

# Migraine Diagnosis, Disability, and Work Productivity Impact in Migraine: Results of the OVERCOME (International) Study

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## BACKGROUND

Migraine is a debilitating neurological disease with an overall estimated prevalence of 11.7% in the United States (US)<sup>1</sup>, 17.9% in Spain<sup>2</sup>, 19.4% in Germany<sup>2</sup>, and 6.0%-10.8% in Japan<sup>2-4</sup>; it is the leading cause of disability in women <50 years of age<sup>5,6</sup>

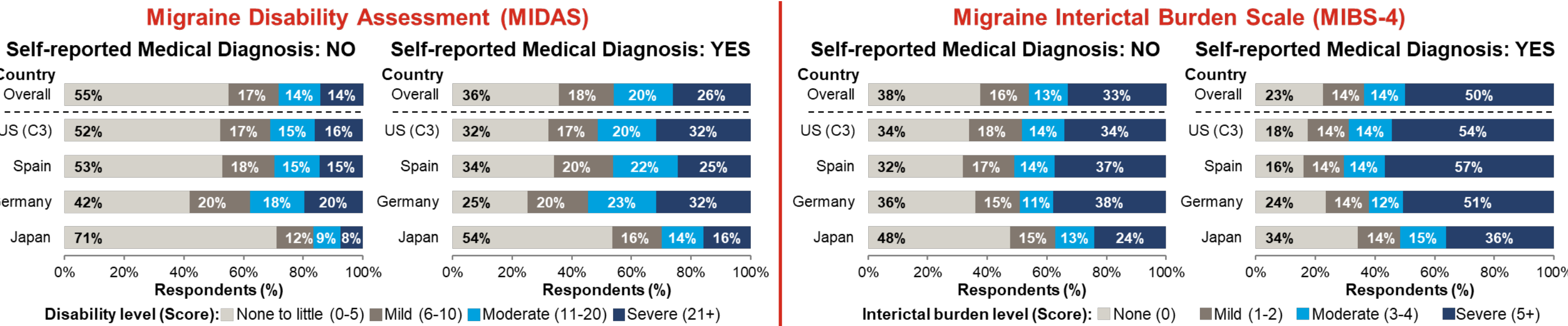
- Only a few studies have evaluated the burden of migraine in multiple countries<sup>7</sup>
- The ObserVational survey of the Epidemiology, tReatment, and Care Of MigrainE (OVERCOME) is a web-based, population-based survey with country-specific surveys fielded in US (Cohort 3 [C3]), Spain, Germany, and Japan in 2020-2021

## OBJECTIVE

- To quantify overall and country-specific rates of self-reported medical diagnosis of migraine and disease burden among OVERCOME respondents meeting the modified International Classification of Headache Disorders version 3 (ICHD-3) criteria for migraine
- To further analyze differences in respondents with and without self-reported medical diagnosis of migraine, overall and in each country

## KEY RESULT

**Overall, Among Respondents Who Met Modified ICHD-3<sup>a</sup> Criteria for Migraine but Did Not Self-report a Medical Diagnosis, 45% Experienced Disability and 62% Experienced Interictal Burden**



- A greater proportion of respondents with a self-reported medical diagnosis of migraine (versus without) had at least mild migraine disability, country-specific results ranged 46%-75% (diagnosis) vs. 29%-58% (no diagnosis); and at least mild migraine interictal burden, country-specific results ranged 66%-84% (diagnosis) vs. 52%-68% (no diagnosis)

Each bar adds up to 100%. Overall data assigned equal weights to all countries. Chi-square test, all Self-reported medical diagnosis of migraine NO versus YES comparisons p<0.001. <sup>a</sup> Modified ICHD-3 criteria for migraine was determined using the validated American Migraine Study/American Migraine Prevalence and Prevention Study migraine diagnostic screener. C3, cohort 3; ICHD-3, International Classification of Headache Disorders, version 3.

## Methods

### Study Design

Cross-sectional, observational study. web-based country-specific surveys were fielded in 2020-2021 in demographically representative samples of US (C3), Spain, Germany, and Japan

- Adults aged 18 years or older and able to read and write in primary language of that country (English, Spanish, German, or Japanese)
  - Reported ≥1 headache or migraine in the past 12 months and not all of them were due to illness or hangover
- Overall N = 57,837

US (C3) N=20,010 Spain N=10,229 Germany N=10,527 Japan N=17,071

- Met modified ICHD-3 criteria for migraine using the validated American Migraine Study/American Migraine Prevalence and Prevention Study migraine diagnostic questionnaire<sup>8,9</sup>

Overall N=52,382 (91%) US (C3) N=19,362 (97%) Spain N=9638 (94%) Germany N = 9349 (89%) Japan N = 14,033 (82%)

C3, cohort 3; N, number of survey respondents identified at each step

### Statistical Analyses

- Data were summarized using mean and standard deviation, or percentage
- For combined overall variables, least square mean and standard deviation of least square mean, or averaged percentage with equal weight across countries are reported
- For each overall and country-specific variable, respondents without (NO) and with (YES) self-reported medical diagnosis of migraine were compared using Student's t-test for continuous and Chi-square test for categorical variables

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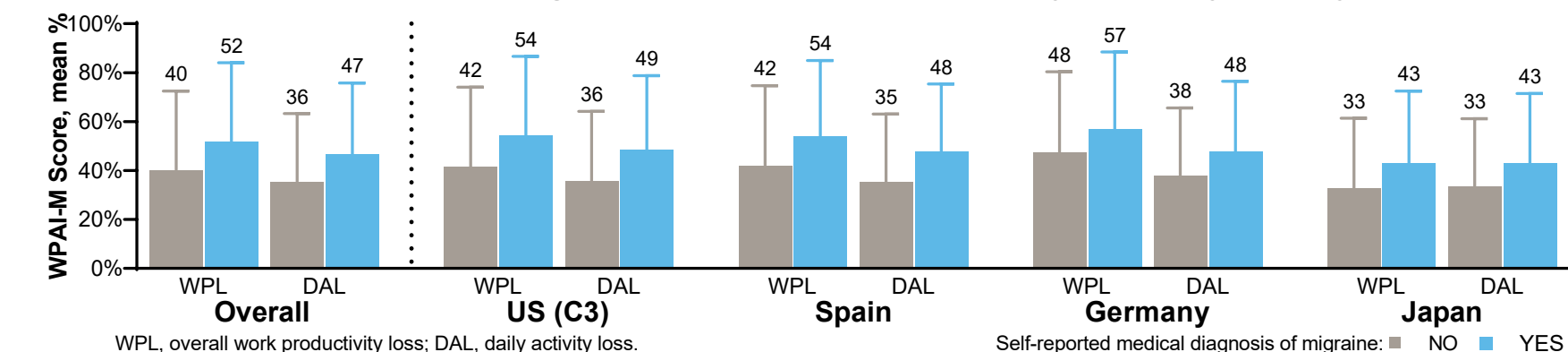
## Results

Respondent Demographics and Characteristics Overall and Across Countries Were Largely Similar and Followed Similar Pattern for Respondents With (51%) and Without (49%) Self-reported Medical Diagnosis of Migraine

Variables	Overall (N=52,382)		US (C3) (N=19,362)		Spain (N=9638)		Germany (N=9349)		Japan (N=14,033)	
	NO (N=25,548)	YES (N=26,834)	NO (N=9336)	YES (N=10,026)	NO (N=4481)	YES (N=5157)	NO (N=4327)	YES (N=5022)	NO (N=7404)	YES (N=6629)
Age (years), mean (SD)	40.0 (13.7)	40.7 (13.2)	40.7 (15.1)	41.8 (13.9)	39.8 (13.0)	38.9 (12.1)	40.5 (14.6) <sup>a</sup>	41.3 (13.7) <sup>a</sup>	39.0 (12.3)	40.6 (12.7)
Sex: % Female	65	67	73	76	61 <sup>b</sup>	60 <sup>b</sup>	59	63	67 <sup>b</sup>	69 <sup>b</sup>
Currently employed: %Yes	67	71	57	60	66	73	68	74	75 <sup>b</sup>	76 <sup>b</sup>
Monthly headache days, mean (SD)	3.7 (4.8)	5.3 (5.8)	3.9 (4.9)	5.9 (6.6)	3.2 (4.1)	4.3 (4.8)	4.0 (4.8)	5.1 (5.3)	3.8 (5.1)	5.6 (6.4)
MIDAS total score, mean (SD)	11.1 (20.6)	18.1 (26.6)	12.1 (21.2)	21.9 (30.3)	11.2 (19.6)	16.7 (23.0)	15.1 (24.7)	21.4 (28.7)	6.7 (15.7)	11.8 (21.5)
MIBS-4 total score, mean (SD)	3.3 (3.7)	4.8 (3.9)	3.5 (3.7)	5.3 (4.0)	3.7 (3.7)	5.4 (3.9)	3.7 (3.9)	4.9 (4.1)	2.5 (3.2)	3.5 (3.5)

Overall data assigned equal weights to all countries. Student's t-test (continuous) and Chi-square test (categorical), all NO versus YES comparisons were significant (p<0.001) unless mentioned otherwise; <sup>a</sup> p=0.006; <sup>b</sup> p not significant. Note: All respondents met the modified ICHD-3 criteria for migraine, which was determined using the validated American Migraine Study/American Migraine Prevalence and Prevention Study migraine diagnostic screener. C3, cohort 3; ICHD-3, International Classification of Headache Disorders, version 3; MIBS-4, Migraine Interictal Burden Scale; MIDAS, Migraine Disability Assessment; N, number of respondents; SD, standard deviation.

Overall, Respondents Who Met Modified ICHD-3<sup>a</sup> Criteria for Migraine but Did Not Self-report a Medical Diagnosis Experienced a Substantial Impairment due to Migraine in Their Work Productivity and Daily Activity



Data are represented as mean and SD. Overall data assigned equal weights to all countries. Student's t-test, all self-reported medical diagnosis of migraine NO versus YES comparisons p<0.001. <sup>a</sup> Modified ICHD-3 criteria for migraine was determined using the validated American Migraine Study/American Migraine Prevalence and Prevention Study migraine diagnostic screener. C3, cohort 3; ICHD-3, International Classification of Headache Disorders, version 3; SD, standard deviation; WPAI-M, Work Productivity and Activity Impairment due to Migraine.

## CONCLUSIONS

- Migraine-related disability and interictal burden are substantial across the US, Spain, Germany, and Japan
- Overall, among survey respondents who met modified ICHD-3 criteria for migraine, just over half self-reported a medical diagnosis of migraine
- Of the respondents without a self-reported medical diagnosis of migraine, 28% reported moderate or severe migraine-related disability and 46% reported moderate or severe interictal burden indicating that a substantial proportion of those without a medical diagnosis of migraine have significant unmet treatment needs
- While overall respondents with a self-reported medical diagnosis of migraine (versus without) experience greater overall work productivity loss (52% vs. 40%) and daily activity loss (47% vs. 36%), substantial impairment was also observed in the latter group
- Study highlights an international unmet need for diagnosing migraine, for effective timely intervention, and for identifying barriers to seeking care

## Strengths and Limitations

- Large dataset capturing respondents across continents with uniform selection criteria and variables measured
- Use of validated instruments in regional languages for assessing the burden of migraine
- Possibility of selection bias during recruitment
  - Segments of the general population were overrepresented such as those healthy enough to participate
  - Respondents were from the online market research consumer panels and accepted the opportunity to participate; characteristics of this sample may differ from general population and those who declined to participate

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### Disclosures

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