

Supplementary Table 1. International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes used to determine hospitalizations

<i>ICD-9-CM Diagnosis codes:</i>	
<i>Smoking</i>	
305.1X	Tobacco use disorder
649.0X	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium
V15.82	Personal history of nicotine dependence
<i>Migraine</i>	
346.XX	Migraine
307.81	Tension-type headache
784.0X	Headache
339.XX	Other headache syndromes
<i>Suicidal behaviors</i>	
V62.84	Suicidal ideation
E950.XX	Suicide and self-inflicted poisoning by solid or liquid substances
E951.XX	Suicide and self-inflicted poisoning by gases in domestic use
E952.XX	Suicide and self-inflicted poisoning by other gases and vapors
E953.XX	Suicide and self-inflicted injury by hanging strangulation and suffocation
E954.XX	Suicide and self-inflicted injury by submersion [drowning]
E955.XX	Suicide and self-inflicted injury by firearms air guns and explosives
E956.XX	Suicide and self-inflicted injury by cutting and piercing instrument
E957.XX	Suicide and self-inflicted injuries by jumping from high place
E958.XX	Suicide and self-inflicted injury by other and unspecified means
E959.XX	Late effects of self-inflicted injury
<i>Any psychiatric disorder</i>	
<i>Depression</i>	
296.82	Atypical depressive disorder
301.12	Chronic depressive personality disorder
309.28	Chronic depressive personality disorder
296.2X	Major depressive disorder, single episode
296.3X	Major depressive disorder, recurrent episode
300.4X	Dysthymic disorder
309.0X	Dysthymic disorder
309.1X	Prolonged depressive reaction
311.XX	Depressive disorder, not elsewhere classified

<i>Anxiety</i>	
300.00	Anxiety state not otherwise specified
300.01	Panic disorder without agoraphobia
300.02	Generalized anxiety disorder
300.21	Agoraphobia with panic disorder
300.22	Agoraphobia without mention of panic attacks
300.23	Social phobia
300.29	Other isolated or specific phobias
309.21	Separation anxiety
300.81	Somatization disorder
300.2X	Phobic disorders
300.3X	Obsessive-compulsive disorders
300.7X	Hypochondriasis
308.2X	Predominant psychomotor disturbance
308.3X	Other acute reactions to stress
309.81	Post-traumatic stress disorder
<i>Alcohol or substance abuse</i>	
291.XX	Alcohol-induced mental disorder
292.XX	Drug-induced mental disorders
303.XX	Alcohol dependence syndrome
304.XX	Drug dependence
305.XX	Nondependent abuse of drugs
648.3X	Drug dependence complicating pregnancy childbirth or the puerperium
655.5X	Suspected damage to fetus from drugs affecting management of mother
965.0X	Poisoning by opiates and related narcotics
V65.42	Counseling on substance use and abuse
<i>Psychosis</i>	
295.XX	Schizophrenic disorders
296.XX	Episodic mood disorders
297.XX	Delusional disorders
298.XX	Other nonorganic psychoses

Supplementary Table 2. Characteristics of hospitals where participants with and without migraine-related hospitalizations being hospitalized (N = 156,172,826)

Characteristics	All (N = 156,172,826)		With migraine (N = 2,190,305)		Without migraine (N = 153,982,521)		P-value
	N	%	N	%	N	%	
Region							
Northeast	31,018,096	19.9	407,070	18.6	30,611,026	19.9	0.02
Midwest	36,121,732	23.1	545,882	24.9	35,575,850	23.1	
South	59,598,005	38.2	827,541	37.8	58,770,464	38.2	
West	29,434,993	18.8	409,811	18.7	29,025,181	18.8	
Location							
Rural	19,283,301	12.3	220,129	10.1	19,063,171	12.4	<0.0001
Urban	135,502,432	86.8	1,950,012	89.0	133,552,420	86.7	
Bed size							
Small	18,463,658	11.8	238,527	10.9	18,225,132	11.8	0.03
Medium	37,493,405	24.0	506,586	23.1	36,986,819	24.0	
Large	98,828,669	63.3	1,425,029	65.1	97,403,640	63.3	
Teaching hospital	69,905,002	44.8	1,040,536	47.5	68,864,466	44.7	<0.0001

Rounded components may not add up to the rounded sum due to weighting and rounding.

Percentages may not add up to 100% due to rounding or missing data.

Supplementary Table 3. Association between migraine and suicidal behaviors by age groups (N = 156,172,826)

Migraine	With migraine (N = 2,190,305)	Without migraine (N = 153,982,521)	OR (95% CI)	
			Unadjusted	Adjusted ^a
All participants (N = 156,172,826)				
< 50				
No suicidal behavior	1,195,495	53,510,653	Reference	Reference
Suicidal behavior	73,528	1,798,906	1.83 (1.73, 1.93)	2.01 (1.91, 2.12)
≥ 50				
No suicidal behavior	902,312	97,994,514	Reference	Reference
Suicidal behavior	18,969	678,449	3.04 (2.79, 3.31)	1.66 (1.52, 1.80)
Male (N = 62,465,446)				
< 50				
No suicidal behavior	183,131	15,669,431	Reference	Reference
Suicidal behavior	13,468	891,103	1.29 (1.19, 1.40)	1.20 (1.10, 1.30)
≥ 50				
No suicidal behavior	172,663	45,186,670	Reference	Reference
Suicidal behavior	3,745	345,236	2.84 (2.41, 3.35)	1.68 (1.43, 1.98)
Female (N = 93,512,367)				
< 50				
No suicidal behavior	1,011,484	37,682,579	Reference	Reference
Suicidal behavior	60,056	906,884	2.47 (2.34, 2.61)	2.25 (2.13, 2.37)
≥ 50				
No suicidal behavior	729,520	52,773,489	Reference	Reference
Suicidal behavior	152,24	333,131	3.31 (3.07, 3.56)	1.60 (1.48, 1.72)

Abbreviations: OR, odds ratio; CI, confidence interval
^a Adjusted for age (continuous), sex, race, median household income quartiles for patient zip code, hospital location, hospital region, year, and

age-adjusted Charlson Comorbidity Index.