Migraine prevalence and depression among adults in Spain: results from the European Health Survey 2014

Rubén Roy, MSc, [a,b,c], Elisabet Sánchez-Rodríguez, PhD, [a,b,c], Santiago Galán, MSc, [a,b,c], Mélanie Racine, PhD, [d,e,f], Elena Castarlenas, PhD, [a,b,c], Mark P. Jensen, PhD, [g], Jordi Miró, PhD, [a,b,c,h]

a Unit for the Study and Treatment of Pain – ALGOS, Universitat Rovira i Virgili, Catalonia, Spain | b Research Center for Behavior Assessment (CRAMC), Department of Psychology, Universitat Rovira i Virgili, Catalonia, Spain | c Institut d'Investigació Sanitària Pere Virgili; Universitat Rovira i Virgili, Catalonia, Spain | d Lawson Health Research Institute | e Beryl & Richard Ivey Rheumatology Day Programs, St. Joseph's Health Care | f Clinical and Neurological Sciences Department, Schulich School of Medicine & Dentistry, University of Western Ontario, London, ON, Canada | g Department of Rehabilitation Medicine, University of Washington, Seattle, WA, USA | h Chair in Pediatric Pain Universitat Rovira i Virgili-Fundación Grünenthal, Catalonia, Spain

1.- BACKGROUND AND AIMS

Migraine is known to be associated with an increased risk of having depression. Prevalence studies, however, have not identified the variables that might moderate this relationship. This study sought to (1) estimate the one-year-prevalence of migraine, (2) its association with depression, and (3) identify moderators of this association, in a representative sample of Spanish adults.

2.- METHODS

PROCEDURE. The study objectives were addressed using secondary data from 22,842 participants aged 15 years or older from the second wave of the European Health Survey conducted in 2014. The European Health Survey is a face-to-face interview surveying a nationally representative sample of 29 countries, including Spain.

MEASURES. Socio-demographic information included sex, age and educational level. Migraine's (and depression's) one-year prevalence was deemed positive for those individuals who answered yes to both of the following questions: "Have you suffered migraine (depression) over the past 12 months?" and "Has a doctor confirmed this diagnosis?" Perceived social support was measured with the Oslo 3-item Social Support Scale (OSS-3), a brief measure that reports the level of support, which can be poor, moderate or strong. Pain interference was measured with the dichotomous question "does pain interfere with your daily activities?" Pain intensity during the previous four weeks was measured on a five-point rating scale ranging from "None" to "Extreme".

DATA ANALYSES. We computed number and percentages for each variable, and then estimated the one-year prevalence of migraine and its 95% confidence interval (CI) in the sample and its distribution with respect to the study variables. We then performed a multivariate logistic regression analysis predicting depression with the socio-demographic variables, migraine, social support, pain intensity and pain interference. In the first step we entered the socio-demographic variables to adjust for their potential confounding effect, and migraine. We then entered the social support, pain intensity and pain interference in the second step. Last, in the third step we entered the first-order interactions between migraine and the rest of predictors. The statistical techniques were conducted with STATA 14.

3.- RESULTS

The one-year prevalence of migraine was 8% (95% CI 8.1-8.9) for the total sample, 12% (95% CI 11.4-12.6) in women and 4% (95% CI 4.0-4.8) in men. Controlling for socio-demographic variables, the odds of having depression were higher among individuals with migraine (OR=3.9 [3.3-4.6], p<0.001). Further adjusting for social support, pain interference and pain intensity reduced by half the increased risk of having depression predicted by migraine alone (OR=2.0 [1.6-2.4], p<0.001). Social support was associated with a decreased prevalence of depression whereas higher pain intensity and a higher pain interference were associated with an increased presence of depression. No interaction between the predictors and migraine emerged significant.

4.- CONCLUSIONS

Migraine is a prevalent condition that is almost three times more frequent in women than men in Spain. Having migraine is associated with a higher likelihood of also having depression, although this association is partially explained by certain pain characteristics (i.e., pain intensity and pain interference) and psychosocial factors (i.e., level of perceived social support).

Table 1. One-year prevalence estimations of migraine as a function of study variables.

Variable	Category	Number n	%	% Migraine (95% CI) One-year
Sex	Female	12,294	54%	12% (11-13)
	Male	10,548	46%	4% (4-5)
Age	15-29	2,392	11%	7% (6-8)
	30-44	5,830	26%	8% (8-9)
	45-59	6,037	26%	10% (9-11)
	60-74	4,935	22%	8% (8-9)
	>75	3,648	16%	8% (7-8)
Education	No studies	2,912	13%	11% (10-12)
	Primary	5,194	23%	8% (8-9)
	Higher	10,476	46%	8% (8-9)
	University	4,260	19%	7% (7-8)
Depression	No	21,777	96%	8% (7-8)
	Yes	895	4%	26% (23-29)
Perceived social support	Poor	969	4%	14% (12-16)
	Moderate	7,960	36%	8% (8-9)
	Strong	13,302	60%	8% (8-9)
Pain interference	No	20,676	91%	7% (7-7)
	Yes	2,152	9%	24% (22-26)
Pain intensity	None	11,975	52%	3% (3-4)
	Very mild	2,029	9%	7% (6-8)
	Mild	3,237	14%	10% (9-11)
	Moderate	3,548	16%	16% (15-17)
	Severe	1,749	8%	25% (23-27)
	Extreme	288	1%	27% (22-33)

Tabla 2. Estimated odds ratios and 95 % CI for depression presence in the European Health Survey.

Variables	Model 1 OR (95% CI)	Model 2 OR (95% CI)
Sex	0.6 (0.5-0.7)***	0.8 (0.7-0.9)**
Age [†]	1.0 (1.0-1.0)***	1.0 (1.0-1.0)**
Education level [†]	0.7 (0.6-0.8)***	0.8 (0.7-0.9)***
Migraine	3.9 (3.3-4.6)***	2.0 (1.6-2.4)***
Social support [†]		
Moderate	-	0.3 (0.2-0.4)***
Strong	-	0.3 (0.2-0.4)***
Pain interference [†]	-	2.8 (2.2-3.5)***
Pain intensity [†]	-	1.6 (1.5-1.7)***
Pseudo r^2	8.4%	20.5%
Wald χ^2	613.24, df =4, p<.001	859.56, df =4, p<.001

Note: The OR for social support are contrasts with the Poor group. *p < .05; **p < .01; ***p < .001. [†] Variables introduced centered.

CÁTEDRA DE DOLOR INFANTIL
Universitat Rovira i Virgili

Fundación GRÜNENTHAL España