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RESEARCH ARTICLE

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A comparison of *DSM*-5 and *DSM*-IV agoraphobia in the World Mental Health Surveys

Annelieke M. Roest[1] | Ymkje Anna de Vries[1] | Carmen C. W. Lim[2] | Hans-Ulrich Wittchen[3,4] | Dan J. Stein[5] | Tomasz Adamowski[6] | Ali Al-Hamzawi[7] | Evelyn J. Bromet[8] | Maria Carmen Viana[9] | Giovanni de Girolamo[10] | Koen Demyttenaere[11] | Silvia Florescu[12] | Oye Gureje[13] | Josep Maria Haro[14] | Chiyi Hu[15] | Elie G. Karam[16,17,18] | José Miguel Caldas-de-Almeida[19] | Norito Kawakami[20] | Jean Pierre Lépine[21] | Daphna Levinson[22] | Maria E. Medina-Mora[23] | Fernando Navarro-Mateu[24,25,26] | Siobhan O'Neill[27] | Marina Piazza[28] | José A. Posada-Villa[29] | Tim Slade[30] | Yolanda Torres[31] | Ronald C. Kessler[32] | Kate M. Scott[33] | Peter de Jonge[1] | On behalf of the WHO World Mental Health Survey Collaborators

[1]Department of Developmental Psychology, University of Groningen, Groningen, The Netherlands

[2]Queensland Centre for Mental Health Research, and Queensland Brain Institute, University of Queensland, St. Lucia, Queensland, Australia

[3]Institute of Clinical Psychology and Psychotherapy, Technische Universität Dresden, Dresden, Germany

[4]Department of Psychiatry and Psychotherapy, Ludwig-Maximilans-University Munich, Munich, Germany

[5]Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, Republic of South Africa

[6]Department of Psychiatry, Medical University of Wroclaw, Wroclaw, Poland

[7]College of Medicine, Al-Qadisiya University, Diwania Governorate, Iraq

[8]Department of Psychiatry, Stony Brook University School of Medicine, New York, New York

[9]Department of Social Medicine and Post-Graduate Program in Public Health, Psychiatric Epidemiology Research Center (CEPEP), Federal University of Espírito Santo (UFES), Vitória, Brazil

[10]IRCCS St. John of God Clinical Research Centre, IRCCS Centro S. Giovanni di Dio Fatebenefratelli, Brescia, Italy

[11]Department of Psychiatry, University Hospital Gasthuisberg, Katholieke Universiteit Leuven, Leuven, Belgium

[12]National School of Public Health, Management and Professional Development, Bucharest, Romania

[13]Department of Psychiatry, University College Hospital, Ibadan, Nigeria

[14]Parc Sanitari Sant Joan de Déu, CIBERSAM, Universitat de Barcelona, Barcelona, Spain

[15]Shenzhen Insitute of Mental Health, Shenzhen Kangning Hospital, Shenzhen, China

[16]Department of Psychiatry and Clinical Psychology, Faculty of Medicine, Balamand University, Beirut, Lebanon

[17]Department of Psychiatry and Clinical Psychology, St. George Hospital University Medical Center, Beirut, Lebanon

[18]Institute for Development Research Advocacy and Applied Care (IDRAAC), Beirut, Lebanon

[19]Lisbon Institute of Global Mental Health and Chronic Diseases Research Center (CEDOC) and Department of Mental Health, Faculdade de Ciências Médicas, Universidade Nova de Lisboa, Lisbon, Portugal

[20]Department of Mental Health, School of Public Health, The University of Tokyo, Tokyo, Japan

[21]Hôpital Lariboisière Fernand Widal, Assistance Publique Hôpitaux de Paris, INSERM UMR-S 1144, University Paris Diderot and Paris Descartes, Paris, France

[22]Ministry of Health Israel, Mental Health Services, Israel

[23]Department of Epidemiology and Psychosocial Research, National Institute of Psychiatry Ramon de la Fuente, Mexico

[24]Instituto Murciano de Investigación Biosanitaria (IMIB)-Arrixaca, Murcia, Spain

[25]CIBER de Epidemiología y Salud Pública (CIBERESP), Murcia, Spain
[26]UDIF-SM, Subdirección General de Salud Mental y Asistencia Psiquiátrica, Servicio Murciano de Salud, El Palmar, Murcia, Spain
[27]School of Psychology, Ulster University, Coleraine, Northern Ireland
[28]National Institute of Health, Universidad Peruana Cayetano Hereidia, Lima, Peru
[29]Colegio Mayor de Cundinamarca University, Bogota, Colombia
[30]National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia
[31]Center for Excellence on Research in Mental Health, CES University, Medellin, Colombia
[32]Department of Health Care Policy, Harvard University Medical School, Boston, Massachusetts
[33]Department of Psychological Medicine, University of Otago, Dunedin, Otago, New Zealand

Correspondence
Annelieke M. Roest, Faculty of Behavioural and Social Sciences, Department Developmental Psychology, University of Groningen, Grote Kruisstraat 2/1, 9712 TS Groningen, The Netherlands.
Email: a.m.roest@rug.nl

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Abstract

Background: The Diagnostic and Statistical Manual of Mental Disorders, version 5 (*DSM*-5) definition of agoraphobia (AG) as an independent diagnostic entity makes it timely to re-examine the epidemiology of AG. Study objective was to present representative data on the characteristics of individuals who meet *DSM*-IV criteria for AG (AG without a history of panic disorder [PD] and PD with AG) but not *DSM*-5 criteria, *DSM*-5 but not *DSM*-IV criteria, or both sets of criteria.

Methods: Population-based surveys from the World Mental Health Survey Initiative including adult respondents ($n = 136{,}357$) from 27 countries across the world. The Composite International Diagnostic Interview was used to assess AG and other disorders.

Results: Lifetime and 12-month prevalence estimates of *DSM*-5 AG (1.5% and 1.0%) were comparable to *DSM*-IV (1.4% and 0.9%). Of respondents meeting criteria in either system, 57.1% met criteria in both, while 24.2% met criteria for *DSM*-5 only and 18.8% for *DSM*-IV only. Severe role impairment due to AG was reported by a lower proportion of respondents who met criteria only for *DSM*-IV AG (30.4%) than those with both *DSM*-5 and *DSM*-IV AG (44.0%; $\chi^2_1 = 4.7$; $P = 0.031$). The proportion of cases with any comorbidity was lower among respondents who met criteria only for *DSM*-IV AG (78.7%) than those who met both sets (92.9%; $\chi^2_1 = 14.5$; $P < 0.001$).

Conclusions: This first large survey shows that, compared to the *DSM*-IV, the *DSM*-5 identifies a substantial group of new cases with AG, while the prevalence rate remains stable at 1.5%. Severity and comorbidity are higher in individuals meeting *DSM*-5 AG criteria compared with individuals meeting *DSM*-IV AG criteria only.

KEYWORDS
agoraphobia, anxiety/anxiety disorders, cross-national, disorders, epidemiology, phobia/phobic

1 | INTRODUCTION

Anxiety disorders are highly prevalent and are major contributors to the burden of disease worldwide (Craske et al., 2017; Murray et al., 2012; Whiteford et al., 2013). Agoraphobia (AG) is one of the least studied anxiety disorders (Asmundson & Asmundson, 2018), and, especially with the introduction of the Diagnostic and Statistical Manual of Mental Disorders, version 5 (*DSM*-5), there is a lack of research focusing on AG including the cross-national epidemiology of AG.

In the Diagnostic and Statistical Manual of Mental Disorders, version 4 (*DSM*-IV), unlike the International Classification of Diseases (ICD-10), AG was not defined as an independent disorder with specific diagnostic criteria, but instead was described as a residual group only to be coded in the presence or absence of panic disorder (PD; i.e., PD with AG [300.21], or AG without a history of PD [300.22]; American Psychiatric Association, 2000). AG was defined as anxiety about being in places or situations from which escape might be difficult (or embarrassing) or in which help may not be available in the event of having a panic attack or panic-like symptoms. These situations had to be avoided, endured with marked distress or with anxiety about having a panic attack or panic-like symptoms, or require the presence of a companion (American Psychiatric Association, 2000).

In *DSM*-5, which was introduced in 2013, AG is defined as a phobic disorder cued by exposure to agoraphobic situations. As a result, PD (300.01) and AG (300.22) are unlinked (American Psychiatric Association, 2013; Asmundson, Taylor, & Smits, 2014), consistent with the

ICD-10 criteria for AG (F40.0) and PD (F41.0; World Health Organization, 2016). The decision to classify AG as a disorder that exists separately from PD was based on studies indicating that a substantial proportion of individuals with AG do not have PD (Kessler et al., 2006; Wittchen, Gloster, Beesdo-Baum, Fava, & Craske, 2010), and/or PD or panic attacks do not precede AG (as implied in *DSM*-IV; Wittchen et al., 2010, 2008; Wittchen, Reed, & Kessler, 1998). As a result, individuals with AG, but without panic-like symptoms, received no formal diagnosis while they showed substantial impairment and disability (Wittchen et al., 2010). Further, *DSM*-5 criterion A is broadened to a fear or avoidance of situations because of thoughts that escape might be difficult or help might not be available in the event of developing panic-like symptoms *or other incapacitating or embarrassing symptoms (e.g., fear of falling in the elderly; fear of incontinence* ; American Psychiatric Association, 2013). This is in line with the ICD criteria, in which AG is understood to be the consequence of a broader range of fears (Kogan et al., 2016; Stein, 2012; Wittchen et al., 2010). To make a better distinction from specific phobia (SP), endorsement of fears from two or more *distinct* situational domains is required in *DSM*-5. Finally, the *DSM*-5 criteria for AG are extended compared to the *DSM*-IV criteria to make them more comparable to other (anxiety) disorders, for instance by adding persistence and severity requirements (American Psychiatric Association, 2013; Asmundson et al., 2014).

These changes in *DSM*-5 call for a re-examination of epidemiological data on AG. The available information is difficult to evaluate because most studies have examined AG only in individuals without a history of PD (Goodwin et al., 2005). As a result, the prevalence of AG (Goodwin et al., 2005) and the impairment due to AG has likely been underestimated. Furthermore, there is a lack of information on age of onset (AOO; Wittchen et al., 2010), sociodemographic correlates, and comorbidity patterns of AG (Goodwin et al., 2005). Therefore, the aim of the current study is to present and compare data on characteristics of AG according to *DSM*-5 and *DSM*-IV criteria (AG without a history of PD and PD with AG) from countries in the World Health Organization (WHO) World Mental Health (WMH) Survey Initiative.

2 | METHODS

2.1 | Survey samples

Data came from 27 surveys administered in low/lower-middle income countries, upper-middle income countries, and high-income countries. A total of 136,357 respondents participated. Interviews were conducted face-to-face in respondent homes. Adults were selected based on multistage clustered area probability sampling designs designed to generate samples that were representative of the household populations in the countries. The details of within-country sampling methods are described in detail elsewhere (Heeringa et al., 2008; Pennell et al., 2008).

2.2 | Ethics, consent, and permissions

Informed consent was obtained according to protocols endorsed by local Institutional Review Boards.

2.3 | Measures

2.3.1 | Mental disorders

Mental disorders were assessed with the WHO Composite International Diagnostic Interview (CIDI), a fully structured interview administered by trained lay interviewers, which generates diagnoses according to the criteria of the *DSM*-IV (Kessler & Ustün, 2004). To reduce respondent burden, interviews were administered in two parts. All respondents completed Part I of the CIDI, assessing core mental disorders. Part II, which assessed other disorders and correlates, was administered to all respondents with any lifetime Part I diagnosis and a probability subsample of other Part I respondents. Part II data were weighted to adjust for the undersampling of Part I noncases so that weighted prevalence estimates in Part II sample are identical to those in Part I sample.

The disorders include anxiety disorders (PD, AG, generalized anxiety disorder [GAD], social anxiety disorder, SP, posttraumatic stress disorder [PTSD],[1] separation anxiety disorder), mood disorders (major depressive episode and/or dysthymia, bipolar disorder [I, II, or subthreshold]), disruptive behavior disorders (intermittent explosive disorder, bulimia nervosa, binge eating disorder, oppositional defiant disorder, conduct disorder, attention deficit disorder), and substance use disorders (alcohol abuse and drug abuse, both with or without dependence). These diagnoses have shown generally good concordance with clinical diagnoses based on blinded Structured Clinical Interview (SCID) reappraisal (Haro et al., 2006). The AOO of AG was assessed using special recall probes that have been shown to yield more plausible distributions of AOO of disorders than conventional recall questions (Knäuper, Cannell, Schwarz, Bruce, & Kessler, 1999).

For purposes of the current analysis, *DSM*-5 AG diagnoses were generated retrospectively; a series of questions were used to operationalize *DSM*-5 AG criteria (see Table S1 for the *DSM*-IV and *DSM*-5 criteria and corresponding CIDI algorithms). We defined three diagnostic groups: respondents who only met *DSM*-IV criteria (AG without a history of PD and PD with AG) "*DSM*-IV only AG," respondents who only met *DSM*-5 criteria "*DSM*-5 only AG," and respondents who met both *DSM*-5 and *DSM*-IV criteria "*DSM*-5 with *DSM*-IV AG."

2.3.2 | Impairment

Severe role impairment in home management, ability to work, ability to form and maintain close relationships, and social life was assessed with a modified version of the Sheehan Disability Scale (SDS) in respondents with 12-month AG (Leon, Olfson, Portera, Farber, & Sheehan, 1997). The response scale for each role domain is from 0 to 10. Severe impairment was defined as a score ≥ 7 in at least one specific role domain. Respondents with 12-month AG were also asked how many days in the past year they were totally unable to work or carry out their normal activities due to their AG (Ormel et al., 2008). Additionally, all Part II respondents were asked how many days in the

[1]In *DSM*-5 PTSD is no longer listed as an anxiety disorder but instead falls under "trauma- and stressor-related disorders."

past 30 days they were totally unable to work or carry out their normal activities because of any physical or mental health problems. Finally, all Part I respondents were asked whether they seriously thought about committing suicide in the past 12 months.

2.3.3 | Treatment

Respondents were asked whether they ever saw each of a long list of professionals. Responses were aggregated into treatment in the specialty mental health sector (e.g., psychiatrist/psychologist), general medical sector (e.g., general practitioner), human services sector (e.g., social worker), and complementary and alternative medicine (CAM) sector (e.g., herbalist).

2.3.4 | Sociodemographic correlates

Factors considered include gender, age cohorts (18–34, 35–49, 50–64, 65+), education level (low, low-average, high-average, high), marital status (married, never married, previously married), and employment status (employed, student, homemaker, retired, other).

2.4 | Statistical analysis

The actuarial method was used to generate AOO survival curves, and differences in age of onset between *DSM*-IV only AG, *DSM*-5 only AG, and *DSM*-5 with *DSM*-IV AG were tested using discrete-time logistic regression in the subsample with *DSM*-IV or *DSM*-5 AG. Logistic regression analysis was used to evaluate the significance of differences in role impairment, suicidality, comorbidity, and treatment between *DSM*-IV only AG, *DSM*-5 only AG, and *DSM*-5 with *DSM*-IV AG cases, and between AG cases and noncases (where applicable). Logistic regression was also used to compare sociodemographic correlates of *DSM*-IV only AG, *DSM*-5 only AG, and *DSM*-5 with *DSM*-IV AG. All analyses were carried out in SAS (9.4). Because the data were clustered and weighted to account for unequal selection probabilities, standard errors were estimated using the Taylor series linearization method (Wolter, 1985) implemented in SUDAAN (11.0.1; Research Triangle Institute, 2002). Significance tests were evaluated using 0.05-level two-sided tests.

3 | RESULTS

3.1 | Prevalence and course of AG

Lifetime and 12-month prevalence estimates of *DSM*-IV AG were 1.4% and 0.9%, while those of *DSM*-5 AG were 1.5% and 1.0% (Table 1). Consistent with *DSM*-IV criteria, 100% of cases with *DSM*-IV AG experienced fear of panic attacks, compared to 70.2% of cases with *DSM*-5 AG. Of all respondents with lifetime PD (prevalence of 1.7%), 19.7% met criteria for *DSM*-IV AG and 18.2% for *DSM*-5 AG (Table S2).

TABLE 1 Lifetime and 12-month prevalence and persistence of *DSM*-IV agoraphobia (AG), *DSM*-5 AG, *DSM*-IV only AG, *DSM*-5 only AG, and *DSM*-5 AG with *DSM*-IV AG, with and without lifetime panic disorder (PD; total $N = 136{,}357$)

	Lifetime		12 months		Persistence (12 months/lifetime)	
	%	*SE*	%	*SE*	%	*SE*
DSM-IV AG						
With PD	0.3	0.0	0.2	0.0	68.0	2.5
Without PD	1.0	0.0	0.7	0.0	65.9	1.5
With PD/total	24.7	1.2	25.3	1.5	–	–
With fear of PA/total	100.0	0.0	100.0	0.0	–	–
Total	1.4	0.0	0.9	0.0	66.4	1.3
DSM-5 AG						
With PD	0.3	0.0	0.2	0.0	69.7	2.7
Without PD	1.2	0.0	0.8	0.0	68.9	1.5
With PD/total	21.4	1.1	21.6	1.2	–	–
With fear of PA/total	70.2	1.3	72.4	1.5	–	–
Total	1.5	0.0	1.0	0.0	69.1	1.3
DSM-IV only AG						
With PD	0.1	0.0	0.0	0.0	53.3	6.8
Without PD	0.3	0.0	0.1	0.0	51.6	3.2
With PD/total	19.3	2.4	19.8	3.6	–	–
With fear of PA/total	100.0	0.0	100.0	0.0	–	–
Total	0.3	0.0	0.2	0.0	51.9[a]	2.8
DSM-5 only AG						
With PD	0.0	0.0	0.0	0.0	57.3	9.3
Without PD	0.4	0.0	0.3	0.0	64.8	2.7
With PD/total	9.3[b,c]	1.5	8.3[d,e]	1.3	–	–
With fear of PA/total	0.0	0.0	0.0	0.0	–	–
Total	0.4	0.0	0.3	0.0	64.1[f,g]	2.6
DSM-5 with *DSM*-IV AG						
With PD	0.3	0.0	0.2	0.0	71.5	2.6
Without PD	0.8	0.0	0.5	0.0	71.1	1.7
With PD/total	26.5	1.4	26.6	1.6	–	–
With fear of PA/total	100.0	0.0	100.0	0.0	–	–
Total	1.0	0.0	0.7	0.0	71.2	1.5
No AG	98.2	0.0	98.8	0.0	–	–

Note. *DSM*-IV: Diagnostic and Statistical Manual of Mental Disorders, version 4; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, version 5.

[a]Significantly different from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 47.1$; $P < 0.001$).

[b]Significantly different from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 54.3$; $P < 0.001$).

[c]Significantly different from *DSM*-IV only AG ($\chi^2_1 = 20.9$; $P < 0.001$).

[d]Significantly different from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 52.8$; $P < 0.001$).

[e]Significantly different from *DSM*-IV only AG ($\chi^2_1 = 20.2$; $P < 0.001$).

[f]Significantly different from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 6.2$; $P = 0.012$).

[g]Significantly different from *DSM*-IV only AG ($\chi^2_1 = 18.6$; $P < 0.001$).

Of all respondents with lifetime AG, 57.1% (*SE* = 1.3) met criteria for both *DSM*-5 and *DSM*-IV AG, 18.8% (*SE* = 1.0) only met criteria for *DSM*-IV, and 24.2% (*SE* = 1.1) only met criteria for *DSM*-5. *DSM*-5 only lifetime cases had a significantly lower lifetime proportion with PD (9.3%) than *DSM*-5 with *DSM*-IV cases (26.5%; $\chi^2_1 = 54.3$; $P < 0.001$) and *DSM*-IV only cases (19.3%; $\chi^2_1 = 20.9$; $P < 0.001$). Respondents with *DSM*-5 with *DSM*-IV AG had higher persistence (i.e., 12-month prevalence among lifetime cases; 71.2%) than *DSM*-IV only (51.9%; $\chi^2_1 = 47.1$; $P < 0.001$) and *DSM*-5 only (64.1%; $\chi^2_1 = 6.2$; $P = 0.012$) cases. *DSM*-5 only cases also had a significantly higher persistence than *DSM*-IV only cases ($\chi^2_1 = 18.6$; $P < 0.001$).

The median AOO of *DSM*-5 only AG was 14 years old (interquartile range [IQR]= 9–25), which was significantly lower than the median AOO of *DSM*-IV only AG (median = 23, IQR = 13–41) and of *DSM*-5 with *DSM*-IV AG (median = 21, IQR = 13–39; $\chi^2 = 21.8$–24.4; $P < 0.001$; Figure S1). The AOO of *DSM*-IV only AG and *DSM*-5 with *DSM*-IV AG did not differ significantly ($\chi^2 = 0.3$; $P = 0.55$).

3.2 | Impairment

Severe role impairment in the past 12 months was reported by 30.4% of respondents with *DSM*-IV only AG, 43.3% of respondents with *DSM*-5 only AG, and 44.0% of respondents with *DSM*-5 with *DSM*-IV AG, with a significant difference between *DSM*-IV only and *DSM*-5 with *DSM*-IV AG ($\chi^2_1 = 4.7$; $P = 0.031$). Mean number of days out of role in the past year due to AG was also significantly lower among respondents with *DSM*-IV only AG (29.9) compared with *DSM*-5 with *DSM*-IV AG (55.8; $\chi^2_1 = 8.0$; $P = 0.005$), while that for *DSM*-5 only AG (40.2) did not differ from *DSM*-IV only AG ($\chi^2_1 = 2.1$; $P = 0.147$) or *DSM*-5 with *DSM*-IV AG ($\chi^2_1 = 1.7$; $P = 0.190$). Although suicidal ideation rates were higher for all AG subgroups compared with respondents without AG (1.7%), there were no significant differences in suicidal ideation rates among respondents with *DSM*-IV only (10.0%), *DSM*-5 only (15.7%), or *DSM*-5 with *DSM*-IV (15.8%) AG (Table 2).

3.3 | Comorbidity

Respondents in all AG subgroups reported higher rates of lifetime and 12-month mental disorder comorbidity compared to respondents without AG, except for 12-month substance use disorders in the *DSM*-IV only AG subgroup ($\chi^2_1 = 0.7$; $P = 0.39$; Table 3). Comorbidity rates were significantly lower for respondents with *DSM*-IV only (3.5–78.7%) than for respondents with *DSM*-5 with *DSM*-IV AG (8.1–92.9%), except for 12-month disruptive behavior disorders and 12-month and lifetime substance use disorders. Respondents with *DSM*-5 only AG did not have a significantly lower rate of comorbidity (12.6–88.7%) than respondents with *DSM*-5 with *DSM*-IV AG for any disorder category except any lifetime disorder ($\chi^2_1 = 4.4$; $P = 0.036$). Also, they reported a significantly higher rate of comorbidity than respondents with *DSM*-IV only AG for 12-month anxiety disorder ($\chi^2_1 = 6.9$; $P = 0.009$) and lifetime anxiety disorders ($\chi^2_1 = 7.1$; $P = 0.008$).

3.4 | Treatment

Respondents in all AG subgroups were more likely to receive any lifetime treatment (31.0–52.8%) than respondents without AG (8.4%), but respondents with *DSM*-IV only AG were significantly less likely than respondents with *DSM*-5 with *DSM*-IV AG to receive any lifetime treatment (Table 4). They were also less likely than respondents with *DSM*-5 with *DSM*-IV AG to receive 12-month specialty mental health care or any 12-month treatment but not less likely to receive 12-month general medical care, human services, or CAM treatment. Respondents

TABLE 2 Sheehan impairment in the worst month in the past year, days out of role in the past year due to agoraphobia (AG), days out of role in the past 30 days for any health reason, and 12-month suicidality

	Among respondents with 12-month AG				Among all respondents			
	Any severe impairment due to AG		Number of days out of role due to AG (past year)		Number of days out of role for any health reason (past 30 days)		12-month suicidal ideation	
Diagnosis	%	*SE*	Mean	*SE*	Mean	*SE*	%	*SE*
DSM-IV only AG	30.4[a]	4.3	29.9[b]	8.7	3.3[c]	0.8	10.0[d]	2.6
DSM-5 only AG	43.3	4.0	40.2	9.3	3.6[e]	0.6	15.7[f]	2.8
DSM-5 with *DSM*-IV AG	44.0	2.1	55.8	4.9	5.0[g]	0.4	15.8[h]	1.3
No AG	–	–	–	–	1.1	0.0	1.7	0.0
$\chi^2_{2/3}$ [*P*-value]	4.8 [0.091]		8.2 [0.016]		128.5 [<0.001]		493.1 [<0.001]	

Note. *DSM*-IV: Diagnostic and Statistical Manual of Mental Disorders, version 4; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, version 5.
[a]Differs significantly from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 4.7$; $P = 0.031$).
[b]Differs significantly from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 8.0$; $P = 0.005$).
[c]Differs significantly from noncases ($\chi^2_1 = 6.1$; $P = 0.013$) and from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 5.8$; $P = 0.016$).
[d]Differs significantly from noncases ($\chi^2_1 = 44.0$; $P < 0.001$).
[e]Differs significantly from noncases ($\chi^2_1 = 19.8$; $P < 0.001$) and from *DSM*-5 AG with *DSM*-IV AG ($\chi^2_1 = 4.2$, $P = 0.040$).
[f]Differs significantly from noncases ($\chi^2_1 = 97.5$; $P < 0.001$).
[g]Differs significantly from noncases ($\chi^2_1 = 103.8$; $P < 0.001$).
[h]Differs significantly from noncases ($\chi^2_1 = 378.2$; $P < 0.001$).

TABLE 3 Lifetime and 12-month comorbidity of agoraphobia (AG) with other (lifetime and 12-month) mental disorders

	Anxiety disorders		Mood disorders		Disruptive behavior disorders		Substance use disorders		Any disorder	
Diagnosis	**%**	***SE***	**%**	***SE***	**%**	***SE***	**%**	***SE***	**%**	***SE***
Lifetime diagnoses										
DSM-IV only AG	63.1[a,b]	3.3	44.6[a,b]	3.3	20.3[a,d]	3.1	18.7[a]	2.6	78.7[a,b]	3.2
DSM-5 only AG	78.9[a,c]	2.7	54.8[a]	2.9	26.3[a]	2.8	31.5[a]	2.8	88.7[a,d]	1.9
DSM-5 with *DSM*-IV AG	84.1[a]	1.5	59.6[a]	1.8	30.1[a]	2.0	28.3[a]	1.6	92.9[a]	1.1
No AG	14.6	0.2	13.0	0.2	6.1	0.2	10.3	0.2	29.5	0.3
χ^2_3 [*P*-value]	1,272.6 [<0.001]		1,172.5 [<0.001]		338.1 [<0.001]		189.5 [<0.001]		677.9 [<001]	
12-month diagnoses										
DSM-IV only AG	52.6[a,b]	5.0	30.0[a,f]	4.1	17.3[a]	3.7	3.5	1.9	68.5[a,c]	5.0
DSM-5 only AG	74.5[a,e]	3.8	39.0[a]	3.6	15.9[a]	2.9	12.6[a]	2.7	80.3[a]	3.7
DSM-5 with *DSM*-IV AG	77.9[a]	1.9	47.1[a]	2.2	16.8[a]	1.8	8.1[a]	1.1	87.7[a]	1.6
No AG	8.9	0.1	5.8	0.1	2.7	0.1	2.5	0.1	15.2	0.2
χ^2_3 [*P*-value]	1,177.4 [<0.001]		1,049.4 [<0.001]		205.3 [<0.001]		81.6 [<0.001]		777.0 [<0.001]	

Note. Anxiety disorders do not include panic disorder, but any disorder does include panic disorder.
DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, version 4; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, version 5.
[a]Differs significantly from noncases (χ^2_1= 17.7–858.3; $P < 0.001$).
[b]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 11.1–25.3; $P < 0.001$).
[c]Differs significantly from *DSM*-IV only AG (χ^2_1 = 7.1; $P = 0.008$).
[d]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 4.4; $P = 0.036$).
[e]Differs significantly from *DSM*-IV only AG (χ^2_1 = 6.9 $P = 0.009$).
[f]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 9.0; $P = 0.003$).

with *DSM*-5 only AG were significantly less likely to receive any type of treatment than respondents with *DSM*-5 with *DSM*-IV AG with the exception of human services or CAM treatment. There were no significant differences in treatment rates between respondents with *DSM*-IV only AG and those with *DSM*-5 only AG, with the exception of lifetime human services (χ^2_1 = 5.5; $P = 0.019$).

3.5 | Sociodemographic correlates

Younger age, female gender, lower education, not being married, and unemployment were associated with 12-month and lifetime AG, although some associations did not reach statistical significance for one or more of the diagnostic groups (Table 5). As a group, the ORs for age cohort for *DSM*-5 only AG differed from the ORs for *DSM*-5

TABLE 4 Lifetime and 12-month treatment rates for people with lifetime and 12-month agoraphobia (AG) or no AG

	Specialty mental health		General medical		Human services		CAM		Any treatment	
Diagnosis	**%**	***SE***	**%**	***SE***	**%**	***SE***	**%**	***SE***	**%**	***SE***
Lifetime diagnoses										
DSM-IV only AG	37.6[a,b]	2.8	38.7[a,c]	3.1	5.7[d,e]	1.2	9.0[a,g]	1.7	54.7[a,h]	3.2
DSM-5 only AG	46.1[a,b]	2.8	39.4[a,b]	2.5	13.6[a,f]	2.1	15.5[a]	2.0	62.6[a,b]	2.6
DSM-5 with *DSM*-IV AG	56.6[a]	1.7	54.9[a]	1.6	11.7[a]	1.0	19.2[a]	1.1	72.7[a]	1.5
No AG	14.6	0.2	12.3	0.1	2.6	0.1	2.9	0.1	22.6	0.2
χ^2_3 [*P*-value]	945.5 [<0.001]		1,094.7 [<0.001]		200.3 [<0.001]		661.2 [<0.001]		1,089.3 [<0.001]	
12-month diagnoses										
DSM-IV only AG	13.5[a,g]	2.9	20.9[a]	3.4	2.1	1.1	1.7	1.2	31.0[a,i]	4.0
DSM-5 only AG	20.5[a,h]	2.9	21.7[a,b]	2.4	4.8[a]	1.3	5.9[a]	1.6	35.0[a,b]	3.1
DSM-5 with *DSM*-IV AG	30.7[a]	1.7	35.7[a]	1.8	5.6[a]	0.8	6.9[a]	0.8	52.8[a]	1.9
No AG	3.9	0.1	4.8	0.1	0.9	0.0	1.0	0.0	8.4	0.1
χ^2_3 [*P*-value]	811.2 [< 001]		779.1 [<0.001]		139.5 [<0.001]		200.5 [<0.001]		1,077.5 [<0.001]	

Note. *DSM*-IV: Diagnostic and Statistical Manual of Mental Disorders, version 4; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, version 5.
[a]Differs significantly from noncases (χ^2_1 = 23.0–865.3; $P < 0.001$).
[b]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 12.1–36.3; $P < 0.001$).
[c]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 7.6; $P = 0.006$).
[d]Differs significantly from noncases (χ^2_1 = 8.0; $P = 0.005$).
[e]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 5.1; $P = 0.024$).
[f]Differs significantly from *DSM*-IV only AG (χ^2_1 = 5.5; $P = 0.019$).
[g]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 9.0; $P = 0.003$).
[h]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 9.2 – 9.4; $P = 0.002$).
[i]Differs significantly from *DSM*-5 AG with *DSM*-IV AG (χ^2_1 = 8.4; $P = 0.004$).

TABLE 5 Multivariate analysis of sociodemographic correlates of 12-month and lifetime old *DSM*-IV only agoraphobia (AG), *DSM*-5 only AG, or *DSM*-5 with *DSM*-IV AG

		12-month diagnosis						Lifetime diagnosis					
		DSM-IV only AG		*DSM*-5 only AG		*DSM*-5 with *DSM*-IV AG		*DSM*-IV only AG		*DSM*-5 only AG		*DSM*-5 with *DSM*-IV AG	
Correlates	**Levels**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Gender	Female	2.2	(1.4–3.5)	2.0	(1.4–2.7)	1.7	(1.4–2.1)	2.5	(1.9–3.3)	1.9	(1.5–2.4)	1.8	(1.6–2.1)
	Male	1.0		1.0		1.0		1.0		1.0		1.0	
	X^2_1 *[P-value]*	*12.5*	*[<0.001]*	*17.0*	*[<0.001]*	*31.5*	*[<0.001]*	*38.2*	*[<0.001]*	*25.4*	*[<0.001]*	*61.2*	*[<0.001]*
Age cohort	18–34	1.6	(0.7–3.8)	2.6[a]	(1.3–5.1)	3.6	(2.2–5.9)	1.8	(0.9–3.6)	2.9[d]	(1.7–5.2)	3.2	(2.2–4.8)
	35–49	2.5	(1.2–5.4)	2.6[a]	(1.3–5.1)	5.4	(3.3–8.7)	2.5	(1.4–4.5)	2.9[d]	(1.7–5.1)	4.7	(3.2–7.0)
	50–64	2.0	(1.0–4.0)	1.9[a]	(1.0–3.3)	3.8	(2.4–6.0)	1.8	(1.0–3.1)	2.0[d]	(1.2–3.2)	3.4	(2.3–4.8)
	65+	1.0		1.0		1.0		1.0		1.0		1.0	
	X^2_3 *[P-value]*	*7.9*	*[0.049]*	*7.6*	*[0.055]*	*53.4*	*[<0.001]*	*11.0*	*[0.012]*	*15.3*	*[0.002]*	*65.6*	*[<0.001]*
Education	Low	2.4	(1.3–4.3)	1.7[b]	(1.1–2.7)	2.2	(1.6–3.0)	2.5[c]	(1.7–3.7)	1.7	(1.2–2.5)	1.9	(1.4–2.4)
	Low-average	2.8	(1.6–4.7)	1.4[b]	(0.9–2.0)	1.8	(1.4–2.4)	2.3[c]	(1.6–3.3)	1.5	(1.1–2.0)	1.6	(1.3–2.0)
	High-average	2.3	(1.4–3.8)	1.7[b]	(1.2–2.6)	1.3	(1.0–1.6)	2.3[c]	(1.6–3.4)	1.6	(1.2–2.2)	1.3	(1.1–1.6)
	High	1.0		1.0		1.0		1.0		1.0		1.0	
	X^2_3 *[P-value]*	*15.9*	*[0.001]*	*9.1*	*[0.027]*	*32.3*	*[<0.001]*	*27.5*	*[<0.001]*	*12.2*	*[0.007]*	*28.9*	*[<0.001]*
Marriage	Never married	1.7	(1.0–3.0)	1.4	(1.0–1.9)	1.4	(1.1–1.7)	1.3	(0.9–2.0)	1.3	(1.0–1.7)	1.4	(1.1–1.7)
	Previously married	1.3	(0.8–2.1)	1.5	(1.1–2.2)	1.6	(1.3–1.9)	1.1	(0.8–1.7)	1.3	(1.0–1.7)	1.6	(1.3–1.9)
	Currently married	1.0		1.0		1.0		1.0		1.0		1.0	
	X^2_2 *[P-value]*	*4.1*	*[0.132]*	*7.3*	*[0.026]*	*25.9*	*[<0.001]*	*2.5*	*[0.285]*	*5.8*	*[0.055]*	*33.8*	*[<0.001]*
Employment status	Student	1.6	(0.6–4.1)	1.2	(0.6–2.3)	1.3	(0.8–1.9)	1.2	(0.6–2.4)	1.1	(0.6–1.9)	1.2	(0.8–1.7)
	Homemaker	1.5	(0.9–2.4)	1.5	(1.0–2.3)	1.9	(1.5–2.4)	1.2	(0.8–1.6)	1.4	(1.0–1.9)	1.8	(1.4–2.1)
	Retired	2.1	(1.0–4.2)	0.9	(0.5–1.8)	1.4	(0.9–2.2)	1.6	(0.9–2.8)	1.0	(0.6–1.8)	1.4	(1.0–1.9)
	Other	1.6	(0.9–2.7)	2.6	(1.7–3.9)	2.8	(2.3–3.5)	1.4	(0.9–2.1)	1.8	(1.2–2.5)	2.5	(2.1–3.0)
	Employed	1.0		1.0		1.0		1.0		1.0		1.0	
	X^2_4 *[P-value]*	*6.5*	*[0.164]*	*21.0*	*[<0.001]*	*104.4*	*[<0.001]*	*4.8*	*[.305]*	*10.8*	*[0.029]*	*114.5*	*[<0.001]*

Note. DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, version 4; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, version 5.

[a]ORs are significantly different from ORs for *DSM*-5 with *DSM*-IV AG (X^2_3 [*P*-value] for group =8.6 [0.035], *P*-value for comparing ORs for age 18–34 = 0.44, age 35–49 = 0.07, age 50–64 = 0.06).

[b]ORs are significantly different from ORs for *DSM*-IV only (X^2_3 [*P*-value] for group =8.3 [0.040], *P*-value for comparing OR for low education =0.06, low-average education =0.007, high-average education =0.35).

[c]ORs are significantly different from ORs for *DSM*-5 with *DSM*-IV AG (X^2_3 [*P*-value] for group =9.6 [0.022], *P*-value for comparing OR for low education =0.014, for low-average education =0.012, and for high-average education =0.005).

[d]ORs are significantly different from ORs for *DSM*-5 with *DSM*-IV AG (X^2_3 [*P*-value] for group =8.9 [0.030], *P*-value for comparing ORs for age 18–34 = 0.85, age 35–49 = 0.18 and for age 50–64 = 0.11).

with *DSM*-IV AG, yet *P*-values for comparing ORs between specific age groups were not statistically significant. Compared to high education, odds for respondents with low, low-average, and high-average education, were particularly high for *DSM*-IV only AG.

4 | DISCUSSION

This study is the first to present representative data for *DSM*-5 compared to *DSM*-IV AG (AG without a history of PD and PD with AG) from countries across the world. Lifetime and 12-month prevalence estimates of *DSM*-5 AG were 1.5% and 1.0%, while those of *DSM*-IV AG were 1.4% and 0.9%. Hence, there was no marked shift in AG prevalence from *DSM*-IV to *DSM*-5. However, only 57.1% of respondents with AG met criteria in both diagnostic systems, with 18.8% of AG cases meeting criteria only for *DSM*-IV and 24.2% meeting criteria only for *DSM*-5. Compared with *DSM*-IV AG, *DSM*-5 AG was characterized by a higher persistence of AG and higher rates of severe role impairments, treatment-seeking, and mental disorder comorbidity.

Several sociodemographic correlates of AG were identified, consistent with other studies of AG and PD (Andrews & Slade, 2002; de Jonge et al., 2016). Although some quantitative differences were found for associations between sociodemographic factors and diagnostic subgroups, the general patterns were comparable, with younger age, female gender, lower education, not being married, and unemployment being associated with AG.

Although our prevalence rates are comparable to the reported prevalence of 12-month *DSM*-IV AG without a history of PD across European countries (1.3%; Goodwin et al., 2005), they are in contrast with the extremely low prevalence rate of 0.05% for 12-month *DSM*-IV AG without a history of PD found in a nationally representative study in the United States, which may (partly) result from the exclusion of lifetime PD cases and a clinical significance criterion used in that study (Grant et al., 2006). Although our 12-month prevalence rate of *DSM*-IV AG increased by including AG with PD, it is interesting to note that 75% of respondents with 12-month *DSM*-IV AG did not have a history of PD. This percentage is comparable to that found for 12-month AG in an Australian survey, in which 64% did not have a history of PD (Andrews & Slade, 2002), and clearly supports the decision made in *DSM*-5 to separate AG from PD.

The relatively stable prevalence rates for *DSM*-IV and *DSM*-5 AG may result from a broadening of the range of fears beyond a fear of panic attacks or panic-like symptoms in *DSM*-5 on the one hand, whereas increasing the strictness of the (severity) criteria on the other hand. None of the respondents with *DSM*-5 only AG reported fear of panic attacks in the feared situations. In addition, the percentage of respondents reporting severe role impairment, and the mean number of days out of role in the past year due to AG, were significantly lower for respondents with *DSM*-IV only compared with respondents with 12-month *DSM*-5 with *DSM*-IV AG. However, the mean number of days out of role in the past 30 days for any health reason, and 12-month suicidal ideation, were increased for all AG subgroups compared with respondents without AG. In addition, respondents with *DSM*-IV only AG also had increased treatment and mental comorbidity rates compared with respondents without AG. Although these results indicate that individuals who meet *DSM*-IV but not *DSM*-5 AG criteria also suffer from clinically significant symptoms including impairment, this suffering may for a large part be the result of comorbid mental disorders. However, we cannot exclude the possibility that a small group of individuals who experience severe distress or impairment are left without a diagnosis as a result of the changes in *DSM*-5, but the population prevalence rate of lifetime *DSM*-IV only AG without mental disorder comorbidity is very low, namely 0.08%.

We found a particularly low median AOO for *DSM*-5 only AG. This result adds to previous studies that showed that AG is not a mere consequence of PD (Wittchen et al., 2008, 1998) and that the median AOO of AG appears to be lower than the AOO of PD (Wittchen et al., 1998). The current study therefore confirms that *DSM*-5 AG is more comparable to other phobic disorders, which have early onsets as well (Kessler et al., 2005; Stein et al., 2017). Identifying individuals who suffer from AG at a younger age may lead to earlier AG focused treatment and thereby has the potential to prevent disorder progression and development of comorbidity (Jones, 2013; Kessler et al., 2005).

One of the reasons for the controversy whether AG can be regarded as a disorder that is independent of PD (Grant et al., 2006; Wittchen et al., 2008, 1998) is that AG without a history of PD is not typically seen in clinical studies and it has been suggested that many individuals diagnosed with AG in epidemiological studies actually suffer from SP (Horwath, Lish, Johnson, Hornig, & Weissman, 1993). However, another study validated the existence of AG in the absence of panic attacks in a survey through a re-evaluation with structured interviews (Faravelli, Cosci, Rotella, Faravelli, & Dell'Osso, 2008). A better distinction between SP and AG probably reflects better measurements of AG in recent surveys (Andrews & Slade, 2002; Wittchen et al., 2010). For example, to meet criteria for AG in this study, agoraphobic anxiety had to apply to at least two situations. The low percentage of AG cases seen in clinical care might also be the result of these individuals being less likely to seek help (Andrews & Slade, 2002; Wittchen et al., 1998), potentially as a result of avoidance behavior (Andrews & Slade, 2002). Indeed, the percentage of individuals with AG seeking treatment was lower compared with rates for individuals with PD in the WMH surveys (de Jonge, Roest, Lim, Levinson, & Scott, 2018; Roest et al., 2018).

A previous review article concluded that AG should be seen as a disorder independent from PD based on data from community samples on prevalence rates, temporal relationships of AG, panic attacks, and PD, and impairment associated with AG without panic attacks (Wittchen et al., 2010). Greene and Eaton (2016) also argued that AG is a diagnostic entity that should be separated from PD. By examining multivariate comorbidity patterns of PD and AG, the authors showed that AG could be categorized as a fear disorder, whereas PD is more strongly related to distress disorders, such as depression (Greene & Eaton, 2016). Yet, evidence is lacking for specific genetic underpinnings of AG (Wittchen et al., 2010) and for differential treatment effects; the latter may result from a lack of treatment studies focusing on patients with AG without PD (Bandelow, 2017; Wittchen et al., 2010). To our knowledge only one other study examined the effect of changes from

DSM-IV to *DSM*-5 criteria for AG. This study examined the effect of the more stringent criterion A in *DSM*-5 (endorsement of fears from multiple distinct situational domains) on the prevalence rate of AG in children and adolescents seeking anxiety treatment (Cornacchio, Chou, Sacks, Pincus, & Comer, 2015). Authors concluded that this adaptation may be too strict for youth, because a substantial proportion (25%) of individuals no longer met criteria for AG, despite being more similar regarding symptomatology and impairment, to individuals who met the new AG criteria than to individuals with SP (Cornacchio et al., 2015). Whether and how the changes in *DSM*-5 criteria will affect clinical treatment is yet unclear (Bandelow, 2017); however, additional research into *DSM*-5 AG in general (Wittchen et al., 2010), and specifically the treatment of *DSM*-5 AG without PD or panic attacks is warranted, especially given the high persistence of *DSM*-5 AG shown in the current study.

A strength of the current study is the use of data from the WMH surveys. The WHO WMH Survey Initiative provides a unique opportunity to examine the cross-national epidemiology of AG because it included data from countries with different income ranges. The numbers of respondents were large enough to examine both lifetime and 12-month AG and compare diagnostic groups based on *DSM*-IV and *DSM*-5 criteria, although not large enough to additionally examine differences between countries. Another strength is that the surveys used a common protocol and instrument to assess AG separately from PD. However, this study also has a number of limitations. First, although we examined AG using both *DSM*-IV and *DSM*-5 criteria, the algorithm was modified in retrospect, as was the case in other reports on *DSM*-5 criteria for GAD, PTSD, and substance use disorder in the WMH surveys (Ruscio et al., 2017; Slade et al., 2016; Stein et al., 2014). As a result, the CIDI questions do not match all *DSM*-5 criteria perfectly. Although this could have caused misclassification in some cases concerning the *DSM*-5 diagnosis of AG, we do not expect this to have a large impact on the comparisons between results for the AG subgroups, since the criteria based on the CIDI questions were sometimes less and sometimes more strict than original *DSM*-5 criteria. Second, because the data are cross-sectional, AOO is reported retrospectively and the indicator of AG persistence is a proxy indicator.

In conclusion, this study is the first to investigate and compare the epidemiology of AG according to the *DSM*-5 and the *DSM*-IV. Results show that the *DSM*-5 criteria may be an improvement over the *DSM*-IV criteria as the *DSM*-5 identifies individuals with a higher disorder persistence, severity, and comorbidity and help-seeking rates, whereas the global lifetime and 12-month prevalence rates remained relatively constant.

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The WHO World Mental Health Survey collaborators are Sergio Aguilar-Gaxiola, MD, PhD, Ali Al-Hamzawi, MD, Mohammed Salih Al-Kaisy, MD, Jordi Alonso, MD, PhD, Laura Helena Andrade, MD, PhD, Corina Benjet, PhD, Guilherme Borges,ScD, Evelyn J. Bromet, PhD, Ronny Bruffaerts, PhD, Brendan Bunting, PhD, Jose Miguel Caldas de Almeida, MD, PhD, Graça Cardoso, MD, PhD, Somnath Chatterji, MD, Alfredo H. Cia, MD, Louisa Degenhardt, PhD, Koen Demyttenaere, MD, PhD, Silvia Florescu, MD, PhD, Giovanni de Girolamo, MD, Oye Gureje, MD, DSc, FRCPsych, Josep Maria Haro, MD, PhD, Hristo Hinkov, MD, PhD, Chi-yi Hu, MD, PhD, Peter de Jonge, PhD, Aimee Nasser Karam, PhD, Elie G. Karam, MD, Norito Kawakami, MD, DMSc, Ronald C. Kessler, PhD, Andrzej Kiejna, MD, PhD, Viviane Kovess-Masfety, MD, PhD, Sing Lee, MB, BS, Jean-Pierre Lepine, MD, Daphna Levinson, PhD, John McGrath, MD, PhD, Maria Elena Medina-Mora, PhD, Zeina Mneimneh, PhD, Jacek Moskalewicz, PhD, Fernando Navarro-Mateu, MD, PhD, Marina Piazza, MPH, ScD, Jose Posada-Villa, MD, Kate M. Scott, PhD, Tim Slade, PhD, Juan Carlos Stagnaro, MD, PhD, Dan J. Stein, FRCPC, PhD, Margreet ten Have, PhD, Yolanda Torres, MPH, Dra.HC, Maria Carmen Viana, MD, PhD, Harvey Whiteford, MBBS, PhD, David R. Williams, MPH, PhD, Bogdan Wojtyniak, ScD.

CONFLICT OF INTERESTS

In the past 3 years, Dr. Stein has received research grants and/or consultancy honoraria from AMBRF/Foundation for Alcohol Research, Biocodex, Cipla, Lundbeck, National Responsible Gambling Foundation, Novartis, Servier, and Sun. Dr. Demyttenaere has served on advisory boards for Eli Lilly, Lundbeck, Johnson&Johnson, Servier, Boehringer Ingelheim, Livanova and has research grants from Eli Lilly, foundation "ga voor geluk," Fonds voor Wetenschappelijk Onderzoek Vlaanderen.

In the past 3 years, Dr. Kessler received support for his epidemiological studies from Sanofi Aventis; was a consultant for Johnson & Johnson Wellness and Prevention, Sage Pharmaceuticals, Shire, Takeda; and served on an advisory board for the Johnson & Johnson Services Inc. Lake Nona Life Project. Kessler is a co-owner of DataStat, Inc., a market research firm that carries out healthcare research. Dr. Haro reports personal fees from Roche, Lundbeck, Eli Lilly and Otsuka, outside the submitted work.

Authors Roest, de Vries, de Jonge, Wittchen, Lim, Adamowski, Carmen Viana, Florescu, Kawakami, Slade, Torres, Posada-Villa, Lépine, Al-Hamzawi, Levinson, de Girolamo, Karam, Elena Medina Mora, Gureje, O'Neill, Hu, Piazza, Miguel Caldas-de-Almeida, Navarro-Mateu, Bromet, and Scott do not have conflict of interests to report.

ORCID

Annelieke M. Roest http://orcid.org/0000-0002-7997-8559
Ymkje Anna Vries http://orcid.org/0000-0003-4580-4873
Ronald C. Kessler http://orcid.org/0000-0003-4831-2305

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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