

## Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. World Mental Health Survey Sample Characteristics by World Bank Income Categories<sup>a</sup>**

Country by income category	Survey <sup>b</sup>	Sample characteristics <sup>c</sup>	Field dates	Age range	Sample size			Response rate <sup>e</sup>
					Part I	Part II	Part II and age ≤ 44 <sup>d</sup>	
<b>I. Low/middle-income countries</b>								
Brazil - São Paulo	São Paulo Megacity	São Paulo metropolitan area.	2005-8	18-93	5,037	2,942	--	81.3
Bulgaria	NSHS	Nationally representative.	2002-6	18-98	5,318	2,233	741	72.0
Bulgaria 2	NSHS - 2	Nationally representative.	2016-17	18-91	1,508	578	--	61.0
Colombia - Medellin	MMHHS	Medellin metropolitan area.	2011-12	19-65	3,261	1,673	--	97.2
Iraq	IMHS	Nationally representative.	2006-7	18-96	4,332	4,332	--	95.2
Lebanon	LEBANON	Nationally representative.	2002-3	18-94	2,857	1,031	595	70.0
Nigeria	NSMHW	21 of the 36 states in the country, representing 57% of the national population. The surveys were conducted in Yoruba, Igbo, Hausa and Efik languages.	2002-4	18-100	6,752	2,143	1,203	79.3
PRC <sup>f</sup> - Shenzhen <sup>g</sup>	Shenzhen	Shenzhen metropolitan area. Included temporary residents as well as household residents.	2005-7	18-88	7,132	2,475	--	80.0
Romania	RMHS	Nationally representative.	2005-6	18-96	2,357	2,357	--	70.9
<b>TOTAL</b>					(38,554)	(19,764)	(2,539)	79.0
<b>II. High-income countries</b>								
Argentina	AMHES	Eight largest urban areas of the country (approximately 50% of the total national population)	2015	18-98	3,927	2,116	--	77.3
Australia <sup>g</sup>	NSMHWB	Nationally representative.	2007	18-85	8,463	8,463	--	60.0
Israel	NHS	Nationally representative.	2003-4	21-98	4,859	4,859	--	72.6
Northern Ireland	NISHS	Nationally representative.	2005-8	18-97	4,340	1,986	--	68.4
Poland	EZOP	Nationally representative	2010-11	18-65	10,081	4,000	2,276	50.4
Portugal	NMHS	Nationally representative.	2008-9	18-81	3,849	2,060	1,070	57.3
Saudi Arabia <sup>g</sup>	SNMHS	Nationally representative	2013-16	18-65	3,638	1,793	--	61.0
Spain - Murcia	PEGASUS Murcia	Murcia region. Regionally representative.	2010-12	18-96	2,621	1,459	--	67.4
<b>TOTAL</b>					(41,778)	(26,736)	(3,346)	60.7
<b>III. TOTAL</b>					(80,332)	(46,500)	(5,885)	68.3

<sup>a</sup> The World Bank (2012) Data. Accessed May 12, 2012 at: <http://data.worldbank.org/country>. Some of the World Mental Health survey countries have moved into new income categories since the surveys were conducted. The income groupings above reflect the status of each country at the time of data collection. The current income category of each country is available at the preceding URL.

<sup>b</sup> NSHS (Bulgaria National Survey of Health and Stress); MMHHS (Medellin Mental Health Household Study); IMHS (Iraq Mental Health Survey); LEBANON (Lebanese Evaluation of the Burden of Ailments and Needs of the Nation); NSMHW (The Nigerian Survey of Mental Health and Wellbeing); RMHS (Romania Mental Health Survey); AMHES (Argentina Mental Health Epidemiologic Survey); NSMHWB (National Survey of Mental Health and Wellbeing); NHS (Israel National Health Survey); NISHS (Northern Ireland Study of Health and Stress); EZOP (Epidemiology of Mental Disorders and Access to Care Survey); NMHS (Portugal National Mental Health Survey); SNMHS (Saudi National Mental Health Survey); PEGASUS-Murcia (Psychiatric Enquiry to General Population in Southeast Spain-Murcia).

<sup>c</sup> Most World Mental Health surveys are based on stratified multistage clustered area probability household samples in which samples of areas equivalent to counties or municipalities in the US were selected in the first stage followed by one or more subsequent stages of geographic sampling (e.g. towns within counties,

blocks within towns, households within blocks) to arrive at a sample of households, in each of which a listing of household members was created and one or two people were selected from this listing to be interviewed. No substitution was allowed when the originally sampled household resident could not be interviewed. These household samples were selected from Census area data. Some WMH surveys (Poland, Spain-Murcia) used municipal, country resident or universal health-care registries to select respondents without listing households. 11 of the 17 surveys are based on nationally representative household samples.

<sup>d</sup> Argentina, Australia, Brazil, Bulgaria 2 (2016-17), Colombia-Medellin, Iraq, Israel, Northern Ireland, PRC-Shenzhen, Romania, Saudi Arabia and Spain-Murcia did not have an age restricted Part 2 sample. All other countries, with the exception of Nigeria (which was age restricted to  $\leq 39$ ) were age restricted to  $\leq 44$ .

<sup>e</sup> The response rate is calculated as the ratio of the number of households in which an interview was completed to the number of households originally sampled, excluding from the denominator households known not to be eligible either because of being vacant at the time of initial contact or because the residents were unable to speak the designated languages of the survey. The weighted average response rate is 68.3%.

<sup>f</sup> People's Republic of China

<sup>g</sup> For the purposes of cross-national comparisons we limited the sample to those 18+.

**eTable 2. Conditional and Cumulative Probabilities of Depression Treatment Being Perceived as Helpful After Each Professional Seen, Among Respondents With Lifetime *DSM-IV* Major Depressive Disorder Who Obtained Treatment**

	I. Conditional probabilities									II. Cumulative probabilities					
	All			High-income countries			Low/middle-income countries			All (n=2,726)		High-income countries (n=2,082)		Low/middle-income countries (n=664)	
	%	(SE)	(n)	%	(SE)	(n)	%	(SE)	(n)	%	(SE)	%	(SE)	%	(SE)
Treatment perceived as helpful after number of professionals seen															
1	30.6	(0.9)	(2,726)	31.1	(1.0)	(2,082)	29.0	(2.1)	(644)	30.6	(0.9)	31.1	(1.0)	29.0	(2.1)
2	39.6	(1.7)	(1,396)	39.3	(1.8)	(1,101)	40.8	(4.0)	(295)	58.1	(1.3)	58.2	(1.5)	58.0	(3.2)
3	37.4	(2.5)	(648)	36.6	(2.9)	(507)	40.2	(4.9)	(141)	73.8	(1.4)	73.5	(1.6)	74.9	(2.7)
4	32.1	(3.2)	(332)	32.6	(3.6)	(266)	30.4	(6.7)	(66)	82.2	(1.3)	82.1	(1.6)	82.5	(2.6)
5	26.3	(3.6)	(186)	28.7	(4.4)	(152)	16.4	(4.8)	(34)	86.9	(1.2)	87.2	(1.4)	85.4	(2.6)
6	16.8	(5.2)	(103)	19.7	(6.4)	(86)	4.9	(3.5)	(17)	89.1	(1.2)	89.8	(1.4)	86.1	(2.6)
7	5.1	(2.4)	(73)	6.5	(3.1)	(61)	0.0	(0.0)	(12)	89.6	(1.2)	90.4	(1.4)	-	
8	19.6	(8.4)	(63)	22.0	(9.7)	(54)	5.1	(5.1)	(9)	91.7	(1.2)	92.5	(1.3)	86.8	(2.6)
9	6.9	(4.0)	(49)	5.5	(4.0)	(41)	12.9	(11.7)	(8)	92.3	(1.2)	92.9	(1.3)	88.5	(2.7)
10	21.7	(6.7)	(44)	25.9	(8.4)	(37)	3.1	(3.2)	(7)	93.9	(1.2)	94.8	(1.3)	88.9	(2.7)
11	37.8	(11.4)	(16)	4.1	(4.2)	(12)	94.3	(1.8)	(4)	96.2	(1.1)	95.0	(1.3)	99.4	(0.6)
12	22.8	(12.2)	(11)	23.7	(12.9)	(10)	0.0	(0.0)	(1)	97.1	(1.1)	96.2	(1.3)	-	
13	0.0	(0.0)	(7)	0.0	(0.0)	(6)	0.0	(0.0)	(1)	-		-		-	
14	0.0	(0.0)	(7)	0.0	(0.0)	(6)	0.0	(0.0)	(1)	-		-		-	
15	37.8	(21.9)	(7)	39.6	(23.2)	(6)	0.0	(0.0)	(1)	98.2	(1.0)	97.7	(1.3)	-	
16	0.0	(0.0)	(4)	0.0	(0.0)	(3)	0.0	(0.0)	(1)	-		-		-	
17	0.0	(0.0)	(4)	0.0	(0.0)	(3)	0.0	(0.0)	(1)	-		-		-	
18	49.3	(30.0)	(3)	60.0	(34.2)	(2)	0.0	(0.0)	(1)	99.1	(0.7)	99.1	(0.9)	-	
19	0.0	(0.0)	(2)	0.0	(0.0)	(1)	0.0	(0.0)	(1)	-		-		-	
20	64.8	(22.8)	(2)	100.0	(0.0)	(1)	0.0	(0.0)	(1)	99.7	(0.3)	100.0	(0.0)	-	
21	0.0	(0.0)	(1)	-		-	0.0	(0.0)	(1)	-		-		-	
22	0.0	(0.0)	(1)	-		-	0.0	(0.0)	(1)	-		-		-	

23	0.0	(0.0)	(1)		-	-		0.0	(0.0)	(1)		-		-		-
24	0.0	(0.0)	(1)		-	-		0.0	(0.0)	(1)		-		-		-
25	0.0	(0.0)	(1)		-	-		0.0	(0.0)	(1)		-		-		-

Abbreviations: SE, standard error.

**eTable 3. Conditional and Cumulative Probability of Persistence With Treatment After Previous Unhelpful Attempts, Among Respondents With Lifetime *DSM-IV* Major Depressive Disorder Who Obtained Treatment**

	I. Conditional probabilities									II. Cumulative probabilities					
	All			High-income countries			Low/middle-income countries			All (n=1,868)		High-income countries (n=1,424)		Low/middle-income countries (n=444)	
	%	(SE)	(n)	%	(SE)	(n)	%	(SE)	(n)	%	(SE)	%	(SE)	%	(SE)
Saw the next professional if not helped by the previous one															
2	74.4	(1.2)	(1,868)	77.2	(1.4)	(1,424)	66.2	(2.1)	(444)	74.4	(1.2)	77.2	(1.4)	66.2	(2.1)
3	76.4	(1.9)	(838)	75.7	(2.2)	(654)	78.9	(3.4)	(184)	56.9	(1.7)	58.4	(2.0)	52.3	(3.5)
4	83.3	(1.9)	(402)	85.4	(2.2)	(312)	75.5	(4.3)	(90)	47.4	(1.9)	49.9	(2.2)	39.5	(3.9)
5	83.1	(2.9)	(224)	83.8	(3.4)	(180)	80.3	(4.6)	(44)	39.4	(2.2)	41.9	(2.5)	31.7	(4.2)
6	83.0	(3.2)	(124)	85.3	(3.8)	(102)	74.8	(6.2)	(22)	32.7	(2.4)	35.7	(2.7)	23.7	(4.8)
7	87.8	(3.5)	(84)	89.7	(3.3)	(69)	81.2	(10.0)	(15)	28.7	(2.6)	32.1	(3.0)	19.3	(4.6)
8	88.0	(5.5)	(68)	96.9	(2.2)	(56)	56.3	(16.0)	(12)	25.3	(2.7)	31.1	(3.1)	10.8	(2.8)
9	87.9	(10.5)	(51)	85.6	(12.3)	(43)	100.0	(0.0)	(8)	22.2	(3.0)	26.6	(3.9)	-	
10	96.7	(2.4)	(46)	96.0	(2.9)	(39)	100.0	(0.0)	(7)	21.5	(3.2)	25.5	(4.3)	-	
11	48.6	(11.7)	(29)	39.3	(13.3)	(23)	80.5	(12.9)	(6)	10.4	(2.6)	10.0	(3.5)	8.7	(2.5)
12	94.2	(5.8)	(12)	94.0	(6.0)	(11)	100.0	(0.0)	(1)	9.8	(2.6)	9.4	(3.5)	-	
13	100.0	(0.0)	(7)	100.0	(0.0)	(6)	100.0	(0.0)	(1)	-		-		-	
14	100.0	(0.0)	(7)	100.0	(0.0)	(6)	100.0	(0.0)	(1)	-		-		-	
15	100.0	(0.0)	(7)	100.0	(0.0)	(6)	100.0	(0.0)	(1)	-		-		-	
16	100.0	(0.0)	(4)	100.0	(0.0)	(3)	100.0	(0.0)	(1)	-		-		-	
17	100.0	(0.0)	(4)	100.0	(0.0)	(3)	100.0	(0.0)	(1)	-		-		-	
18	42.1	(28.3)	(4)	37.4	(28.8)	(3)	100.0	(0.0)	(1)	4.1	(2.7)	3.5	(2.6)	-	
19	100.0	(0.0)	(2)	100.0	(0.0)	(1)	100.0	(0.0)	(1)	-		-		-	
20	100.0	(0.0)	(2)	100.0	(0.0)	(1)	100.0	(0.0)	(1)	-		-		-	
21	100.0	(0.0)	(1)	-		-	100.0	(0.0)	(1)	-		-		-	
22	100.0	(0.0)	(1)	-		-	100.0	(0.0)	(1)	-		-		-	

23	100.0	(0.0)	(1)		-	-	100.0	(0.0)	(1)		-		-	
24	100.0	(0.0)	(1)		-	-	100.0	(0.0)	(1)		-		-	
25	100.0	(0.0)	(1)		-	-	100.0	(0.0)	(1)		-		-	

Abbreviations: SE, standard error.

**eTable 4. Interaction Between Main Effects and Country Income Group to Predict Helpful Treatment and Persistence (Pooled Across Professionals Seen) and Perceived Helpfulness of Treatment (Person Level), Among People With Lifetime *DSM-IV* Major Depressive Disorder Who Obtained Treatment**

Interaction terms between each predictor and high income countries	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across MDD patients			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	(95% CI)	Mean/%	(SE)	AOR	(95% CI)	Mean/%	(SE)	AOR	(95% CI)
Age at first depression treatment	25.7	(0.5)	1.00	(0.98-1.01)	25.0	(0.6)	1.00	(0.97-1.03)	26.2	(0.4)	1.00	(0.97-1.03)
$\chi^2_1$			0.06				0.01				0.01	
Female	52.1	(1.6)	0.98	(0.27-1.34)	51.3	(2.1)	1.03	(0.64-1.67)	51.1	(1.0)	1.06	(0.68-1.65)
Male	25.2	(1.7)	1.00		25.8	(2.1)	1.00		24.5	(1.0)	1.00	
$\chi^2_1$			0.01				0.01				0.07	
Marital status												
Never married	33.7	(1.7)	1.38	(0.87-2.20)	33.9	(2.1)	0.77	(0.43-1.38)	31.9	(1.2)	1.20	(0.60-2.39)
Previously married	12.9	(1.1)	1.16	(0.77-1.73)	13.4	(1.4)	1.27	(0.65-2.48)	12.3	(0.8)	1.49	(0.79-2.81)
Currently married	30.6	(1.5)	1.00		29.8	(2.0)	1.00		31.4	(1.1)	1.00	
$\chi^2_2$			1.88				1.56				1.56	
Education												
Low	7.8	(0.7)	0.98	(0.59-1.62)	7.6	(0.9)	0.75	(0.3-1.8)	8.4	(0.6)	0.98	(0.48-2.99)
Low-average	18.6	(1.4)	0.85	(0.54-1.35)	19.2	(2.0)	1.32	(0.6-3.0)	17.3	(0.8)	1.12	(0.53-2.36)
High-average	27.6	(1.5)	1.31	(0.88-1.96)	26.9	(1.9)	1.37	(0.7-2.8)	28.5	(1.1)	1.87	(0.94-3.72)
High	14.3	(1.2)	1.00		13.4	(1.4)	1.00		14.5	(0.8)	1.00	
Student	9.1	(1.0)	0.72	(0.38-1.36)	9.9	(1.2)	1.01	(0.36-2.86)	7.0	(0.6)	0.80	(0.23-2.16)
$\chi^2_4$			7.64				2.40				6.93	
Treatment delay (years) <sup>a</sup>	3.7	(0.2)	1.00	(0.99-1.02)	3.8	(0.3)	1.00	(0.98-1.03)	3.8	(0.2)	1.00	(0.98-1.03)
$\chi^2_1$			0.09				0.11				0.14	
Started depression treatment $\geq$ 2000 (vs. 1990-1999)	41.3	(1.6)	1.06	(0.76-1.47)	38.2	(1.9)	1.42	(0.81-2.47)	46.1	(1.1)	1.56	(0.95-2.56)
$\chi^2_1$			0.10				1.5				3.14	
Treatment type <sup>b</sup>												
Mental health specialist + Psychotherapy	33.3	(1.6)	0.68	(0.41-1.14)	32.9	(1.8)	0.58	(0.27-1.22)	32.6	(1.3)	0.48	(0.22-1.04)
Mental health specialist + Medication	45.4	(1.7)	1.04	(0.58-1.87)	45.4	(2.1)	1.47	(0.70-3.10)	37.4	(1.2)	1.73	(0.78-3.82)
General medical	58.5	(1.6)	0.74	(0.49-1.12)	59.7	(1.9)	0.71	(0.39-1.28)	54.3	(1.2)	0.57	(0.30-1.10)



**eTable 4 continued. Interaction between main effects and country income group to predict helpful treatment and persistence (pooled across professionals seen) and perceived helpfulness of treatment (person level), among people with lifetime *DSM-IV* major depressive disorder who obtained treatment**

Interaction terms between each predictor and high-income countries	Model 1: Predicting helpful treatment pooled across professionals seen				Model 2: Predicting persistence pooled across treatment failure				Model 3: Predicting perceived helpfulness of treatment across MDD patients			
	Prevalence		Multivariate		Prevalence		Multivariate		Prevalence		Multivariate	
	Mean/%	(SE)	AOR	(95% CI)	Mean/%	(SE)	AOR	(95% CI)	Mean/%	(SE)	AOR	(95% CI)
Complementary/alternative medicine	16.0	(1.6)	0.50*	(0.32-0.81)	18.2	(2.1)	1.21	(0.52-2.86)	10.4	(0.7)	0.46	(0.18-1.19)
Human services	11.0	(1.1)	1.00		12.5	(1.4)	1.00		8.1	(0.7)	1.00	
$\chi^2_4$			10.53*				4.04				10.42*	
Exactly 2 or more of the above	51.2	(1.7)	1.13	(0.60-2.12)	53.1	(2.1)	1.06	(0.42-2.68)	42.0	(1.1)	1.06	(0.41-2.77)
$\chi^2_1$			0.14				0.01				0.02	
$\chi^2_5$			11.71*				4.18				10.49	
Number of lifetime anxiety disorders <sup>c</sup>												
2 or more lifetime anxiety disorders <sup>c</sup>	18.6	(1.3)	1.15	(0.73-1.80)	19.3	(1.6)	1.37	(0.67-2.79)	15.3	(0.9)	1.66	(0.87-3.17)
Exactly 1 lifetime anxiety disorder <sup>c</sup>	23.2	(1.3)	1.18	(0.83-1.68)	23.6	(1.6)	0.77	(0.43-1.35)	22.3	(1.0)	1.04	(0.62-1.74)
No lifetime anxiety disorder <sup>c</sup>	35.5	(1.7)	1.00		34.3	(2.2)	1.00		38.1	(1.2)	1.00	
$\chi^2_2$			0.98				2.49				2.66	
Substance use disorder												
Alcohol and/or drug abuse	14.8	(1.3)	0.94	(0.50-1.75)	16.2	(1.7)	0.66	(0.26-1.66)	11.7	(0.8)	0.68	(0.30-1.55)
Alcohol or drug dependence but not abuse	0.3	(0.1)	1.22	(0.26-5.80)	0.3	(0.1)	0.13	(0.01-2.33)	0.3	(0.1)	0.41	(0.03-6.24)
$\chi^2_2$			0.15				2.63				1.38	
$\chi^2_4$			1.11				5.34				4.49	
Global $\chi^2_{19}$			27.27				22.52				31.13*	

Abbreviations: SE, standard error; AOR, adjusted odds ratio; CI, confidence interval; MDD, major depressive disorder.

\*Significant at .05 level, two-sided test.

<sup>a</sup> Treatment delay (years) = Age at first depression treatment – Age at onset of MDD.

<sup>b</sup> Treatment providers: mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, mental health counselor), primary care providers, human services providers (social worker or counselor in a social services agency, spiritual advisor), and complementary/alternative medicine (other type of healer or self-help group).

<sup>c</sup> Lifetime anxiety disorders included generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, post-traumatic stress disorder, specific phobia, and social phobia.