

Findings From World Mental Health Surveys of the Perceived Helpfulness of Treatment for Patients With Major Depressive Disorder

Meredith G. Harris, PhD; Alan E. Kazdin, PhD, ABPP; Wai Tat Chiu, AM; Nancy A. Sampson, BA; Sergio Aguilar-Gaxiola, MD, PhD; Ali Al-Hamzawi, MBChB; Jordi Alonso, MD, PhD; Yasmin Altwajiri, PhD; Laura Helena Andrade, MD, PhD; Graça Cardoso, MD, PhD; Alfredo Cia, MD; Silvia Florescu, MD, PhD; Oye Gureje, MD, PhD; Chiyi Hu, MD, PhD; Elie G. Karam, MD; Georges Karam, MD; Zeina Mneimneh, PhD; Fernando Navarro-Mateu, MD, PhD; Bibilola D. Oladeji, MBBS, MSc; Siobhan O'Neill, PhD; Kate Scott, PhD; Tim Slade, PhD; Yolanda Torres, MPH, DraHC; Daniel Vigo, MD, DrPH; Bogdan Wojtyniak, ScD; Zahari Zarkov, MD, PhD; Yuval Ziv, MA; Ronald C. Kessler, PhD; for the WHO World Mental Health Survey Collaborators

IMPORTANCE The perceived helpfulness of treatment is an important patient-centered measure that is a joint function of whether treatment professionals are perceived as helpful and whether patients persist in help-seeking after previous unhelpful treatments.

OBJECTIVE To examine the prevalence and factors associated with the 2 main components of perceived helpfulness of treatment in a representative sample of individuals with a lifetime history of *DSM-IV* major depressive disorder (MDD).

DESIGN, SETTING, AND PARTICIPANTS This study examined the results of a coordinated series of community epidemiologic surveys of noninstitutionalized adults using the World Health Organization World Mental Health surveys. Seventeen surveys were conducted in 16 countries (8 surveys in high-income countries and 9 in low- and middle-income countries). The dates of data collection ranged from 2002 to 2003 (Lebanon) to 2016 to 2017 (Bulgaria). Participants included those with a lifetime history of treated MDD. Data analyses were conducted from April 2019 to January 2020. Data on socioeconomic characteristics, lifetime comorbid conditions (eg, anxiety and substance use disorders), treatment type, treatment timing, and country income level were collected.

MAIN OUTCOMES AND MEASURES Conditional probabilities of helpful treatment after seeing between 1 and 5 professionals; persistence in help-seeking after between 1 and 4 unhelpful treatments; and ever obtaining helpful treatment regardless of number of professionals seen.

RESULTS Survey response rates ranged from 50.4% (Poland) to 97.2% (Medellín, Columbia), with a pooled response rate of 68.3% (n = 117 616) across surveys. Mean (SE) age at first depression treatment was 34.8 (0.3) years, and 69.4% were female. Of 2726 people with a lifetime history of treatment of MDD, the cumulative probability (SE) of all respondents pooled across countries of helpful treatment after seeing up to 10 professionals was 93.9% (1.2%), but only 21.5% (3.2%) of patients persisted that long (ie, beyond 9 unhelpful treatments), resulting in 68.2% (1.1%) of patients ever receiving treatment that they perceived as helpful. The probability of perceiving treatment as helpful increased in association with 4 factors: older age at initiating treatment (adjusted odds ratio [AOR], 1.02; 95% CI, 1.01-1.03), higher educational level (low: AOR, 0.48; 95% CI, 0.33-0.70; low-average: AOR, 0.62; 95% CI, 0.44-0.89; high average: AOR, 0.67; 95% CI, 0.49-0.91 vs high educational level), shorter delay in initiating treatment after first onset (AOR, 0.98; 95% CI, 0.97-0.99), and medication received from a mental health specialist (AOR, 2.91; 95% CI, 2.04-4.15). Decomposition analysis showed that the first 2 of these 4 factors were associated with only the conditional probability of an individual treatment professional being perceived as helpful (age at first depression treatment: AOR, 1.02; 95% CI, 1.01-1.02; educational level: low: AOR, 0.48; 95% CI, 0.33-0.70; low-average: AOR, 0.62; 95% CI, 0.44-0.89; high-average: AOR, 0.67; 95% CI, 0.49-0.91 vs high educational level), whereas the latter 2 factors were associated with only persistence (treatment delay: AOR, 0.98; 95% CI, 0.97-0.99; treatment type: AOR, 3.43; 95% CI, 2.51-4.70).

CONCLUSIONS AND RELEVANCE The probability that patients with MDD obtain treatment that they consider helpful might increase, perhaps markedly, if they persisted in help-seeking after unhelpful treatments with up to 9 prior professionals.

JAMA Psychiatry. 2020;77(8):830-841. doi:10.1001/jamapsychiatry.2020.1107
Published online May 20, 2020.

← Editorial page 784

+ Supplemental content

Author Affiliations: Author affiliations are listed at the end of this article.

Group Information: The World Health Organization (WHO) World Mental Health Survey Collaborators are listed at the end of this article.

Corresponding Author: Ronald C. Kessler, PhD, Department of Health Care Policy, Harvard Medical School, 180 Longwood Ave, Boston, MA 02115 (kessler@hcp.med.harvard.edu).

Major depressive disorder (MDD) is associated with the number of years lived with disability globally,¹ affecting approximately 5% to 6% of people worldwide each year and 11% to 15% of people for a lifetime.^{2,3} The high burden of MDD exists, in part, because many people do not receive effective care.^{4,5} Many studies have defined potentially effective care for MDD using objective criteria, usually in terms of the number of professional visits and either the type of professional seen or the type of intervention received. However, patient-centered definitions can also help to identify needs that are not fully met by treatment and in turn can inform policy and service responses to address these needs.⁶⁻⁸ Thus, a patient's evaluation of the helpfulness of treatment is an important measure^{9,10} that can be collected directly and efficiently^{11,12} and, when assessed in population surveys, can help fill a knowledge gap about treatment outcomes at a population level.¹¹

In epidemiologic studies, approximately 55% to 75% of adults seeking help for depression or other mental health needs say they received treatment or professional contact that was at least somewhat helpful.¹²⁻¹⁷ With some exceptions,^{16,17} available studies of the helpfulness of depression treatment have focused on treatment received during a short term among prevalent cases rather than taking a longer-term perspective. This focus provides only a partial understanding because it excludes the many incident MDD cases in which patients take longer than 12 months to initiate treatment¹⁷⁻²⁰ and captures only a subset of the long-term course of MDD²¹ across the complete treatment pathway.²²

A patient's pathway through care may involve contact with numerous professionals, each of whom may or may not provide treatment that the patient considers helpful, and this experience may consequently encourage or discourage future attempts by the patient to seek care either in the current episode or in subsequent episodes.^{23,24} An evaluation of this pathway through care requires information about the sequence of contacts with health professionals following the onset of the disorder. Given this information, the probability of a patient ever receiving helpful depression treatment will mathematically be the product of 2 components: the probability of a given treatment professional being perceived as helpful and the probability that the patient will persist in help-seeking after receiving unhelpful treatment.²⁵ Decomposing the treatment pathway in this way is potentially informative because these 2 components could have different determinants. Moreover, they may vary across mental health service contexts, being associated with factors such as availability of services and barriers to access. Here, we examined the prevalence and factors associated with perceived helpfulness of treatment and of its 2 main components based on retrospective reports obtained in a cross-national, representative community sample of individuals with a lifetime history of depression treatment.

Methods

Sample

The World Health Organization (WHO) World Mental Health (WMH) surveys are a coordinated set of community epide-

Key Points

Question What proportion of patients with depression perceive treatment as helpful?

Findings This study of 80 332 respondents surveyed in 16 countries found that 68.2% of adults with a lifetime history of *DSM-IV* major depressive disorder ($n = 2726$) obtained treatment that they considered helpful; other patients stopped seeking treatment after early unhelpful treatment. Most patients (93.9%) were helped if they persisted through 10 treatment professionals, but only 21.5% of patients were that persistent.

Meaning Many more patients with major depressive disorder might obtain helpful treatment if they persist after early unhelpful treatment.

miologic surveys administered to probability samples of the noninstitutionalized household population in countries throughout the world.^{26,27} Data for the present report were collected from 17 WMH surveys carried out in 16 countries—8 surveys in countries classified by the World Bank as high-income countries (Argentina; Australia; Israel; Murcia, Spain; Northern Ireland; Poland; Portugal; and Saudi Arabia) and 9 surveys in countries classified as low- and middle-income countries (São Paulo, Brazil; Bulgaria; Medellín, Colombia; Iraq; Lebanon; Nigeria; Shenzhen, People's Republic of China; and Romania). There were 2 surveys in Bulgaria administered to separate samples from 2002 to 2006 and from 2016 to 2017. Eleven surveys were based on nationally representative household samples, whereas 3 surveys were representative of selected metropolitan areas (São Paulo, Brazil; Medellín, Colombia; and Shenzhen, People's Republic of China), 2 surveys of selected regions (Murcia, Spain, and selected states in Nigeria), and 1 survey of all urbanized areas (Argentina). The field dates ranged from 2002 to 2003 (Lebanon) to 2016 to 2017 (Bulgaria). Response rates ranged from 50.4% (Poland) to 97.2% (Medellín, Columbia), with a pooled response rate of 68.3% ($n = 117\ 616$) across surveys (eTable 1 in the Supplement). The study protocol was approved by all local institutional review boards. Written or verbal informed consent was obtained in a manner consistent with the regulations of each country. Small compensation or gifts were offered as incentives for participating in this study as approved by local institutional review boards.²⁸

The interview schedule was developed in English and translated into other languages using a standardized WHO translation, team translation, and harmonization protocol.²⁹ Interviews were administered face to face in respondents' homes after obtaining informed consent. Interviews were conducted in 2 parts. Part 1 was administered to all 80 332 respondents across all surveys, and core *DSM-IV* mental disorders were assessed. Part 2 assessed additional disorders and correlates and was administered to 46 500 respondents who met lifetime criteria for any part 1 disorder and to a probability subsample of other part 1 respondents.

Measures

Major Depressive Disorder

Diagnoses were based on version 3.0 of the WHO Composite International Diagnostic Interview (CIDI),²⁶ a fully structured lay-administered diagnostic interview. The *DSM-IV* cri-

teria were used to define a major depressive episode, mania, and hypomania. The requirement that symptoms do not meet criteria for a mixed episode (criterion C for mania or hypomania and criterion B for major depressive episode) was not used in making these diagnoses. We also defined subthreshold bipolar disorder as a history of recurrent subthreshold hypomania (at least 2 criterion B symptoms along with all other criteria for hypomania). The reduction in the number of required symptoms for a determination of subthreshold hypomania was confined to 2 criterion B symptoms (from the *DSM-IV* requirement of 3 or 4 if mood is only irritable) to retain the core features of hypomania in the subthreshold definition. Bipolar spectrum disorder was defined as having a history of mania, hypomania, or subthreshold hypomania. Lifetime MDD was then defined conservatively as having a history of major depressive episodes in the absence of a history of bipolar spectrum disorder.³⁰ All diagnoses excluded cases with plausible organic causes. Clinical reappraisal interviews were carried out in several countries in conjunction with WMH surveys using the lifetime nonpatient version of the Structured Clinical Interview for *DSM-IV* (SCID)³¹ as the criterion standard. Good agreement was found between diagnoses of MDD based on the CIDI and those based on blinded Structured Clinical Interview clinician-administered reappraisal interviews ($\kappa = 0.54$; positive predictive value, 0.74).³²

Perceived Helpfulness of Treatment of Depression

Respondents who met lifetime *DSM-IV* and CIDI criteria for MDD were asked retrospectively about age at onset and were then asked “Did you *ever* in your life talk to a medical doctor or other professional about your (sadness/or/discouragement/or/lack of interest)?” (exact wording based on responses to earlier questions; emphasis in original); if so, respondents were asked “How old were you the *first time* you talked to a professional about your (sadness/or/discouragement/or/lack of interest)?” “Other professionals” were defined broadly to include psychologists, counselors, spiritual advisors, herbalists, acupuncturists, and other healing professionals. Respondents who said that they had talked to a professional were then asked “Did you ever get treatment for your (sadness/or/discouragement/or/lack of interest) that you considered *helpful or effective*?” If they said yes, they were asked “How many professionals did you *ever* talk to about your (sadness/or/discouragement/or/lack of interest) up to and including the first time you ever got helpful treatment?” If they said no, they were asked “How many professionals did you *ever* talk to about your (sadness/or/discouragement/or/lack of interest)?”

Factors Associated With Perceived Helpfulness

Socioeconomic characteristics included age at first depression treatment (continuous), sex, marital status (married, never married, or previously married) at the time of first MDD treatment, and educational level (in quartiles defined by within-country distributions) at the time of first treatment. Lifetime comorbid conditions included number of anxiety disorders and substance use disorders with first onsets prior to the age at first treatment, which are thought to be associated with an increased mental health burden among individuals with

MDD.³³⁻³⁶ Anxiety disorders included generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, posttraumatic stress disorder, specific phobia, and social phobia. Substance use disorders included alcohol and illicit drug abuse and dependence. Treatment type was defined as the cross-classification of factors for (1) whether the respondent reported receiving medication, talk therapy, or both as of the age at first depression treatment and (2) types of treatment professionals seen as of that age, including mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, and mental health counselor), primary care physician, human services professionals (social worker or counselor in a social services agency or a spiritual advisor), and complementary or alternative medicine professionals (other type of healer or self-help group). Treatment timing included a dichotomous measure for whether the respondent's first attempt to seek treatment occurred before 2000 or subsequently (2000 being the typical midpoint time between the start of observation and the survey field dates) and a continuous variable for length of delay in years between age at onset of MDD and age at time of initially seeking treatment.

Statistical Analysis

The analysis sample was limited to people with onset of lifetime *DSM-IV* MDD treatment during or after 1990 to focus on treatments subsequent to the widespread introduction of selective serotonin reuptake inhibitors.³⁷ To investigate the 2 components of helpful treatment separately, we used discrete-event survival analysis to calculate the conditional and cumulative probabilities of (1) obtaining helpful treatment after seeing between 1 and 10 professionals and (2) persisting in seeking treatment with between 2 and 10 professionals after obtaining prior unhelpful treatment.³⁸ We followed up with patients through 10 professionals because this was the highest number of professionals that our required minimum of at least 30 patients had received treatment from (see eTable 2 and eTable 3 in the [Supplement](#) for the full set of conditional and cumulative probabilities of receiving helpful treatment and persistence beyond 10 professionals). We then carried out parallel survival analyses of the factors associated with these 2 component outcomes using standard discrete-time methods and a logistic link function,³⁹ followed by a person-level model of overall probability of ever receiving helpful treatment regardless of the number of professionals seen.

Individual weights were applied to adjust for probability of selection, nonresponse, and poststratification. In addition, data from part 2 respondents were weighted to adjust for differential probabilities of selection into part 2 and deviations between the sample and population demographic-geographic distributions. This weight resulted in prevalence estimates of part 1 disorders in the weighted part 2 sample being virtually identical to those in the part 1 sample.⁴⁰ Because the WMH sample designs used weighting and clustering, all statistical analyses were carried out using the Taylor series linearization method,⁴¹ a design-based method implemented in SAS, version 9.4.⁴² Logistic regression coefficients and ± 2 of their design-based standard errors (SEs) were exponentiated to create odds ratios (ORs) and 95% CIs. The significance of the

Table 1. Lifetime Prevalence of DSM-IV Major Depressive Disorder, Proportion of Adults With Lifetime MDD Who Obtained Treatment, and Proportion of Patients Who Perceived Treatment as Helpful

Category	Total sample and % with lifetime MDD		Respondents with lifetime MDD who obtained treatment ^a		Respondents who obtained lifetime MDD treatment and perceived treatment as helpful ^b	
	No.	% (SE)	No.	% (SE)	No.	% (SE)
High-income country						
Overall	41 778	10.0 (0.2)	4438	47.1 (1.0)	2082	70.1 (1.2)
Argentina	3927	8.7 (0.6)	390	36.8 (3.0)	144	72.7 (3.6)
Australia	8463	13.5 (0.5)	1173	56.2 (1.9)	633	70.4 (2.5)
Israel	4859	9.8 (0.5)	484	39.6 (2.4)	189	49.4 (3.7)
Murcia, Spain	2621	13.8 (0.8)	370	54.4 (3.8)	207	90.7 (3.2)
Northern Ireland	4340	16.3 (0.8)	778	52.5 (2.3)	415	67.0 (2.6)
Poland	10 081	3.0 (0.2)	297	34.5 (2.5)	102	84.7 (3.6)
Portugal	3849	16.7 (0.7)	706	46.2 (2.1)	332	70.7 (2.4)
Saudi Arabia	3638	6.2 (0.6)	240	23.8 (3.6)	60	46.5 (7.5)
χ^2	711.7 ^c		100.3 ^c		67.2 ^c	
Low- and middle-income countries						
Overall	38 554	7.4 (0.2)	3010	22.5 (1.0)	644	62.4 (2.2)
Iraq	4332	7.2 (0.6)	335	13.5 (4.4)	40	64.7 (12.7)
Nigeria	6752	3.1 (0.3)	229	7.0 (2.1)	13	62.3 (18.0)
Shenzhen, PRC	7132	6.1 (0.4)	449	8.6 (1.5)	40	59.2 (7.8)
São Paulo, Brazil	5037	16.9 (0.9)	884	35.7 (1.8)	301	62.5 (2.8)
Bulgaria	6826	5.1 (0.3)	388	19.6 (2.2)	72	67.7 (7.9)
Lebanon	2857	9.9 (0.9)	283	20.0 (2.6)	52	34.6 (6.2)
Medellín, Colombia	3261	9.9 (0.8)	349	30.9 (3.3)	108	76.0 (4.4)
Romania	2357	2.9 (0.4)	93	19.4 (4.8)	18	48.9 (15.5)
χ^2	426.6 ^c		121.2 ^c		26.2 ^c	
Pooled countries						
All countries	80 332	8.8 (0.1)	7448	37.2 (0.7)	2726	68.2 (1.1)
χ^2_{15}		1280.3 ^c		415.5 ^c		100.4 ^c
Low- and middle-income countries vs high-income countries						
χ^2_1		91.8 ^c		261.0 ^c		9.7 ^c

Abbreviations: MDD, major depressive disorder; PRC, People's Republic of China.

^a Cases are based on 3 conditions: (1) respondents obtained depression treatment; (2) year of first depression treatment was 1990 or later; and (3) age at onset of MDD was the year of first depression treatment or earlier.

^b Cases are based on 4 conditions: (1) respondents obtained depression treatment; (2) year of first depression treatment was 1990 or later; (3) age at onset of MDD was year of first depression treatment or earlier; and (4) respondents obtained helpful treatment.

^c Indicates significant at .05 level, 2-sided test.

sets of coefficients was evaluated with Wald χ^2 tests based on design-corrected coefficient variance-covariance matrices. Statistical significance was evaluated consistently from April 2019 to January 2020 using 2-sided design-based .05 probability level tests.

Results

Perceived Helpfulness of Treatment

Across all countries combined, 37.2% (n = 7448) of adults with lifetime DSM-IV MDD reported ever being treated, and of those treated, 68.2% (n = 2726) reported ever obtaining treatment that they considered helpful (Table 1). Mean (SE) age at first depression treatment was 34.8 (0.3) years, and 69.4% were female. The mean (SE) treatment probability among all people with lifetime MDD receiving treatment in high-income coun-

tries (47.1% [1.0%]) was approximately twice that of comparable people in low- and middle-income countries (22.5% [1.0%]), but the mean (SE) probabilities of treated patients reporting that treatment was helpful were similar (70.1% [1.2%] vs 62.4% [2.2%], respectively).

Helpful Depression Treatment by Number of Professionals Seen

Across all countries combined, 30.6% (SE, 0.9%) of patients said that they were helped by the first professional seen (Table 2). The conditional probability of a second professional being helpful after initial unhelpful treatment was 39.6% (SE, 1.7%). The conditional probabilities of receiving helpful treatment after each subsequent professional seen were in the range of 37.4% (SE, 2.5%) after 3 visits to 5.1% (SE, 2.4%) after 7 visits.

Survival analysis showed that the cumulative probability of receiving helpful treatment increased from 30.6% (SE, 0.9%)

Table 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

No. of professionals seen after which treatment was perceived as helpful	Conditional probability						Cumulative probability, % (SE)		
	All		High-income countries		Low- and middle-income countries		All (n = 2726)	High-income countries (n = 2082)	Low- and middle-income countries (n = 664)
	No.	% (SE)	No.	% (SE)	No.	% (SE)			
1	2726	30.6 (0.9)	2082	31.1 (1.0)	644	29.0 (2.1)	30.6 (0.9)	31.1 (1.0)	29.0 (2.1)
2	1396	39.6 (1.7)	1101	39.3 (1.8)	295	40.8 (4.0)	58.1 (1.3)	58.2 (1.5)	58.0 (3.2)
3	648	37.4 (2.5)	507	36.6 (2.9)	141	40.2 (4.9)	73.8 (1.4)	73.5 (1.6)	74.9 (2.7)
4	332	32.1 (3.2)	266	32.6 (3.6)	66	30.4 (6.7)	82.2 (1.3)	82.1 (1.6)	82.5 (2.6)
5	186	26.3 (3.6)	152	28.7 (4.4)	34	16.4 (4.8)	86.9 (1.2)	87.2 (1.4)	85.4 (2.6)
6	103	16.8 (5.2)	86	19.7 (6.4)	17	4.9 (3.5)	89.1 (1.2)	89.8 (1.4)	86.1 (2.6)
7	73	5.1 (2.4)	61	6.5 (3.1)	12	0 (0)	89.6 (1.2)	90.4 (1.4)	86.1 (2.6)
8	63	19.6 (8.4)	54	22.0 (9.7)	9	5.1 (5.1)	91.7 (1.2)	92.5 (1.3)	86.8 (2.6)
9	49	6.9 (4.0)	41	5.5 (4.0)	8	12.9 (11.7)	92.3 (1.2)	92.9 (1.3)	88.5 (2.7)
10	44	21.7 (6.7)	37	25.9 (8.4)	7	3.1 (3.2)	93.9 (1.2)	94.8 (1.3)	88.9 (2.7)

Table 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

No. of professionals seen if not helped by the previous one	Conditional probability						Cumulative probability, % (SE)		
	All		High-income countries		Low- and middle-income countries		All (n = 1868)	High-income countries (n = 1424)	Low- and middle-income countries (n = 444)
	No.	% (SE)	No.	% (SE)	No.	% (SE)			
2	1868	74.4 (1.2)	1424	77.2 (1.4)	444	66.2 (2.1)	74.4 (1.2)	77.2 (1.4)	66.2 (2.1)
3	838	76.4 (1.9)	654	75.7 (2.2)	184	78.9 (3.4)	56.9 (1.7)	58.4 (2.0)	52.3 (3.5)
4	402	83.3 (1.9)	312	85.4 (2.2)	90	75.5 (4.3)	47.4 (1.9)	49.9 (2.2)	39.5 (3.9)
5	224	83.1 (2.9)	180	83.8 (3.4)	44	80.3 (4.6)	39.4 (2.2)	41.9 (2.5)	31.7 (4.2)
6	124	83.0 (3.2)	102	85.3 (3.8)	22	74.8 (6.2)	32.7 (2.4)	35.7 (2.7)	23.7 (4.8)
7	84	87.8 (3.5)	69	89.7 (3.3)	15	81.2 (10.0)	28.7 (2.6)	32.1 (3.0)	19.3 (4.6)
8	68	88.0 (5.5)	56	96.9 (2.2)	12	56.3 (16.0)	25.3 (2.7)	31.1 (3.1)	10.8 (2.8)
9	51	87.9 (10.5)	43	85.6 (12.3)	8	100 (0)	22.2 (3.0)	26.6 (3.9)	10.8 (2.8)
10	46	96.7 (2.4)	39	96.0 (2.9)	7	100 (0)	21.5 (3.2)	25.5 (4.3)	10.8 (2.8)

after the first professional seen to 58.1% (SE, 1.3%) when patients persevered in trying a second professional after unhelpful treatment from the first, with 93.9% (SE, 1.2%) projected to receive helpful treatment if they persevered in trying up to 10 professionals after earlier ones were unhelpful (Table 2). Patterns and probabilities were generally similar across country income levels.

Persistence With Depression Help-Seeking Following Treatment Failure

Across all countries, at least three-quarters of those who were not helped by an initial professional (range, 74.4%-96.7%) persisted in seeing another professional (Table 3). However, because not all people persisted after each unhelpful attempt, the cumulative probability of persisting through 10 professionals was only 21.5% (SE, 3.2%). Patterns were generally similar across country income levels.

Factors Associated With Helpful Depression Treatment

Table 4 gives the results of 3 multivariate models assessing whether treatment was helpful pooled across all professionals seen by each patient (model 1), whether patients persisted

in help-seeking after previous unhelpful treatment pooled across subsequent professionals seen after an earlier unhelpful professional (model 2), and whether helpful treatment was obtained at the person level regardless of number of treatment professionals seen (model 3). We focused on how the results from the pooled models helped explain the associations in the person-level model.

Adjusting for all other variables in the model, we found that the relative odds of treatment being perceived as helpful at the person level were higher among patients who were older (adjusted odds ratio [AOR], 1.02; 95% CI, 1.01-1.03) and highly educated (educational level low: AOR, 0.48; 95% CI, 0.33-0.70; low-average: AOR, 0.62; 95% CI, 0.44-0.89; high-average: AOR, 0.67; 95% CI, 0.49-0.91 vs high educational level) at the time of treatment. Decomposition into the 2 components of helpful treatment showed that these variables were associated with significantly elevated relative odds of treatment from a given professional being helpful (age: AOR, 1.02; 95% CI, 1.01-1.02; higher education level [low: AOR, 0.48; 95% CI, 0.33-0.70; low-average: AOR, 0.62; 95% CI, 0.44-0.89; high-average: AOR, 0.67; 95% CI, 0.49-0.91 vs high educational level]) rather than increased persistence

Table 4. Factors Associated With Helpful Treatment and Persistence (Pooled Across Professionals Seen) and of Perceived Helpfulness of Treatment (Person Level) Among People With Lifetime DSM-IV MDD Who Obtained Treatment

Factor	Model 1: helpful treatment pooled across professionals seen		Model 2: persistence pooled across treatment failure		Model 3: perceived helpfulness of treatment across patients with MDD	
	Mean (SE) prevalence, %	Multivariate, AOR (95% CI)	Mean (SE) prevalence, %	Multivariate, AOR (95% CI)	Mean (SE) prevalence, %	Multivariate, AOR (95% CI)
Age at first depression treatment, mean (SE), y	33.3 (0.4)	1.02 (1.01-1.02) ^a	32.5 (0.4)	1.00 (0.99-1.01)	34.8 (0.3)	1.02 (1.01-1.03) ^a
χ ²		25.14 ^a		0.18		8.32 ^a
Female	69.0 (1.7)	1.10 (0.94-1.29)	68.2 (2.1)	1.27 (0.98-1.65)	69.4 (1.0)	1.25 (0.99-1.57)
Male	31.0 (1.7)	1 [Reference]	31.8 (2.1)	1 [Reference]	30.6 (1.0)	1 [Reference]
χ ²		1.38		3.24		3.51
Marital status						
Never married	43.3 (1.7)	1.03 (0.85-1.26)	44.0 (2.2)	0.86 (0.65-1.14)	41.1 (1.2)	0.92 (0.70-1.22)
Previously married	16.8 (1.2)	0.95 (0.78-1.15)	17.3 (1.4)	0.72 (0.52-0.99) ^a	17.0 (1.0)	0.83 (0.59-1.15)
Currently married	39.9 (1.6)	1 [Reference]	38.8 (2.1)	1 [Reference]	41.9 (1.2)	1 [Reference]
χ ²		0.57		4.48		1.46
Educational level						
Low	10.9 (0.7)	0.69 (0.56-0.86) ^a	10.8 (0.9)	0.79 (0.51-1.21)	11.7 (0.6)	0.48 (0.33-0.70) ^a
Low-average	23.1 (1.5)	0.78 (0.62-0.97) ^a	23.8 (2.0)	0.80 (0.55-1.17)	22.5 (1.0)	0.62 (0.44-0.89) ^a
High-average	35.3 (1.6)	0.81 (0.68-0.97) ^a	35.1 (2.0)	0.85 (0.61-1.19)	36.7 (1.2)	0.67 (0.49-0.91) ^a
High	19.1 (1.3)	1 [Reference]	17.9 (1.5)	1 [Reference]	19.8 (0.9)	1 [Reference]
Student	11.5 (1.1)	0.92 (0.72-1.17)	12.3 (1.4)	1.55 (0.98-2.45)	9.3 (0.7)	1.22 (0.75-1.98)
χ ²		13.75 ^a		8.51		21.71 ^a
Treatment delay, mean (SE), y ^b	4.8 (0.3)	0.99 (0.99-1.00)	4.9 (0.3)	0.98 (0.97-0.99) ^a	5.1 (0.2)	0.98 (0.97-0.99) ^a
χ ²		3.17		10.56 ^a		13.33 ^a
Started depression treatment ≥2000 (vs 1990-1999)	55.6 (1.8)	1.40 (1.20-1.62) ^a	51.9 (2.2)	0.60 (0.47-0.75) ^a	63.1 (1.1)	0.95 (0.77-1.18)
χ ²		18.49 ^a		19.34 ^a		0.18
Treatment type ^c						
Mental health specialist and psychotherapy	45.9 (1.7)	0.90 (0.74-1.10)	45.4 (2.0)	1.05 (0.75-1.47)	45.3 (1.3)	1.00 (0.72-1.39)
Mental health specialist and medication	57.6 (1.8)	1.01 (0.83-1.22)	57.8 (2.3)	3.43 (2.51-4.70) ^a	48.9 (1.2)	2.91 (2.04-4.15) ^a
General medical	69.3 (1.6)	0.82 (0.68-0.99) ^a	70.7 (1.9)	1.55 (1.14-2.10) ^a	65.7 (1.1)	1.24 (0.93-1.66)
Complementary or alternative medicine	18.1 (1.6)	0.78 (0.65-0.94) ^a	20.2 (2.1)	1.52 (1.06-2.19) ^a	12.5 (0.8)	1.27 (0.85-1.89)
Human services	13.9 (1.2)	1 [Reference]	15.9 (1.5)	1 [Reference]	10.6 (0.8)	1 [Reference]
χ ²		11.06 ^a		69.41 ^a		37.65 ^a

(continued)

Table 4. Factors Associated With Helpful Treatment and Persistence (Pooled Across Professionals Seen) and of Perceived Helpfulness of Treatment (Person Level) Among People With Lifetime DSM-IV MDD Who Obtained Treatment (continued)

Factor	Model 1: helpful treatment pooled across professionals seen		Model 2: persistence pooled across treatment failure		Model 3: perceived helpfulness of treatment across patients with MDD	
	Mean (SE) prevalence, %	Multivariate, AOR (95% CI)	Mean (SE) prevalence, %	Multivariate, AOR (95% CI)	Mean (SE) prevalence, %	Multivariate, AOR (95% CI)
Exactly 2 or more of the above	62.8 (1.7)	0.83 (0.65-1.08)	64.8 (2.2)	1.41 (0.95-2.12)	52.5 (1.2)	0.94 (0.61-1.45)
χ^2_1	1.91		2.86		0.09	
χ^2_2	23.42 ^a		227.58 ^a		86.37 ^a	
No. of lifetime anxiety disorders ^d						
≥2	23.5 (1.4)	0.89 (0.73-1.07)	24.5 (1.7)	1.16 (0.84-1.60)	20.0 (0.9)	1.07 (0.80-1.43)
1	30.2 (1.4)	0.93 (0.80-1.09)	30.8 (1.8)	1.05 (0.82-1.35)	29.4 (1.1)	1.00 (0.79-1.27)
None	46.2 (1.6)	1 [Reference]	44.7 (2.1)	1 [Reference]	50.6 (1.2)	1 [Reference]
χ^2_2	1.73		0.84		0.24	
Substance use disorder						
Alcohol or drug abuse	16.9 (1.4)	0.89 (0.73-1.08)	18.5 (1.8)	1.19 (0.85-1.66)	13.5 (0.8)	1.05 (0.75-1.46)
Alcohol or drug dependence but not abuse	0.4 (0.1)	0.88 (0.36-2.16)	0.4 (0.2)	0.32 (0.07-1.47)	0.5 (0.1)	0.42 (0.13-1.37)
χ^2_2	1.36		3.65		2.23	
χ^2_4	3.07		4.32		2.41	
Global χ^2_{19}	111.1 ^a		340.94 ^a		124.5 ^a	

Abbreviations: AOR, adjusted odds ratio; MDD, major depressive disorder.

^a Significant at .05 level (2-sided test).

^b Treatment delay (in years) equals age at first depression treatment minus age at onset of MDD.

^c Treatment professionals: mental health specialists (psychiatrist, psychiatric nurse, psychologist, psychiatric social worker, mental health counselor), primary care physicians, human services professionals (social worker or

counselor in a social services agency, spiritual advisor), and complementary or alternative medicine professionals (other type of healer or self-help group).

^d Includes generalized anxiety disorder, panic disorder, agoraphobia with or without panic disorder, posttraumatic stress disorder, specific phobia, and social phobia.

after unhelpful treatment (age: AOR, 1.00; 95% CI, 0.99-1.01; higher education level [low: AOR, 0.48; 95% CI, 0.33-0.70; low-average: AOR, 0.62; 95% CI, 0.44-0.89; high-average: AOR, 0.67; 95% CI, 0.49-0.91 vs high educational level]).

Shorter delay to first treatment from age at onset was also associated with increased relative odds of treatment being perceived as helpful at the person level (AOR, 0.98; 95% CI, 0.97-0.99). The same was true for obtaining medication and treatment from a mental health specialist (AOR, 2.91; 95% CI, 2.04-4.15). Decomposition showed that these associations were due to increased persistence after unhelpful treatment (treatment delay: AOR, 0.98; 95% CI, 0.97-0.99; treatment type: AOR, 3.43; 95% CI, 2.51-4.70) rather than to these factors showing increased odds of treatment from a given professional being perceived as helpful (treatment delay: AOR, 0.99; 95% CI, 0.99-1.00; treatment type: AOR, 1.01; 95% CI, 0.83-1.22).

Starting treatment in 2000 or later was associated with significantly elevated odds of treatment from a given professional being helpful and also with significantly decreased odds of persistence following unhelpful treatment. These 2 opposite-sign associations cancelled each other so that there was no significant overall time trend in treatment being perceived as helpful. Treatment provided by human services, general medical, or complementary or alternative medicine professionals was negatively associated with helpful treatment from a given professional but positively associated with persistence, resulting in no significant association at the person level. We also estimated more complex models that included interactions between country income level and each of the other factors, but few interactions were statistically significant (eTable 4 in the Supplement).

Discussion

In this analysis of data from WHO World Mental Health surveys across 16 countries combined, 68.2% of adults with a lifetime history of treated *DSM-IV* MDD reported ever obtaining treatment that they considered helpful. Our key finding was that persistence in help-seeking was associated with greatly increased likelihood that treatment would be perceived as helpful. The vast majority (93.9%) of patients who persisted in help-seeking through 10 professionals after earlier unhelpful treatment eventually received treatment that they considered helpful. However, persistence through 10 professionals was observed for only 21.5% of patients.

The estimate that approximately two-thirds of people seeking help for MDD eventually obtained treatment that they considered helpful is consistent with previous epidemiologic studies.¹²⁻¹⁷ Our decomposition analyses extended these previous findings. Compounding the modest rates of perceived helpfulness of treatment from individual professionals, only 21.5% of patients persisted in seeing up to 10 different professionals when earlier ones had been unhelpful. We do not know whether people who did not persist had expectations of treatment similar to those who did persist, nor can we be certain that they would have had similar outcomes if they had all persisted. However, to the extent that they were similar, our find-

ings suggested that many more people with MDD would receive treatment that they would consider helpful if they had persisted after earlier treatment failures.

Consistent with some previous findings, relatively older and highly educated people were more likely to report receiving helpful treatment.^{15,43,44} We found that this result was due to the increased likelihoods of these people perceiving treatments as helpful rather than due to greater persistence in help-seeking after earlier unhelpful treatments. The opposite was true, though, for the other 2 factors associated with receiving helpful treatment (ie, short delays in initiating help-seeking after first onset, and receiving medication and treatment from a mental health professional). Both of these factors were associated with increased persistence of help-seeking rather than with increased likelihood of the treatments being perceived as helpful. Because people who receive medication from mental health specialists are likely to be more severely unwell, persisting in help-seeking after earlier failures might equate to persisting with treatment until an adequate “dose” has been received.⁴⁵ We were unable to examine perceived helpfulness of depression treatment among people with different types of pathways (eg, based on timing or combinations of professionals talked to) because the depression-specific treatment questions did not capture these details.

The finding that people who initiated treatment as of 2000 or later were more likely to report treatment from individual professionals as helpful is encouraging in suggesting that treatment has improved over time from the patient perspective. Less encouraging, though, was a time trend for reduced persistence in help-seeking after prior unhelpful treatment. It is unclear why this would be the case, but one possibility is an increase in expectations of treatment. This reduced persistence may help explain why the prevalence of major depression has not decreased with time despite treatment increasing.⁴⁶

The extent to which perceived helpfulness is associated with actual helpfulness as assessed in objective measures of treatment outcome, such as those used in clinical trials, is difficult to determine because perceived helpfulness and outcome are overlapping domains rather than distinct domains. For example, perceived helpfulness, subjective well-being, feeling better about the present and the future, perceived quality of life, and having a greater purpose in life—all factors of perception—are associated directly with morbidity and mortality.^{47,48} Thus, the perceptions that patients have at the end of treatment are not trivial. Indeed, such perceptions are taking on increased importance given that improving depression symptoms might not be associated with other aspects of everyday life for which treatment is sought.^{7,49,50}

Direct tests of perceived helpfulness and treatment outcome have not been reported in a way that would permit drawing firm conclusions. Among the reasons is that many competing factors (eg, severity of patient symptoms and premorbid social competence) that might well be associated with perceived helpfulness are already known to be associated with therapeutic change.^{51,52} Yet adjacent literature focuses on perceptions of diverse facets of treatment and therapeutic change. For example, patient expectations for improvement, perceptions of the helpfulness of the relationship with the therapist

(therapeutic alliance), perceptions of few obstacles or barriers to treatment, and views of the acceptability of the treatment procedures are all positively associated with therapeutic change in the small to moderate range.⁵³⁻⁵⁹ These findings might lead to the argument that helpfulness as a perception is valuable in its own right given its associations with improved functioning and symptom change.

Limitations

We know of no previous research that has attempted to decompose patterns or factors associated with perceived helpfulness of treatment of MDD in the manner we used in the present study. Even so, important limitations should be acknowledged. First, we had no means of corroborating respondents' recall of lifetime symptoms and treatment timing. People who did not obtain treatment may have failed to recall their symptoms or recalled them as less problematic,⁶⁰ potentially underestimating the probability of MDD and overestimating the extent to which MDD treatment is helpful. Telescoping (ie, dating past events as occurring more recently than they did) might also have occurred and led to inaccurate estimates of the timing of symptoms or treatment.⁶¹ The WMH surveys attempt to minimize this kind of recall bias by using procedures to aid memory search.²⁶ In the present study, we also restricted the sample to patients initiating MDD treatment during or after 1990. However, these strategies did not guarantee that we removed recall errors that might have distorted results.

Second, the measures of perceived helpfulness of treatment were based on a single question asking respondents whether and when they "talk(ed) to" a professional about their depression and follow-up questions about whether they ever received "helpful or effective" treatment and about the number of professionals talked to up to the time that helpful or effective treatment was obtained. We have no way of knowing whether these were formal or therapeutic consultations, the type(s) or appropriateness of clinical activities undertaken, or how encounters with a team of professionals were counted. Nor do we know how patients determined whether treatment was helpful.

Third, it is unknown whether unmeasured factors were associated with both low perceived helpfulness of treatment and low persistence in help-seeking after prior unhelpful treatments. If so, then the suggestion that the proportion of patients obtaining helpful treatment might increase if greater persistence was encouraged could be incorrect or overestimated.

Despite these limitations, the findings are provocative and may provide clues about how to improve treatment delivery and decrease steps in the pathway that must be traversed before treatment is considered helpful. Such insights could be valuable both in terms of reducing symptom duration prior to receiving helpful treatment and in terms of reducing the economic waste of providing unhelpful treatment. Precision treatment assigning holds great promise in this regard but remains an underdeveloped area of investigation.^{62,63} However, the current results suggested that a more practical approach in the short term might be to emphasize to patients that MDD treatment is a trial and error enterprise that requires persistence.^{64,65} Shared decision-making and measurement-based care practices may increase opportunities to detect and address patients' negative evaluations of treatment helpfulness.^{66,67} Lower rates of people with MDD receiving helpful treatment in low- and middle-income countries than in high-income countries were due mostly to lower rates of obtaining any depression treatment rather than to lower rates of treatment being perceived as helpful once received or persisting with help-seeking, reinforcing the need for local adaptation and scaling up of effective depression interventions in these settings.⁶⁸⁻⁷⁰ Whether improving the perceived helpfulness of depression treatment would reduce the likelihood of future negative outcomes (eg, suicidality, future MDD episodes, or onset of comorbidities) is an important question that will require controlled studies evaluating long-term outcomes. Longitudinal studies of persistence in help-seeking are needed.

Conclusions

Perceived helpfulness of treatment is an important health care measure in its own right from a patient-centered perspective. Findings from the present large, community sample are encouraging in that more than two-thirds of those people seeking help for lifetime MDD eventually received depression treatment that they perceived as helpful. However, our findings also suggested that this percentage might increase markedly if patients persisted in help-seeking after earlier treatment failures. Evidence regarding the extent to which individualized, targeted treatment can reduce the number of steps in the pathway to helpful treatment is needed.

ARTICLE INFORMATION

Accepted for Publication: January 31, 2020.

Published Online: May 20, 2020.

doi:10.1001/jamapsychiatry.2020.1107

Author Affiliations: The University of Queensland School of Public Health, Herston, Queensland, Australia (Harris); Queensland Centre for Mental Health Research, The Park Centre for Mental Health, Queensland, Australia (Harris); Department of Psychology, Yale University, New Haven, Connecticut (Kazdin); Department of Health Care Policy, Harvard Medical School, Boston, Massachusetts (Chiu, Sampson, Kessler); Center for Reducing Health Disparities, UC Davis Health

System, Sacramento, California (Aguilar-Gaxiola); Al-Qadisiya University College of Medicine, Diwaniya Governorate, Iraq (Al-Hamzawi); IMIM-Hospital del Mar Research Institute, Parc de Salut Mar, Barcelona, Spain (Alonso); Departament de Ciències Experimentals i de la Salut, Pompeu Fabra University, Barcelona, Spain (Alonso); CIBER en Epidemiología y Salud Pública, Barcelona, Spain (Alonso); Epidemiology Section, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia (Altwajiri); Núcleo de Epidemiologia Psiquiátrica (LIM 23), Instituto de Psiquiatria Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil (Andrade); Lisbon Institute of Global

Mental Health and Chronic Diseases Research Center, NOVA Medical School, NOVA University of Lisbon, Lisbon, Portugal (Cardoso); Anxiety Disorders Center, Buenos Aires, Argentina (Cía); National School of Public Health, Management and Development, Bucharest, Romania (Florescu); Department of Psychiatry, University College Hospital, Ibadan, Nigeria (Gureje, Oladeji); Shenzhen Institute of Mental Health, Shenzhen Kangning Hospital, Shenzhen, China (Hu); Department of Psychiatry and Clinical Psychology, Faculty of Medicine, Balamand University, Beirut, Lebanon (E. G. Karam, G. Karam); Department of Psychiatry and Clinical Psychology, St George Hospital University Medical Center, Beirut, Lebanon

(E. G. Karam, G. Karam); Institute for Development Research Advocacy and Applied Care, Beirut, Lebanon (E. G. Karam, G. Karam); Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor (Mneimneh); UDIF-SM, Subdirección General de Planificación, Innovación y Cronicidad, Servicio Murciano de Salud, IMIB-Arrixaca, CIBERESP-Murcia, Murcia, Spain (Navarro-Mateu); Ulster University School of Psychology, Londonderry, United Kingdom (O'Neill); Department of Psychological Medicine, University of Otago, Dunedin, Otago, New Zealand (Scott); The Matilda Centre for Research in Mental Health and Substance Use, University of Sydney, Sydney, New South Wales, Australia (Slade); Center for Excellence on Research in Mental Health, CES University, Medellín, Colombia (Torres); Department of Psychiatry, University of British Columbia, Vancouver, British Columbia, Canada (Vigo); Department of Global Health and Social Medicine, Harvard Medical School, Boston, Massachusetts (Vigo); National Institute of Public Health–National Institute of Hygiene, Warsaw, Poland (Wojtyniak); National Center of Public Health and Analyses, Directorate of Mental Health and Prevention of Addictions, Sofia, Bulgaria (Zarkov); Mental Health Services, Israeli Ministry of Health, Jerusalem, Israel (Ziv).

Author Contributions: Dr Kessler had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Harris, E. G. Karam, G. Karam, Mneimneh, O'Neill, Vigo, Kessler.

Acquisition, analysis, or interpretation of data:

Harris, Kazdin, Chiu, Sampson, Aguilar-Gaxiola, Al-Hamzawi, Alonso, Altwaijri, Andrade, Cardoso, Cía, Florescu, Gureje, Hu, E. G. Karam, G. Karam, Navarro-Mateu, Oladeji, O'Neill, Scott, Slade, Torres, Vigo, Wojtyniak, Zarkov, Ziv, Kessler.

Drafting of the manuscript: Harris, Sampson, E. G. Karam, O'Neill, Zarkov, Kessler.

Critical revision of the manuscript for important intellectual content: Harris, Kazdin, Chiu, Sampson, Aguilar-Gaxiola, Al-Hamzawi, Alonso, Altwaijri, Andrade, Cardoso, Cía, Florescu, Gureje, Hu, E. G. Karam, G. Karam, Mneimneh, Navarro-Mateu, Oladeji, O'Neill, Scott, Slade, Torres, Vigo, Wojtyniak, Ziv, Kessler.

Statistical analysis: Chiu, Sampson, E. G. Karam, G. Karam.

Obtained funding: Alonso, Andrade, Gureje, G. Karam, Navarro-Mateu, Torres, Kessler.

Administrative, technical, or material support: Kazdin, Sampson, Gureje, Hu, E. G. Karam, G. Karam, Mneimneh, Navarro-Mateu, Oladeji, O'Neill, Ziv.

Supervision: Sampson, Aguilar-Gaxiola, Alonso, Hu, E. G. Karam, G. Karam, Mneimneh, O'Neill, Vigo.

Conflict of Interest Disclosures: Ms Sampson reported receiving grants from Bristol-Myers Squibb, Eli Lilly and Company, the Fogarty International Center, GlaxoSmithKline, the John D. and Catherine T. MacArthur Foundation, the National Institute of Mental Health, Ortho-McNeil Pharmaceutical LLC, the Pan American Health Organization, Pfizer, and the United States Public Health Service during the conduct of the study. Dr Mneimneh reported receiving personal fees as a co-director of the data collection center that helps support the implementation of surveys generating the data in this work from the University of Michigan during the conduct of the study.

Dr Navarro-Mateu reported receiving nonfinancial support from Otsuka outside the submitted work. Dr Kessler reported receiving grants from Sanofi-Aventis; personal fees from Datastat Inc, Johnson & Johnson Wellness and Prevention, Johnson & Johnson Services Inc Lake Nona Life Project, Sage Therapeutics, Shire, and Takeda outside the submitted work. No other disclosures were reported.

Funding/Support: The World Health Organization (WHO) World Mental Health (WMH) Survey Initiative is supported by the National Institute of Mental Health (R01 MH070884), the John D. and Catherine T. MacArthur Foundation, the Pfizer Foundation, the United States Public Health Service (R13 MH066849, R01 MH069864, and R01 DA016558), the Fogarty International Center (FIRCA R03 TW006481), the Pan American Health Organization, Eli Lilly and Company, Ortho-McNeil Pharmaceutical Inc, GlaxoSmithKline, and Bristol-Myers Squibb. The Argentina survey—Estudio Argentino de Epidemiología en Salud Mental—was supported by a grant from the Argentinian Ministry of Health (Ministerio de Salud de la Nación) (2002-17270/13-5). The 2007 Australian National Survey of Mental Health and Wellbeing is funded by the Australian Government Department of Health and Ageing. The São Paulo Megacity Mental Health Survey is supported by the State of São Paulo Research Foundation (FAPESP) Thematic Project grant 03/00204-3. The Bulgarian Epidemiological Study of Common Mental Disorders (EPIBUL) is supported by the Ministry of Health and the National Center for Public Health Protection. The EPIBUL 2, conducted in 2016 to 2017, is supported by the Ministry of Health and European Economic Area grants. The Mental Health Study Medellín–Colombia was carried out and supported jointly by the Center for Excellence on Research in Mental Health (CES University) and the Secretary of Health of Medellín. Implementation of the Iraq Mental Health Survey (IMHS) and data entry were carried out by the staff of the Iraqi Ministry of Health and Ministry of Planning with direct support from the Iraqi IMHS team with funding from both Japanese and European Funds through United Nations Development Group Iraq Trust Fund. The Israel National Health Survey is funded by the Ministry of Health with support from the Israel National Institute for Health Policy and Health Services Research and the National Insurance Institute of Israel. The Lebanese Evaluation of the Burden of Ailments and Needs of the Nation is supported by the Lebanese Ministry of Public Health, the WHO (Lebanon), the National Institute of Health/Fogarty International Center (R03 TW006481-01), anonymous private donations to the Institute for Development, Research, Advocacy and Applied Care, Lebanon, and unrestricted grants from Algorithm, AstraZeneca, Benta Pharma Industries, Bella Pharma, Eli Lilly and Company, GlaxoSmithKline, Lundbeck, Novartis, OmniPharma, Pfizer, Phenicia Pharmaceuticals, Servier, and United Planning Organization. The Nigerian Survey of Mental Health and Wellbeing is supported by the WHO (Geneva), the WHO (Nigeria), and the Federal Ministry of Health, Abuja, Nigeria. The Northern Ireland Study of Mental Health was funded by the Health & Social Care Research & Development Division of the Public Health Agency. The Polish project Epidemiology of Mental Health and Access to Care–EZOP Project (PL 0256) was supported by

Iceland, Liechtenstein, and Norway through funding from the European Economic Area Financial Mechanism and the Norwegian Financial Mechanism. The EZOP project was cofinanced by the Polish Ministry of Health. The Portuguese Mental Health Study was carried out by the Department of Mental Health, Faculty of Medical Sciences, NOVA University of Lisbon, with collaboration of the Portuguese Catholic University, and was funded by Champalimaud Foundation, Gulbenkian Foundation, Foundation for Science and Technology, and the Ministry of Health. The Romania WMH study projects “Policies in Mental Health Area” and “National Study Regarding Mental Health and Services Use” were carried out by National School of Public Health & Health Services Management (formerly the National Institute for Research & Development in Health), with technical support of Metro Media Transilvania, the National Institute of Statistics–National Centre for Training in Statistics, SC Cheyenne Services SRL, and Statistics Netherlands, and were funded by the Ministry of Public Health (formerly Ministry of Health) with supplemental support from Eli Lilly Romania SRL. The Saudi National Mental Health Survey was conducted by the King Salman Center for Disability Research. It is funded by Saudi Basic Industries Corporation, King Abdulaziz City for Science and Technology, Ministry of Health (Saudi Arabia), and King Saud University. Funding in-kind was provided by King Faisal Specialist Hospital and Research Centre, the Ministry of Economy and Planning, and the General Authority for Statistics. The Shenzhen Mental Health Survey is supported by the Shenzhen Bureau of Health and the Shenzhen Bureau of Science, Technology, and Information. The Psychiatric Enquiry to General Population in Southeast Spain–Murcia (PEGASUS–Murcia) Project was financed by the Regional Health Authorities of Murcia (Servicio Murciano de Salud and Consejería de Sanidad y Política Social) and Fundación para la Formación e Investigación Sanitarias de Murcia. Dr Laura Helena Andrade is supported by the Brazilian Council for Scientific and Technological Development (CNPq grant 307784/2016-9) and the State of São Paulo Research Foundation (FAPESP; Project Saúde mental, migração e São Paulo Megacity–M3SP; grant 16/50307-3).

Role of the Funder/Sponsor: The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Group Information: The WHO World Mental Health Survey collaborators are Sergio Aguilar-Gaxiola, MD, PhD, University of California, Davis; Ali Al-Hamzawi, MD, Al-Qadisiya University; Mohammed Salih Al-Kaisy, MD, Ibn Sina Teaching Hospital; Jordi Alonso, MD, PhD, IMIM-Hospital del Mar Medical Research Institute; Laura Helena Andrade, MD, PhD, Universidade de São Paulo; Lukoye Atwoli, MD, PhD, Moi University; Corina Benjet, PhD, National Institute of Psychiatry Ramón de la Fuente Muñiz; Guilherme Borges, ScD, National Institute of Psychiatry Ramón de la Fuente Muñiz; Evelyn J. Bromet, PhD, Stony Brook University; Ronny Bruffaerts, PhD, Katholieke Universiteit Leuven; Brendan Bunting, PhD, Ulster University; José Miguel Caldas-de-Almeida, MD, PhD, University of Lisbon; Graça Cardoso, MD, PhD; University of Lisbon; Somnath Chatterji, MD, WHO; Alfredo H. Cía, MD, Anxiety Disorders Center;

Louisa Degenhardt, PhD, University of New South Wales; Koen Demyttenaere, MD, PhD, Katholieke Universiteit Leuven; Silvia Florescu, MD, PhD, National School of Public Health, Management and Development; Giovanni de Girolamo, MD, IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli; Oye Gureje, MD, DSc, FRCPsych, University of Ibadan, Nigeria; Josep Maria Haro, MD, PhD, Parc Sanitari Sant Joan de Déu; Meredith Harris, PhD, The University of Queensland; Hristo Hinkov, MD, PhD, National Center of Public Health and Analyses; Chiyi Hu, MD, PhD, Shenzhen Institute of Mental Health; Peter de Jonge, PhD, University of Groningen; Aimee Nasser Karam, PhD, Institute for Development, Research, Advocacy & Applied Care; Elie G. Karam, MD, St George Hospital University Medical Center; Norito Kawakami, MD, DMSc, The University of Tokyo; Ronald C. Kessler, PhD, Harvard Medical School; Andrzej Kiejna, MD, PhD, University of Lower Silesia; Viviane Kovess-Masfety, MD, PhD, Paris Descartes University; Sing Lee, MB, BS, Chinese University of Hong Kong; Jean-Pierre Lepine, MD, Hôpital Lariboisière-Fernand Widal; John McGrath, MD, PhD, The University of Queensland; Maria Elena Medina-Mora, PhD, National Institute of Psychiatry Ramón de la Fuente Muñiz; Zeina Mneimneh, PhD, University of Michigan; Jacek Moskalewicz, PhD, Institute of Psychiatry and Neurology; Fernando Navarro-Mateu, MD, PhD, Servicio Murciano de Salud; Marina Piazza, MPH, ScD, Instituto Nacional de Salud, Peru; José Posada-Villa, MD, Colegio Mayor de Cundinamarca University; Kate M. Scott, PhD, University of Otago; Tim Slade, PhD, University of Sydney; Juan Carlos Stagnaro, MD, PhD, Universidad de Buenos Aires; Dan J. Stein, FRCPsych, PhD, University of Cape Town; Margreet ten Have, PhD, Trimbos-Instituut; Yolanda Torres, MPH, DraHC, CES University; Maria Carmen Viana, MD, PhD, Federal University of Espírito Santo; Daniel V. Vigo, MD, DrPH, University of British Columbia; Harvey Whiteford, MBBS, PhD, University of Queensland; David R. Williams, MPH, PhD, Harvard T.H. Chan School of Public Health; Bogdan Wojtyniak, ScD, National Institute of Public Health-National Institute of Hygiene.

Disclaimer: The views and opinions expressed in this report are those of the authors and should not be construed to represent the views of the WHO, other sponsoring organizations, agencies, or governments.

Additional Contributions: We thank the staff of the WMH Data Collection and Data Analysis Coordination Centres for assistance with instrumentation, fieldwork, and consultation on data analysis.

Additional Information: A complete list of all within-country and cross-national WMH publications can be found at <http://www.hcp.med.harvard.edu/wmh>.

REFERENCES

1. GBD 2017 DALYs and HALE Collaborators. Global, regional, and national disability-adjusted life-years (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*. 2018;392(10159):1859-1922. doi:10.1016/S0140-6736(18)32335-3
2. Kessler RC, Bromet EJ. The epidemiology of depression across cultures. *Annu Rev Public Health*.

2013;34:119-138. doi:10.1146/annurev-publhealth-031912-114409

3. Bromet E, Andrade LH, Hwang I, et al. Cross-national epidemiology of DSM-IV major depressive episode. *BMC Med*. 2011;9:90. doi:10.1186/1741-7015-9-90
4. Thornicroft G, Chatterji S, Evans-Lacko S, et al. Undertreatment of people with major depressive disorder in 21 countries. *Br J Psychiatry*. 2017;210(2):119-124. doi:10.1192/bjp.bp.116.188078
5. Andrews G, Issakidis C, Sanderson K, Corry J, Lapsley H. Utilising survey data to inform public policy: comparison of the cost-effectiveness of treatment of ten mental disorders. *Br J Psychiatry*. 2004;184:526-533. doi:10.1192/bjp.184.6.526
6. Cuijpers P. The patient perspective in research on major depression. *BMC Psychiatry*. 2011;11:89. doi:10.1186/1471-244X-11-89
7. Cuijpers P. Targets and outcomes of psychotherapies for mental disorders: an overview. *World Psychiatry*. 2019;18(3):276-285. doi:10.1002/wps.20661
8. Jelinek L, Moritz S, Hauschildt M. Patients' perspectives on treatment with Metacognitive Training for Depression (D-MCT): results on acceptability. *J Affect Disord*. 2017;221:17-24. doi:10.1016/j.jad.2017.06.003
9. Donabedian A. The quality of care: how can it be assessed? *JAMA*. 1988;260(12):1743-1748. doi:10.1001/jama.1988.03410120089033
10. Berwick DM. What "patient-centered" should mean: confessions of an extremist. *Health Aff (Millwood)*. 2009;28(4):w555-w565. doi:10.1377/hlthaff.28.4.w555
11. Edlund MJ, Pettiford AG, Hampton J, et al. Adolescents' assessments of the helpfulness of treatment for major depression: results from a national survey. *Psychiatr Serv*. 2015;66(10):1064-1073. doi:10.1176/appi.ps.201400018
12. Wang J, Patten SB. Perceived effectiveness of mental health care provided by primary-care physicians and mental health specialists. *Psychosomatics*. 2007;48(2):123-127. doi:10.1176/appi.psy.48.2.123
13. Kuramoto-Crawford SJ, Han B, Jacobus-Kantor L, Mojtabai R. Differences in patients' perceived helpfulness of depression treatment provided by general medical providers and specialty mental health providers. *Gen Hosp Psychiatry*. 2015;37(4):340-346. doi:10.1016/j.genhosppsych.2015.04.006
14. Colman E, Missinne S, Bracke P. The role of perceived helpfulness in predicting subjective unmet need and the frequency of health care use. *Arch Psychiatr Nurs*. 2014;28(1):43-49. doi:10.1016/j.apnu.2013.10.007
15. Alang SM, McAlpine DD. Pathways to mental health services and perceptions about the effectiveness of treatment. *Soc Ment Health*. 2018;9(3):388-407. doi:10.1177/2156689318802341
16. Lorenzo-Blanco EI, Delva J. Examining lifetime episodes of sadness, help seeking, and perceived treatment helpfulness among US Latino/as. *Community Ment Health J*. 2012;48(5):611-626. doi:10.1007/s10597-011-9426-5
17. ten Have M, de Graaf R, van Dorsselaer S, Beekman A. Lifetime treatment contact and delay in treatment seeking after first onset of a mental

disorder. *Psychiatr Serv*. 2013;64(10):981-989. doi:10.1176/appi.ps.201200454

18. Wang PS, Angermeyer M, Borges G, et al. Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry*. 2007;6(3):177-185.
19. Wang PS, Berglund P, Olfson M, Pincus HA, Wells KB, Kessler RC. Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):603-613. doi:10.1001/archpsyc.62.6.603
20. Bunting BP, Murphy SD, O'Neill SM, Ferry FR. Lifetime prevalence of mental health disorders and delay in treatment following initial onset: evidence from the Northern Ireland Study of Health and Stress. *Psychol Med*. 2012;42(8):1727-1739. doi:10.1017/S0033291711002510
21. Malhi GS, Mann JJ. Depression. *Lancet*. 2018;392(10161):2299-2312. doi:10.1016/S0140-6736(18)31948-2
22. Fikretoglu D, Liu A, Pedlar D, Brunet A. Patterns and predictors of treatment delay for mental disorders in a nationally representative, active Canadian military sample. *Med Care*. 2010;48(1):10-17. doi:10.1097/MLR.Ob013e3181bd4bf9
23. Simon GE, Stewart C, Hunkeler EM, et al. Care pathways before first diagnosis of a psychotic disorder in adolescents and young adults. *Am J Psychiatry*. 2018;175(5):434-442. doi:10.1176/appi.ajp.2017.17080844
24. Cusack J, Deane FP, Wilson CJ, Ciarrochi J. Emotional expression, perceptions of therapy, and help-seeking intentions in men attending therapy services. *Psychol Men Masc*. 2006;7(2):69-82. doi:10.1037/1524-9220.7.2.69
25. Hora SC, Dodd NG, Hora JA. The use of decomposition in probability assessments of continuous variables. *J Behav Decis Making*. 1993;6:133-147. doi:10.1002/bdm.3960060205
26. Kessler RC, Üstün TB. The World Mental Health (WMH) Survey Initiative Version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *Int J Methods Psychiatr Res*. 2004;13(2):93-121. doi:10.1002/mpr.168
27. The World Mental Health Survey Initiative. Accessed April 7, 2020. <https://www.hcp.med.harvard.edu/wmh/>
28. Harvard Medical School. Table: study institutional review boards (IRB) and consent features across WMH Survey Initiative. Accessed April 18, 2020. https://www.hcp.med.harvard.edu/wmh/ftpdir/WMH_Ethics_approval.pdf
29. Harkness J, Pennell B, Villar A, Gebler N, Aguilar-Gaxiola S, Bilgen I. Translation procedures and translation assessment in the World Mental Health Survey Initiative. In: Kessler RC, Üstün TB, eds. *The WHO World Mental Health Surveys: Global Perspectives on the Epidemiology of Mental Disorders*. Cambridge University Press; 2008:91-113.
30. Kessler RC, Akiskal HS, Angst J, et al. Validity of the assessment of bipolar spectrum disorders in the WHO CIDI 3.0. *J Affect Disord*. 2006;96(3):259-269. doi:10.1016/j.jad.2006.08.018
31. First MB, Spitzer RL, Gibbon M, Williams JBW. *Structured Clinical Interview for DSM-IV Axis I Disorders, Research Version, Non-patient Edition*

(SCID-I/NP). Biometrics Research, New York State Psychiatric Institute; 2002.

32. Haro JM, Arbabzadeh-Bouchez S, Brugha TS, et al. Concordance of the Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) with standardized clinical assessments in the WHO World Mental Health surveys. *Int J Methods Psychiatr Res*. 2006;15(4):167-180. doi:10.1002/mpr.196
33. Coplan JD, Aaronson CJ, Panthangi V, Kim Y. Treating comorbid anxiety and depression: psychosocial and pharmacological approaches. *World J Psychiatry*. 2015;5(4):366-378. doi:10.5498/wjpv.5.i4.366
34. Moffitt TE, Harrington H, Caspi A, et al. Depression and generalized anxiety disorder: cumulative and sequential comorbidity in a birth cohort followed prospectively to age 32 years. *Arch Gen Psychiatry*. 2007;64(6):651-660. doi:10.1001/archpsyc.64.6.651
35. Pettinati HM, O'Brien CP, Dundon WD. Current status of co-occurring mood and substance use disorders: a new therapeutic target. *Am J Psychiatry*. 2013;170(1):23-30. doi:10.1176/appi.ajp.2012.12010112
36. Kraus C, Kadriu B, Lanzemberger R, Zarate CA Jr, Kasper S. Prognosis and improved outcomes in major depression: a review. *Transl Psychiatry*. 2019;9(1):127. doi:10.1038/s41398-019-0460-3
37. Hillhouse TM, Porter JH. A brief history of the development of antidepressant drugs: from monoamines to glutamate. *Exp Clin Psychopharmacol*. 2015;23(1):1-21. doi:10.1037/a0038550
38. Halli SS, Rao KV, Halli SS. *Advanced Techniques of Population Analysis*. Plenum; 1992. doi:10.1007/978-1-4757-9030-6
39. Willett JB, Singer JD. Investigating onset, cessation, relapse, and recovery: why you should, and how you can, use discrete-time survival analysis to examine event occurrence. *J Consult Clin Psychol*. 1993;61(6):952-965. doi:10.1037/0022-006X.61.6.952
40. Heeringa SG, Wells JE, Hubbard F, et al. Sample designs and sampling procedures. In: Kessler RC, Üstün TB, eds. *The WHO World Mental Health Surveys: Global Perspectives on the Epidemiology of Mental Disorders*. Cambridge University Press; 2008:14-32.
41. Wolter K. *Introduction to Variance Estimation*. Springer-Verlag; 1985.
42. SAS/STAT® 14.3 Software Version 9.4 for Unix [computer program]. Version 9.4. Cary, NC: SAS Institute Inc; 2016.
43. Ford KL, Bryant AN, Kim G. Age differences in satisfaction with and perceived benefit from mental health services: results from the collaborative psychiatric epidemiology surveys. *Int J Geriatr Psychiatry*. 2013;28(8):831-840. doi:10.1002/gps.3889
44. Karlin BE, Duffy M, Gleaves DH. Patterns and predictors of mental health service use and mental illness among older and younger adults in the United States. *Psychol Serv*. 2008;5(3):275-294. doi:10.1037/1541-1559.5.3.275
45. Wang PS, Berglund P, Kessler RC. Recent care of common mental disorders in the United States: prevalence and conformance with evidence-based recommendations. *J Gen Intern Med*. 2000;15(5):284-292. doi:10.1046/j.1525-1497.2000.9908044.x
46. Jorm AF, Patten SB, Brugha TS, Mojtabai R. Has increased provision of treatment reduced the prevalence of common mental disorders? review of the evidence from four countries. *World Psychiatry*. 2017;16(1):90-99. doi:10.1002/wps.20388
47. Frey BS. Psychology: happy people live longer. *Science*. 2011;331(6017):542-543. doi:10.1126/science.1201060
48. Xu J, Roberts RE. The power of positive emotions: it's a matter of life or death—subjective well-being and longevity over 28 years in a general population. *Health Psychol*. 2010;29(1):9-19. doi:10.1037/a0016767
49. Bai S, Guo W, Feng Y, et al. Efficacy and safety of anti-inflammatory agents for the treatment of major depressive disorder: a systematic review and meta-analysis of randomised controlled trials. *J Neural Neurosurg Psychiatry*. 2020;91(1):21-32. doi:10.1136/jnnp-2019-320912
50. Rosenblat JD, Simon GE, Sachs GS, et al. Treatment effectiveness and tolerability outcomes that are most important to individuals with bipolar and unipolar depression. *J Affect Disord*. 2019;243:116-120. doi:10.1016/j.jad.2018.09.027
51. Glick M, Zigler E. Premorbid competence and the courses and outcomes of psychiatric disorders. In: Rolf J, Masten A, Cicchetti D, Nuechterlein K, Weintraub S, eds. *Risk and Protective Factors in Psychopathology*. Cambridge University Press; 1990:497-513. doi:10.1017/CBO9780511752872.028
52. Kazdin AE, Whitley MK. Pretreatment social relations, therapeutic alliance, and improvements in parenting practices in parent management training. *J Consult Clin Psychol*. 2006;74(2):346-355. doi:10.1037/0022-006X.74.2.346
53. Ankuta GY, Abeles N. Client satisfaction, clinical significance, and meaningful change in psychotherapy. *Prof Psychol Res Pr*. 1993;24:70-74. doi:10.1037/0735-7028.24.1.70
54. Greenberg RP, Constantino MJ, Bruce N. Are patient expectations still relevant for psychotherapy process and outcome? *Clin Psychol Rev*. 2006;26(6):657-678. doi:10.1016/j.cpr.2005.03.002
55. Joyce AS, Piper WE. Expectancy, the therapeutic alliance, and treatment outcome in short-term individual psychotherapy. *J Psychother Pract Res*. 1998;7(3):236-248.
56. Meyer B, Pilkonis PA, Krupnick JL, Egan MK, Simmens SJ, Sotsky SM. Treatment expectancies, patient alliance, and outcome: further analyses from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. *J Consult Clin Psychol*. 2002;70(4):1051-1055. doi:10.1037/0022-006X.70.4.1051
57. Price M, Anderson PL. Outcome expectancy as a predictor of treatment response in cognitive behavioral therapy for public speaking fears within social anxiety disorder. *Psychotherapy (Chic)*. 2012;49(2):173-179. doi:10.1037/a0024734
58. Kazdin AE. Perceived barriers to treatment participation and treatment acceptability among antisocial children and their families. *J Child Fam Stud*. 2000;9(2):157-174. doi:10.1023/A:1009414904228
59. Kazdin AE, McWhinney E. Therapeutic alliance, perceived treatment barriers, and therapeutic change in the treatment of children with conduct problems. *J Child Fam Stud*. 2018;27(1):240-252. doi:10.1007/s10826-017-0869-3
60. Takayanagi Y, Spira AP, Roth KB, Gallo JJ, Eaton WW, Mojtabai R. Accuracy of reports of lifetime mental and physical disorders: results from the Baltimore Epidemiological Catchment Area study. *JAMA Psychiatry*. 2014;71(3):273-280. doi:10.1001/jamapsychiatry.2013.3579
61. Barsky AJ. Forgetting, fabricating, and telescoping: the instability of the medical history. *Arch Intern Med*. 2002;162(9):981-984. doi:10.1001/archinte.162.9.981
62. Kessler RC. The potential of predictive analytics to provide clinical decision support in depression treatment planning. *Curr Opin Psychiatry*. 2018;31(1):32-39. doi:10.1097/YCO.0000000000000377
63. Cohen ZD, DeRubeis RJ. Treatment selection in depression. *Annu Rev Clin Psychol*. 2018;14:209-236. doi:10.1146/annurev-clinpsy-050817-084746
64. Rush AJ, Trivedi MH, Wisniewski SR, et al. Acute and longer-term outcomes in depressed outpatients requiring one or several treatment steps: a STAR*D report. *Am J Psychiatry*. 2006;163(11):1905-1917. doi:10.1176/ajp.2006.163.11.1905
65. Demyttenaere K, Frank E, Castle D, Cindik-Herbrüggen E. Integrating patients' expectations into the management of their depression: report of a symposium at the European College of Neuropsychopharmacology Congress. *Adv Ther*. 2019;36(suppl 3):73-90. doi:10.1007/s12325-019-01038-w
66. Barr PJ, Forcino RC, Mishra M, Blitzer R, Elwyn G. Competing priorities in treatment decision-making: a US national survey of individuals with depression and clinicians who treat depression. *BMJ Open*. 2016;6(1):e009585. doi:10.1136/bmjopen-2015-009585
67. Lewis CC, Boyd M, Puspitasari A, et al. Implementing measurement-based care in behavioral health: a review. *JAMA Psychiatry*. 2019;76(3):324-335. doi:10.1001/jamapsychiatry.2018.3329
68. Dua T, Barbui C, Clark N, et al. Evidence-based guidelines for mental, neurological, and substance use disorders in low- and middle-income countries: summary of WHO recommendations. *PLoS Med*. 2011;8(11):e1001122. doi:10.1371/journal.pmed.1001122
69. Eaton J, McCay L, Semrau M, et al. Scale up of services for mental health in low-income and middle-income countries. *Lancet*. 2011;378(9802):1592-1603. doi:10.1016/S0140-6736(11)60891-X
70. Shidhaye R, Lund C, Chisholm D. Closing the treatment gap for mental, neurological and substance use disorders by strengthening existing health care platforms: strategies for delivery and integration of evidence-based interventions. *Int J Ment Health Syst*. 2015;9:40. doi:10.1186/s13033-015-0031-9