

# Delay and failure in treatment seeking after first onset of mental disorders in the World Health Organization's World Mental Health Survey Initiative

PHILIP S. WANG<sup>1</sup>, MATTHIAS ANGERMEYER<sup>2</sup>, GUILHERME BORGES<sup>3</sup>, RONNY BRUFFAERTS<sup>4</sup>, WAI TAT CHIU<sup>5</sup>, GIOVANNI DE GIROLAMO<sup>6</sup>, JOHN FAYYAD<sup>7</sup>, OYE GUREJE<sup>8</sup>, JOSEP MARIA HARO<sup>9</sup>, YUEQIN HUANG<sup>10</sup>, RONALD C. KESSLER<sup>5</sup>, VIVIANE KOVLESS<sup>11</sup>, DAPHNA LEVINSON<sup>12</sup>, YOSHIBUMI NAKANE<sup>13</sup>, MARK A. OAKLEY BROWNE<sup>14</sup>, JOHAN H. ORMEL<sup>15</sup>, JOSÉ POSADA-VILLA<sup>16</sup>, SERGIO AGUILAR-GAXIOLA<sup>17</sup>, JORDI ALONSO<sup>18</sup>, SING LEE<sup>19</sup>, STEVEN HEERINGA<sup>20</sup>, BETH-ELLEN PENNELL<sup>20</sup>, SOMNATH CHATTERJI<sup>21</sup>, T. BEDIRHAN ÜSTÜN<sup>21</sup>, FOR THE WHO WORLD MENTAL HEALTH SURVEY CONSORTIUM

<sup>1</sup>Division of Service and Intervention Research, National Institute of Mental Health, 6001 Executive Blvd., Bethesda, MD 20892, USA; <sup>2</sup>Department of Psychiatry, University of Leipzig, Germany; <sup>3</sup>Department of Epidemiology, National Institute of Psychiatry, Mexico City, Mexico; <sup>4</sup>Department of Neurosciences and Psychiatry, University Hospital Gasthuisberg, Leuven, Belgium; <sup>5</sup>Department of Health Care Policy, Harvard Medical School, Boston, MA, USA; <sup>6</sup>Department of Mental Health, Local Health Unit, Bologna, Italy; <sup>7</sup>Institute for Development, Research, Advocacy and Applied Care (IDRAAC), Beirut, Lebanon; <sup>8</sup>Department of Psychiatry, University College Hospital, Ibadan, Nigeria; <sup>9</sup>Sant Joan de Deu – Mental Health Services, Barcelona, Spain; <sup>10</sup>Institute of Mental Health, Peking University, Beijing, People's Republic of China; <sup>11</sup>MGEN Foundation for Public Health, Paris, France; <sup>12</sup>Research and Planning, Mental Health Services, Ministry of Health, Jerusalem, Israel; <sup>13</sup>Division of Human Sociology, Nagasaki International University Graduate School, Nagasaki, Japan; <sup>14</sup>Department of Rural and Indigenous Health, School of Rural Health, Faculty of Medicine, Nursing and Health Sciences, Monash University, Victoria, Australia; <sup>15</sup>Netherlands Institute of Mental Health and Addiction, Utrecht, The Netherlands; <sup>16</sup>Colegio Mayor de Cundinamarca University, Saldarraga Concha Foundation, Bogota, Colombia; <sup>17</sup>Center for Reducing Health Disparities, UC Davis School of Medicine, Sacramento, CA, USA; <sup>18</sup>Health Services Research Unit, Institut Municipal d'Investigació Mèdica (IMIM), Barcelona, Spain; <sup>19</sup>Department of Psychiatry, University of Hong Kong, People's Republic of China; <sup>20</sup>Institute for Social Research, University of Michigan, Ann Arbor, MI, USA; <sup>21</sup>Global Programme on Evidence for Health Policy, World Health Organization, Geneva, Switzerland

*Data are presented on patterns of failure and delay in making initial treatment contact after first onset of a mental disorder in 15 countries in the World Health Organization (WHO)'s World Mental Health (WMH) Surveys. Representative face-to-face household surveys were conducted among 76,012 respondents aged 18 and older in Belgium, Colombia, France, Germany, Israel, Italy, Japan, Lebanon, Mexico, the Netherlands, New Zealand, Nigeria, People's Republic of China (Beijing and Shanghai), Spain, and the United States. The WHO Composite International Diagnostic Interview (CIDI) was used to assess lifetime DSM-IV anxiety, mood, and substance use disorders. Ages of onset for individual disorders and ages of first treatment contact for each disorder were used to calculate the extent of failure and delay in initial help seeking. The proportion of lifetime cases making treatment contact in the year of disorder onset ranged from 0.8 to 36.4% for anxiety disorders, from 6.0 to 52.1% for mood disorders, and from 0.9 to 18.6% for substance use disorders. By 50 years, the proportion of lifetime cases making treatment contact ranged from 15.2 to 95.0% for anxiety disorders, from 7.9 to 98.6% for mood disorders, and from 19.8 to 86.1% for substance use disorders. Median delays among cases eventually making contact ranged from 3.0 to 30.0 years for anxiety disorders, from 1.0 to 14.0 years for mood disorders, and from 6.0 to 18.0 years for substance use disorders. Failure and delays in treatment seeking were generally greater in developing countries, older cohorts, men, and cases with earlier ages of onset. These results show that failure and delays in initial help seeking are pervasive problems worldwide. Interventions to ensure prompt initial treatment contacts are needed to reduce the global burdens and hazards of untreated mental disorders.*

**Key words:** Treatment seeking, anxiety disorders, mood disorders, substance use disorders

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Worldwide, mental disorders inflict tremendous morbidity, mortality, and impairment (1,2). Although the armamentarium of effective treatments keeps growing, few nations seem able or willing to pay for their widespread use (3). Indeed, the majority of people with recent episodes of mental illnesses continue to go untreated, even in economically-advantaged societies (4). This reality has left many nations searching for strategies to use what limited resources they do have as efficiently as possible in an effort to alleviate burden given current constraints (5).

One promising strategy is to emphasize use of treatment resources earlier in the disease courses of affected individuals, before many negative sequelae from mental illnesses develop (6). Such an approach is supported by several lines of research. Data from preclinical studies suggest that neu-

ral “kindling” can cause untreated disorders to become more frequent, spontaneous, severe, and treatment refractory (7). Epidemiologic studies suggest that school and job failure, teenage child-bearing, and early, violent, or unstable marriages are associated with early-onset untreated mental disorders (8-10). Single disorders often progress to complex comorbid disorders that are more difficult to treat and more likely to recur than less complex conditions (11). In addition, clinical trials have shown that timely intervention can prevent suicidality (12).

A crucial first step in reducing delays in seeking treatment after first onset of a mental disorder is to document the current state of affairs with regard to the delays that currently exist in the population and the predictors of those delays. Unfortunately, very little is known about ini-

tial treatment contact, as mental health services research has focused on recent treatment of current episodes rather than initial treatment of incident cases (13). However, the few existing studies that have examined initial treatment seeking have found that many lifetime cases eventually make contact, but usually after delaying years from when the disorders began (14-16).

A second critical step is identifying what nations can concretely do to shorten periods of untreated mental illness. Although countries employ a wide variety of national policies, delivery system designs, and means of financing mental health services, the impacts of these on delays in initial treatment seeking are unknown. Perhaps the only way to shed light on these impacts is to compare delays across countries with different policy, delivery system, and financing features (3,17). Unfortunately, very few such cross-national studies of delays have been conducted (14,15).

The current report begins to address these issues by analyzing data from the World Health Organization (WHO)'s World Mental Health (WMH) Initiative, a program of coordinated surveys being conducted in 28 developed and developing countries (1). We start by constructing cumulative lifetime probability of treatment contact curves to estimate probabilities of help-seeking for mental disorders and the typical duration of delays. We do so separately for 15 countries in which WMH surveys are now complete. To begin to understand potential determinants as well as developing and targeting future interventions, we also examine correlates of failure to make initial treatment contact.

## METHODS

### Samples

Countries with completed WMH surveys used in these analyses included Belgium, Colombia, France, Germany, Israel, Italy, Japan, Lebanon, Mexico, the Netherlands, New Zealand, Nigeria, People's Republic of China (Beijing and Shanghai), Spain and the United States. Employing designations made by the World Bank (18), China, Colombia, Lebanon, Mexico and Nigeria were categorized as less developed and the remainder as developed. Trained lay interviewers conducted all surveys face-to-face among multi-stage household probability samples. Individual country sample sizes ranged from 2,372 in the Netherlands to 12,992 in New Zealand, and the total sample size was 76,012. Response rates in individual countries ranged from 45.9% in France to 87.7% in Colombia and the weighted average response rate across all countries was 71.1%. Details on response rates and other design issues are presented in the paper by Kessler et al (19).

Part I of the survey contained core diagnostic assessments and was completed by all respondents. All Part I respondents who met criteria for any disorder and a sub-sample of approximately 25% of others were administered Part II, which

assessed correlates, service use, and disorders of secondary interest. Details concerning the standardized survey methods (e.g., interviewer training procedures, WHO translation protocols for all study materials, and quality control procedures for interviewer and data accuracy) employed in all WMH surveys are available elsewhere (1,20,21). Informed consent was obtained prior to beginning all interviews. Informed consent procedures and human subjects safeguards were approved by the Institutional Review Boards of organizations coordinating the survey in each country.

### Diagnostic assessments

The WHO's Composite International Diagnostic Interview (CIDI) Version 3.0 (22,23) was used to assess mental disorders using DSM-IV criteria. Disorders considered in this report include mood disorders (major depressive episode, dysthymia, and bipolar disorder I or II, or sub-threshold bipolar disorder), anxiety disorders (panic disorder, specific phobia, social phobia, generalized anxiety disorder), and substance use disorders (alcohol and drug abuse and dependence). Lifetime prevalence and age of onset were assessed separately for each disorder (19). All diagnoses are considered with organic exclusions and without diagnostic hierarchy rules.

Blinded clinical reappraisal studies using the Structured Clinical Interview for DSM-IV (SCID) (25) have shown generally good concordance between DSM-IV diagnoses based on the CIDI 3.0 and the SCID for anxiety, mood, and substance use disorders (22). The recent clinical reappraisal studies carried out in four WMH countries (the United States, Italy, Spain, and France, with total N=468) have provided evidence for a good concordance between CIDI-3.0 diagnoses and diagnoses based on blinded re-interviews, with area under the receiver operator characteristics curve ranging between 0.71 and 0.93 for lifetime mood/anxiety disorders, and between 0.83 and 0.88 for 12-month mood/anxiety disorders (26).

### Initial treatment contacts

In each CIDI diagnostic section, respondents were asked whether they ever in their life talked to a medical doctor or other professional about the disorder under investigation. When asking this question, interviewers clarified that the term "other professional" was intended to apply broadly and include a wide range such as psychologists, counselors, spiritual advisors, herbalists, acupuncturists, and any other healing professionals. Respondents who reported that they ever talked to any professional about the disorder being assessed were then asked how old they were the first time they did so. Responses to this question were used to define ages of first treatment contact. Data from WMH countries (e.g., South Africa, Ukraine) in which dis-

order-specific questions about treatment were not asked are not included in this analysis.

### Predictor variables

Predictors included age of onset of the disorder being assessed, cohort, and gender. Age of onset was categorized separately for each country as early (25th percentile), early-average (50th percentile), late-average (75th percentile), and late onset. Cohort was defined by age at interview and categorized as 18-34, 35-49, 50-64, 65+ years.

### Analysis procedures

Estimated projections of the cumulative probability of treatment contact in the year of disorder onset and by 50 years after onset were made using the actuarial method of survival analysis (27) implemented in SAS (version 8.2, SAS Institute, Cary, N.C.). Separate curves were generated for each country. Typical durations of delay in initial treatment contact were defined as the median years from disorder onset to first treatment contact among cases that eventually made treatment contact. Correlates of treatment contact were examined separately for each disorder using discrete-time survival analysis (28) with person-year as the unit of analysis. Time-invariant predictors included age of onset of the disorder, cohort, and gender. The only time-varying

predictor was the number of years since first onset of the disorder. Models were estimated among all respondents with the disorder to identify predictors of ever making treatment contact. Effects of weighting and clustering on significance tests were adjusted for using the Taylor series linearization method (29) implemented in SUDAAN (version 8.0.1, Research Triangle Institute, N.C.). Wald  $\chi^2$  tests using Taylor series design-based coefficient variance-covariance matrices were used to make multivariate significance tests in the discrete-time survival analyses. Statistical significance was evaluated using .05 level, two-sided tests.

## RESULTS

### Cumulative probabilities and median delays in treatment contact

The first column of Table 1 presents the proportions of lifetime cases with anxiety disorders making treatment contact in the year of disorder onset. The proportion ranged from a low of 0.8% in Nigeria to a high of 36.4% in Israel, with an inter-quartile range (IQR: 25th -75th percentiles) of 3.6-19.8%. The proportions of lifetime cases with anxiety disorders making treatment contact by 50 years are shown in the second column of Table 1 and ranged from 15.2% in Nigeria to 95.0% in Germany (IQR 44.7-90.7%). The median duration of delay among cases with anxiety disorders that eventually made treatment contact is shown in the third col-

**Table 1** Proportional treatment contact in the year of onset of any anxiety disorder and median duration of delay among cases that subsequently made treatment contact

	Making treatment contact in year of onset, % (SE)	Making treatment contact by 50 years, % (SE)	Median duration of delay in years (SE)
<i>The Americas</i>			
Colombia	2.9 (0.6)	41.6 (3.9)	26.0 (1.5)
Mexico	3.6 (1.1)	53.2 (18.2)	30.0 (5.1)
USA	11.3 (0.7)	87.0 (2.4)	23.0 (0.6)
<i>Europe</i>			
Belgium	19.8 (2.8)	84.5 (4.9)	16.0 (3.5)
France	16.1 (1.8)	93.3 (1.9)	18.0 (1.8)
Germany	13.7 (1.8)	95.0 (2.3)	23.0 (2.3)
Italy	17.1 (2.1)	87.3 (8.5)	28.0 (2.2)
Netherlands	28.0 (3.7)	91.1 (2.8)	10.0 (1.6)
Spain	23.2 (2.0)	86.6 (5.2)	17.0 (3.2)
<i>Africa and Middle East</i>			
Israel	36.4 (0.9)	90.7 (1.3)	3.0 (0.1)
Lebanon	3.2 (1.1)	37.3 (11.5)	28.0 (3.9)
Nigeria	0.8 (0.5)	15.2 (2.6)	16.0 (4.2)
<i>Asia and the Pacific</i>			
Japan	11.2 (2.4)	63.1 (6.2)	20.0 (2.4)
PR China	4.2 (2.0)	44.7 (7.2)	21.0 (3.1)
<i>Oceania</i>			
New Zealand	12.5 (0.8)	84.2 (2.5)	21.0 (0.8)

**Table 2** Proportional treatment contact in the year of onset of any mood disorder and median duration of delay among cases that subsequently made treatment contact

	Making treatment contact in year of onset, % (SE)	Making treatment contact by 50 years, % (SE)	Median duration of delay in years (SE)
<i>The Americas</i>			
Colombia	18.7 (2.7)	66.6 (3.7)	9.0 (1.6)
Mexico	16.0 (2.2)	69.9 (8.5)	14.0 (3.1)
USA	35.4 (1.2)	94.8 (2.5)	4.0 (0.2)
<i>Europe</i>			
Belgium <sup>a</sup>	47.8 (2.7)	93.7 (2.5)	1.0 (0.3)
France <sup>a</sup>	42.7 (2.1)	98.6 (1.4)	3.0 (0.3)
Germany <sup>a</sup>	40.4 (3.8)	89.1 (5.0)	2.0 (0.4)
Italy <sup>a</sup>	28.8 (3.0)	63.5 (5.9)	2.0 (0.5)
Netherlands <sup>a</sup>	52.1 (2.9)	96.9 (1.7)	1.0 (0.3)
Spain <sup>a</sup>	48.5 (2.3)	96.4 (3.1)	1.0 (0.3)
<i>Africa and Middle East</i>			
Israel	31.9 (0.8)	92.7 (0.5)	6.0 (0.3)
Lebanon	12.3 (2.0)	49.2 (5.2)	6.0 (2.1)
Nigeria	6.0 (1.7)	33.3 (7.2)	6.0 (3.3)
<i>Asia and the Pacific</i>			
Japan	29.6 (4.0)	56.8 (7.3)	1.0 (0.7)
PR China	6.0 (2.2)	7.9 (2.6)	1.0 (2.0)
<i>Oceania</i>			
New Zealand	41.4 (1.3)	97.5 (1.0)	3.0 (0.2)

<sup>a</sup>Used major depressive episode instead of any mood disorder

umn of Table 1. Among the fraction of cases making treatment contact, delays were shortest in Israel (median delay of 3.0 years) and longest in Mexico (median delay of 30.0 years). There were statistically significant differences between countries ( $F_{15,726}=95,259.7$ ;  $p<0.001$ ) and generally longer delays in developing vs. developed countries (detailed results are not reported, but are available on request).

As shown in Table 2, the proportions of lifetime cases with mood disorders making treatment contact in the year of disorder onset ranged from lows of 6.0% in Nigeria and China to a high of 52.1% in the Netherlands (IQR 16.0-42.7%). The proportions of cases with mood disorders making treatment contact by 50 years ranged from 7.9% in China to 98.6% in France (IQR 56.8-96.4%). Among cases with mood disorders eventually making treatment contact, the median duration of delay was shortest in three Western European (Belgium, the Netherlands, and Spain) and two Asian (China and Japan) countries (median delay of 1.0 years in each) and longest in Mexico (median delay of 14.0 years). The delays among cases with mood disorders were significantly different across countries ( $F_{15,726}=47,368.1$ ;  $p<0.001$ ) (detailed results are not reported, but are available on request). Comparison of Tables 1 and 2 reveals that delays were generally shorter for mood than anxiety disorders.

The proportions of lifetime cases with substance use disorders making treatment contact in the year of disorder onset ranged from a low of 0.9% in Mexico to a high of 18.6% in Spain (IQR 2.8-13.2%) (see Table 3). By 50 years, the pro-

**Table 3** Proportional treatment contact in the year of onset of any substance use disorder and median duration of delay among cases that subsequently made treatment contact

	Making treatment contact in year of onset, % (SE)	Making treatment contact by 50 years, % (SE)	Median duration of delay in years (SE)
<i>The Americas</i>			
Colombia	3.6 (0.8)	23.1 (7.1)	11.0 (5.0)
Mexico	0.9 (0.5)	22.1 (4.8)	10.0 (3.3)
USA <sup>a</sup>	10.0 (0.8)	75.5 (3.8)	13.0 (1.2)
<i>Europe</i>			
Belgium	12.8 (4.8)	61.2 (17.7)	18.0 (5.8)
France	15.7 (5.4)	66.5 (14.1)	13.0 (3.7)
Germany	13.2 (5.7)	86.1 (8.6)	9.0 (3.9)
Italy	_b	_b	_b
Netherlands	15.5 (5.4)	66.6 (7.9)	9.0 (3.1)
Spain	18.6 (7.6)	40.1 (14.1)	6.0 (4.9)
<i>Africa and Middle East</i>			
Israel	2.0 (0.5)	48.0 (2.4)	12.0 (0.5)
Lebanon <sup>a</sup>	_b	_b	_b
Nigeria <sup>a</sup>	2.8 (1.7)	19.8 (7.2)	8.0 (1.8)
<i>Asia and the Pacific</i>			
Japan <sup>a</sup>	9.2 (5.1)	31.0 (7.8)	8.0 (4.6)
PR China <sup>a</sup>	2.8 (1.8)	25.7 (9.0)	17.0 (3.7)
<i>Oceania</i>			
New Zealand	6.3 (0.8)	84.8 (15.4)	17.0 (1.3)

<sup>a</sup>Assessed in the part II sample

<sup>b</sup>Disorder was omitted due to insufficient cases (n<30)

portions of cases with substance use disorders making treatment contact ranged from 19.8% in Nigeria to 86.1% in Germany (IQR 25.7-66.6%). Cases with substance use disorders eventually making treatment contact had the shortest delays in Spain (median delay of 6.0 years) and the longest in Belgium (median delay of 18.0 years). The delays among cases with substance use disorders were significantly different across countries ( $F_{15,726}=21,505.3$ ;  $p<0.001$ ) (detailed results are not reported, but are available on request). The delays among cases with substance use disorders appeared to be generally intermediate between those for mood and anxiety disorders.

### Correlates of lifetime treatment contact

Results from the discrete time survival models of lifetime treatment contact for anxiety disorders are shown in Table 4. Female gender was significantly associated with a higher likelihood of making initial treatment contact in four countries. Significant, monotonic relationships between being in younger cohorts and higher probabilities of treatment contact existed in 12 out of the 13 countries with significant cohort differences. Cases with earlier ages of onset of their anxiety disorders were significantly less likely to make treatment contact in 14 countries.

Correlates of lifetime treatment contact for mood disorders are shown in Table 5. Female gender was significantly associated with higher likelihoods of treatment contact in three countries. Significant, generally monotonic relationships between being in younger cohorts and higher probabilities of treatment contact existed in 10 countries. Earlier ages of onset were significantly associated with lower likelihoods of making treatment contact for mood disorders in 13 countries.

For substance use disorders, female gender was significantly associated with greater initial treatment contact in one country (see Table 6). There were significant, generally monotonic relationships between being in younger cohorts and higher probabilities of initial treatment contact in eight countries. Having an earlier age of onset was significantly associated with a lower likelihood of making treatment contact for substance use disorders in eight countries.

### DISCUSSION

Several potential limitations should be kept in mind when interpreting these results. Most important is the potential that respondents failed to recall events occurring over their lifetimes. For example, those not seeking treatment may have been more likely to forget or normalize symptoms than cases who sought treatment. Unfortunately, we cannot evaluate this possibility or whether it occurred differentially across countries. However, it is worth noting that, to the extent this occurred, we have underestimated failures and delays in initial treatment seeking.

**Table 4** Socio-demographic predictors of lifetime treatment contact for any anxiety disorder

Country	Sex		Cohort (age at interview)						Age of onset								
	Female		$\chi^2$	Age 18-34		Age 35-49		Age 50-64		$\chi^2$	Early		Early-average		Late-average		$\chi^2$
	OR	(95% CI)		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	
<i>The Americas</i>																	
Colombia	1.1	(0.7-1.8)	0.1	3.4	(1.4-8.2)	1.6	(0.8-3.3)	1.0	-	9.6	0.2	(0.1-0.3)	0.3	(0.2-0.6)	0.3	(0.1-0.5)	33.4
Mexico	1.1	(0.6-1.8)	0.1	2.3	(0.8-6.4)	2.3	(0.8-6.4)	1.0	-	2.6	0.2	(0.1-0.3)	0.2	(0.1-0.3)	0.2	(0.1-0.3)	59.1
USA	1.3	(1.0-1.6)	5.4	2.5	(1.9-3.3)	1.4	(1.1-1.8)	1.2	(0.9-1.6)	62.6	0.2	(0.2-0.2)	0.2	(0.2-0.3)	0.2	(0.2-0.3)	326.4
<i>Europe</i>																	
Belgium	1.2	(0.7-2.1)	0.4	4.7	(1.6-13.6)	3.0	(1.2-7.5)	1.3	(0.6-2.8)	14.8	0.1	(0.1-0.3)	0.1	(0.0-0.3)	0.2	(0.1-0.5)	63.5
France	1.5	(1.1-2.1)	8.8	4.5	(2.5-8.1)	2.3	(1.3-4.2)	1.3	(0.7-2.5)	52.2	0.2	(0.1-0.3)	0.2	(0.1-0.3)	0.3	(0.2-0.5)	82.4
Germany	1.5	(1.1-2.1)	6.6	4.5	(2.7-7.5)	2.3	(1.5-3.7)	1.5	(0.8-2.9)	59.8	0.2	(0.1-0.3)	0.2	(0.1-0.3)	0.2	(0.1-0.5)	43.5
Italy	1.1	(0.7-1.5)	0.1	2.6	(1.3-5.2)	2.1	(1.2-3.7)	1.4	(0.7-2.9)	16.0	0.1	(0.1-0.2)	0.1	(0.1-0.2)	0.3	(0.2-0.5)	101.8
Netherlands	1.1	(0.7-1.6)	0.2	3.0	(1.8-5.1)	2.5	(1.6-3.7)	1.0	-	26.8	0.1	(0.0-0.2)	0.1	(0.1-0.3)	0.4	(0.2-0.7)	52.0
Spain	1.0	(0.7-1.6)	0.0	3.3	(1.9-5.7)	2.0	(1.1-3.7)	0.8	(0.5-1.3)	38.5	0.1	(0.0-0.1)	0.1	(0.0-0.2)	0.2	(0.1-0.4)	96.2
<i>Africa and Middle East</i>																	
Israel	1.0	(0.6-1.5)	0.0	5.0	(1.8-13.9)	3.2	(1.4-7.4)	1.9	(0.9-4.0)	10.0	0.4	(0.2-1.0)	0.5	(0.3-1.1)	0.6	(0.3-1.2)	3.7
Lebanon	0.5	(0.2-1.2)	2.5	1.9	(0.2-20.0)	1.3	(0.1-11.3)	0.8	(0.1-6.9)	2.6	0.1	(0.0-0.3)	0.2	(0.1-0.4)	0.7	(0.3-1.5)	28.7
Nigeria	1.1	(0.4-3.3)	0.0	0.6	(0.1-3.0)	0.1	(0.0-0.7)	0.3	(0.1-1.9)	7.9	0.3	(0.2-0.7)	0.6	(0.2-2.0)	0.5	(0.2-1.5)	10.1
<i>Asia and the Pacific</i>																	
Japan	0.9	(0.5-1.6)	0.3	5.6	(1.8-17.2)	1.7	(0.8-3.7)	1.3	(0.5-3.3)	14.1	0.1	(0.0-0.1)	0.1	(0.1-0.2)	0.4	(0.2-1.0)	63.5
PR China	1.0	(0.4-2.3)	0.0	4.6	(1.4-15.6)	2.1	(0.9-5.0)	1.0	-	6.7	0.3	(0.1-0.9)	0.2	(0.0-1.0)	0.7	(0.2-2.4)	8.3
<i>Oceania</i>																	
New Zealand	1.3	(1.1-1.5)	8.6	4.3	(2.9-6.3)	2.4	(1.7-3.4)	1.7	(1.3-2.4)	68.8	0.1	(0.1-0.1)	0.1	(0.1-0.2)	0.2	(0.2-0.2)	461.0

**Table 5** Socio-demographic predictors of lifetime treatment contact for any mood disorder

Country	Sex		Cohort (age at interview)						Age of onset								
	Female		$\chi^2$	Age 18-34		Age 35-49		Age 50-64		$\chi^2$	Early		Early-average		Late-average		$\chi^2$
	OR	(95% CI)		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	
<i>The Americas</i>																	
Colombia	1.5	(0.9-2.3)	2.7	3.2	(1.3-7.7)	1.7	(1.0-3.2)	1.0	-	6.7	0.2	(0.1-0.4)	0.3	(0.2-0.7)	0.8	(0.5-1.3)	33.6
Mexico	1.6	(1.0-2.4)	4.6	2.1	(0.9-4.9)	1.7	(0.8-3.3)	1.0	-	3.1	0.3	(0.2-0.6)	0.5	(0.2-0.9)	0.8	(0.4-1.6)	25.1
USA	1.3	(1.1-1.5)	10.2	4.4	(3.2-6.1)	3.1	(2.3-4.1)	1.9	(1.4-2.6)	115.5	0.2	(0.1-0.3)	0.3	(0.2-0.3)	0.4	(0.3-0.6)	176.7
<i>Europe</i>																	
Belgium <sup>a</sup>	1.4	(0.9-2.1)	2.5	3.9	(1.2-12.5)	3.9	(1.5-10.5)	1.7	(0.7-4.0)	14.5	0.2	(0.1-0.6)	0.4	(0.2-0.9)	0.6	(0.4-0.9)	14.2
France <sup>a</sup>	1.3	(0.9-1.8)	2.9	5.7	(3.1-10.5)	4.4	(2.4-8.0)	2.0	(1.1-3.5)	44.3	0.2	(0.1-0.4)	0.4	(0.2-0.8)	0.6	(0.3-1.2)	54.9
Germany <sup>a</sup>	1.2	(0.8-2.0)	0.9	1.9	(0.7-5.1)	1.2	(0.6-2.8)	1.2	(0.5-2.5)	6.3	0.3	(0.1-0.6)	0.5	(0.2-1.0)	1.1	(0.5-2.1)	22.5
Italy <sup>a</sup>	1.4	(0.9-2.0)	2.6	1.4	(0.7-2.8)	1.6	(0.8-2.9)	1.1	(0.6-2.1)	2.8	0.4	(0.2-0.8)	0.8	(0.4-1.6)	0.8	(0.4-1.4)	15.7
Netherlands <sup>a</sup>	0.9	(0.7-1.3)	0.1	3.9	(1.7-8.9)	2.7	(1.6-4.4)	1.0	-	18.5	0.1	(0.0-0.3)	0.3	(0.1-0.6)	0.5	(0.3-0.8)	27.1
Spain <sup>a</sup>	1.2	(0.8-1.8)	1.1	1.9	(0.9-3.8)	2.7	(1.4-5.1)	1.3	(0.8-2.1)	11.3	0.4	(0.2-0.8)	0.4	(0.2-0.9)	0.7	(0.4-1.2)	8.3
<i>Africa and Middle East</i>																	
Israel	1.1	(0.9-1.5)	0.7	5.4	(2.9-10.0)	4.0	(2.3-6.8)	2.3	(1.4-3.7)	30.9	0.3	(0.2-0.6)	0.4	(0.2-0.6)	0.6	(0.4-1.0)	20.8
Lebanon	1.1	(0.7-1.8)	0.2	13.8	(2.3-83.0)	8.8	(1.5-51.1)	5.0	(0.8-30.8)	13.4	0.4	(0.2-0.8)	0.2	(0.1-0.7)	0.7	(0.3-1.4)	10.6
Nigeria	1.4	(0.5-3.6)	0.5	2.7	(0.3-22.4)	0.5	(0.1-3.7)	1.0	-	6.8	2.6	(0.2-33.6)	1.2	(0.0-31.2)	3.3	(0.3-41.1)	3.0
<i>Asia and the Pacific</i>																	
Japan	1.6	(0.8-3.5)	1.7	3.9	(1.1-13.4)	2.0	(0.7-6.2)	1.5	(0.6-4.2)	5.0	0.2	(0.0-0.6)	0.5	(0.2-1.3)	0.8	(0.4-1.9)	9.8
PR China	0.8	(0.2-3.6)	0.1	0.7	(0.2-2.9)	0.4	(0.1-1.3)	1.0	-	2.4	0.5	(0.1-3.3)	0.4	(0.1-1.7)	0.5	(0.1-1.9)	2.3
<i>Oceania</i>																	
New Zealand	1.4	(1.2-1.6)	16.9	3.7	(2.7-5.2)	2.3	(1.7-3.1)	1.6	(1.2-2.2)	84.1	0.2	(0.2-0.3)	0.3	(0.3-0.4)	0.6	(0.5-0.8)	205.6

<sup>a</sup>Used major depressive episode instead of any mood disorder

Even when events were recalled, they may have been dated inaccurately. The most common form of dating error is telescoping, in which past experiences are recalled as hav-

ing occurred more recently than they actually did. Questions that focused memory search and bounded recall uncertainty were embedded in WMH surveys to help respon-

**Table 6** Socio-demographic predictors of lifetime treatment contact for any substance use disorder

Country	Sex		$\chi^2$	Cohort (age at interview)						$\chi^2$	Age of onset						$\chi^2$
	Female			Age 18-34		Age 35-49		Age 50-64			Early		Early-average		Late-average		
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	
<i>The Americas</i>																	
Colombia	0.8	(0.3-2.5)	0.1	9.1	(1.6-51.0)	5.3	(1.0-28.2)	1.0	-	6.7	0.2	(0.0-0.9)	0.4	(0.1-2.1)	0.2	(0.0-0.9)	7.9
Mexico	2.8	(0.8-9.5)	2.9	3.6	(0.7-18.1)	0.8	(0.2-2.9)	1.0	-	8.0	0.8	(0.2-3.6)	1.3	(0.3-5.7)	1.7	(0.5-5.5)	2.0
USA <sup>a</sup>	1.2	(0.8-1.6)	1.0	3.4	(1.7-6.8)	1.7	(0.9-3.1)	1.3	(0.7-2.3)	18.2	0.6	(0.4-0.8)	0.6	(0.4-0.8)	0.6	(0.4-0.8)	14.4
<i>Europe</i>																	
Belgium	0.7	(0.1-8.3)	0.1	35.9	(1.1-1163.4)	35.9	(1.1-1163.4)	35.9	(1.1-1163.4)	4.5	0.1	(0.0-0.2)	0.1	(0.0-0.2)	0.1	(0.0-0.2)	25.7
France	0.8	(0.2-3.2)	0.2	0.2	(0.0-3.2)	0.7	(0.1-4.8)	1.0	-	2.1	0.4	(0.1-2.6)	0.4	(0.1-2.6)	0.4	(0.1-2.6)	1.0
Germany	1.4	(0.4-5.3)	0.2	4.3	(0.5-37.5)	4.3	(0.5-37.5)	1.0	-	1.9	0.2	(0.0-1.2)	0.1	(0.0-0.3)	1.0	(0.3-3.1)	12.6
Italy	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b
Netherlands	0.6	(0.1-2.9)	0.4	1.4	(0.1-24.1)	1.7	(0.1-19.6)	0.4	(0.0-5.1)	2.1	0.0	(0.0-0.7)	0.2	(0.0-1.1)	0.1	(0.0-0.3)	18.3
Spain	1.5	(0.1-41.2)	0.1	8.1	(1.4-46.8)	1.0	-	1.0	-	5.8	0.0	(0.0-0.1)	0.0	(0.0-0.7)	0.2	(0.0-1.7)	16.0
<i>Africa and Middle East</i>																	
Israel	0.2	(0.0-1.3)	2.8	9.5	(1.8-49.7)	3.8	(1.0-14.7)	1.0	-	7.3	0.7	(0.2-2.8)	0.3	(0.1-1.5)	2.2	(0.7-7.6)	8.5
Lebanon <sup>a</sup>	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b	.b
Nigeria <sup>a</sup>	.b	.b	.b	4.7	(0.6-34.6)	2.3	(0.7-7.9)	1.0	-	3.5	0.1	(0.0-1.7)	0.5	(0.1-3.0)	0.2	(0.0-2.8)	3.1
<i>Asia and the Pacific</i>																	
Japan <sup>a</sup>	0.4	(0.1-3.3)	0.7	3.6	(0.1-203.0)	0.3	(0.1-0.7)	0.3	(0.1-0.7)	9.5	0.2	(0.0-5.3)	0.4	(0.0-3.1)	1.3	(0.3-5.2)	2.5
PR China <sup>a</sup>	0.4	(0.0-6.4)	0.5	1.8	(0.2-20.1)	0.5	(0.1-2.0)	1.0	-	3.0	0.5	(0.1-3.1)	0.5	(0.1-3.1)	0.8	(0.1-5.9)	0.6
<i>Oceania</i>																	
New Zealand	1.3	(1.0-1.7)	4.6	5.6	(2.8-11.0)	3.1	(1.6-5.9)	1.8	(0.9-3.5)	47.1	0.4	(0.3-0.6)	0.3	(0.2-0.4)	0.4	(0.3-0.5)	63.2

<sup>a</sup>Assessed in the part II sample

<sup>b</sup>Disorder was omitted due to insufficient lifetime cases (n<30)

dents recall age of onset and age of initial treatment contact (23,30). However, to the extent these efforts were not successful, it is again likely that delays in initial treatment seeking have been underestimated.

Our examinations of contacts with providers in the prior year have revealed that many fail to result in adequate treatment (4). To the extent that initial contacts with providers also fail to result in any treatment or in adequate regimens, we have underestimated failure and delays in receipt of *effective* treatment. Furthermore, we were only able to study predictors of failure to make treatment contact that could be retrospectively dated. We also limited potential predictors to variables for which *a priori* hypotheses have been raised regarding treatment delay or failure, to reduce the possibility of chance findings (14-16).

Finally, we cannot be certain that the failures and delays in initial treatment seeking observed here are of clinical or public health significance. Alternatively, those who failed to make prompt initial contacts may have largely had self-limiting or less serious disorders (31). However, our earlier analyses of the U.S. data revealed that even those with severe and impairing disorders have substantial delays in initial treatment contact (16). Furthermore, the preclinical, epidemiologic, and trial data reviewed above suggest that even milder disorders, if left untreated, lead to greater severity, additional psychiatric comorbidity, and negative social and occupational functioning (8-10).

Keeping these limitations in mind, our results reveal two

major problems in the initial treatment-seeking process for mental disorders that are occurring throughout the world. On one hand, many lifetime cases never make any treatment contact for their disorders, particularly in developing countries, where the financial and structural barriers to accessing mental health services are most formidable (3). Failure to seek help also appears to be greatest for conditions with low perceived needs for treatment, such as substance use disorders, for which over half of lifetime cases failed to make any treatment contact in the majority of countries (13,32).

Even among cases that do eventually seek help, a second major source of unmet need for mental health care is the pervasive delays before treatment contacts are made. The typical delays observed here last for years or even decades after disorder onset. Initial treatment contacts appear to be fastest for mood disorders, perhaps because these disorders have been targeted in some countries by educational campaigns, primary care quality improvement programs, and treatment advances (33-35). On the other hand, the longer delays for anxiety disorders may be due to the earlier age of onset of some conditions (e.g., phobias), fewer associated impairments, and even fear of providers or treatments involving social interactions (e.g., talking therapies, group settings, waiting rooms) (4,13,36).

Women have been shown in prior research to be faster than men at translating nonspecific feelings of distress into conscious recognition that they have emotional problems, perhaps explaining the significantly higher rates of initial

treatment contact by women in some countries (37). More recent cohorts were also significantly more likely to make eventual treatment contact, perhaps suggesting a positive outcome of programs recently attempted in some countries to destigmatize and increase awareness of mental illness, of screening and outreach initiatives, of the introduction and direct-to-consumer promotion of new treatments, and of expansion of insurance programs (1,33-35,38-42). Consistent with prior research (14-16), early-onset disorders were associated with lower probabilities of initial treatment contact in most countries. One explanation for this finding may be that minors need the help of parents or other adults to seek treatment, and recognition is often low among these adults unless symptoms are severe (43,44). In addition, child and adolescent-onset mental disorders may be associated with normalization of symptoms or development of coping strategies (e.g., social withdrawal in social phobias) that interfere with help-seeking later in life. Finally, lack of accessible child mental health services may also be an important issue in many countries.

While these results document the failure and delay in initial treatment seeking for mental disorders that are occurring worldwide, additional research will be needed to clarify what policy makers can concretely do to address them at the local and national levels. At the local level, it is critical to identify whether and through what specific programs long periods of untreated mental illness can be reduced. Cost-efficient interventions that can be applied in schools, clinics, or health care systems, consisting of aggressive outreach and prompt treatment of new cases, are just emerging. Long-term intervention trials currently in the field will shed light on the extent to which these model programs prevent subsequent negative clinical, social, educational, and occupational outcomes (45,46). Programs of public education, school or primary care-based screening, disease management, or coordination and referral between non-health care and health care professions, may also prove helpful in this regard (34,38,44,47-51).

Furthermore, it will be critical to clarify what can be done at the national level to minimize failure and delay in initial treatment contact. General and mental health care policies, delivery system designs, and levels or mechanisms of financing mental health services may have enormous impacts on the timeliness of treatment seeking. Unfortunately, policy makers currently lack rigorous data on these impacts, including whether impacts are positive, negative, as intended, or inadvertent. Linking data such as those of the WHO Project Atlas on existing policies, delivery systems, and financing of mental health care, to WMH survey data on failure and delay in initial treatment, may offer a novel way to shed light on these impacts and help guide future policy decisions (3,17).

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