Barriers to Mental Health Treatment: Results from the WHO World Mental Health (WMH) Surveys

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Abstract

Background—To examine barriers to initiation and continuation of mental health treatment among individuals with common mental disorders.

Methods—Data are from the WHO World Mental Health (WMH) Surveys. Representative household samples were interviewed face-to-face in 24 countries. Reasons to initiate and continue treatment were examined in a subsample (n= 63,678) and analyzed at different levels of clinical severity.

Results—Among those with a DSM-IV disorder in the past twelve months, low perceived need was the most common reason for not initiating treatment and more common among moderate and mild than severe cases. Women and younger people with disorders were more likely to recognize a need for treatment. Desire to handle the problem on one's own was the most common barrier among respondents with a disorder who perceived a need for treatment (63.8%). Attitudinal barriers were much more important than structural barriers both to initiating and continuing treatment. However, attitudinal barriers dominated for mild-moderate cases and structural barriers for severe cases. Perceived ineffectiveness of treatment was the most commonly reported reason for treatment dropout (39.3%) followed by negative experiences with treatment providers (26.9% of respondents with severe disorders).

Conclusions—Low perceived need and attitudinal barriers are the major barriers to seeking and staying in treatment among individuals with common mental disorders worldwide. Apart from targeting structural barriers, mainly in countries with poor resources, increasing population mental health literacy is an important endeavor worldwide.

Keywords

mental healthcare; treatment seeking; continuity

INTRODUCTION

Mental disorders are widespread, inflicting considerable morbidity and impairment (Demyttenaere *et al.*, 2004; Kessler *et al.*, 2009; Mathers & Loncar, 2006), and despite

documented effectiveness of treatment (American Psychiatric Association, 2006; Yatham *et al.*, 2005) a high proportion of people with mental disorders do not receive care (Wang *et al.*, 2007), or else drop-out of treatment (Edlund *et al.*, 2002; Olfson *et al.*, 2009). Untreated mental conditions have personal and social consequences and economic loss (Knapp, 2003) and can increase healthcare expenditure through a variety of inter-related mechanisms (Andrade *et al.*, 2008; Prince *et al.*, 2007). Understanding barriers to treatment constitutes an important endeavor for planning mental health services, setting priorities in allocation of resources, and reducing the burden of mental illness (Bebbington, 1990; Mechanic, 2002).

Although the importance of identifying barriers to treatment is generally acknowledged, few cross-national data are available and most of these data are from Western developed countries (Kessler *et al.*, 1997; Wells *et al.*, 1994). Attitudinal barriers to treatment are the ones most commonly reported in these studies (Jagdeo *et al.*, 2009; Sareen *et al.*, 2007), mainly due to negative health beliefs (Prins *et al.*, 2008), misinterpretations about consequences of treatment, and stigma. Many people with significant disorders are unaware of treatments that could be helpful (ten Have *et al.*, 2010). Structural barriers, such as inconvenient location or inability to obtain an appointment are less commonly reported (Alegria *et al.*, 2000), although Sareen et al. found that low-income respondents were significantly more likely to report a financial barrier in the United States than in either Ontario or the Netherlands (Sareen *et al.*, 2007). Treatment dropout rates are high, with the most important reasons reported to be lack of satisfaction with service and financial barriers (Edlund *et al.*, 2002; Olfson *et al.*, 2009).

Differences among population groups in their willingness to report mental disorders and obtain help have been reported (Bhui *et al.*, 2007; Hernandez *et al.*, 2009; Saxena *et al.*, 2007b) and they are due to embarrassment about reporting symptoms, misinformation about mental illness, stigma and poor competence of health professionals in detecting problems in culturally diverse societies. Obtaining cross-national information in countries with different levels of development is essential for the identification of unmet needs and is an important step action to reduce this gap. The World Mental Health (WMH) Surveys represent a unique opportunity to do this across countries with different levels of development, health policy, and delivery systems. The current report, based on WMH, represents the first cross-national study to include standardized clinical severity measures of specific disorders and examine effects of perceived need, structural barriers, and attitudinal barriers to initiation and continuation of treatment for mental disorders.

METHODS

Survey respondents

Twenty five WHO World Mental Health (WMH) surveys were carried out in 24 countries (two surveys in the People's Republic of China [PRC]), including from six low/lower-middle income countries (LAMIC: Colombia, India, Iraq, Nigeria, PRC, Ukraine), six upper-middle income countries (UMIC: Brazil, Bulgaria, Lebanon, Mexico, Romania, and South Africa), and twelve high income countries (HIC: Belgium, France, Germany, Italy, Netherlands, Spain, Japan, New Zealand, Israel, Northern Ireland, Portugal, and United States [US]) (Table 1). Seventeen surveys were based on nationally representative

household samples, two (Colombia and Mexico) on samples representative of urban areas, one of selected states (Nigeria), and the remaining four of selected Metropolitan Areas (Brazil, India, Japan, PRC). In the latter cases, the surveys represented either only one area (São Paulo in Brazil, Pondicherry in India), three areas (Beijing, Shanghai, and Shenzhen in PRC), or 11 different areas (Japan). We refer to the latter four areas as Pondicherry, São Paulo, PRC – Beijing/Shanghai, PRC - Shenzhen, and Metropolitan Japan to distinguish them from the more broadly representative nation samples in other countries. Trained lay interviewers conducted face-to-face interviews with respondents ages 18 and older in all surveys. Respondents were selected using multistage household probability samples. The total sample size is 121,899. The weighted average response rate across all countries is 72.0%. All surveys were approved by the local human subjects committee.

Subsampling was used in most surveys to reduce respondent burden by dividing the interview into two parts. Part 1 included core diagnostic assessment. Part 2 included information about correlates and disorders of secondary interest. All respondents completed Part 1. All Part 1 respondents who met criteria for any disorder and a subsample of approximately 25% of others were administered Part 2. Part 2 respondents were weighted by the inverse of their probability of selection to adjust for differential sampling. Four surveys administered the Part II survey to 100% of respondents (Romania, Israel, Iraq, South Africa). The Part 2 sample included 63,678 respondents, including 32,387 from high-income, 15,240 from upper-middle, and 16,051 from low/lower-middle income countries. Because questions regarding reasons for not using services and drop-out were usually asked in Part II, the present analyses are limited to this subsample. Part II data were weighted not only to adjust for under-sampling non-cases from Part I but also to adjust for differential within-household probability of selection and for residual aggregate discrepancies between samples and populations on a wide range of socio-demographic and geographic variables (Heeringa *et al.*, 2008).

Diagnostic assessment

DSM-IV diagnoses were based on the Composite International Diagnostic Interview (CIDI; Kessler & Üstün, 2004), a fully-structured lay interview. Analyses reported here were restricted to respondents with at least one DSM-IV disorder in the previous twelve months. Disorders included anxiety disorders (panic disorder, generalized anxiety disorder, agoraphobia without panic disorder, specific phobia, social phobia, posttraumatic stress disorder, obsessive-compulsive disorder, separation anxiety disorder), mood disorders (major depressive disorder, dysthymia, bipolar disorder I, II, or subthreshold), disruptive behavior disorders (oppositional defiant disorder, conduct disorder, attention-deficit/ hyperactivity disorder [ADHD], intermittent explosive disorder), and substance use disorders (alcohol and drug abuse with or without dependence). Blind clinical re-interviews using the Structured Clinical Interview for DSM-IV (SCID) (First *et al.*, 2002) with a probability subsample of WMH respondents found generally good concordance between diagnoses based on the CIDI and SCID (Haro *et al.*, 2006). CIDI-SCID concordance for 12-month disorders assessed by area under the receiver operating characteristic curve (AUC) was .73 for any anxiety disorder, .93 for any mood disorder, .86 for substance abuse with or

without dependence, .86 for ADHD (the only disruptive behavior disorder assessed in the SCID), and .76 for any disorder.

Levels of Severity

Serious 12 month disorders were defined as: bipolar I disorder or substance dependence with a physiological dependence syndrome; making a suicide attempt in conjunction with any other disorder; reporting severe role impairment due to a mental disorder in at least two areas of functioning measured by the disorder-specific Sheehan Disability Scales (SDS; Leon *et al.*, 1997); or having overall functional impairment from any disorder consistent with a Global Assessment of Functioning (GAF; Endicott *et al.*, 1976) score of 50 or less. Disorders not classified as serious were classified as moderate if the respondent had substance dependence without a physiological dependence syndrome or at least moderate interference in any SDS domain. All other disorders were classified as mild.

Use of services

Twelve-month treatment was assessed by asking respondents if they saw any of a long list of professionals either as an outpatient or inpatient for problems with emotions, nerves, mental health, or use of alcohol or drugs. Included were mental health professionals (e.g., psychiatrist, psychologist), general medical professionals (e.g., general practitioner, occupational therapist), religious counselors (e.g., minister, rabbi), and traditional healers (e.g., herbalist, spiritualist). The list varied across countries depending on local services provided.

Barriers for not using services and reasons for not continuing to use them

Respondents who reported no use of mental health services were asked whether there was a time in the past twelve months when they felt they might have needed to see a professional for problems with their emotions, nerves, or mental health. Those who did not think they needed help or thought they needed help for less than four weeks were coded as “low perceived need.” Those with “perceived need” were then asked about structural and attitudinal barriers (See Appendix A for a list of structural and attitudinal barriers of not seeking treatment).

Respondents who accessed mental health treatment in the past twelve months were asked whether the treatment had stopped and, if so, whether they “quit before the [provider] wanted you to stop.” Those who saw a provider and “quit” were then asked reasons for treatment dropout from a list of potential reasons similar to the list of reasons for not seeking treatment (See Appendix A). Those who “got better” or “didn’t need help anymore” were not asked about structural or attitudinal reasons for dropping out. For the purposes of this study, only those who dropped out from all sectors and gave a reason for dropping out of treatment were included in the analysis. Respondents who endorsed more than one reason for not seeking help or drop out were coded positively on each reason reported.

Socio-demographic predictor variables

Socio-demographic variables included age (18–34, 35–49, 50–64, 65+), sex, completed years of education (7 categories: no education, some primary, primary finished, some

secondary, secondary finished, some college, college finished), income (classified into four categories based on country quartiles: low, low-average, high-average, high), and marital status (married/cohabitating, separated/widowed/divorced, never married).

Analytic approach

The distribution of barriers to seeking treatment was examined among respondents with any 12-month disorder who had not used services in the 12 months prior to interview and then repeated in the sub-sample of respondents who recognized the need for treatment. These analyses were carried out in sub-samples defined by severity of disorder. Multivariate logistic regression models were then estimated to examine association of socio-demographic variables and disorder severity with barriers controlling for number of mood, anxiety, substance, and disruptive behavior disorders and country. Models also examined interactions of socio-demographic variables with country. As model fit, as assessed by the Akaike Information Criterion (AIC; Burnham and Anderson 2002), was best for the model without interaction in both cases, we present only models without interactions for all countries combined. The same analysis steps were repeated to study reasons for dropout from treatment among respondents who received treatment but dropped out. Logistic regression coefficients and their standard errors were exponentiated to create odds-ratios (ORs) and their 95% confidence intervals. Standard errors were estimated using the Taylor series method in SUDAAN (Research Triangle Institute, 2009) to adjust for clustering and weighting of data. Multivariate significance tests were conducted using Wald χ^2 tests based on coefficient variance–covariance matrices adjusted for design effects using the Taylor series method. Statistical significance was evaluated using two-sided design-based .05-level tests.

RESULTS

Barriers to seeking treatment

Of the 63,678 Part II respondents, 11,471 met criteria for a 12-month disorder but reported no service use during that period. Of these, 4,583 (38.5%) perceived a need for professional treatment, including 1124 of 2,380 (48.1%) serious cases, 1,930 of 4,478 (42.8%) moderate cases, and 1,529 of 4,613 (31.0%) of mild cases.

Among respondents with serious disorders, low perceived need was the most commonly-reported barrier to treatment in 15 of the 25 surveys (99.3-56.4% reporting this as a barrier) and attitudinal barriers in the other 10 surveys (80.3-52.2%) (Table 2). Among respondents with moderate/mild disorders, low perceived need was the most commonly-reported barrier to treatment in 17 of the 25 surveys (99.3-62.1%) and attitudinal barriers in the other 8 surveys (75.1-50.1%). Structural barriers were never most commonly-reported, but were second most commonly-reported among respondents with serious disorders in 8 surveys (44.0-0.7%) and among respondents with moderate/mild disorders in 3 surveys (28.0-0.4%).

The proportion of respondents who reported low perceived need is significantly lower among those with serious than moderate/mild disorders in nine surveys (24.3–86.4-% vs. 42.0–95.8-%, χ^2_1= 4.0–37.4, p = .045-<.001) and significantly higher in none. The

proportion of respondents who reported structural barriers, in comparison, is significantly higher among those with serious than moderate/mild disorders in eight surveys (12.3–44.4% vs. 3.8–28.0%, χ^2_1= 3.9–50.6, p = .048-<.001) and significantly lower in none. The proportion of respondents who reported attitudinal barriers, finally, is significantly higher among those with serious than moderate/mild disorders in eight surveys (14.5–73.6% vs. 5.0–56.5%, χ^2_1=4.2–34.0, p = .040-.001)and significantly lower in none.

The vast majority (96.3%) of respondents recognizing a need for treatment that did not receive treatment reported at least one attitudinal barrier (Table 3). This was true regardless of level of disorder severity (95.1–96.9%). By far the most common attitudinal barrier was wanting to handle the problem on their own (63.8% overall; 57.9–66.5% across subgroups defined by disorder severity). The next most common attitudinal barriers were related to perceived need: the belief that the problem was not severe (24.4% overall; 22.9–26.3% across subgroups defined by disorder severity) and that it would get better on its own (16.0% overall; 10.6.–23.6% across subgroups defined by disorder severity). Wanting to handle on was somewhat less likely to be reported by respondents with serious than moderate or mild disorders, but several other attitudinal barriers were more likely to be endorsed by those with serious than moderate or mild disorders. Of structural barriers, financial barriers and lack of availability were the most often mentioned.

The pattern of endorsement of each barrier was examined by calculating Pearson correlations matrix. All structural barriers were highly positively correlated with each other, as were attitudinal barriers. The exception to this pattern occurred with “Want to handle on own” and “Problem was not severe.” These two barriers were negatively correlated with each other (−.80). It seems that respondents who endorsed any of those two barriers were less likely to report any other attitudinal or structural barrier, as the majority of pair-wise correlations were below .30 (data not shown, but available upon request).

Correlates of barriers to treatment

Low perceived need for treatment was more common at older ages, among men, and among milder cases (Table 4). Among respondents with perceived need, structural barriers were more common among the youngest than oldest respondents (OR 2.0, 95% CI 1.1–3.5; (χ^2_3=9.3; p= .026). Respondents with the lowest two levels of education (OR 3.2, 95% CI 1.9–5.3; OR 1.5, 95% CI: 1.1–2.2) were more likely to report structural barriers than those with the highest level of education (χ^2_6 =27.2, p<.001). Married/cohabitating respondents were marginally more likely to endorse such barriers. Respondents with a serious disorder were more likely than respondents with mild disorders to report a structural barrier (OR 1.6, 95% CI 1.2–2.2, χ^2_2 =12.2, p=.002).

Reasons and correlates for dropping out of treatment

Roughly one-fourth (27.9%) of the 16,518 respondents with 12-month disorders reported receiving mental health treatment in the past year. Of those 5,047 respondents, 3,917 dropped out of treatment, but the vast majority of these patients continued treatment in another section, with only 466 (12.8%) dropping out of all treatment. The distribution of reasons for dropping out of treatment in the latter group was examined only in the total

sample because of sparse data (Table 5). Attitudinal reasons predominate, with 84.0% of respondents reporting at least one attitudinal reason. “Wanted to handle on my own” was the most commonly reported (50.2%) followed by “perceived ineffectiveness” of treatment (39.3%). Negative experience with a treatment provider was the only reason for dropout that varied across severity level, with 26.9% of those with severe conditions compared to 11.2% of those with moderate and 15.9% with mild disorders reporting this as a reason for dropout (χ^2_2=6.9, p=.032). Structural barriers were reported by 41.8% of dropouts, with no difference across severity levels (χ^2_2= 2.7, p=.26). Financial barriers and inconvenience/ transportation were reported by around 25% of dropouts, again with no difference across severity levels (χ^2_2=2.1, p=.36; χ^2_2= 3.4, p= 18, respectively). No strong correlations were found among reasons for dropping out of treatment.

Only exploratory analysis was possible in examining country-specific reasons for dropping out of treatment due to the small numbers of dropouts in the sample (Appendix B), but this analysis confirmed that attitudinal barriers were predominant in most countries with sufficient sample size for analysis, although structural barriers were important reasons for severe cases in some high income countries, including New Zealand (49%), Portugal (32.3%), and the US (30.2%), as well as in some upper-middle income countries, including Brazil (29.6%) and Mexico (37.1%). In multivariate analyses (Table 6), age was found to be inversely related to structural barriers (χ^2_3=4.6, p=0.033), with respondents with moderate conditions more likely than those with mild conditions to report structural barriers (OR: 3.5, 95% CI: 1.3–9.3).

DISCUSSION

Several important study limitations merit attention before interpreting these results. First, the cross-sectional design of the WMH surveys prevents us from capturing the complexity of representation in the sequence of help-seeking (Mechanic, 2002). Second, response rates varied widely across WMH surveys, with some surveys with response rates below acceptable standards. This could bias the report of perceived need and barriers since survey response could be related to severity of psychopathology (Kessler et al, 1995). Third, the list of reasons/barriers to treatment and dropout used, based on previous research in Western countries, was the same in all countries participating in the WMH surveys even though customization of questions to different national contexts might have yielded more nuanced information. Questions about barriers to treatment were structured in a way that prevented those with low perceived need from endorsing other reasons, which might have led to an underestimate of other reasons. Fourth, disorder specific needs were not assessed, as we grouped all 12-month disorders together. There is reason to believe that perceived need is not uniform across diagnoses (Mojtabai et al., 2002). In addition, some of the most incapacitating disorders, such as schizophrenia, were not evaluated.

Notwithstanding these limitations, the results clearly show that low perceived need for treatment is an extremely important barrier for seeking treatment worldwide. This result is consistent with previous studies (van Beljouw et al., 2010). Although low perceived need would be expected in mild cases, a substantial number of severe cases think that they do not need help. Low perceived need was also high in countries that differ widely in levels of

development, although it is possible that a deeper analysis might show that these perceptions differ in important ways across cultural settings. Absence of more textured information makes it impossible to obtain deeper insights from these data, but it is certainly plausible to imagine that variation in mental health literacy – that is, in knowledge and beliefs about mental disorders – could be importantly involved. As mental disorders still are highly stigmatized, social and cultural factors might contribute to biased perceptions of need (Leventhal et al., 1984; Jorm, 2000; Gureje et al., 2006). Biased judgment due to the illnesses themselves might also be involved along with stigma and inaccurate beliefs (Mechanic, 2002; Prins et al., 2008; Schomerus & Angermeyer, 2008).

It is striking that attitudinal barriers were more important among serious than moderate or mild cases in most of the countries. This presumably reflects the fact that serious cases are likely to recognize need and would seek care in the absence of attitudinal barriers. A desire to handle the problem by oneself was the second most common reason reported in respondents who recognized a need. Self-stigma and label avoidance can be related to the desire to handle the problem by oneself. Even in high income countries, public attitudes towards mental illness (Mehta et al., 2009) and fear of being discriminated in workplace for revealing a mental illness or psychiatric treatment restrain people from disclosing their own mental health history (Corrigan & Wassel, 2008; Wheat et al., 2010). Stigma is an important reason for not having treatment in severe cases from low/lower-middle income countries (Brohan et al., 2010; Gureje et al., 2006; Saxena et al., 2007b).

Structural barriers such as finance and availability were commonly reported in severe cases that recognized need. Even in some developed countries that have health insurance to pay for treatment, a meaningful proportion of the population sometimes lacks this coverage (Mechanic, 2002). In developing countries there is a gap between policy and financing (Saxena et al., 2003) with under provision and inefficiency in use of resources (Andrade et al., 2008; Seedat et al., 2008). In some Latin American countries, where mental health reform has been implemented, community-based services still are insufficient, the integration with primary care is weak, and inpatient beds have been reduced to a level that might be inadequate to meet the needs (Andreoli et al., 2007; Caldas de Almeida & Horvitz-Lennon, 2010; Romero-Gonzalez et al., 2003). In many middle and lower income countries, geographic distance from services in rural areas, population density, and lack of trained personal produce service deficiencies (Jacob et al., 2007).

The majority of respondents who dropped out of treatment wanted to handle the problem themselves. Perceived ineffectiveness was also common. Respondents from high income countries who had previous treatment are skeptical about effectiveness of professional help for serious emotional problems (ten Have et al., 2010). Negative experience with a provider is commonly reported by severe cases. Patients reject the passive role assigned to them, probably having a different evaluation of need than providers and little ability to evaluate the quality of services received (Prins et al., 2010). Structural factors and health beliefs could interact, therefore increasing the likelihood for dropping out (Ngui et al., 2010). Patients might prefer counseling rather than medication in primary care, when physicians are constrained by time and offer a pharmacological treatment (Ring et al., 2005).

As in previous surveys we found that being a women, being younger or middle-aged and having severe/moderate disorders are associated with perceived need for treatment, and reporting more structural barriers to treatment seeking (Codony et al., 2009; Cohen-Mansfield & Frank, 2008; Mojtabai et al., 2002; Mojtabai et al., 2011). Young and middle-aged adults were more likely than older adults to perceive need for treatment, and to report structural barriers to treatment seeking after they perceived a need. Besides self-stigma and negative attitudes toward help seeking (Jadeo et al, 2009), younger respondents may experience financial problems, and time barriers to seeking treatment.

In conclusion, our findings confirmed that patients' lack of perceived need plays a major role in not receiving care worldwide (Prins et al., 2010). In addition, there is not agreement among cases on what should be considered need for mental healthcare (Alonso et al., 2007). There are many challenges to reduce this gap. Future research should focus in identifying categories of need among those with a diagnosis, namely who would benefit from treatment and of what kind. Severe disorders, identified here as those associated with disabilities, are within the targets for mental health services, being priorities in terms of delivering care. Motivating primary care physicians to recognize and treat mild and moderate disorders should be a goal for intervention (McCrone & Knapp, 2007). Our results also suggest that there is need for community campaigns aimed at increasing public awareness, raising mental health literacy, decreasing the distance between people's beliefs about different treatment options and what mental health professionals have to offer (Khandelwal et al., 2010; Meadows & Burgess, 2009). Stakeholders and health care providers in countries with poor resources should target structural barriers by improving service availability and accessibility in order to reduce mental health service disparities.

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Table 1

WMH sample characteristics by World Bank income categories[a]

Country by income category	Survey[b]	Sample characteristics[c]	Field dates	Age range	Sample Size		Response rate[d]
					Part1	Part2	
I. Low and lower middle income countries							
Colombia	NSMH	All urban areas of the country (approximately 73% of the total national population)	2003	18–65	4426	2381	87.7
India - Pondicherry	WMHI	Pondicherry region.	2003–5	18–97	2992	1373	98.8
Iraq	IMHS	Nationally representative.	2006–7	18–96	4332	4332	95.2
Nigeria	NSMHW	21 of the 36 states in the country, representing 57% of the national population. The surveys were conducted in Yoruba, Igbo, Hausa and Efik languages.	2002–3	18–100	6752	2143	79.3
PRC[e]– Beijing/Shanghai	B-WMH S-WMH	Beijing and Shanghai metropolitan areas.	2002–3	18–70	5201	1628	74.7
PRC[e]- Shenzhen	Shenzhen	Shenzhen metropolitan area. Included temporary residents as well as household residents.	2006–7	18–88	7132	2475	80.0
Ukraine	CMDPSD	Nationally representative.	2002	18–91	4724	1719	78.3
Total					35559	16051	
II. Upper-middle income countries							
Brazil – São Paulo	São PauloMegacity	São Paulo metropolitanarea.	2005–7	18–93	5037	2942	81.3
Bulgaria	NSHS	Nationally representative.	2003–7	18–98	5318	2233	72.0
Lebanon	LEBANON	Nationally representative.	2002–3	18–94	2857	1031	70.0
Mexico	M-NCS	All urban areas of the country (approximately 75% of the total national population).	2001–2	18–65	5782	2362	76.6
Romania	RMHS	Nationally representative.	2005–6	18–96	2357	2357	70.9
South Africa	SASH	Nationally representative.	2003–4	18–92	4315	4315	87.1
Total					25666	15240	
III. High-income countries							
Belgium	ESEMeD	Nationally representative. The sample was selected from a national register of Belgium residents	2001–2	18–95	2419	1043	50.6
France	ESEMeD	Nationally representative. The sample was selected from a national list of households with listed telephone numbers.	2001–2	18–97	2894	1436	45.9
Germany	ESEMeD	Nationally representative.	2002–3	18–95	3555	1323	57.8
Israel	NHS	Nationally representative.	2002–4	21–98	4859	4859	72.6

Country by income category	Survey[b]	Sample characteristics[c]	Field dates	Age range	Sample Size		Response rate[d]
					Part1	Part2	
Italy	ESEMeD	Nationally representative. The sample was selected from municipality resident registries.	2001–2	18–100	4712	1779	71.3
Japan	WMHJ2002–2006	Eleven metropolitan areas.	2002–6	20–98	4129	1682	55.1
Netherlands	ESEMeD	Nationally representative. The sample was selected from municipal postal registries.	2002–3	18–95	2372	1094	56.4
New Zealand	NZMHS	Nationally representative.	2003–4	18–98	12790	7312	73.3
Northern Ireland	NISHS	Nationally representative.	2004–7	18–97	4340	1986	68.4
Portugal	NMHS	Nationally representative.	2008–9	18–81	3849	2060	57.3
Spain	ESEMeD	Nationally representative.	2001–2	18–98	5473	2121	78.6
United States	NCS-R	Nationally representative.	2002–3	18–99	9282	5692	70.9
Total					60674	32387	
IV. Total					**121899**	**63678**	**72.0**

[a]The World Bank. (2008). Data and Statistics. Accessed May 12, 2009 at: http://go.worldbank.org/D7SN0B8YU0

[b]NSMH (The Colombian National Study of Mental Health); WMHI (World Mental Health India); IMHS (Iraq Mental Health Survey); NSMHW (The Nigerian Survey of Mental Health and Wellbeing); B-WMH (The Beijing World Mental Health Survey); S-WMH (The Shanghai World Mental Health Survey); CMDPSD (Comorbid Mental Disorders during Periods of Social Disruption); NSHS (Bulgaria National Survey of Health and Stress); LEBANON (Lebanese Evaluation of the Burden of Ailments and Needs of the Nation); M-NCS (The Mexico National Comorbidity Survey); RMHS (Romania Mental Health Survey); SASH (South Africa Health Survey); ESEMeD (The European Study Of The Epidemiology Of Mental Disorders); NHS (Israel National Health Survey); WMHJ2002–2006 (World Mental Health Japan Survey); NZMHS (New Zealand Mental Health Survey); NISHS (Northern Ireland Study of Health and Stress); NMHS (Portugal National Mental Health Survey); NCS-R (The US National Comorbidity Survey Replication).

[c]Most WMH surveys are based on stratified multistage clustered area probability household samples in which samples of areas equivalent to counties or municipalities in the US were selected in the first stage followed by one or more subsequent stages of geographic sampling (e.g., towns within counties, blocks within towns, households within blocks) to arrive at a sample of households, in each of which a listing of household members was created and one or two people were selected from this listing to be interviewed. No substitution was allowed when the originally sampled household resident could not be interviewed. These household samples were selected from Census area data in all countries other than France (where telephone directories were used to select households) and the Netherlands (where postal registries were used to select households). Several WMH surveys (Belgium, Germany, Italy) used municipal resident registries to select respondents without listing households. The Japanese sample is the only totally un-clustered sample, with households randomly selected in each of the eleven metropolitan areas and one random respondent selected in each sample household. 17 of the 25 surveys are based on nationally representative household samples.

[d]The response rate is calculated as the ratio of the number of households in which an interview was completed to the number of households originally sampled, excluding from the denominator households known not to be eligible either because of being vacant at the time of initial contact or because the residents were unable to speak the designated languages of the survey. The weighted average response rate is 72.0%.

[e]People’s Republic of China

Table 2

Barriers for not seeking treatment among all respondents with twelve month mental disorders who did not use services in that period, according to the level of disorder severity

Country[a]	Low perceived need for treatment						Any structural barrier						Any attitudinal barrier					
	Serious		Moderate or Mild		Serious vs. Moderate/Mild		Serious		Moderate or Mild		Serious vs. Moderate/Mild		Serious		Moderate or Mild		Serious vs. Moderate/Mild	
	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p
High-income																		
Belgium (N=143)	97.5	2.0	91.5	3.2	1.4	.23	1.0	1.0	3.9	2.0	1.0	.33	2.5	2.0	8.2	3.2	1.3	.25
France (N=238)	85.9	6.0	84.5	3.8	0.0	.85	2.1	1.6	3.4	1.0	0.5	.48	14.1	6.0	15.5	3.8	0.0	.84
Germany (N=177)	90.4	4.9	93.5	2.1	0.3	.58	3.1	2.3	1.2	0.5	0.6	.43	7.5	4.4	6.5	2.1	0.0	.84
Italy (N=194)	82.0	7.7	95.8	1.4	4.0	.047	7.1	4.5	1.3	0.7	1.9	.17	15.4	7.2	4.2	1.4	3.0	.08
Netherlands (N=172)	88.7	3.5	90.8	3.7	0.2	.66	2.6	1.8	2.4	2.4	0.0	.96	11.3	3.5	9.2	3.7	0.2	.66
Spain (N=209)	78.9	10.8	91.2	2.5	1.1	.29	9.9	9.2	4.0	1.5	0.4	.54	21.1	10.8	8.8	2.5	1.1	.29
Israel (N=326)	33.6	5.4	34.5	3.1	0.0	.88	13.0	4.0	3.8	1.3	4.6	.032	62.1	5.6	63.8	3.1	0.1	.79
Japan (N=189)	24.1	12.2	46.2	4.9	1.4	.23	5.7	6.0	2.2	1.6	0.3	.56	75.9	12.2	52.3	5.0	1.5	.21
New Zealand (N=1724)	47.1	3.5	65.0	1.5	19.4	<.001	16.3	2.7	4.4	0.7	19.9	<.001	52.2	3.4	34.8	1.6	18.3	<.001
Northern Ireland (N=295)	43.3	10.9	73.9	3.5	4.2	.040	3.0	3.1	1.1	0.6	0.4	.53	56.7	10.9	26.1	3.5	4.2	.040
Portugal (N=429)	39.4	9.5	46.4	2.9	0.5	.48	12.3	4.1	4.7	1.1	3.9	.048	60.6	9.5	53.2	2.9	0.6	.45
United States (N=1350)	25.9	3.3	48.6	1.9	37.4	<.001	28.6	2.9	9.2	1.1	50.6	<.001	72.7	3.1	50.1	2.0	34.0	<.001
Upper-middle income																		
Brazil – São Paulo (N=959)	40.3	3.7	62.1	2.6	24.6	<.001	25.1	3.3	10.0	1.8	17.0	<.001	53.2	3.5	34.5	2.5	22.7	<.001
Bulgaria (N=325)	93.3	3.5	92.8	2.4	0.0	.92	6.7	3.5	5.2	2.0	0.1	.76	3.3	2.3	7.2	2.4	1.1	.29
Lebanon (N=274)	79.8	6.0	89.0	3.2	1.5	.22	12.0	5.4	2.9	1.4	2.1	.14	20.2	6.0	10.1	3.2	1.8	.18
Mexico (N=545)	25.8	4.2	43.3	3.4	13.6	<.001	29.9	4.7	15.7	2.0	9.7	.002	68.0	5.1	53.6	3.3	6.5	.011
Romania (N=151)	57.6	11.6	63.7	4.7	0.2	.67	0.0	0.0	3.8	2.0	3.1	.08	42.5	11.6	35.7	4.6	0.2	.64
South Africa (N=547)	86.4	2.5	95.0	1.2	8.0	.005	3.1	1.3	2.3	0.9	0.3	.60	14.5	2.8	5.0	1.2	7.8	.005
Low and lower middle income																		
Colombia (N=708)	24.3	5.0	42.0	3.2	10.7	<.001	31.7	6.6	12.6	1.7	7.2	.007	73.6	5.0	56.5	3.2	9.8	.002
India - Pondicherry (N=453)	99.3	0.7	99.3	0.5	0.0	.94	0.7	0.7	0.8	0.5	0.0	.94	0.7	0.7	0.0	0.0	1.0	.32
Iraq (N=528)	14.1	4.4	20.5	2.9	1.6	.20	44.4	7.1	28.0	3.2	5.6	.018	80.3	4.8	75.1	3.0	0.9	.34
Nigeria (N=180)	98.5	1.5	99.3	0.5	0.2	.69	1.5	1.5	0.4	0.4	0.5	.47	1.5	1.5	0.4	0.4	0.4	.53

Country[a]	Low perceived need for treatment						Any structural barrier						Any attitudinal barrier					
	Serious		Moderate or Mild		Serious vs. Moderate/Mild		Serious		Moderate or Mild		Serious vs. Moderate/Mild		Serious		Moderate or Mild		Serious vs. Moderate/Mild	
	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p
PRC[b]-Beijing/Shanghai (N=211)	86.5	5.4	93.1	2.3	1.8	.18	9.7	5.5	2.7	1.3	1.8	,18	8.7	4.4	6.1	1.9	0.3	.58
PRC[b]-Shenzhen (N=593)	56.4	11.0	44.7	3.3	0.8	.37	0.0	0.0	0.4	0.3	1.2	.27	43.6	11.0	55.2	3.3	0.8	.37
Ukraine (N=551)	83.4	3.9	92.3	1.7	4.0	.045	9.4	3.7	2.9	1.0	2.8	.09	16.6	3.9	7.0	1.6	4.8	.028

[a] N shown is the denominator N of all respondents with twelve month mental disorders who did not use services in that period in each country

[b] People's Republic of China

Table 3

Barriers for not seeking treatment among the subgroup with twelve-month mental disorders who perceived a need for mental health care but did not access any, according to level of severity (All countries).

	Any Severity (N=4,583)		Severe (N=1,124)		Moderate (N=1,930)		Mild (N=1,529)				
	%	(se)	%	(se)	%	(se)	%	(se)	χ^2_2	p	Pair-wise comparisons
Barriers											
Structural barriers											
Financial	15.9	(0.8)	23.9	(1.8)	15.4	(1.1)	11.3	(1.4)	30.2	(<.001)	1>2>3
Availability	12.4	(0.6)	21.1	(1.7)	12.1	(0.9)	7.3	(0.8)	50.6	(<.001)	1>2>3
Transportation	5.4	(0.4)	10.7	(1.1)	4.7	(0.6)	2.7	(0.6)	40.6	(<.001)	1>2>3
Inconvenient	6.4	(0.5)	12.6	(1.3)	6.2	(0.7)	2.8	(0.6)	42.3	(<.001)	1>2>3
Any structural barrier	22.6	(0.9)	35.8	(1.9)	21.1	(1.2)	15.9	(1.5)	70.4	(<.001)	1>2>3
Attitudinal barriers											
Wanted to handle on own	63.8	(1.0)	57.9	(2.2)	64.9	(1.6)	66.5	(1.7)	9.7	(.008)	1<2=3
Perceived ineffectiveness	15.7	(0.7)	23.3	(1.8)	14.9	(1.0)	11.8	(1.1)	28.0	(<.001)	1>2>3
Stigma	7.7	(0.5)	15.4	(1.4)	6.3	(0.6)	4.3	(0.7)	47.2	(<.001)	1>2>3
Thought would get better	16.0	(0.8)	23.6	(1.7)	16.4	(1.2)	10.6	(1.1)	41.9	(<.001)	1>2>3
Problem was not severe	24.4	(1.0)	26.3	(1.7)	24.6	(1.6)	22.9	(1.9)	1.9	(.38)	1=2=3
Any attitudinal barrier	96.3	(0.3)	95.1	(0.8)	96.4	(0.6)	96.9	(0.7)	3.2	(.20)	1=2=3

Table 4

Multivariable analyses of the socio-demographic correlates of not seeking treatment because of low perceived need, any structural barriers or any attitudinal barriers among respondents with twelve-month DSM-IV disorders (all countries)

	Low Perceived Need (N=11,471)		Any Structural Barrier among those who recognized the need for treatment (N=4,583)	
	OR (95% CI)	χ^2 P	OR (95% CI)	χ^2 P
Age (≥65, reference)				
Age 18–34	0.6* (0.4–0.8)	16.2(.001)	2.0* (1.1–3.5)	9.3(.026)
Age 35–49	0.6* (0.4–0.8)		2.0* (1.1–3.5)	
Age 50–64	0.7* (0.5–0.9)		1.4 (0.8–2.6)	
Sex (male, reference)				
Female	0.9* (0.8–1.0)	4.9(.027)	1.2 (0.9–1.5)	1.7(.19)
Education (college, reference)				
No education	1.2 (0.8–1.9)	3.6(.73)	3.2* (1.9–5.3)	27.2(.001)
Some primary	1.2 (0.9–1.6)		1.1 (0.7–1.9)	
Primary finished	1.1 (0.8–1.5)		1.5 (0.9–2.5)	
Some secondary	1.1 (0.8–1.3)		1.5* (1.1–2.2)	
Secondary finished	1.1 (0.9–1.4)		1.1 (0.8–1.6)	
Some college	1.2 (1.0–1.5)		1.4 (0.9–2.1)	
Household Income (high, reference)				
Low income	1.0 (0.8–1.2)	1.6(.67)	1.3 (0.9–1.8)	4.9(.18)
Low-average income	0.9 (0.8–1.1)		1.2 (0.9–1.7)	
High-average income	1.0 (0.9–1.2)		1.0 (0.7–1.3)	
Marital Status (never married, reference)				
Married/cohabitating	1.0 (0.8–1.1)	4.3(.12)	1.3 (1.0–1.7)	4.5(.10)
Separated/widowed/divorced	0.8 (0.6–1.0)		1.0 (0.7–1.5)	
Severity (mild, reference)				
Severe	0.6* (0.5–0.7)	42.4(<.001)	1.6* (1.2–2.2)	12.2(.002)
Moderate	0.7* (0.6–0.8)		1.1 (0.8–1.5)	

Note: Analyses adjusted for number of 12 month mood disorders, number of 12 month anxiety disorders, number of 12 month substance disorders and number of 12 month disruptive behavior disorder, country.

Df for χ^2 = (k-1) where k is the number of categories on the correlate variable.

Table 5

Reasons for dropping out of treatment among respondents with 12-month mental disorders who recognized the need for treatment according to level of severity (all countries)

	Any Severity		Severe		Moderate		Mild			
Reasons	**%**	**(se)**	**%**	**(se)**	**%**	**(se)**	**%**	**(se)**	**χ^2**	**(p-val)**
Structural barriers										
Financial	25.4	(3.4)	21.6	(4.1)	31.5	(6.1)	20.8	(7.7)	2.1	(.35)
Availability	5.1	(1.4)	6.1	(2.2)	3.1	(1.5)	7.8	(4.5)	2.0	(.37)
Inconvenient or transportation	23.0	(3.3)	18.6	(3.9)	31.1	(6.5)	15.4	(5.1)	3.4	(.18)
Any structural barrier	41.8	(3.7)	36.7	(4.6)	49.7	(6.5)	36.3	(7.9)	2.7	(.26)
Attitudinal barriers										
Wanted to handle on own	50.2	(3.7)	51.6	(4.8)	48.8	(6.3)	50.3	(8.5)	0.1	(.94)
Perceived ineffectiveness	39.3	(3.7)	45.8	(4.9)	33.3	(6.0)	38.0	(8.4)	2.7	(.25)
Stigma	23.1	(3.6)	26.9	(5.9)	20.1	(5.3)	21.4	(7.4)	0.7	(.71)
Negative experience with treatment provider	18.4	(2.6)	26.9	(4.7)	11.2	(3.3)	15.9	(5.5)	6.9	(.032)
The problem got better	16.7	(2.7)	12.9	(3.6)	19.8	(4.8)	17.9	(7.0)	1.4	(.49)
Any Attitudinal barrier	83.9	(2.8)	83.0	(3.8)	83.0	(5.0)	87.7	(4.3)	0.8	(.67)

Table 6

Multivariable analyses of the socio-demographic correlates of dropping out of treatment because of any structural barriers among respondents with 12-month DSM-IV disorders who recognized the need for treatment (all countries)[a]

	Any Structural barriers + (among those who recognized the need for treatment)			
	OR	**(95% CI)**	**χ^2**	**p**
Age				
Age	1.0*	(0.9–1.0)	4.6	.033
Sex				
Female	1.001	(0.5–2.0)	0.0	.99
Education				
Continuous education	1.029	(0.9–1.1)	0.4	.52
Income				
Continuous income	0.9	(0.7–1.1)	2.1	.15
Marital Status				
Married/cohabitating	1.048	(0.5–2.2)	0.1	.97
Separated/widowed/divorced	1.1	(0.4–3.1)	.	.
Severity				
Severe	2.1	(0.7–5.8)	7.3	.027
Moderate	3.5*	(1.3–9.3)	.	.

[a]Controls: number of 12 month mood disorders, number of 12 month anxiety disorders, number of 12 month substance disorders, number of 12 month disruptive behavior disorders, and country

Appendix table A

Barriers to use and reasons for dropout treatment: WMH surveys

Barriers to use	Reasons for dropout
Low perceived need:	**Low perceived need:**
The problem went away by itself, and I did not really need help.	You didn't need help anymore.
Structural barriers:	**Structural barriers:**
My health insurance would not cover this type of treatment.	The therapist or counselor left or moved away.
I was concerned about how much money it would cost.	The policies were a hassle.
I was unsure about where to go or who to see.	There were problems with lack of time, schedule change, or lack of transportation.
I thought it would take too much time or be inconvenient.	You moved.
I could not get an appointment.	Treatment was too expensive.
I had problems with things like transportation, childcare, or scheduling that would have made it hard to get to treatment	Your health insurance would not pay for more treatment.
Attitudinal barriers:	**Attitudinal barriers:**
I thought the problem would get better by itself.	You got better.
I didn't think treatment would work.	You were not getting better.
I was concerned about what others might think if they found out I was in treatment.	You wanted to handle the problem on your own.
I wanted to handle the problem on my own.	You had bad experiences with the treatment providers.
I was scared about being put into a hospital against my will.	You were concerned about what people would think if they found out you were in treatment.
I was not satisfied with available services.	You were treated badly or unfairly.
I received treatment before and it did not work.	You felt out of place.
The problem didn't bother me very much.	Your family wanted you to stop.

Appendix Table B

Reasons for dropping out of treatment among respondents with twelve-month mental disorders who received any treatment according to level of severity.

Country[a]	Low perceived need for treatment						Any structural barrier						Any attitudinal barrier					
	Serious		Moderate/ Mild		serious vs. moderate/mild		Serious		Moderate/ Mild		serious vs. moderate/mild		Serious		Moderate/ Mild		serious vs. moderate/mild	
	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p
High-income countries																		
Belgium (N=13)	45.4	20.6	44.4	26.0	0.0	.97	0.0	0.0	0.0	0.0	.	.	52.4	20.3	100.0	0.0	2.9	.09
France (N=13)	21.2	22.5	49.0	17.8	0.9	.35	0.0	0.0	0.0	0.0	.	.	81.8	16.6	83.4	13.1	0.0	.94
Germany (N=7)	100.0	0.0	70.9	18.3	0.8	.37	0.0	0.0	0.0	0.0	.	.	0.0	0.0	100.0	0.0	1.1	.29
Italy (N=7)	51.1	35.3	21.6	16.1	0.5	.49	0.0	0.0	0.0	0.0	.	.	100.0	0.0	89.6	10.7	0.8	.39
Netherlands (N=11)	10.0	9.9	80.2	17.8	4.0	.04	0.0	0.0	0.0	0.0	.	.	86.3	18.7	38.5	20.8	2.7	.10
Spain (N=12)	4.8	5.1	57.6	22.5	3.3	.07	15.1	11.5	0.0	0.0	1.8	.18	100.0	0.0	56.0	22.7	2.6	.11
Israel (N=27)	34.2	16.3	30.8	11.7	0.0	.86	28.9	13.1	29.3	11.2	0.0	.98	77.5	11.9	83.8	10.7	0.2	.70
Japan (N=7)	100.0	0.0	57.0	21.5	0.9	.35	0.0	0.0	26.7	18.7	0.7	.98	0.0	0.0	100.0	0.0	2.1	.15
NZL (N=83)	37.4	10.2	44.4	9.3	0.3	.62	49.0	11.1	39.2	9.4	0.5	.98	79.1	9.5	98.5	1.1	3.6	.06
Northern Ireland (N=13)	58.9	25.1	54.4	22.5	0.0	.90	14.8	15.0	19.7	14.8	0.1	.98	35.2	22.7	58.6	26.1	0.4	.52
Portugal (N=29)	23.0	14.1	57.5	14.0	2.4	.13	32.3	13.6	13.6	8.4	1.1	.98	82.6	8.9	85.0	10.3	0.0	.87
United States (N=78)	19.0	7.5	29.6	8.3	0.7	.39	30.2	7.3	32.7	8.3	0.1	.98	92.0	3.7	76.7	7.5	3.9	.06
Upper-middle income countries																		
Brazil – São Paulo (N=42)	17.0	6.3	22.8	13.9	0.1	.71	29.6	8.3	32.6	16.9	0.0	.98	76.1	8.8	70.1	16.7	0.2	.69
Bulgaria (N=5)	.	.	17.0	13.7	.	.	.	.	83.0	13.7	.	.98	.	.	87.1	13.2	.	.
Lebanon (N=5)	20.7	19.1	100.0	0.0	2.4	.12	24.5	21.6	0.0	0.0	0.9	.98	34.0	25.9	100.0	0.0	2.2	.14
Mexico (N=27)	16.3	9.9	42.2	14.1	1.7	.19	37.1	17.0	42.2	10.1	0.1	.98	90.6	7.5	77.7	14.4	0.6	.46
Romania (N=4)	.	.	59.6	23.7	.	.	.	.	0.0	0.0	.	.98	.	.	100.0	0.0	.	.
South Africa (N=21)	14.8	13.8	34.7	12.6	1.0	.31	16.7	13.0	32.3	15.7	0.6	.98	90.0	9.9	90.5	7.0	0.0	.96
Low and lower middle income countries																		
Colombia (N=28)	43.3	15.9	38.4	12.4	0.1	.82	0.0	0.0	12.2	6.8	2.2	.98	100.0	0.0	62.4	12.6	3.7	.05
India - Pondicherry (N=3)	.	.	17.0	17.5	.	.	.	.	0.0	0.0	.	.98	.	.	89.2	13.2	.	.
Iraq (N=7)	79.9	19.7	22.1	17.3	1.0	.31	20.2	19.7	77.9	17.3	1.0	.98	10.8	12.9	92.8	8.9	1.8	.18
Nigeria (N=1)	100.0	0.0	.	.	.	.	0.0	0.0	.	.	.	.98	100.0	0.0	.	.	.	.

Country[a]	Low perceived need for treatment						Any structural barrier						Any attitudinal barrier					
	Serious		Moderate/ Mild		serious vs. moderate/mild		Serious		Moderate/ Mild		serious vs. moderate/mild		Serious		Moderate/ Mild		serious vs. moderate/mild	
	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p	%	SE	%	SE	χ^2_1	p
PRC[b]-Beijing/Shanghai (N=5)	100.0	0.0	55.7	23.6	0.8	.36	0.0	0.0	0.0	0.0	.	.98	100.0	0.0	60.1	32.0	0.7	.42
PRC[b] -Shenzhen (N=4)	0.0	0.0	0.0	0.0	.	.	100.0	0.0	0.0	0.0	2.7	.98	100.0	0.0	100.0	0.0	.	.
Ukraine (N=14)	73.9	14.1	33.7	20.9	2.0	.16	26.2	14.1	30.3	15.7	0.0	.98	37.0	22.5	54.1	17.4	0.4	.51

[a] N shown is the denominator N of all respondents with twelve month mental disorders who did not use services in that period in each country

[b] People's Republic of China