Chapter 8

Patterns of Treatment and Barriers to Care in Posttraumatic Stress Disorder

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Most individuals with posttraumatic stress disorder (PTSD) never receive any treatment (Kantor et al., 2017), even though a few effective treatments exist (Cukor et al., 2010; Bisson et al., 2013). To date, much of the epidemiological research on treatment has been limited to studies on either of those exposed to particular types of trauma (e.g., natural disasters; Rodriguez & Kohn, 2008) or of special populations (e.g., members of the military; Hom et al., 2017). Most general population studies have focused on treatment for "worst" lifetime traumas (e.g., Roberts et al., 2011; Sheerin et al., 2016). In this chapter, we examine the World Mental Health (WMH) survey data related to patterns of treatment and barriers to obtaining treatment for PTSD.

Earlier WMH reports documented that many individuals throughout the world afflicted with mental disorders fail to benefit from proven treatments. Not only is the proportion of individuals with mental disorders who receive any treatment low, but the treatment provided also often fails to meet even minimal standards of adequacy (Wang et al., 2007a, 2007b; Thornicroft et al., 2017). It is unclear, though, whether these results also apply to PTSD, as individuals with PTSD tend to have greater access to treatment than those with other disorders. In particular, special treatment systems are often put in place to address the mental health needs of refugees (Mollica et al., 2004), combat veterans (Holdeman, 2009), and those exposed to natural or human-made disasters (Vernberg et al., 2008) and school shootings (Jordan, 2003). In addition, in contrast to those with other disorders, individuals with PTSD tend to face fewer psychological barriers to seeking treatment, since it is widely considered "normal" to have a difficulty coping with reactions to highly abnormal experiences (Mittal et al., 2013). As a result, we might expect that a higher proportion of individuals with PTSD would obtain treatment. We investigate this hypothesis in this chapter.

We also examine barriers to treatment. Most of the research on such barriers comes from high-income countries (Wells et al., 1994; Kessler et al., 1997) where attitudinal barriers to treatment, such as negative health beliefs (e.g., that treatments are not effective or that an individual cannot recover) (Prins et al., 2008), misinterpretations about the consequences of treatment, or stigma, are the most commonly reported barriers (Sareen et al., 2007; Jagdeo et al., 2009; Clement et al., 2015). Many individuals with severe mental disorders are unaware of available 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). However, Sareen et al. (2007) found that low-income respondents were significantly more likely to report a financial barrier to care in the United States than in either Canada or the Netherlands. While previous WMH studies have documented that low levels of perceived need and attitudinal barriers are the most commonly reported barriers by individuals with mental disorders who failed to obtain any treatment (Andrade et al., 2014), it is unclear whether these same patterns hold for PTSD.

Methods

We examined treatment after random traumas in the same 22 WMH surveys referred to in several other chapters that assessed lifetime PTSD after random traumas. Respondents who met DSM-IV/CIDI criteria for PTSD were asked whether they had ever *"talk(ed) to a medical doctor or other professional about"* the symptoms of PTSD reported in the survey. This question went on to define "other professionals" broadly to include *"psychologists, counselors, spiritual advisors, herbalists, acupuncturists, and other healing professionals."*

The respondents who reported receiving treatment were then asked two additional questions. The first asked if they had ever received treatment for their psychological reactions to the random trauma that *"you considered helpful or effective."* The second asked

about the number of professionals seen. Respondents who reported helpful treatment were asked how many professionals they had seen *"up to and including"* the one who had helped them, whereas respondents who reported that the treatment was not helpful were asked how many professionals they had seen in total. Our intent in asking these questions was to learn both how often patients reported being helped by PTSD treatment, and how often obtaining helpful treatment required persistence in seeking out additional treatment providers, after one or more initial providers had proven unhelpful.

We used simple actuarial methods to calculate cumulative probabilities of obtaining helpful treatment by number of professionals seen. We then used logistic regression analysis to examine basic sociodemographic correlates of seeking treatment and among treatment-seekers, of being helped by the treatment. Although 1,575 respondents met criteria for PTSD associated with random traumas, only 1,106 were included in the analysis; that's because the cases in Brazil, Bulgaria, and South Africa were excluded due to a skip error that led to the random-trauma treatment questions being omitted in those countries. In addition, these questions were incorrectly skipped in a number of surveys when the random trauma was the same as the respondent's self-reported worst lifetime trauma, introducing a possible bias into the sample of excluding the most severe PTSD episodes.

We also carried out a separate analysis of more recent treatment by focusing on the subset of WMH respondents described in Chapter 5, who both met lifetime criteria for PTSD and reported that they continued to have PTSD in the 12 months before interview. These respondents were asked if they received any treatment for these symptoms in the past 12 months. As part of a broader assessment of 12-month service use in a separate section of the interview, we then asked the subset of these respondents who *did* receive 12-month treatment whether they were treated during that time period by any providers in four treatment categories: (1) *specialist mental health* treatment (psychiatrist, psychologist, other mental health professional in any setting, social worker or counselor in a mental health specialist treatment setting, used a mental health hotline); (2) *general medical* treatment (primary care doctor, other medical doctor, any other healthcare professional seen in a general medical setting); (3) *human services* treatment (religious or spiritual advisor, social worker, or counselor in any setting other than specialist mental health); and (4) *complimentary and alternative medicine* (CAM) treatment (any other type of healer such as a chiropractor or participation in a self-help group).

We asked the respondents who received any treatment about the number of visits to providers in each of these four categories in the previous 12 months and about the content of treatment (psychotherapy, medication, or both). Responses to these questions enabled us to study treatment adequacy. Previous WMH analyses have shown that a substantial proportion of the individuals in community epidemiological surveys who report "receiving treatment" for mental health problems did not receive a type of treatment that met even the most minimal standards of adequacy (Wang et al., 2007a). Using evidence-based guidelines (Depression Guideline Panel, 1993; Lehman & Steinwachs, 1998; American Psychiatric Association, 2006), we defined minimally adequate treatment as receiving either pharmacotherapy ($\geq$1 month of a medication, plus $\geq$4 visits to any type of medical doctor) or psychotherapy ($\geq$8 visits with any professional). The decision to have four or more physician visits for pharmacotherapy was based on the fact that for medication assessment, initiation, and monitoring, four or more visits are generally recommended during the acute and continuation phases of treatment. We required at least eight sessions for psychotherapy, based on the fact that clinical trials showing efficacy have generally included eight or more visits. Any respondent in continuing treatment was regarded as having met this definition.

The subset of respondents with 12-month PTSD who did not receive treatment in the past 12 months were asked a different set of follow-up questions. This question series began by asking respondents whether there was ever a time in the past 12 months when they felt that they might have needed to see a professional for their problems with emotions, nerves, or mental health. Respondents who did not think they needed help, or who reported that their PTSD symptoms were not sufficiently distressing to warrant treatment, were coded as having "low perceived need." In contrast, respondents who reported having "perceived need" were asked additional questions about the structural barriers (e.g., financial) and attitudinal barriers (e.g., stigma) listed in Box 8.1.

Once we inspected the descriptive data for patterns of treatment, treatment adequacy, and barriers to treatment, we used logistic regression to examine the predictors of receiving treatment and of treatment

in separate service sectors. We also carried out parallel analyses of the predictors of specific treatment barriers among those who did not receive treatment. Previous WMH analyses that studied 12-month treatment for any mental disorder found that both the proportion of cases in treatment (Wang et al., 2007a) and the barriers reported by those not in treatment (Andrade et al., 2014) varied significantly with disorder severity. As a result, we included a measure of 12-month disorder severity in the analysis of 12-month treatment for PTSD.

As in previous WMH studies, respondents with 12-month PTSD were classified as *severe* cases either if they made a suicide attempt in the 12 months before interview, or if they reported severe role impairment in the past 12 months in any domain of the expanded version of the Sheehan Disability Scales (SDS; Leon et al., 1997), or if they had a comorbid 12-month disorder that we considered prima facie evidence of severe disorder (either bipolar I disorder or substance dependence with a physiological dependence syndrome). Respondents not classified as severe were classified as *moderate* if they reported moderate impairment on any of the SDS dimensions, or if they met criteria for substance dependence without a physiological dependence syndrome. All other cases were classified as *mild*.

Box 8.1 The structural and attitudinal barriers to seeking treatment assessed in the WMH surveys

I **Structural Barriers**
- My health insurance would not cover this type of treatment.
- I was concerned about how much money it would cost.
- I was unsure about where to go or who to see.
- I thought it would take too much time or be inconvenient.
- I could not get an appointment.
- I had problems with things like transportation, childcare, or scheduling that would have made it hard to get to treatment.

II **Attitudinal Barriers**
- I thought the problem would get better by itself.
- I didn't think treatment would work.
- I was concerned about what others might think if they found out I was in treatment.
- I wanted to handle the problem on my own.
- I was scared about being put into a hospital against my will.
- I was not satisfied with available services.
- I received treatment before and it did not work.
- The problem didn't bother me very much.

Results

Treatment After Random Traumas

Broadly defined treatment of PTSD associated with random traumas was reported by 39.2% of respondents (see Table 8.1). This proportion was dramatically higher in high-income countries than in low- and middle-income countries (LMICs; 47.1% versus 14.3%; $\chi^2_1 = 58.5$, $p < 0.001$). Among the respondents who received treatment, 22.9% said that they were helped by

Table 8.1 Lifetime treatment and helpfulness among those with random lifetime DSM-IV/CIDI PTSD by country income

	Full sample			High-income countries			LMICs			
	%	(SE)	(*n*)	%	(SE)	(*n*)	%	(SE)	(*n*)	χ^2_1
I Obtained treatment	39.2	(1.9)	(1,209)	47.1	(2.1)	(891)	14.3	(2.5)	(318)	58.5*
II Treatment was helpful										
Helped by the first professional	22.9	(2.4)	(348)	21.0	(1.7)	(307)	45.2	(18.2)	(41)	2.3
Helped by the second professional[a]	22.3	(2.4)	(190)	21.5	(2.5)	(171)	36.5	(4.7)	(19)	8.6*
Helped by the third professional[a]	33.2	(5.4)	(107)	34.1	(5.8)	(97)	13.2	(6.0)	(10)	4.4*
Helped by a later professional[a]	13.2	(1.6)	(265)[b]	14.0	(1.7)	(211)[b]	3.5	(0.6)	(54)[b]	46.8*

*Significant at the 0.05 level, two-sided test.
[a]Among respondents who were not helped by the prior professional(s) and sought help from an additional professional. In the case of the last row, this percentage was averaged over all subsequent professionals visited beyond the first three.
[b]Some respondents sought treatment from up to six professionals. This number represents the number of professionals seen, not the number of individuals seeking treatment.

the first professional they saw. A comparable proportion of the remainder (22.3%) reported being helped by a second professional, conditional on not being helped by the first and seeing a second.

The conditional proportion being helped by a third professional was also comparable (33.2%), but decreased after the third visit (13.2%). The proportion of patients continuing to seek help from additional professionals after receiving unhelpful treatment declined after the third professional. It is unlikely that the patients who persisted in seeking help were comparable to those who gave up with regard to treatment response. But to the extent they were, these results suggest that close to 60% of patients would have been helped if they had persisted in seeing three professionals (see Figure 8.1).

Correlates of Treatment After Random Traumas

Consistent with the results in Table 8.1, the logistic regression analysis showed that respondents from high-income countries were significantly more likely to receive treatment after random traumas (OR = 6.2) (see Table 8.2) than those from LMICs. However, country income was unrelated to the odds of treatment being perceived as helpful. Women were somewhat more likely to receive treatment than men (OR = 1.4) and also somewhat more likely than men to believe that treatment helped (OR = 1.3). Respondent age at the time of trauma exposure was not associated either with odds of receiving treatment or odds of treatment being perceived as helpful. Respondent education at the time of trauma exposure was also not related significantly with odds of receiving treatment, but there was a significant nonlinear association of education with odds of treatment being perceived as helpful ($\chi^2_3 = 11.6$, $p = 0.010$) due to a significantly reduced OR for this perception among respondents with high-average levels of education (OR = 0.6).

Trauma category significantly predicted receiving treatment ($\chi^2_5 = 13.0$, $p = 0.020$) due to a significantly elevated OR of sexual violence victimization with receiving treatment (OR = 1.4), and a significantly reduced OR between physical violence victimization and treatment (OR = 0.7). Trauma category also predicted odds of treatment being perceived as helpful ($\chi^2_5 = 27.2$, $p = 0.020$), with significantly elevated ORs for physical and sexual violence victimization

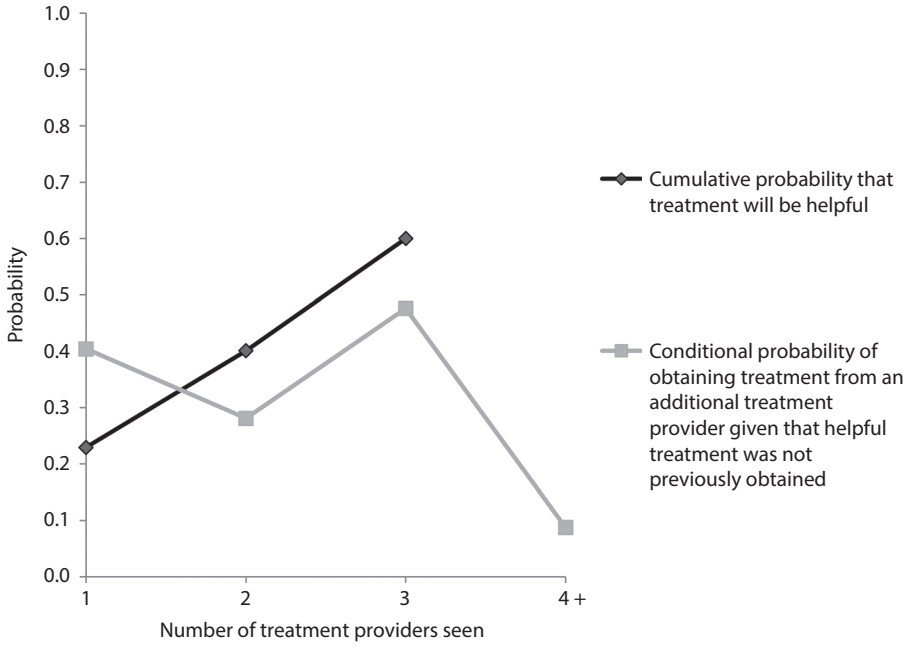

Figure 8.1 Cumulative probability of receiving helpful treatment as a function of number of treatment providers seen and conditional probabilities of continuing to seek treatment after prior unhelpful treatment

Table 8.2 Associations of lifetime treatment and helpful treatment among those with random lifetime DSM-IV/CIDI PTSD

	Received any treatment[a]		Treatment was helpful among those who received treatment[b]	
	OR	95% CI	OR	95% CI
I Country Income				
High income	6.2*	(4.1–9.3)	0.6	(0.2–1.9)
Low and middle income	1.0	–	1.0	–
II Age[c]	1.0	(0.8–1.3)	1.1	(0.9–1.2)
III Sex				
Female	1.4	(1.0–2.0)	1.3	(1.0–1.7)
Male	1.0	–	1.0	–
IV Education				
Low	1.0	–	1.0	–
Low average	1.2	(0.6–2.1)	1.2	(0.9–1.6)
High average	1.8*	(1.1–2.9)	0.7*	(0.5–1.0)
High	1.2	(0.5–2.5)	1.5	(0.7–3.1)
χ^2_3	5.8		11.6*	
V Random Trauma Category[d]				
Exposure to organized violence	1.0	(0.5–1.8)	0.6	(0.2–2.0)
Participation in organized violence	0.8	(0.5–1.4)	0.6*	(0.4–0.9)
Physical violence victimization	0.7*	(0.4–1.0)	1.5*	(1.1–2.1)
Sexual violence victimization	1.4*	(1.1–1.9)	1.7*	(1.2–2.2)
Accidents/injuries	1.1	(0.7–1.7)	0.9	(0.6–1.5)
Other	1.2	(0.8–1.9)	1.2	(0.8–1.8)
χ^2_5	13.0*		27.2*	
(*n*)	(1,209)		(492)	

*Significant at the 0.05 level, two-sided design-based test.
[a]Based on a logistic regression model to predict obtaining treatment controlling for survey.
[b]Based on a discrete patient-provider survival model for treatment helpfulness with controls for surveys and for number of prior treatment professionals seen. A total of 492 patients were included in the analysis and a total of 910 patient-provider observations.
[c]ORs are for a 10-year increase.
[d]ORs are relative to the average across all six trauma categories.

(OR = 1.5–1.7) and significantly reduced ORs for participation in organized violence (OR = 0.6).

Treatment Among 12-Month Cases

Slightly more than half (58.8%) of WMH respondents with 12-month PTSD in high-income countries and 25.4% in LMICs reported being in treatment for PTSD at some time in the 12 months before interview (see Table 8.3). Roughly two-thirds of these patients in high-income countries (40.3% of all respondents with 12-month PTSD) and 55% of those in LMICs (13.9% of all respondents with 12-month PTSD) were seen in the general medical (GM) sector; somewhat smaller proportions (53% of patients in high-income countries and 32% in LMICs) were seen in the specialty mental health (SMH) sector, and considerably smaller proportions in the human services (14% to 12% across country income groups) and CAM (15% to 11% across country income groups) sectors.

The proportion of cases receiving treatment was consistently much higher in high-income countries than in LMICs across treatment sectors. The sum of the proportions of cases in treatment in the separate treatment sectors was about 30.2% higher than the proportion receiving any treatment in high-income countries and 2.6% higher in LMICs, suggesting that a meaningful proportion of patients were seen in multiple treatment sectors. Nearly half (47.9%) of the patients in high-income countries and 24.6% of those in LMICs received minimally adequate treatment.

In high-income countries, a significant positive monotonic association was found between disorder severity and the proportion of cases receiving any treatment (between 73.0% for severe cases and 39.9% for mild cases; $\chi^2_2 = 50.8$, $p < 0.001$) as well as treatment

Table 8.3 Treatment of 12-month DSM-IV/CIDI PTSD by country income level and severity

	Any		SMH		GM		HS		CAM		Minimally Adequate		Minimally Adequate/Any		
	%	(SE)	%	(SE)	%	(SE)	%	(SE)	%	(SE)	%	(SE)	%	(SE)	(n)
I High-Income Countries[a]															
Severe	73.0	(2.8)	42.8	(3.1)	49.6	(3.4)	10.3	(1.9)	12.1	(1.9)	39.2	(3.5)	56.3	(4.7)	(405)
Moderate	56.1	(5.6)	31.2	(4.7)	36.8	(4.7)	6.8	(2.6)	9.0	(2.5)	26.3	(6.1)	42.6	(8.4)	(169)
Mild	39.9	(4.1)	14.0	(2.6)	29.2	(3.5)	7.0	(1.9)	4.8	(2.2)	13.6	(3.3)	32.0	(6.7)	(254)
Total	58.8	(2.6)	31.1	(2.0)	40.3	(2.2)	8.5	(1.2)	9.1	(1.3)	28.3	(2.3)	47.9	(3.6)	(828)
χ^2_2	50.8*		42.5*		16.3*		2.3		3.4		21.3*		11.6*		
II LMICs[b]															
Severe	32.6	(7.1)	13.7	(4.5)	13.8	(5.3)	5.9	(2.7)	2.0	(1.2)	15.2	(6.1)	39.0	(14.0)	(92)
Moderate	27.6	(8.8)	5.2	(3.9)	11.2	(4.2)	2.0	(1.4)	11.2	(7.9)	5.6	(5.4)	16.7	(15.4)	(54)
Mild	20.9	(6.1)	6.3	(3.4)	15.0	(5.5)	2.0	(1.1)	0.4	(0.4)	1.9	(1.5)	12.1	(4.6)	(115)
Total	25.4	(4.5)	8.1	(2.4)	13.9	(3.8)	3.1	(0.9)	2.9	(1.7)	6.4	(2.3)	24.6	(7.3)	(261)
χ^2_2	2.8		8.1*		1.9		2.3		6.9*		6.8*		0.7		

*Significant at the 0.05 level, two-sided test.

[a]High-income countries include: Belgium, France, Germany, Israel, Italy, Japan, Netherlands, New Zealand, Northern Ireland, Spain, Spain – Murcia, and the United States.

[b]LMICs include: Bulgaria, Colombia, Peru, Brazil – SãoPaulo, Ukraine, Lebanon, Colombia – Medellin, Mexico, Romania, and South Africa.

in the SMH (42.8.0–14.0%; χ^2_2 =42.5, $p < 0.001$) and GM (49.6–29.2; χ^2_2 =16.3, $p < 0.001$) sectors; receiving adequate treatment (39.2–13.6%; $\chi^2_2 = 21.3$, $p < 0.001$); or receiving treatment classified as at least minimally adequate (56.3–32.0%; $\chi^2_2 = 11.6$, $p = 0.003$). These patterns were less clear in LMICs, as severity was not significantly associated with the proportion of cases receiving any treatment (χ^2_2 =2.8, $p = 0.25$); GM treatment ($\chi^2_2 = 1.9, p = 0.38$) HS ($\chi^2_2 = 2.3, p = 0.32$); or minimally adequate treatment among those with any treatment ($\chi^2_2 = 0.7, p = 0.70$). However, severity was significantly associated with treatment in the SMH sector (13.7–5.2%; χ^2_2 =8.1, $p = 0.017$) in the CAM sector (11.2–0.4%; $\chi^2_2 = 6.9, p = 0.032$), and with receiving minimally adequate treatment (15.2–1.9; χ^2_2 =6.8, $p = 0.034$).

Correlates of 12-Month Treatment

Human services and CAM treatments were too rare in both high-income countries and LMICs and minimally adequate treatment was too low in LMICs to study their correlates with precision. Controlling for severity and comorbidity, age was not related significantly to any other treatment measures, either in high-income countries ($\chi^2_3 = 2.2$–5.0, $p = 0.53$–0.17) or LMICs ($\chi^2_3 = 4.0$, $p = 0.26$) other than for a statistically significant non-monotonic association with SMH treatment or in LMICs (see Table 8.4). Men were significantly less likely than women to receive any treatment, but only in high-income countries (OR = 0.6), and there was no sex difference in treatment within separate service sectors either in high-income countries or LMICs or in receipt of adequate treatment in high-income countries ($\chi^2_1 = 0.0$–$3.3, p = 0.87$–0.7).

Education was unrelated to any of the treatment measures in high-income countries ($\chi^2_3 = 1.7$–6.7, $p = 0.65$–0.08) and to all but one of the treatment measures in LMICs ($\chi^2_3 = 5.2$–7.1, $p = 0.16$–0.07), the exception being a significantly positive association of education with SMH treatment ($\chi^2_3 = 10.5$, $p = 0.015$). The other indicator of socio-economic status considered, family income, was unrelated to any of the treatment measures in either high-income countries ($\chi^2_3 = 2.2$–$4.1, p = 0.54$–0.25) or LMICs ($\chi^2_3 = 1.0$–7.1, $p = 0.79$–0.07). Finally, marital status was unrelated to any of the treatment measures in high-income countries ($\chi^2_2 = 0.1$–$3.7, p = 0.95$–0.16) and to all but one in LMICs ($\chi^2_2 = 1.4$–5.0, $p = 0.50$–0.08), the exception being a significant association with GM treatment ($\chi^2_2 = 7.9$, $p = 0.019$) due to elevated ORs among the never married and previously married (OR = 3.1–3.6) relative to the married.

Barriers to 12-Month Treatment

The most commonly reported barriers to receiving 12-month treatment among respondents with severely impairing 12-month PTSD were attitudinal (53.4%), followed by low perceived need (43.6%) and structural barriers (31.1%) (see Table 8.5). In contrast, this rank ordering of barriers was quite different for respondents with moderate–mild 12-month PTSD, among whom low perceived need was by far the most commonly reported barrier to treatment (64.1%), followed by attitudinal barriers (34.0%) and structural barriers (9.1%). A significantly higher proportion of respondents with mild–moderate rather than severe PTSD reported low perceived need for treatment as a barrier to seeking treatment ($\chi^2_1 = 10.0$, $p = 0.001$), whereas a significantly higher proportion of respondents with severe rather than mild–moderate PTSD reported structural and attitudinal barriers ($\chi^2_1 = 9.6$–14.4, $p = 0.001$–< 0.001). The same basic patterns held when we looked separately at respondents in high-income countries and LMICs.

Given that low perceived need, unlike structural and attitudinal barriers, is a sufficient explanation for lack of treatment (unless treatment is involuntary, as it seldom is for PTSD), it is useful to examine the distribution of structural and attitudinal barriers among respondents who recognized a need for treatment but did not receive treatment (see Table 8.6). The vast majority of these individuals (94.6%) reported at least one attitudinal barrier. This was true regardless of level of disorder severity (94.5% to 94.8%).

By far the most common attitudinal barrier was the desire to handle the problem on their own (reported by 65.2% overall; 59.6–71.7% in subgroups defined by disorder severity). The next most common attitudinal barrier was related to perceived need: the belief that the problem would get better on its own (30.6% overall; 22.0–39.8% in subgroups), followed by perceived ineffectiveness (22.9%; 8.9–36.1%), stigma (17.8%; 5.7–37.1%), and the perception that the problem was not severe enough to need treatment (16.0%; 11.1–21.6%). The mean number of attitudinal barriers reported increased as severity decreased (from a low of 1.5 among severe cases to 1.9 among mild cases).

Table 8.4 Multivariable association of socio-demographic variables with 12-month treatment of DSM-IV/CIDI PTSD separately in high-income countries and LMICs[a]

	High-income countries								LMICs					
	Any		SMH		GM		Minimally Adequate		Any		SMH		GM	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
I Age														
18–34	0.8	(0.4–1.8)	0.9	(0.3–2.7)	0.7	(0.3–1.8)	1.1	(0.3–3.5)	0.7	(0.2–3.2)	0.1	(0.0–2.0)	0.7	(0.1–6.4)
35–49	1.3	(0.6–2.6)	1.4	(0.5–3.9)	1.2	(0.5–2.8)	1.6	(0.6–4.4)	1.1	(0.3–3.6)	0.8	(0.1–7.5)	0.8	(0.2–4.4)
50–64	1.3	(0.6–2.7)	1.2	(0.4–3.3)	1.2	(0.5–2.8)	1.1	(0.3–3.7)	1.9	(0.6–5.8)	1.9	(0.2–19.0)	1.9	(0.5–8.1)
65+	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–
χ^2_3	4.5		3.0		5.0		2.2		4.0		9.2*		4.0	
II Sex														
Female	1.7*	(1.1–2.7)	1.3	(0.8–2.0)	1.6	(1.0–2.5)	1.2	(0.7–2.2)	0.9	(0.4–2.0)	0.9	(0.2–4.0)	0.5	(0.1–1.7)
Male	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–
χ^2_1	5.1*		0.9		3.3		0.5		0.1		0.0		1.3	
III Education														
Low	0.6	(0.3-1.2)	0.8	(0.4–1.6)	1.1	(0.6–1.9)	0.8	(0.3–2.1)	1.0	(0.3–3.6)	0.0*	(0.0–0.4)	5.4	(0.8–38.4)
Low average	0.7	(0.4–1.1)	0.5*	(0.3–1.0)	0.9	(0.5–1.7)	0.4	(0.1–1.1)	0.8	(0.3–2.3)	0.2	(0.1–1.0)	3.7	(0.8–16.6)
High average	0.9	(0.5–1.6)	0.8	(0.4–1.5)	1.3	(0.7–2.1)	0.5	(0.2–1.2)	2.4	(0.9–6.6)	0.7	(0.2–3.6)	7.8*	(1.5–41.5)
High	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–
χ^2_3	4.1		5.1		1.7		6.7		5.2		10.5*		7.1	
IV Marital Status														
Currently married	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–
Previously married	1.4	(0.8–2.4)	1.3	(0.8–2.2)	1.1	(0.7–1.6)	1.9	(1.0–3.8)	2.2*	(1.0–4.9)	2.2	(0.6–8.8)	3.6*	(1.5–9.0)
Never married	1.0	(0.6–1.8)	1.0	(0.6–1.7)	1.1	(0.6–1.9)	1.5	(0.7–3.1)	2.2	(0.7–7.1)	1.1	(0.2–6.9)	3.1	(0.7–14.5)
χ^2_2	1.5		1.2		0.1		3.7		5.0		1.4		7.9*	
V Household Income														
Low	1.8	(0.9–3.7)	1.3	(0.6–2.7)	1.9	(1.0–3.8)	1.3	(0.4–4.0)	0.6	(0.2–1.7)	1.0	(0.2–4.5)	0.6	(0.2–2.0)
Low average	1.3	(0.6–2.6)	1.0	(0.4–2.1)	1.5	(0.8–2.9)	1.0	(0.3–2.8)	0.3	(0.1–1.1)	0.5	(0.1–3.3)	0.8	(0.2–2.9)
High average	1.3	(0.6–2.8)	0.8	(0.4–1.7)	1.6	(0.8–3.1)	1.7	(0.6–4.6)	0.9	(0.3–3.0)	0.2*	(0.0–0.9)	1.0	(0.3–3.7)
High	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–	1.0	–
χ^2_3	3.6		3.0		4.1		2.2		7.1		5.7		1.0	
(*n*)	(795)									(261)				

*Significant at the 0.05 level, two-sided test.

[a]Based on logistic regression models among Part II respondents with one or more 12-month DSM-IV/CIDI disorders controlling for severity and survey.

Structural barriers were reported less often (36.8% overall; 23.1–55.3% in subgroups defined by disorder severity). The most common structural barriers were lack of availability (25.0%; 11.9–40.0%) and financial constraints (24.3%; 17.8–29.9%), followed by transportation (15.3%; 7.4–224%), and inconvenience (11.9%; 1.2–28.3%). As with attitudinal barriers, mean number of structural barriers reported increased as severity decreased (from a low of 0.5 among severe cases to 1.1 among mild cases).

Table 8.5 Barriers to treatment among all respondents with 12-month DSM-IV/CIDI PTSD who did not use services in that period, by the level of disorder severity

	Severe		Moderate/Mild		
	%	(SE)	%	(SE)	χ^2_1
I Total Sample					
Low perceived need	43.6	(5.1)	64.1	(3.8)	10.0*
Structural barriers	31.1	(5.0)	9.1	(1.9)	14.4*
Attitudinal barriers	53.4	(5.0)	34.0	(3.7)	9.7*
II High-Income Countries					
Low perceived need	42.5	(6.4)	63.0	(4.6)	6.7*
Structural barriers	27.6	(6.0)	6.8	(1.7)	9.9*
Attitudinal barriers	55.4	(6.4)	36.3	(4.6)	5.8*
III Upper-Middle-Income Countries					
Low perceived need	35.1	(10.4)	62.0	(7.6)	3.5
Structural barriers	50.9	(10.9)	14.6	(5.3)	6.1*
Attitudinal barriers	59.0	(9.0)	33.4	(7.7)	4.1*
IV Low- and Lower-Middle-Income Countries					
Low perceived need	57.5	(13.3)	76.3	(10.8)	1.2
Structural barriers	25.7	(14.0)	7.8	(3.9)	1.3
Attitudinal barriers	38.8	(12.8)	21.8	(10.7)	1.0
(*n*)	(89)		(138)		

*Significant at the 0.05 level, two-sided test.

Table 8.6 Barriers to seeking treatment among respondents with 12-month DSM-IV/CIDI PTSD who perceived a need for treatment but did not obtain treatment by disorder severity

	All cases		Severe		Moderate		Mild		
	%	(SE)	%	(SE)	%	(SE)	%	(SE)	χ^2_2
I Structural Barriers									
Financial	24.3	(3.4)	17.8	(4.2)	29.9	(9.5)	29.2	(5.4)	3.6
Availability	25.0	(3.7)	11.9	(3.7)	24.9	(9.3)	40.0	(6.6)	10.3*
Transportation	15.3	(3.0)	7.5	(2.8)	19.6	(9.0)	22.4	(5.4)	7.1*
Inconvenient	11.9	(3.2)	1.2	(0.9)	2.9	(2.4)	28.3	(7.4)	9.1*
Any structural barrier	36.8	(4.2)	23.2	(4.8)	30.8	(9.5)	55.1	(6.3)	11.5*
II Attitudinal Barriers									
Wanted to handle on own	65.2	(4.2)	71.7	(7.3)	59.6	(10.3)	60.2	(6.4)	1.7
Perceived ineffectiveness	23.0	(3.5)	8.9	(3.5)	29.4	(8.2)	36.2	(6.8)	12.0*
Stigma	17.8	(3.4)	5.7	(2.7)	5.7	(4.0)	37.1	(6.9)	12.9*
Thought would get better	30.7	(4.5)	22.0	(7.7)	32.5	(8.5)	39.8	(7.3)	2.5
Problem was not severe	16.0	(3.8)	21.6	(7.5)	11.1	(5.3)	11.9	(3.2)	1.4
Any attitudinal barrier	94.6	(1.7)	94.5	(2.6)	94.9	(3.0)	94.7	(3.0)	0.0
(*n*)	(227)		(89)		(38)		(100)		

*Significant at the 0.05 level, two-sided test.

Correlates of Barriers to 12-Month Treatment

Low perceived need for treatment was not significantly related to any of the socio-demographic variables we considered, including respondent age ($\chi^2_3 = 3.1$, $p = 0.38$), sex ($\chi^2_1 = 0.3$, $p = 0.56$), education ($\chi^2_6 = 12.5$, $p = 0.051$), income ($\chi^2_3 = 1.8$, $p = 0.60$), or marital status ($\chi^2_2 = 2.9$, $p = 0.23$) (see Table 8.7). Among respondents with a perceived need for treatment, marital status was the only significant socio-demographic predictor of structural barriers ($\chi^2_2 = 7.9$, $p = 0.019$) due to a significantly elevated OR among the married compared to the never married (5.4), although this barrier was more common among older respondents, among men, and among milder cases. Respondents with severe PTSD were more likely than respondents with mild PTSD to report a structural barrier (OR 1.6, 95% CI 1.2–2.2, $\chi^2_2 = 12.2$, $p = 0.002$).

Discussion

In addition to the limitations noted in other chapters, our analysis of treatment was limited by the fact that we had no corroborating data from administrative records. Earlier studies suggest that self-reported

Table 8.7 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 12-month DSM-IV/CIDI PTSD (all countries)[a]

	Low perceived need		Any structural barrier given perceived need	
	OR	(95% CI)	OR	(95% CI)
I Age				
18–34	0.8	(0.3–2.0)	2.4	(0.3–16.4)
35–49	0.6	(0.2–1.4)	2.1	(0.3–12.6)
50–64	0.5	(0.2–1.2)	1.7	(0.2–12.7)
65+	1.0	–	1.0	–
χ^2_3	3.1		0.8	
II Sex				
Female	0.8	(0.5–1.5)	0.5	(0.2–1.4)
Male	1.0	–	1.0	–
III Education				
No education	0.2	(0.0–1.8)	0.0*	(0.0–0.6)
Some primary	2.6	(0.8–8.9)	0.4	(0.1–2.8)
Primary finished	2.1	(0.5–9.0)	0.6	(0.1–5.8)
Some secondary	0.6	(0.2–1.4)	0.5	(0.1–2.1)
Secondary finished	0.6	(0.3–1.5)	0.7	(0.2–2.8)
Some college	0.6	(0.3–1.5)	1.0	(0.4–3.0)
Completed college	1.0	–	1.0	–
χ^2_6	12.5		5.8	
IV Marital Status				
Married/cohabitating	1.2	(0.5–2.7)	5.4*	(1.3–23.1)
Separated/widowed/divorced	0.7	(0.3–1.7)	1.5	(0.3–7.7)
Never married	1.0	–	1.0	–
χ^2_2	2.9		7.9*	
V Household Income				
Low-income	1.2	(0.6–2.8)	0.5	(0.1–2.3)
Low-average-income	1.0	(0.4–2.4)	0.4	(0.1–1.3)
High-average-income	1.5	(0.6–3.6)	0.1*	(0.0–0.7)
High-income	1.0	–	1.0	–
χ^2_3	1.9		6.7	
(*n*)	(500)		(227)	

*Significant at the 0.05 level, two-sided test.
[a]Controlling for PTSD severity, number of comorbid 12-month mood, anxiety, substance and disruptive behavior disorders, and survey.

treatment overestimates actual treatment received as documented in administrative records (Rhodes & Fung, 2004). An additional limitation is that we did not ask about the types of professionals seen, the types of treatment received, or the patient ratings of adequacy of these treatments. Furthermore, since our analysis of barriers to treatment of 12-month PTSD relied on a list of barriers based on previous research in high-income countries, it might not have been sensitive to different national contexts. Finally, respondents were asked about barriers to treatment for any emotional problem, not just for PTSD; but even though responses were applied to respondents who failed to receive treatment for PTSD, this is a limitation because evidence exists that barriers to treatment are not uniform across diagnoses (Mojtabai et al., 2002).

Despite these limitations, the results reveal disturbingly high levels of unmet need for mental health treatment among individuals with PTSD after random traumas worldwide. Even in high-income countries, fewer than half of respondents with PTSD received treatment after random traumas, and only about one in five reported that the treatment provided by the first professional they saw was helpful (a total of only about 10% of cases that received helpful treatment from the first professional they saw). About 60% of those who persisted in seeking help from additional professionals were eventually helped. The situation was considerably worse in LMICs, where only 14.3% of individuals with PTSD sought treatment, of whom only a small minority received treatment that they considered helpful.

The finding that treatment rates for PTSD were much higher in high-income countries than in LMICs is consistent with prior WMH findings about patterns of treatment for any mental disorder (Wang et al., 2007b). And the finding that the treatment rate for PTSD after random traumas was slightly elevated among women is similar to WMH data on overall treatment of any mental disorder. However, the failure to find an age gradient in PTSD treatment is not consistent with the WMH results regarding overall treatment for any mental disorder, where we found a significant inverse association between age and odds of obtaining treatment. The finding that treatment rates were highest for PTSD associated with sexual assaults and lowest for PTSD associated with physical assaults might reflect differences in official recognition-reporting to law enforcement officials; in the case of sexual assault, the high treatment rates may be due to encouragement from law enforcement personnel. The finding of significantly higher rates of helpfulness reported by individuals receiving treatment after physical and sexual assaults could reflect either more intensive treatments, treatments that were specifically designed to address the special issues that emerge after these two types of trauma, or the greater effectiveness of PTSD treatments for these types of trauma. The WMH data provide no way of adjudicating among those and other possible explanations.

The findings for 12-month treatment of PTSD were somewhat different, as 58.8% of respondents were in treatment in high-income countries and 25% in LMICs. It is important to recognize that 12-month cases are different from lifetime cases in that 12-month cases over-represent people with chronic PTSD. In addition, 12-month treatment was defined as receiving treatment for any emotional problem rather than treatment specifically for PTSD. Importantly, the 12-month treatment rates we discovered were considerably higher than those found in other WMH analyses for mental disorders overall, consistent with our initial hypothesis that treatment for PTSD might be more common than for other mental disorders. For example, the 73.0% treatment rate for severely impairing 12-month PTSD in high-income countries was considerably higher than the 53% (48% to 58%) median (inter-quartile range) 12-month treatment rates found in earlier WMH analyses for all severely impairing 12-month mental disorders in those same countries (Wang et al., 2007a). The 32.6% treatment rate for severely impairing 12-month PTSD in LMICs was also higher than the 25% (20% to 26%) treatment rate for all severely impairing 12-month mental disorders found in earlier WMH analyses of those same countries.

As one might expect, we found a strong association between symptom severity and treatment in high-income countries. But this same association was not found in LMICs. This doubtlessly reflects differences in help-seeking behaviors, but could also be partly due to differences in the extent to which healthcare providers place priorities on delivering care. An argument could be made that it could be cost-effective in terms of secondary prevention to motivate primary care physicians to recognize and treat mild and moderately severe PTSD and other mental disorders (McCrone & Knapp, 2007) or to implement models

that make use of lay counselors to support primary care medical providers in treating these non-severe cases (Buttorff et al., 2012; Levin & Chisholm, 2015). The association of severity with treatment is related to the finding regarding barriers to treatment among the 12-month cases that did not receive treatment, which showed clearly that low perceived need for treatment was a critical barrier to seeking treatment of PTSD worldwide, even among individuals with severely impairing PTSD. This result is consistent with previous studies using WMH data (Andrade et al., 2014) as well as with other research (van Beljouw et al., 2010) showing that a substantial proportion of those with mental disorders do not define or recognize their distress as an "illness" that can be treated. Low perceived need was equally high in countries with various levels of economic development, although it is possible that a deeper analysis going beyond the WMH data might find that these perceptions differ in important ways across cultural settings.

It is plausible to imagine that the variation in mental health literacy – that is, in knowledge and beliefs about mental disorders – could be related to both perceived need for treatment and to service utilization. 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; Mojtabai, 2010; Lewer et al., 2015). Biased judgment due to the illnesses themselves might also have been involved, along with stigma and inaccurate beliefs (Mechanic, 2002; Prins et al., 2008; Schomerus & Angermeyer, 2008). Community campaigns aimed at increasing public awareness, raising mental health literacy, reducing the stigma and discrimination associated with mental illness, and bridging the gap between commonly held beliefs about treatment options and what mental health professionals actually have to offer, might be useful in reducing stigma and discrimination and improving awareness (Meadows & Burgess, 2009; Khandelwal et al., 2010; Thornicroft et al., 2016; Maulik et al., 2017).

Regarding those who did not seek treatment, it is noteworthy that attitudinal and structural barriers to treatment were more prevalent among those with severe than among those with mild–moderate PTSD. This difference presumably reflected the fact that individuals with severe PTSD were likely to recognize a need for help and would have a comparatively high probability of seeking treatment were it not for attitudinal and structural barriers. A desire to handle the problem by oneself was among the most common reasons reported by respondents who recognized a need. This result is consistent with other evidence that negative public attitudes, shame associated with mental illness (Mehta et al., 2009), and fear of being discriminated against in the workplace for revealing either a mental illness or psychiatric treatment (Thornicroft et al., 2009; Wheat et al., 2010; Lasalvia et al., 2013) often lead people to conceal mental health problems. Stigma has also been shown to be an important reason for not seeking treatment even among those with severe mental illness in both high-income countries and LMICs (Gureje et al., 2006; Saxena et al., 2007; Brohan et al., 2010; Clement et al., 2015).

We know from the dramatic increases in treatment rates of common mental disorders in high-income countries when direct-to-consumer advertisements for mental disorder treatments came into being that attitudinal barriers can be overcome with thoughtful public communication campaigns that help individuals with mental disorders recognize that their distress is a sign of illness, that the illness has a name, and that effective treatments exist to treat the illness (Ventola, 2011; Becker & Midoun, 2016). However, structural barriers have to be removed in order to enable individuals to act on these new realizations. Structural barriers such as financial constraints and lack of availability were commonly reported by WMH respondents with severe PTSD, even when they recognized a need for help. Even in high-income countries with well-funded health systems, individuals may lack insurance coverage for mental health treatment or the means to access services (Mechanic, 2002). In LMICs, the lack of trained mental health professionals and general scarcity of resources can reduce access to care much more (Andrade et al., 2008; Seedat et al., 2008). And in LMICs where mental health reform has been implemented, community-based services are often insufficient, the integration with primary care is weak, and inpatient beds are inadequate to meet population needs (e.g., Romero-Gonzalez et al., 2003; Andreoli et al., 2007; Caldas de Almeida & Horvitz-Lennon, 2010). In many LMICs, geographic distance from services in rural areas, population density, and lack of trained personnel also result in service deficiencies (Jacob et al., 2007). Health care policy planners need to address these structural barriers by improving service availability and accessibility in order to increase the proportion of individuals with PTSD and other mental disorders who receive treatment.

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