

Barriers to mental health treatment: results from the National Comorbidity Survey Replication

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Background. The aim was to examine barriers to initiation and continuation of treatment among individuals with common mental disorders in the US general population.

Method. Respondents in the National Comorbidity Survey Replication with common 12-month DSM-IV mood, anxiety, substance, impulse control and childhood disorders were asked about perceived need for treatment, structural barriers and attitudinal/evaluative barriers to initiation and continuation of treatment.

Results. Low perceived need was reported by 44.8% of respondents with a disorder who did not seek treatment. Desire to handle the problem on one's own was the most common reason among respondents with perceived need both for not seeking treatment (72.6%) and for dropping out of treatment (42.2%). Attitudinal/evaluative factors were much more important than structural barriers both to initiating (97.4% *v.* 22.2%) and to continuing (81.9% *v.* 31.8%) of treatment. Reasons for not seeking treatment varied with illness severity. Low perceived need was a more common reason for not seeking treatment among individuals with mild (57.0%) than moderate (39.3%) or severe (25.9%) disorders, whereas structural and attitudinal/evaluative barriers were more common among respondents with more severe conditions.

Conclusions. Low perceived need and attitudinal/evaluative barriers are the major barriers to treatment seeking and staying in treatment among individuals with common mental disorders. Efforts to increase treatment seeking and reduce treatment drop-out need to take these barriers into consideration as well as to recognize that barriers differ as a function of sociodemographic and clinical characteristics.

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Introduction

A substantial proportion of adults with common mental disorders fail to receive any treatment (Kessler *et al.* 2005c; President's New Freedom Commission on Mental Health, 2005; Wang *et al.* 2005a,b, 2007a; Sareen *et al.* 2007), even when these conditions are quite severe and disabling (Kessler *et al.* 2001). Furthermore, many who do receive treatment drop out before completing treatment (Edlund *et al.* 2006;

Wang, 2007). Because individuals with psychiatric disorders would often benefit from a full course of treatment, the gap between the prevalence and treatment of disorders contributes to unmet need for care. An important step in reducing unmet need for mental health care involves understanding the reasons why individuals with mental disorders either do not seek treatment or drop out of care.

Several factors are thought to impede appropriate mental health care seeking, including lack of perceived need for treatment (Mojtabai *et al.* 2002; Edlund *et al.* 2006; Sareen *et al.* 2007), stigma (van Voorhees *et al.* 2005, 2006; Wrigley *et al.* 2005; Wynaden *et al.* 2005), pessimism regarding the effectiveness of treatments (Bayer & Peay, 1997), lack of access due to

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financial barriers (Mojtabai, 2005) and other structural barriers, such as inconvenience or inability to obtain an appointment (Sareen *et al.* 2007). The contribution of these factors, however, may vary across populations, health care settings (Sareen *et al.* 2007) and possibly over time (Mojtabai, 2005). In one recently published study, for example, low-income respondents from the US as compared with those from Ontario or the Netherlands were significantly more likely to report a financial barrier to mental health treatment (Sareen *et al.* 2007). Nevertheless, in all three settings, attitudinal/evaluative barriers were more commonly reported obstacles than financial factors (Sareen *et al.* 2007).

Within the United States, financial barriers to mental health treatment seeking may have grown over the past decade (Mojtabai, 2005). During this period, however, public attitudes towards mental health treatment seeking became more favorable (Mojtabai, 2007). These trends, coupled with a marked increase in the use of mental health care (Olsson *et al.* 2002; Kessler *et al.* 2005c) call for a re-evaluation of reasons for not seeking treatment in the US. A better understanding of these barriers may inform the design of clinical services and public health campaigns aimed at improving access to mental health care.

In the present study, we use data from the National Comorbidity Survey Replication (NCS-R), a representative survey of the US population in the early 2000s, to examine barriers to initiation or continuation of treatment among individuals who meet criteria for a mental disorder. More specifically, we examine the role of perceived need as well as structural and attitudinal/evaluative barriers in treatment seeking and in dropping out of treatment among those who have already started treatment. We also examine and compare the role of these factors at different levels of clinical severity. Finally, we use multivariate models to examine associations between sociodemographic characteristics and severity of illness on the one hand and barriers to mental health treatment seeking, on the other.

Methods

Sample

The NCS-R is a nationally representative household survey of respondents aged ≥ 18 years in the contiguous United States (Kessler *et al.* 2004, 2005a). Face-to-face interviews were carried out with 9282 respondents between 5 February 2001 and 7 April 2003. Part I included a core diagnostic assessment and a service use questionnaire administered to all respondents. Part II ($n = 5962$) assessed risk factors, correlates

and additional disorders and was administered to all Part I respondents with lifetime disorders plus a probability subsample of other respondents. Because a number of disorders considered in rating severity level were asked only in Part II, the present analyses are limited to the Part II sample. This sample was appropriately weighted to adjust for the under-sampling of Part I respondents without any disorder. The overall response rate was 70.9%. NCS-R recruitment, consent and field procedures were approved by the Human Subjects Committees of Harvard Medical School and the University of Michigan.

Reasons for not using services or not continuing to use them

Respondents who reported no use of mental health services were asked whether there was a time in the past 12 months that they felt that they might have needed to see a professional for problems with their emotions, nerves or mental health. Those who answered affirmatively were then asked whether or not they endorsed each of a series of reason statements, about why they did not see a professional, from a list that included reasons involving low perceived need, structural barriers (e.g. lack of financial means, available treatments, personnel or transportation or the presence of other inconveniences) and attitudinal/evaluative barriers (e.g. the presence of stigma, low perceived efficacy of treatments or the desire to handle the problem on their own). These reason statements are based on similar statements used in the baseline NCS and earlier studies as well as on focus group interviews about barriers to seeking treatment carried out to expand these earlier lists. Respondents who reported that there was never a time in the past 12 months when they felt they might need help were not asked about reasons and were coded as having 'low perceived need' (Appendix A, available online).

Respondents who reported having seen a provider within the mental health specialty, general medical, human service or complementary-alternative medical sectors for help with emotional problems in the past 12 months were asked whether the treatment had stopped and, if so, whether they 'quit before the [provider] wanted [them] to stop'. Those who answered affirmatively to both questions were then asked to endorse reasons for dropping out of treatment from a list of potential reason statements similar to the list of reasons for not seeking treatment (Appendix B, online). Only respondents who had stopped or quit all ongoing treatments were rated as having dropped out and asked questions about the reasons for dropping out of treatment. Those who continued treatment with providers in one sector

while stopping treatment with any providers in other sectors were not rated as having dropped out of treatment. The 160 respondents who reported taking psychotropic medications for their emotional problems at any time in the past year, but reported no contacts with a treatment provider over that time period, were not counted as having received mental health treatment in the past 12 months even though some of them were presumably in long-term treatment and others made their last visit shortly before the beginning of the 12-month recall period (e.g. 13 months ago) and continued taking medications into the early part of that recall period. As we did not ask questions about treatment beyond the 12-month recall period, we had no way of classifying the treatment of these 160 respondents, leading us to delete them from the analysis.

Diagnostic assessment

DSM-IV diagnoses were based on version 3.0 of the Composite International Diagnostic Interview (CIDI) (Kessler & Üstün, 2004), a fully structured lay interview that generates diagnoses according to International Classification of Diseases, 10th Revision (WHO, 1992) and DSM-IV (APA, 1994) criteria. The analyses were restricted to respondents with at least one 12-month CIDI/DSM-IV disorder. The 12-month disorders included anxiety disorders (panic disorder, generalized anxiety disorder, agoraphobia without panic disorder, specific phobia, social phobia, post-traumatic stress disorder, obsessive-compulsive disorder, separation anxiety disorder), mood disorders (major depressive disorder, dysthymic disorder, bipolar disorder I or II), impulse control disorders (oppositional defiant disorder, conduct disorder, attention deficit/hyperactivity disorder, intermittent explosive disorder) and substance use disorders (alcohol and drug abuse and dependence). The disorders assessed in Part 2 include the four childhood disorders (separation anxiety disorder, oppositional defiant disorder, conduct disorder and attention deficit/hyperactivity disorder), post-traumatic stress disorder, obsessive-compulsive disorder and the substance use disorders. As described elsewhere (Kessler *et al.* 2005a), blind clinical re-interviews using the Structured Clinical Interview for DSM-IV (SCID) (First *et al.* 2002) with a probability subsample of NCS-R respondents found generally good concordance between WMH-CIDI diagnoses and SCID diagnoses. The above disorders were the only ones assessed in the survey. Exclusion of other disorders of clinical interest (e.g. non-affective psychosis, dementia, personality disorders) is a limitation.

Level of severity

The 12-month cases were classified as serious if they had any of the following: a 12-month suicide attempt with serious lethality intent; work disability or substantial limitation due to a mental or substance disorder; positive screen results for non-affective psychosis; bipolar I or II disorder; substance dependence with serious role impairment, as defined by scores in the 'severe' or 'very severe' range on disorder-specific versions of the Sheehan Disability Scale (Leon *et al.* 1997); an impulse control disorder with repeated serious violence; or any disorder that resulted in ≥ 30 days out of role in the last year. Cases not defined as serious were defined as moderate if they had any of the following: suicide gesture, plan or ideation; substance dependence without serious role impairment; at least moderate work limitation due to a mental or substance disorder; or any disorder with at least 'moderate' role impairment in two or more domains of the Sheehan Disability Scale. All other cases were classified as mild. As reported elsewhere (Kessler *et al.* 2005b), mean number of days in the past 12 months that respondents were completely unable to carry out their normal daily activities because of mental or substance use problems was 88.3 among respondents classified as having a serious condition, 4.7 among those classified as having a moderate condition and 1.9 among those classified as having a mild condition ($F_{2,5689} = 17.7, p < 0.001$).

Sociodemographic predictor variables

Sociodemographic variables included age (18–34, 35–49, 50–64, ≥ 65 years), sex, race-ethnicity (non-Hispanic white, Hispanic, non-Hispanic black, other), years of education (0–11, 12, 13–15, ≥ 16), family income in relation to the federal poverty level (Proctor & Dalaker, 2001) [low (≤ 1.5 times the poverty line), low average (> 1.5 – 3.0 times the poverty line), high average (> 3.0 – 6.0 times the poverty line), high (≥ 6.0 times the poverty line)] and marital status (married/cohabitating, separated/widowed/divorced, never married).

Analysis methods

The NCS-R data were weighted to adjust for differences in selection probabilities, differential non-response and residual differences between the sample and the US population on sociodemographic variables. An additional weight was used in the Part 2 sample to adjust for the over-sampling of Part 1 respondents (Kessler *et al.* 2004). All descriptive statistics are based on these weighted data. Analyses of reasons for not initiating treatment or continuing treatment were conducted in three stages. First, reasons were

Table 1. Reported reasons for not seeking treatment by level of severity of disorder among respondents with 12-month DSM-IV disorders who did not seek treatment at any time in the past 12 months

	Total		Severe		Moderate		Mild		χ^2	Significant pair-wise comparisons
	%	S.E.	%	S.E.	%	S.E.	%	S.E.		
I. Low perceived need										
Low perceived need for treatment	44.8	1.8	25.9	3.3	39.3	2.1	57.0	2.4	52.0*	1<2<3
<i>n</i>	1350		244		554		552			
II. Structural barriers among those with perceived need										
Financial	15.3	1.8	26.0	4.2	14.5	2.4	9.1	2.5	10.3*	1>2>3
Availability	12.8	1.6	24.2	3.5	11.3	2.0	7.0	1.3	18.2*	1>2>3
Transportation	5.7	1.1	13.4	3.0	4.9	1.2	1.6	0.7	14.9*	1>2>3
Inconvenient	9.8	1.3	18.7	3.2	10.0	1.6	3.7	1.2	16.9*	1>2>3
	22.2	2.3	38.5	3.5	20.4	2.9	13.5	2.5	43.5*	1>2>3
<i>n</i>	783		181		344		258			
III. Attitudinal/evaluative barriers among those with perceived need										
Wanted to handle on own	72.6	1.4	62.7	3.3	73.9	2.8	77.7	2.9	10.9*	1<2=3
Perceived ineffectiveness	16.4	1.4	26.0	4.4	14.9	1.7	12.0	2.5	6.7*	1>2=3
Stigma	9.1	1.3	21.3	3.2	7.2	1.6	3.3	1.0	23.6*	1>2>3
Thought would get better	11.5	1.5	23.1	3.5	10.3	1.8	5.3	1.2	23.4*	1>2>3
Problem was not severe	16.9	1.2	27.1	3.6	15.9	2.6	11.5	2.0	12.9*	1>2=3
Any	97.4	0.6	97.9	1.1	97.4	1.1	97.0	1.3	0.3	1=2=3
<i>n</i>	783		181		344		258			

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

examined and compared in the total group of respondents with any 12-month disorder as well as separately in subgroups defined by severity. Second, analyses of reasons other than those involving lack of need were repeated among respondents who reported perceived need for treatment. Third, multivariate logistic regression models were used to examine variation in reasons for not seeking treatment associated with sociodemographic characteristics and severity of illness. Three main effect models were estimated, one for each of the three broad categories of reasons (low perceived need, any structural barrier, any attitudinal/evaluative barrier). These multivariate analyses were then repeated with the addition of interaction terms between severity and each sociodemographic characteristic to examine whether the association of each sociodemographic factor with each type of barrier was uniform regardless of level of severity. Logistic regression coefficients and their standard errors were exponentiated and reported as odds ratios (OR) and 95% confidence intervals (CI).

Standard errors were calculated using the Taylor series method implemented in the SUDAAN software package (Research Triangle Institute, 2002) 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 tests and the $p < 0.05$ level of significance. Only when multivariate significance tests were significant did we interpret the significance of individual coefficients. This decision rule was used to guard against the possibility of false positive coefficients in an analysis that made a large number of individual tests. It is important to note, however, that although use of omnibus tests reduces the chance of false positive findings, the only definitive protection against this problem is replication in independent datasets.

Results

Reasons for not seeking treatment

Somewhat more than half (55.2%) of the 1350 Part II NCS-R respondents who met criteria for at least one 12-month DSM-IV/CIDI disorder but did not use any 12-month services reported that they might have needed to see a professional for mental health problems. This perception of need was significantly associated with severity of psychopathology ($\chi^2_3 = 52.0$, $p < 0.001$), with 74.1% of non-users who had a severe disorder reporting perceived need compared with 60.7% of those who had a moderately severe disorder and 43.0% of those who had a mild disorder. Low perceived need was the most commonly reported barrier to treatment across levels of severity (Table 1).

Table 2. Sociodemographic and severity predictors of reported reasons for not seeking treatment among respondents with 12-month DSM-IV disorders who did not seek treatment at any time in the past 12 months^a

	Low perceived need			Any structural barrier among those with perceived need		
	OR	95% CI	χ^2	OR	95% CI	χ^2
Age (≥ 65 years, reference)			13.0*			10.1*
18–34	0.4*	0.2–0.7		2.7*	1.4–5.2	
35–49	0.5*	0.3–0.8		2.6*	1.2–5.7	
50–64	0.6*	0.3–0.9		— ^b		
Sex (male, reference)			5.1*			1.9
Female	0.8*	0.6–1.0		1.3	0.9–1.9	
Race–ethnicity (non-Hispanic white, reference)			0.7			7.8
Hispanic	1.1	0.6–1.9		2.6*	1.3–5.6	
Non-Hispanic black	1.2	0.8–1.8		1.2	0.7–2.1	
Other	1.0	0.6–1.7		1.7	0.7–4.3	
Education (≥ 16 years, reference)			19.4*			1.5
0–11	0.5*	0.3–0.9		1.2	0.6–2.4	
12	0.8	0.5–1.4		1.2	0.6–2.2	
13–15	1.1	0.7–1.8		1.4	0.8–2.7	
Income (high, reference)			4.6			0.8
Low	1.4	1.0–2.0		1.0	0.5–1.9	
Low-average	1.1	0.8–1.7		0.8	0.4–1.6	
High-average	1.3	0.9–1.7		1.0	0.5–1.7	
Marital status (never married, reference)			4.6			4.8
Married/cohabitating	0.8	0.5–1.3		1.8	1.0–3.1	
Separated/widowed/divorced	0.6	0.4–1.0		1.4	0.7–3.0	
Severity (mild, reference)			15.1*			11.4*
Severe	0.5*	0.3–0.8		2.4*	1.4–4.0	
Moderate	0.6*	0.5–0.8		1.3	0.8–2.0	
χ^2_{17}			159.9*			53.6*
<i>n</i>	1350			783		

OR, Odds ratio; CI, confidence interval.

^a Based on multivariate logistic regression models controlling for number of 12-month mood, anxiety, substance, and externalizing disorders. A comparable model to predict attitudinal/evaluative barriers found no significant predictors. Results are available on request.

^b The reference category was collapsed due to the small number of respondents in the cells.

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

Over and above the effects of global measures of disorder severity, generalized anxiety disorder was the only individual disorder that predicted perceived need significantly, with an OR of 1.8 (95% CI 1.1–2.9, $p=0.020$). Among respondents who recognized a need for treatment, in comparison, the desire to handle the problem on one's own was the most commonly reported reason for not seeking treatment (72.6%), while attitudinal/evaluative barriers were much more commonly reported (97.4%) than structural barriers (22.2%). Reported reasons for not seeking treatment varied significantly across severity levels, with low perceived need more commonly reported by respondents with mild than moderate or severe disorders compared with structural and most

attitudinal/evaluative barriers being reported by a higher proportion of respondents with perceived need who had severe or moderate than mild conditions.

The joint effects of sociodemographic variables and severity were significant as a set in predicting both low perceived need ($\chi^2_{17}=159.9$, $p<0.001$) and structural barriers among respondents with perceived need ($\chi^2_{17}=53.6$, $p<0.001$) but not attitudinal/evaluative barriers among respondents with perceived need ($\chi^2_{17}=9.9$, $p=0.54$). (Table 2) The failure to find significant predictors of attitudinal/evaluative barriers presumably reflects the fact that virtually every respondent with perceived need reported at least one such barrier (97.4%; detailed results for this model can be found in Appendix C, online). Age (≥ 65 compared

Table 3. Reported reasons for dropping out of treatment by level of severity of disorder among respondents with 12-month DSM-IV disorders dropped out of treatment in the past 12 months

	Any severity		Severe		Moderate		Mild		χ^2_2
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	
I. Low perceived need									
Didn't need help anymore	25.9	6.0	19.0	7.5	29.2	10.5	30.5	14.7	0.7
II. Structural barriers									
Financial	16.7	4.7	16.8	6.9	20.1	8.9	7.6	7.3	0.9
Availability	5.3	2.5	7.3	4.5	4.0	3.0	4.6	4.1	0.5
Inconvenient or transportation	17.4	5.2	12.8	5.4	25.3	11.0	5.4	4.8	2.4
Any structural barrier	31.8	5.9	30.2	7.3	38.5	11.5	17.6	10.7	1.4
III. Attitudinal/evaluative barriers									
Wanted to handle on own	42.2	7.3	53.1	8.0	43.1	10.5	19.7	10.8	5.6
Perceived ineffectiveness	21.1	4.4	35.0	8.1	10.7	5.9	21.9	11.6	3.6
Stigma	21.2	8.4	36.6	16.0	14.6	11.1	9.1	8.7	4.8
Negative experience with provider	14.1	3.3	22.7	6.3	5.8	3.5	19.2	11.4	4.8
The problem got better	31.2	6.3	24.4	7.0	42.9	12.4	13.9	7.1	3.4
Any attitudinal/evaluative barrier	81.9	5.5	92.0	3.7	83.1	8.3	60.2	11.4	5.6
<i>n</i>	78		30		32		16		

with 18–64 years), sex (males compared with females), education (0–11 *v.* ≥ 16 years) and severity (mild *versus* moderate-severe) were significant predictors of low perceived need. Age (18–49 *v.* ≥ 50 years) and severity (severe *versus* mild-moderate) were significant predictors of structural barriers.

We also evaluated interactions between each sociodemographic variable and severity in predicting perceived need and structural barriers. The 30 interactions (15 sociodemographic variables \times two severity variables) were significant as a set in each of the two equations ($\chi^2_{30} = 74.1$, $p < 0.001$ predicting perceived need and $\chi^2_{30} = 163.0$, $p < 0.001$ predicting structural barriers), although none of the more specific interactions between individual sociodemographics and severity was significant in predicting perceived need. Two of these specific interactions were significant, however, in predicting structural barriers. These involved race-ethnicity ($\chi^2_3 = 25.7$, $p < 0.001$) and marital status ($\chi^2_2 = 9.5$, $p = 0.023$). (Detailed results are available in Appendix D, online.) In the case of race-ethnicity, the elevated OR of structural barriers among Hispanics compared with Non-Hispanic whites was found to be confined to mild-moderate cases. In the case of marital status, married/cohabiting respondents were found to have a significantly elevated OR of structural barriers compared with the never married among mild cases but not moderate-severe cases.

Reasons for dropping out of treatment

A total of 851 respondents with 12-month disorders reported receiving treatment at some time in the past

12 months, of whom a weighted 10.6% ($n = 78$ actual respondents) reported dropping out of treatment in all service sectors where they received treatment. Wanting to handle the problem on one's own was the most commonly reported reason for dropping out of treatment (42.2%), followed by perceived improvement in mental health (31.2%) (Table 3). Although disorder severity was not significantly related to any of the reported reasons for drop-out ($\chi^2_2 = 0.5$ – 5.6 , $p = 0.06$ – 0.78), respondents with severe disorders reported a significantly higher mean number of reasons (2.3) than those with moderately severe (2.0) or mild (1.3) disorders ($F_{2,848} = 7.1$, $p = 0.002$). In multivariate analyses (data not shown but available in Appendix E, online), a standardized continuous measure of income was the only significant sociodemographic predictor of reporting attitudinal/evaluative barriers. This association was negative (OR 0.2, 95% CI 0.1–0.7; $\chi^2_1 = 7.5$, $p = 0.006$) and persisted when the sample was limited to respondents who perceived a need for continued treatment (OR 0.1, 95% CI 0.0–0.4, $\chi^2_1 = 8.6$, $p = 0.003$).

Conclusion

This study had several noteworthy limitations. First, results are subject to recall bias because disorders, treatments and reasons were all assessed retrospectively over a 12-month recall period with self-report. It is noteworthy in this regard that self-reports of service use tend to underestimate service use reported in administrative records (Jobe *et al.* 1990;

Clark *et al.* 1996; Kashner *et al.* 1999; Ritter *et al.* 2001; Petrou *et al.* 2002), although the underestimation of more recent service use tends to be modest (Clark *et al.* 1996; Petrou *et al.* 2002). Second, the list of reasons for not seeking treatment and drop-out was limited to those reported most commonly in past research and elicited in qualitative interviews carried out to expand these earlier lists. Some individuals may have had other reasons for not initiating treatment or dropping out that were not included in our lists. In addition, some reason statements were ambiguous or double-barreled (e.g. 'The problem went away by itself, and I did not really need help') and were aggregated into rational categories in ways that could be debated. Furthermore, the reliability of self-reports of reasons for not seeking treatment has not been assessed. Third, with regard to reasons involving severity and change in severity (problem was not severe; problem went away), the analysis was limited by not having information on duration, which was almost certainly related to these reports and would be expected to be a strong predictor of seeking treatment.

Another weakness is that the analysis of treatment drop-out had low power due to the small number of respondents defined as having dropped out of treatment. This may have been due to the stringent definition of drop-out that we used, which classified respondents as having dropped out only if they dropped out of treatment from all sectors in which they obtained treatment. A total of 81 respondents with a 12-month DSM-IV disorder dropped out of one or more types of treatments but stayed in some other type of treatment. We did not classify these respondents as having dropped out, based on the fact that some number of them were presumably referred to a new treatment provider by their original provider or switched rather than dropped out of treatment. These 81 respondents did not differ significantly with regard to severity from those who stayed in the same type of treatment, but both groups were more severe than those who we defined as having dropped out. Given that this group is relatively large, it would be useful for future research to evaluate reasons for switching treatments among respondents of this type.

A final noteworthy limitation is that respondents who reported 12-month service use in one of the disorder-specific diagnostic sections but not in the general service section were not included in the analysis. There were 149 such individuals. These respondents were inconsistent in their reports, making it difficult to know how to classify them. Had we been aware of this inconsistency at the time of designing the interview, we could have included these cases by placing the general services section later in the interview and including respondents who reported disorder-specific

treatment. It would be fairly easy to correct this problem in future surveys. Similar inconsistencies between reports of service use when assessed globally *versus* separately after assessing each condition have been reported in other surveys (Duan *et al.* 2007).

In the context of these limitations, the data provide a broad overview of perceived barriers to initiation and continuation of mental health treatments in the United States. Three patterns are especially noteworthy. First, low perceived need for treatment was a common reason for not seeking treatment, with attitudinal/evaluative reasons much more common than structural barriers among people with perceived need. This pattern is consistent with previous findings from the US and other settings in the 1990s (Sareen *et al.* 2007) and suggests that low perceived need has remained a key barrier to seeking treatment for mental disorders.

Second, reasons for not seeking treatment varied significantly across levels of illness severity, with respondents who had more severe disorders being significantly less likely to report low perceived need as a barrier and significantly more likely to report structural and attitudinal/evaluative barriers than people with less severe disorders. These findings are consistent with findings from past research on the association of severity of illness with barriers to seeking treatment for mental disorders (Wang *et al.* 2007b; Drapalski *et al.* 2008). The disjunction between perceived need and our measure of severity highlights the fact that personal evaluations of perceived need do not fully capture objectively measured need. Notably, over one-quarter of respondents with severe psychopathology did not perceive a need for treatment and one in four of those who did perceive a need reported that they thought that the problem was not severe or that it would get better on its own. Furthermore, two-thirds of respondents with severe disorders who perceived a need for treatment and did not seek treatment, and more than one-half of respondents who dropped out, reported a wish to handle their problems on their own as a reason for not seeking treatment or dropping out. These results are consistent with an extensive clinical literature documenting a significant association between illness insight and treatment acceptance/adherence among patients with serious mental illness (Buckley *et al.* 2007). Results such as these point to the importance of efforts to educate the public at large as well as patients about indicators of serious psychopathology and appropriate treatment options (Paykel *et al.* 1997; Hickie, 2004; Jorm *et al.* 2005, 2006; Highet *et al.* 2006).

Third, over one-third of respondents who dropped out of treatment cited an attitudinal/evaluative barrier, such as stigma, negative experience with

providers or perceived ineffectiveness of treatment, that show low perceived treatment quality leads to treatment drop-out. It is sadly ironic that among those who dropped out of treatment, patients with severe psychopathology were more likely than those with less severe disorders (albeit at a statistically insignificant level) to report attitudinal/evaluative obstacles to treatment, as those with the most severe conditions are likely to be in greatest need for treatment and potentially stand to benefit most from care. This finding points to the need to improve quality of mental health services for adults with severe mental disorders in the United States to better address the individual needs and preferences of this patient group (Adams & Drake, 2006).

It is also noteworthy that the reasons for not seeking treatment differed by respondent sociodemographic characteristics. Most notably, young and middle-aged adults were less likely than older adults to report a lack of perceived need for treatment but more likely to report structural and attitudinal/evaluative barriers to treatment seeking after they perceived a need. The effect of age may partly be explained by differences in access to care and life-style. Respondents aged ≥ 65 years typically are covered by a Medicare financed health plan and are more likely than younger people to be retired. Thus, they may be less likely than their younger peers to experience financial and time barriers to seeking treatment. Furthermore, younger people tend to have a less positive attitude toward mental health treatment seeking, although this pattern has been changing in recent years (Mojtabai, 2007).

Females compared with males and respondents with low compared with high education were less likely to report lack of perceived need as a reason for not seeking treatment. While past research generally supports an association between female sex and greater perceived need for mental health treatment (Meadows *et al.* 2002; Sareen *et al.* 2010), the association with education is puzzling and may suggest that formal education by itself does not significantly promote recognition of mental health care needs. The finding that married/cohabiting respondents had an elevated OR of reporting structural barriers, but only among mild cases, might reflect the fact that married people have more family responsibilities than single people, which place demands on their time and financial resources, thereby creating barriers to seeking treatment that are only overcome when disorders become relatively serious. The finding that high income was associated with low odds of dropping out of treatment for attitudinal/evaluative reasons is consistent with earlier reports that high income is associated with positive attitudes toward mental health treatment (Mojtabai, 2007). This might be due to a

higher quality of services accessible to individuals from higher income groups or more attitudes related to more general perceptions of medical care.

The results reported here reinforce other evidence that low rates of seeking treatment for common mental disorders remains a major public health problem in the United States (Gonzalez *et al.* 2010). The President's New Freedom Commission on Mental Health (2005) recommended a campaign to improve treatment seeking by reducing the stigma associated with mental disorders and their treatments. The 2008 Mental Health Parity legislation has also sought to reduce financial barriers to accessing such treatments. The results of the current study show, consistent with these recommendations, that both attitudinal/evaluative and structural barriers are significant impediments to treatment seeking in the US. However, we also found that low perceived need is an even more important barrier. This might well reflect the fact that most of the mental disorders considered here are extreme variants on normal patterns of emotion, cognition and behavior that are difficult for many people to see as distinct from the normal patterns. Our results suggest that new public education initiatives are needed to increase recognition of mental illness in conjunction with the efforts currently underway to reduce stigma and financial barriers.

Note

Supplementary material accompanies this paper, available at: www.hcp.med.harvard.edu/ncs/publications.php.

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Psychiatry; Technical University of Dresden). The views and opinions expressed in this report are those of the authors and should not be construed to represent the views of any of the sponsoring organizations, agencies or US Government. A complete list of NCS publications and the full text of all NCS-R instruments can be found at <http://www.hcp.med.harvard.edu/ncs> (send correspondence to ncs@hcp.med.harvard.edu).

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Declaration of Interest

During the past 3 years, **Dr Olsson** has received research funding from Eli Lilly & Company, Ortho-McNeil Pharmaceuticals, Bristol-Myers Squibb and AstraZeneca Pharmaceuticals. He has also served as a consultant for Eli Lilly & Company, Pfizer, Janssen and AstraZeneca Pharmaceuticals. **Dr Druss** has worked as a consultant for Pfizer, Inc. **Dr Kessler** has been a consultant for AstraZeneca, Analysis Group, Bristol-Myers Squibb, Cerner-Galt Associates, Eli Lilly & Company, GlaxoSmithKline Inc., HealthCore Inc., Health Dialog, Integrated Benefits Institute, John Snow Inc., Kaiser Permanente, Matria Inc., Mensante, Merck & Co, Inc., Ortho-McNeil Janssen Scientific Affairs, Pfizer Inc., Primary Care Network, Research Triangle Institute, Sanofi-Aventis Groupe, Shire US Inc., SRA International, Inc., Takeda Global Research & Development, Transcept Pharmaceuticals Inc. and Wyeth-Ayerst; has served on advisory boards for Appliance Computing II, Eli Lilly & Company, Mindsite, Ortho-McNeil Janssen Scientific Affairs and Wyeth-Ayerst; and has had research support for his epidemiological studies from Analysis Group Inc., Bristol-Myers Squibb, Eli Lilly & Company, EPI-Q, GlaxoSmithKline, Johnson & Johnson Pharmaceuticals, Ortho-McNeil Janssen Scientific Affairs, Pfizer Inc., Sanofi-Aventis Groupe and Shire US, Inc.

Dr Pincus has provided details regarding the source of support for research and any consulting arrangements or sources of support for the past 3 years that may represent a potential conflict interest.

I am currently employed by (all not for profit): Columbia University, New York-Presbyterian Hospital, RAND Corporation, University of Pittsburgh/UPMC (Employer to 6/2006).

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Any commercial or financial involvements within the past 3 years that might present an appearance of a conflict of interest (e.g. institutional or corporate affiliations, paid consultancies, stock ownership or other equity interests, patent ownership, royalties, funds for travel and interests in patents, instruments, and technologies) are as follows:

In the past 3 years, I have been a consultant for: University of Washington, University of New Mexico, SUNY Stony Brook, Community Care Behavioral Health Organization/UPMC Health Plan, Magellan Health Care, Urban Institute, Value Options (travel only).

I have received royalties for publications (none of which involved specific products) from: American Psychiatric Press, Current Opinion in Psychiatry/Lippincott, William and Wilkins.

I have received payments for speaking (none of which involve specific products) from: Bimark Medical Education, Comprehensive Neuroscience, Inc., Medical Information Technologies, Cardinal Health Inc., Health Partners, American Medical Association.

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