

# Treatment of Adult Depression in the United States

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**IMPORTANCE** Despite recent increased use of antidepressants in the United States, concerns persist that many adults with depression do not receive treatment, whereas others receive treatments that do not match their level of illness severity.

**OBJECTIVE** To characterize the treatment of adult depression in the United States.

**DESIGN, SETTING, AND PARTICIPANTS** Analysis of screen-positive depression, psychological distress, and depression treatment data from 46 417 responses to the Medical Expenditure Panel Surveys taken in US households by participants aged 18 years or older in 2012 and 2013.

**MAIN OUTCOME AND MEASURES** Percentages of adults with screen-positive depression (Patient Health Questionnaire-2 score of  $\geq 3$ ) and adjusted odds ratios (AORs) of the effects of sociodemographic characteristics on odds of screen-positive depression; percentages with treatment for screen-positive depression and AORs; percentages with any treatment of depression and AORs stratified by presence of serious psychological distress (Kessler 6 scale score of  $\geq 13$ ); and percentages with depression treatment by health care professional group (psychiatrists, other health care professionals, and general medical providers); and type of depression treatment (antidepressants, psychotherapy, and both) all stratified by distress level.

**RESULTS** Approximately 8.4% (95% CI, 7.9-8.8) of adults screened positive for depression, of which 28.7% received any depression treatment. Conversely, among all adults treated for depression, 29.9% had screen-positive depression and 21.8% had serious psychological distress. Adults with serious compared with less serious psychological distress who were treated for depression were more likely to receive care from psychiatrists (33.4% vs 17.3%,  $P < .001$ ) or other mental health specialists (16.2% vs 9.6%,  $P < .001$ ), and less likely to receive depression care exclusively from general medical professionals (59.0% vs 74.4%,  $P < .001$ ). They were also more likely to receive psychotherapy (32.5% vs 20.6%,  $P < .001$ ), though not antidepressant medications (81.1% vs 88.6%,  $P < .001$ ).

**CONCLUSIONS AND RELEVANCE** Most US adults who screen positive for depression did not receive treatment for depression, whereas most who were treated did not screen positive. In light of these findings, it is important to strengthen efforts to align depression care with each patient's clinical needs.

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Previous research indicates that many adults with depression do not receive treatment for their symptoms.<sup>1,2</sup> According to national surveys from 2001 to 2003, approximately 1-half (49.5%) of adults with a lifetime medical history of major depressive disorder had never received treatment for depression<sup>1</sup> and a similar percentage (48.4%) had not received any mental health care in the past year.<sup>2</sup> Over the past several years, however, there has been a substantial increase in antidepressant prescriptions,<sup>3</sup> which have become the most commonly prescribed class of medications in the United States.<sup>4</sup> In light of increased antidepressant use, an updated characterization of the treatment of adult depression would help to gauge current mental health service needs and target initiatives to improve access to depression care.

Screening for depression has recently received increased attention. The US Preventive Services Task Force (USPSTF) now recommends screening adults for depression and adequate services for follow-up treatment that may be provided through a variety of different arrangements of clinicians and settings.<sup>5</sup> The USPSTF recommendations, which support the effectiveness of antidepressants, specific psychotherapies, and their combination, highlight the need to integrate behavioral health services within primary care. In this context, it is important to assess national treatment patterns of screen-positive depression across treatment modalities and sectors of care.

Because patients with depression present in various settings and with various levels of depression severity, matching patients to appropriate treatments and health care professionals is a widely endorsed clinical goal.<sup>6,7</sup> A range of interventions may be provided, from monitoring, psychotherapy or counseling, exercise,<sup>8</sup> and yoga,<sup>9</sup> to pharmacological treatment, and combination interventions.<sup>10</sup> Because placebo-controlled trials indicate that antidepressants are not more effective than placebo for mild depression,<sup>11,12</sup> antidepressants are generally not recommended for patients with mild or less severe depression.<sup>6,7</sup> Stronger evidence supports the benefit of antidepressants for patients with severe depression<sup>11</sup> and a combination of psychotherapy and antidepressants is particularly effective for patients with persistent depression and more severe symptoms.<sup>13</sup> Clinical trials<sup>14</sup> and practice guidelines<sup>6</sup> support referral of complex cases to psychiatrists and other mental health specialists.

Little is known about the extent to which adults with depression in the United States receive depression care and, among those who receive treatment, the extent to which patients are matched based on their illness severity to appropriate depression treatments and health care professionals. We examined the prevalence and treatment of adults with screen-positive depression among a nationally representative household sample of adults. Among all patients treated for depression, we further assessed whether serious psychological distress was associated with more intensive treatment, including antidepressant medications, psychotherapy, combined treatment, and treatment from a psychiatrist or other specialty mental health professional.

## Methods

### Sources of Data

Data were analyzed from the household components of the 2012 and 2013 Medical Expenditure Panel Surveys (MEPS) conducted by the Agency for Healthcare Research and Quality (AHRQ). Following AHRQ recommendations, the 2 annual samples were concatenated to increase sample size.<sup>15</sup> Technical information concerning the survey sampling design and nonresponse adjustment is provided elsewhere.<sup>16-18</sup> The MEPS oversampled blacks, Hispanics, Asians, and persons with a predicted low income. Analyses, which relied exclusively on de-identified data, were exempted from human subjects review by the institutional review board of the New York State Psychiatric Institute.

### Depression Symptoms and Treatment

The MEPS used the Patient Health Questionnaire-2 (PHQ-2), a brief screen for depressed mood and anhedonia during the past 2 weeks, to screen for depression. A PHQ-2 score of 3 or less (scores range from 0 to 6, with higher scores indicating more severe depressive symptoms) defined screen-positive depression. In primary care patients, a PHQ-2 score of 3 or less has a sensitivity of 0.61 to 0.87 and specificity of 0.78 to 0.92 for major depressive disorder which refers to more severe rather than mild depression.<sup>19-21</sup> In a validation study of 88 primary care patients with a PHQ-2 score of 3 or less, 34 (38.6%) had major depressive disorder, 32 (36.3%) had other less severe depression, and 22 (25.0%) had neither type of depression.<sup>19</sup>

Detailed data were collected directly from households using 3 interviews during each survey year. Treatment of depression was defined by an outpatient visit or use of antidepressant, antipsychotic, mood stabilizer, or anxiolytic medications, or psychotherapy for depression (*International Classification of Diseases, 9th Revision*, codes 296.2, 296.3, 300.4, and 311) without regard to clinical effectiveness. Patients treated for bipolar disorder were excluded from the definition of depression treatment.

Respondents indicated whether each visit included psychotherapy or mental health counseling. One or more psychotherapy or counseling visits defined use of psychotherapy. Three groups were defined: any psychotherapy, any antidepressant treatment, and combination treatment. Information was also collected concerning the health care professionals providing treatment at each visit. Respondents were classified into those who received depression treatment from (1) any psychiatrist, (2) any social worker or psychologist, and (3) only general medical professionals (ie, health care professionals other than psychiatrists, psychologists, or social workers). The 2 mental health specialty groups were not mutually exclusive.

### Psychological Distress

Psychological distress was assessed in the MEPS with the Kessler 6 (K6) scale (scores range from 0-24 with higher scores indicating more severe distress), which queries the frequency of mental health symptoms in the past 30 days.<sup>22</sup> The

K6 has high internal consistency ( $\alpha = 0.89$ ) and strong receiver operator characteristics for disorders defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM).<sup>23</sup> At a cut score of 13, which defined serious psychological distress, the K6 has a classification accuracy of 0.92 for serious mental illness defined as meeting criteria for at least one DSM diagnosis and substantial impairment.<sup>24</sup> In 1 study,<sup>25</sup> the mean (SD) K6 score of psychiatric outpatients with depression or anxiety disorders was 13.1 (4.2).

### Sociodemographic Characteristics and Health Insurance

Respondents were classified by age group (18-34 years, 35-49 years, 50-64 years, and  $\geq 65$  years), sex, race/ethnicity (white, non-Hispanic; black, non-Hispanic; and Hispanic), and marital status (married; separated, divorced, or widowed; and not married). They were also classified by highest level of education (less than high school graduate, high school graduate but not college graduate, and college graduate), family income by percentage of the federal poverty level (<100%, 100%-200%, 201%-400%, and >400%), and by health insurance (any private health insurance, only public health insurance, and none).

### Statistical Analyses

The percentages of adults with screen-positive depression and with any depression treatment were each determined overall and according to sociodemographic strata. A logistic regression model was fit to evaluate the effects of each sociodemographic variable level on odds of screening positive for depression controlling for each of the other sociodemographic variables. A second model limited to adults with screen-positive depression evaluated the effects of each sociodemographic characteristic on odds of receiving any depression treatment. A third model that included all adults evaluated the effects of each sociodemographic characteristic on odds of receiving any depression treatment. The latter 2 models also controlled for PHQ-2 score.

Among all adults treated for depression, the percentages treated using each modality (antidepressants, psychotherapy, and antidepressants and psychotherapy) were calculated separately for respondents with serious psychological distress and less serious or no psychological distress. Similar analyses were performed for depression treatment by each of the 3 health care professional groups. Results are presented overall and separately for each sociodemographic stratum. A corresponding series of logistic regression models within each stratum produced adjusted odds ratios (AORs) for the association of serious distress (relative to less serious or no distress) with each depression treatment and professional group controlling for the other sociodemographic variables. Separate logistic models were used to calculate *P* values for the interaction between levels of each sociodemographic variable and seriousness of psychological distress to assess whether these AORs differed across strata.

All statistical analyses were performed with SAS/STAT statistical software (version 13.1, SAS institute) using SURVEYFREQ and SURVEYLOGISTIC procedures to accommodate the complex sample design and weighting in the MEPS.

## Results

### Screen-Positive Depression

Approximately 8.4% of adults had screen-positive depression. Screen-positive depression was nearly 5 times more prevalent among adults in the lowest (18.2%) than highest (3.7%) income group. It was also common among adults who were separated, divorced, or widowed; had public health insurance; or had less than a high school education (Table 1).

Less than one-third (28.7%) of adults with screen-positive depression received any depression treatment during the survey year. After adjusting for other covariates, the odds of receiving depression treatment among those with screen-positive depression was increased by being aged 35 to 64 years; female; white, non-Hispanic; having at least completed high school; and having health insurance (Table 1). Approximately 78.5% of adults with screen-positive depression and who received no depression treatment made 1 or more medical visits during the survey year (data not shown).

### Depression Treatment

An estimated 8.1% of adult population received treatment for depression regardless of their depression screen status (Table 1). Among those treated, a minority had screen-positive depression (29.9%) or had serious psychological distress (21.8%), as defined by a K6 score of 13 or more (Figure 1).

The percentage of adults who were treated for depression varied across sociodemographic groups. The highest percentages of treatment occurred among publicly insured individuals and separated, divorced, and widowed persons; whereas the lowest percentages occurred among uninsured adults, racial/ethnic minorities, and men. Compared with uninsured adults, those with public health insurance had approximately 3 times the odds of receiving depression treatment (Table 1).

### Treatment Modalities

Antidepressants (87.0%) were the most common treatment for depression followed by psychotherapy (23.2%), anxiolytics (13.5%), antipsychotics (7.0%), and mood stabilizers (5.1%) (eTable in the Supplement).

A minority of depressed patients receiving antidepressants (20.3%), psychotherapy (30.5%), or their combination (29.6%) had serious distress (data not shown). Patients with serious as compared to less serious distress were significantly less likely to be treated with antidepressants (81.1% vs 88.6%,  $P < .001$ ) (Figure 2). By contrast, patients with serious distress were significantly more likely than patients with less distress to be treated with antipsychotics (13.4% vs 5.2%,  $P < .001$ ), anxiolytics (21.0% vs 11.4%,  $P < .001$ ), mood stabilizers (8.9% vs 4.0%,  $P < .001$ ), psychotherapy (32.5% vs 20.6%,  $P < .001$ ) or antidepressants and psychotherapy (14.8% vs 6.5%,  $P < .001$ ). The 2 groups did not significantly differ with respect to the percentage that received any of the 4 classes of medications (91.2% vs 92.7%,  $P = 0.30$ ) (eTable in the Supplement). The association between distress and combination treatment varied by patient education, with higher educational at-

**Table 1. Percentage of Adults With Screen-Positive Depression, Treatment of Screen-Positive Depression, and Any Treatment for Depression, Total and Stratified by Sociodemographic Characteristics**

Characteristic	Adults With Screen-Positive Depression, % (95% CI) (n = 46 417) <sup>a</sup>	Adjusted Odds Ratio (95% CI) <sup>b</sup>	Adults Receiving Treatment for Screen-Positive Depression, % (95% CI) (n = 4430)	Adjusted Odds Ratio (95% CI) <sup>c</sup>	Adults Receiving Any Treatment for Depression, % (95% CI) (n = 46 417)	Adjusted Odds Ratio (95% CI) <sup>c</sup>
Total	8.4 (7.9-8.8)		28.7 (26.9-30.6)		8.1 (7.7-8.6)	
<b>Age, y</b>						
18-34	6.6 (6.0-7.3)	1 [Reference]	20.1 (16.2-24.0)	1 [Reference]	4.4 (3.9-5.0)	1 [Reference]
35-49	8.8 (8.0-9.7)	1.59 (1.36-1.86)	31.0 (26.8-35.1)	1.55 (1.10-2.19)	8.2 (7.4-9.1)	1.81 (1.50-2.19)
50-64	10.0 (9.2-10.7)	1.92 (1.65-2.22)	35.7 (32.2-39.1)	1.96 (1.44-2.68)	11.3 (10.3-12.3)	2.53 (2.10-3.06)
≥65	8.3 (7.4-9.2)	0.98 (0.80-1.20)	25.1 (20.2-30.0)	1.10 (0.72-1.68)	9.5 (8.4-10.6)	1.77 (1.40-2.22)
<b>Sex</b>						
Male	7.3 (6.8-7.9)	0.87 (0.79-0.96)	20.9 (18.2-23.6)	0.52 (0.41-0.66)	5.1 (4.7-5.6)	0.48 (0.42-0.54)
Female	9.3 (8.7-9.9)	1 [Reference]	34.5 (31.9-37.1)	1 [Reference]	10.9 (10.1-11.6)	1 [Reference]
<b>Race/Ethnicity</b>						
White, non-Hispanic <sup>d</sup>	8.1 (7.6-8.6)	1 [Reference]	31.6 (29.2-34.0)	1 [Reference]	9.3 (8.7-9.9)	1 [Reference]
Black, non-Hispanic	10.6 (9.6-11.5)	0.87 (0.78-0.98)	21.7 (18.1-25.2)	0.61 (0.47-0.80)	4.9 (4.2-5.5)	0.42 (0.36-0.48)
Hispanic	8.2 (7.4-8.9)	0.67 (0.59-0.77)	22.1 (18.6-25.6)	0.69 (0.52-0.91)	4.6 (3.9-5.2)	0.54 (0.45-0.65)
<b>Education</b>						
<High school graduate	12.7 (11.6-13.8)	1 [Reference]	22.9 (19.5-26.4)	1 [Reference]	6.7 (5.8-7.6)	1 [Reference]
High school graduate	9.1 (8.6-9.6)	0.90 (0.79-1.02)	29.8 (27.4-32.3)	1.39 (1.08-1.78)	8.5 (7.9-9.1)	1.43 (1.19-1.72)
College graduate	4.6 (4.1-5.1)	0.66 (0.56-0.78)	34.6 (29.6-39.6)	1.90 (1.38-2.61)	8.1 (7.3-9.0)	1.62 (1.33-1.99)
<b>Marital status</b>						
Married	6.3 (5.8-6.9)	1 [Reference]	26.9 (23.8-29.9)	1 [Reference]	7.3 (6.7-7.9)	1 [Reference]
Separated/divorced/widowed	13.3 (12.4-14.2)	1.48 (1.31-1.66)	35.2 (31.5-38.9)	1.29 (0.97-1.72)	12.8 (11.7-13.9)	1.29 (1.13-1.48)
Not married	8.6 (7.8-9.3)	1.18 (1.02-1.37)	23.8 (20.2-27.4)	1.13 (0.82-1.55)	6.2 (5.6-6.8)	1.28 (1.09-1.51)
<b>Income level (% FPL)</b>						
<100	18.2 (16.9-19.5)	1 [Reference]	30.1 (26.7-33.6)	1 [Reference]	11.1 (9.9-12.2)	1 [Reference]
100-200	12.3 (11.3-13.3)	0.76 (0.68-0.86)	29.3 (25.6-33.0)	0.98 (0.78-1.23)	8.8 (7.8-9.8)	0.90 (0.77-1.06)
201-400	7.9 (7.1-8.7)	0.55 (0.47-0.65)	28.5 (25.0-31.9)	0.86 (0.64-1.15)	7.8 (7.2-8.4)	0.88 (0.74-1.04)
>400	3.7 (3.29-4.2)	0.28 (0.24-0.34)	26.1 (21.5-30.8)	0.70 (0.49-1.00)	7.1 (6.4-7.8)	0.84 (0.69-1.03)
<b>Health insurance</b>						
Private, any	5.6 (5.2-5.9)	1 [Reference]	29.8 (26.7-32.9)	1 [Reference]	7.5 (7.0-8.1)	1 [Reference]
Public, only	17.0 (15.8-18.2)	2.17 (1.91-2.47)	32.5 (29.5-35.5)	1.11 (0.86-1.42)	13.4 (12.1-14.6)	1.33 (1.12-1.57)
None	10.5 (9.5-11.5)	1.23 (1.12-1.50)	18.8 (14.2-23.3)	0.56 (0.39-0.80)	4.4 (3.6-5.1)	0.54 (0.44-0.68)

Abbreviation: FPL, federal poverty level.

Data are from Medical Expenditure Panel Surveys (2012-2013). Analysis limited to ages ≥18 y.

<sup>a</sup> Patient Health Questionnaire-2 (PHQ-2) score ≥3.

<sup>b</sup> Model controls for age, sex, race/ethnicity, education, marital status, income level, and health insurance.

<sup>c</sup> Model controls for PHQ-2, age, sex, race/ethnicity, education, marital status, income level, and health insurance.

tainment related to a stronger association between serious distress and treatment (interaction  $P = .05$ ) (Table 2).

### Health Care Professionals

Most patients who were treated for depression were treated exclusively by general medical professionals (73.3%), with fewer patients treated by psychiatrists (23.6%) or other mental health specialists (12.6%). Patients treated for depression exclusively by general medical professionals were less likely than those treated by psychiatrists or other mental health professionals to have screened positive for depression or serious psychological distress (Figure 2). Treatments for depression varied across the 3 groups of health professionals. Although most patients treated by each group received antidepressants,

patients who were treated only by general medical professionals seldom received psychotherapy (eTable in the Supplement).

Treated patients with serious distress were nearly twice as likely as those with less distress to be treated by a psychiatrist (Figure 2). While approximately half of college graduates with serious distress were treated by psychiatrists, less than a third of their counterparts with less education received psychiatric care (Table 3). Patients with serious distress were also more likely than those with less distress to be treated by other mental health professionals (Figure 2). Married as well as privately insured and uninsured patients with serious distress were disproportionately treated by other mental health professionals (Table 3). As compared to patients with less serious

or no distress, patients with serious psychological distress were less likely to be treated by only general medical professionals (Figure 2). This inverse association was particularly evident for college graduates (Table 3).

## Discussion

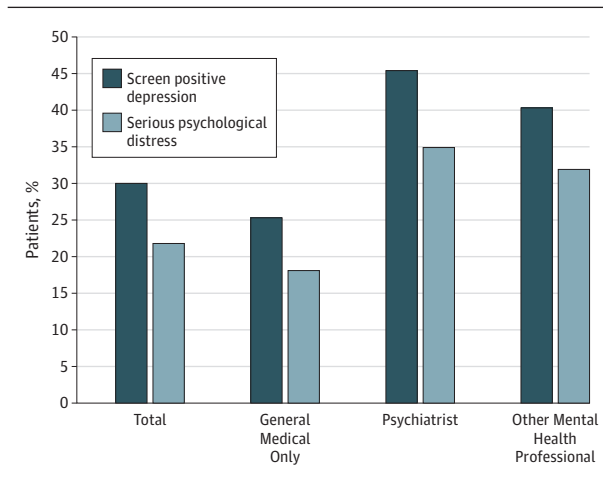
Despite a recent increase in antidepressant use, substantial gaps persist in the treatment of depression.<sup>1,2</sup> Over two-thirds of all adults who screened positive for depression did not receive de-

pression treatment during the survey year. Racial/ethnic minorities had a particularly low likelihood of receiving treatment.<sup>26</sup> Because most screen-positive untreated adults made at least 1 annual medical visit, primary care models that involve depression care managers and consulting specialists may have opportunities to narrow the gap in untreated depression. Prior research has shown that, compared with depressed primary care patients who receive standard care, those who receive integrated mental health services tend to achieve more favorable depression outcomes.<sup>27</sup>

Although antidepressants are not superior to placebo for mild depression,<sup>11,12</sup> patients with less serious distress were more likely than those with serious distress to receive antidepressants. The clinical reasons for this pattern are unclear, but may include a tendency to overestimate the effectiveness of antidepressants in treating mild depression, insufficient time to provide alternative interventions for mild depression, and errors in clinical assessment. A meta-analysis<sup>28</sup> of the clinical diagnosis of depression in primary care revealed that in a typical practice, false positives substantially outnumber true positives. The reported treatment patterns suggest a need to increase routine assessment of depression severity. In systems of care that routinely assess depression severity and use depression guidelines that do not recommend antidepressants for mild symptoms, antidepressants are rarely prescribed for mild depression.<sup>29</sup> Yet limited evidence supports the effectiveness of psychotherapy for mild depression. Although cognitive behavioral therapy and other psychological interventions have been reported to have small to moderate beneficial effects on patient reported outcomes in mild depression, this research is inconclusive.<sup>30</sup> More research is needed on whether antidepressants or psychotherapy are superior to exercise or nonspecific attention for mild depression.

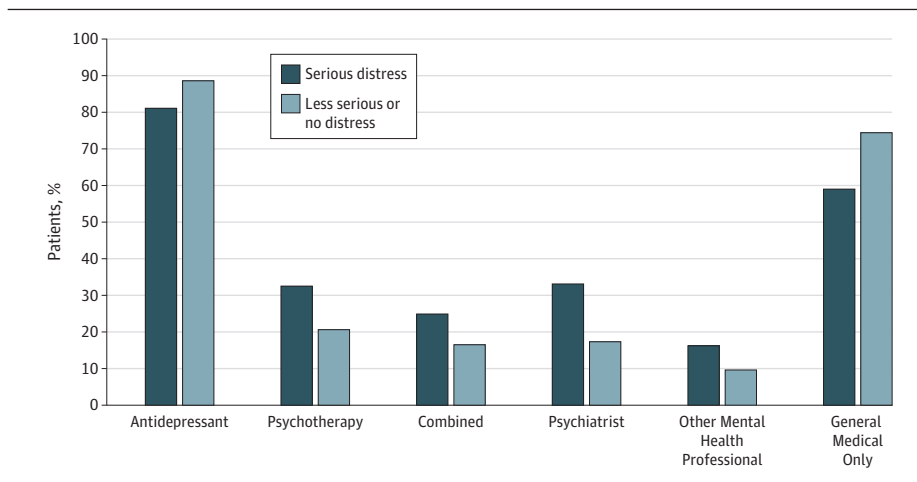
Psychotherapy was less commonly provided than antidepressants. Nevertheless, psychotherapy was more frequently provided to patients with more serious than with less serious psychological distress. This is consistent with evidence supporting efficacy of several specific psychotherapies for

**Figure 1. Percentages of Patients With Screen-Positive Depression and Serious Psychological Distress Treated For Depression by Health Care Professional Group**



Data are from Medical Expenditure Panel Surveys (2012-2013). Analysis limited to ages 18 years or older. Percentages (95% CIs) of adult sample treated for depression with screen-positive depression are: total, 29.9% (27.9-31.9); general medical only, 25.3% (23.0-27.6); psychiatrist, 45.4% (40.5-50.3); and other mental health professional, 40.3% (33.9-46.8). Corresponding percentages for serious psychological distress are: total, 21.8% (19.9-23.6); general medical only, 18.1% (16.0-20.2); psychiatrist, 34.9% (30.1-39.7); and other mental health professional, 31.9% (25.5-38.3).

**Figure 2. Percentage of Adults Treated for Depression by Level of Psychological Distress, Treatment Modality, and Health Care Professional**



Data are from 2012 and 2013 MEPS. Statistics for comparisons: antidepressants: AOR, 0.65; 95% CI, 0.48-0.90;  $P < .001$ ; psychotherapy: AOR, 1.77; 95% CIs, 1.34-2.34;  $P < .001$ ; combined antidepressants and psychotherapy: AOR, 1.60; 95% CIs, 1.17-2.19;  $P < .001$ ; treatment by psychiatrist: AOR, 2.37; 95% CIs, 1.82-3.08;  $P < .001$ ; treatment by other mental health professionals: AOR, 1.82; 95% CIs, 1.28-2.61;  $P < .001$ ; treatment by only general medical professionals: AOR, 0.53; 95% CIs, 0.42-0.68;  $P < .001$ .

Table 2. Outpatient Treatments for Depression by Level of Psychological Distress and Treatment Modality Stratified by Sociodemographic Characteristics<sup>a</sup>

Characteristic	Antidepressant, %			Psychotherapy, %			Antidepressant and Psychotherapy, %			P Value <sup>b</sup>
	Serious Distress (n = 4265)	Less Serious or No Distress (n = 42152)	AOR (95% CI)	Serious Distress (n = 4265)	Less Serious or No Distress (n = 42152)	AOR (95% CI)	Serious Distress (n = 4265)	Less Serious or No Distress (n = 42152)	AOR (95% CI)	
Total	81.1	88.6	0.65 (0.48-0.90)	32.5	20.6	1.77 (1.34-2.34)	24.9	16.5	1.60 (1.17-2.19)	<.001
Age, y										
18-34	76.2	77.7	0.78 (0.46-1.31)	39.0	31.2	1.78 (0.91-3.51)	25.5	20.3	1.47 (0.72-3.02)	.37
35-49	77.4	87.7	0.59 (0.33-1.08)	36.0	24.8	1.53 (0.95-2.46)	26.2	20.1	1.30 (0.78-2.17)	
50-64	83.8	91.9	0.70 (0.41-1.21)	35.6	19.6	2.15 (1.31-3.54)	30.0	16.8	2.21 (1.32-3.72)	
≥65	87.8	92.2	0.87 (0.35-2.15)	9.0	10.2	0.90 (0.30-2.68)	6.8	9.4	0.72 (0.20-2.56)	.97
Sex										
Male	77.7	84.8	0.75 (0.45-1.24)	32.6	21.8	2.07 (1.23-3.50)	21.8	16.2	1.71 (0.99-2.96)	
Female	82.6	90.2	0.62 (0.42-0.91)	32.5	20.1	1.69 (1.22-2.35)	26.1	16.6	1.57 (1.09-2.27)	
Race/ethnicity										
White, non-Hispanic	83.4	90.4	0.57 (0.38-0.85)	31.2	19.7	1.82 (1.31-2.54)	25.1	16.3	1.65 (1.14-2.38)	.63
Black, non-Hispanic	71.8	76.2	0.80 (0.43-1.52)	40.7	29.5	1.39 (0.85-2.28)	24.8	20.3	1.09 (0.62-1.91)	
Hispanic	74.4	76.0	0.91 (0.54-1.53)	34.2	24.4	1.63 (1.00-2.65)	23.5	14.9	1.64 (0.89-3.02)	
Education										
<High school graduate	68.4	77.0	0.60 (0.36-1.00)	26.0	21.0	1.56 (0.90-2.68)	17.2	14.0	1.18 (0.59-2.37)	.05
High school graduate	83.5	89.4	0.70 (0.46-1.07)	29.0	18.6	1.44 (1.00-2.08)	21.4	14.9	1.30 (0.89-1.89)	
College graduate	86.7	91.2	0.57 (0.27-1.18)	51.9	24.3	3.52 (1.97-6.28)	45.3	20.2	3.33 (1.78-6.24)	.10
Marital status										
Married	83.5	91.4	0.61 (0.37-0.99)	27.2	14.4	2.61 (1.62-4.19)	23.0	12.3	2.45 (1.50-4.01)	
Separated/divorced/ widowed	84.5	91.1	0.72 (0.40-1.32)	31.5	21.6	1.41 (0.89-2.24)	25.9	18.1	1.43 (0.88-2.32)	
Not married	70.8	77.8	0.71 (0.41-1.24)	43.7	34.8	1.59 (1.00-2.52)	25.9	24.6	1.15 (0.69-1.93)	.42
Income level (% FPL)										
<100	77.8	83.4	0.77 (0.49-1.23)	36.6	27.0	1.48 (1.00-2.20)	28.4	19.8	1.58 (1.00-2.48)	.63
100-200	81.5	87.4	0.64 (0.38-1.10)	28.0	20.8	1.88 (1.02-3.46)	20.4	17.4	1.45 (0.76-2.75)	
201-400	81.0	90.0	0.43 (0.23-0.82)	27.8	20.6	1.50 (0.87-2.62)	20.1	17.1	1.21 (0.66-2.21)	
>400	88.3	89.8	1.19 (0.43-3.30)	40.9	18.5	2.72 (1.35-5.51)	34.4	14.5	2.95 (1.38-6.29)	.08
Health insurance										
Private, any	88.5	89.1	0.87 (0.51-1.49)	34.1	21.1	2.16 (1.37-3.40)	28.2	16.7	2.06 (1.27-3.36)	.31
Public, only	73.5	87.8	0.45 (0.29-0.71)	32.6	21.1	1.35 (0.94-1.94)	23.6	17.4	1.04 (0.72-1.50)	
None	84.0	86.4	0.84 (0.35-2.00)	27.6	14.4	1.84 (0.96-3.54)	22.2	10.7	2.08 (0.97-4.47)	

Abbreviations: AOR, adjusted odds ratio; FPL, federal poverty level. Models control for age, sex, race/ethnicity, education, marital status, education, income, and health insurance. <sup>a</sup> Data are from Medical Expenditure Panel Surveys (2012-2013). Analysis limited to ages 18 years and older. Serious psychological distress defined as Kessler 6 score of 13 or greater (range: 0 to 24). <sup>b</sup> P values for interaction.

Table 3. Outpatient Treatment of Depression by Level of Psychological Distress and Health Care Professional Stratified by Sociodemographic Characteristics<sup>a</sup>

Characteristic	Treatment by Psychiatrist, %			Treatment by Other Mental Health Professionals, %			Treatment by Only General Medical Professionals, %		
	Serious Distress (n = 4265)	Less Serious or No Distress (n = 4252)	P Value <sup>b</sup>	Serious Distress (n = 4265)	Less Serious or No Distress (n = 4252)	P Value <sup>b</sup>	Serious Distress (n = 4265)	Less Serious or No Distress (n = 4252)	P Value <sup>b</sup>
Total	33.4	17.3	<.001	16.2	9.6	<.001	59.0	74.4	<.001
Age, y, %			.17			.14			.17
18-34	29.7	23.8		19.0	18.4		55.8	59.1	
35-49	35.6	16.6		20.8	11.7		55.9	72.7	
50-64	40.3	19.1		16.4	7.7		53.7	75.1	
≥65	13.9	10.8		2.0	4.0		84.1	85.9	
Sex			.45			.70			.63
Male	36.2	23.3		12.6	9.5		57.4	68.7	
Female	32.2	14.7		17.7	9.7		59.6	76.8	
Race/ethnicity			.20			.87			.42
White, non-Hispanic	31.5	16.3		15.5	9.4		61.6	75.5	
Black, non-Hispanic	35.5	24.7		18.3	11.3		53.2	66.0	
Hispanic	43.6	24.1		18.9	11.1		47.0	67.4	
Education			.02			.25			.04
<High school graduate	31.0	23.6		12.9	11.7		62.9	67.9	
High school graduate	29.1	14.3		13.6	7.9		62.6	77.6	
College graduate	51.0	20.6		28.8	11.9		41.8	70.7	
Marital status			.06			.03			.17
Married	29.1	12.3		15.8	5.9		64.8	81.4	
Separated/divorced/widowed	32.8	15.6		16.1	10.8		59.9	75.1	
Not married	41.8	32.5		17.0	5.4		47.2	55.7	
Income level (% FPL)			.48			.33			.92
<100	38.8	21.3		17.9	13.9		51.6	65.6	
100-200	32.2	16.3		9.8	8.4		65.0	75.8	
201-400	24.8	16.6		10.6	16.2		63.9	75.6	
>400	39.5	17.1		24.5	8.0		54.9	75.7	
Health insurance			.49			.04			.12
Private, any	32.5	17.0		21.0	10.2		59.2	75.0	
Public, only	36.0	18.8		12.3	8.9		59.6	72.6	
None	27.4	15.5		14.3	5.9		56.2	74.4	

Abbreviations: AOR, adjusted odds ratio; FPL, federal poverty level.

<sup>a</sup> Data are from Medical Expenditure Panel Surveys (2012-2013). Analysis limited to ages 18 years and older.

Models control for age, sex, race/ethnicity, education, marital status, education, income, and health insurance.

Serious psychological distress defined as Kessler 6 score of 13 or greater (range: 0 to 24).

<sup>b</sup> P values for interaction.

moderate depression<sup>31</sup> with less benefit for mild depression.<sup>32</sup> Yet only a minority (30.5%) of depressed patients receiving psychotherapy had serious psychological distress.

Psychotherapy can be effective for depression in later life<sup>33</sup> and many older adults prefer psychotherapy over pharmacotherapy (57% vs 43%).<sup>34</sup> In our study, however, psychotherapy was rarely provided to older adults, even those with serious psychological distress. This may be because older adults tend to favor treatment in primary care settings<sup>35</sup> where psychotherapy may not be available. However, even when on-site psychotherapy is freely available to depressed older primary care patients who express a preference for psychotherapy, some select antidepressants.<sup>36</sup>

Approximately 1 in 5 patients treated for depression received both antidepressants and psychotherapy, although the proportion was lower for older adults and patients with less education. Patients with serious psychological distress were more likely than those with less distress to receive combined treatment. In these patients, antidepressants combined with psychotherapy tends to confer greater improvement than antidepressants alone.<sup>37</sup> Because combination treatment is more costly and many patients improve on single-modality treatment, it may be reasonable to reserve combined treatment for patients who are at greatest risk of incomplete response to monotherapy.<sup>38</sup> Lower income and education,<sup>39,40</sup> as well as older age,<sup>41</sup> have been associated with poor outcomes in depression. Nevertheless, these groups did not have higher rates of receiving combination treatment. These patterns highlight the importance of improving access to high-quality depression care for socioeconomically disadvantaged groups.

In the treatment of depression, patients with serious psychological distress were approximately twice as likely as those with less distress to be treated by a psychiatrist. This may reflect a tendency for psychiatrists to care for patients with more severe mental health conditions<sup>42</sup> and aligns with guideline recommendations.<sup>6</sup> Patient and family influences on treatment-seeking behavior including a tendency for adults with more severe, distressing, or impairing symptoms to directly seek out specialty mental health care likely contribute to this distribution of patients across provider groups.<sup>43</sup> This pattern did not extend to older patients, African Americans, patients with less education, and uninsured patients. An important strength of some programs that integrate specialized mental services into primary care is their ability to facilitate access to effective depression care to disadvantaged populations.<sup>44,45</sup>

Antipsychotics, mood stabilizers, and anxiolytics were more commonly used to treat patients with higher than with lower levels of distress. These medications tend to be reserved for patients with more complex or treatment-

resistant conditions. Antipsychotics are effective adjunctive treatments for patients who have not responded to multiple antidepressant trials.<sup>46</sup> Anxiety frequently cooccurs with depression and coprescription of anxiolytics may reduce early antidepressant discontinuation<sup>47</sup> or help manage anxiety symptoms that do not respond to antidepressants. Although benzodiazepines and other anxiolytics are commonly prescribed to patients with depression,<sup>48</sup> concerns over cognitive impairment, withdrawal symptoms following discontinuation, and psychomotor effects underscore a need for caution concerning long-term use of anxiolytics in patients with depression.<sup>49</sup> Mood stabilizers might be useful adjuncts to antidepressants for treating irritability or agitation associated with depression.<sup>50</sup>

A minority of patients who were treated for depression screened positive for depression (29.9%) or had serious psychological distress (21.8%). Without more detailed information, it is not possible to determine how many patients without these clinical indicators had been effectively treated. However, the large percentage of treated patients who screened negative for depression and did not have serious distress raises the possibility of overtreatment.<sup>51</sup>

### Limitations

The current analyses have several limitations. First, the MEPS surveys rely on respondent recall and diaries which may underestimate mental health service use; however, a medical provider survey supplements and validates reported service use. Second, although K6 scores correlate with several psychiatric disorders, it is not a diagnostic measure. Third, although the results provide nationally representative information on medication use and psychotherapy, no information is provided concerning medication doses or duration. Fourth, no information is available concerning treatment outcomes. Fifth, the survey does not permit estimation of state-level variation in depression treatment. Finally, no adjustments were made to the many *P* values for the multiple comparisons; therefore, *P* values should be interpreted with caution.

### Conclusions

Although access to depression care has expanded in recent years,<sup>52</sup> critical treatment gaps persist, especially for racial/ethnic minorities, low income individuals, less educated adults, and uninsured people. Among adults who receive depression care, it is important to align patients with appropriate treatments and health care professionals. With dissemination of integrated care models, opportunities exist to promote depression care that is neither too intensive nor insufficient for each patient's clinical needs.

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