

# Perceived Barriers to Treatment for Adolescent Depression

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**Background and Objective:** Adolescent depression is common, disabling, and is associated with academic, social, behavioral, and health consequences. Despite the availability of evidence-based depression care, few teens receive it, even when recognized by primary care clinicians. Perceived barriers such as teen worry about what others think or parent concerns about cost and access to care may contribute to low rates of care. We sought to better understand perceived barriers and their impact on service use.

**Design:** After completing an eligibility and diagnostic telephone interview, all depressed teens and a matched sample of nondepressed teens recruited from 7 primary care practices were enrolled and completed telephone interviews at baseline and 6 months (August 2005–September 2006).

**Participants:** Three hundred sixty-eight adolescent patients aged 13 to 17 (184 depressed and 184 nondepressed) and 338 of their parents.

**Measures:** Perceived barriers to depression care and use of services for depression (psychotherapy and antidepressant medication).

**Results:** Teens with depression were significantly more likely to perceive barriers to care compared with nondepressed teens. Parents were less likely to report barriers than their teens; perceived stigma and concern about family member response were among the significant teen barriers. Teen perceived barriers scores were negatively associated with any use of antidepressants ( $P < 0.01$ ), use of antidepressants for at least 1 month ( $P < 0.001$ ), and any psychotherapy or antidepressant use ( $P < 0.05$ ) at 6 months.

**Conclusions:** To improve treatment for adolescent depression, interventions should address both teen and parent perceived barriers and primary care clinicians should elicit information from both adolescents and their parents.

**Key Words:** adolescents, barriers, depression, primary care

(*Med Care* 2009;47: 677–685)

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This research was supported by an unrestricted grant to the RAND Corporation from Pfizer Inc.

An earlier version of this article was presented at the annual meeting of AcademyHealth's Child Health Services Research section, Washington DC, June, 2008.

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 ISSN: 0025-7079/09/4706-0677

Depression in adolescents is common and disabling,<sup>1,2</sup> with an estimated 15% to 20% of youth experiencing a depressive disorder by the age of 18.<sup>1</sup> Adolescent depression is associated with a range of negative academic, social, and health outcomes, including adult depression, suicide completed, substance abuse, pregnancy, early parenthood, and impaired social and school functioning.<sup>1,3–8</sup>

Several psychosocial and pharmacological treatments have been shown to be efficacious in treating depression in adolescents. These include cognitive-behavioral therapy, interpersonal psychotherapy, and some selective serotonin reuptake inhibitors.<sup>3,9–15</sup> Despite the availability of evidence-based care for depression, most teens with depression do not receive treatment,<sup>3,16–18</sup> with primary care clinicians (PCCs) providing the majority of care to those who are treated.<sup>19–21</sup> Studies have documented that there is often a multiyear time lag between the onset of mental health symptoms in children and adolescents and their receipt of appropriate treatment.<sup>22</sup>

Improvement in care for depressed adults has been achieved in the primary care setting,<sup>23–27</sup> and similar efforts have been shown to be an effective way to improve care and outcomes for depressed adolescents.<sup>28</sup> Thus, primary care is a promising venue for improving access to care for depressed teens. However, barriers to care can interfere with both receipt and continuity of care.

Although there has been extensive work on barriers to depression care for adults,<sup>29</sup> few studies have examined barriers to adolescent depression care. The perceived barriers that have been identified include adolescent or parent concerns about revealing an adolescent's emotional problems (stigma), barriers to access including insurance limitations,<sup>30,31</sup> parental lack of awareness, PCC's lack of knowledge, and discomfort with treating adolescent's depression itself can contribute to the under-treatment of adolescent depression. Further, perceptions of adolescents and their parents about the availability and effectiveness of treatment and the social stigma associated with revealing emotional problems are critical to the decision to seek treatment.<sup>32</sup> Wisdom et al<sup>33</sup> identified 3 key themes that affect teen health care seeking for depression. Depression adversely affects teens' self-perception making them feel abnormal, disconnected, and dependent on others. These challenges, in turn, make it difficult for teens to seek care. As these studies suggest, examining barriers to care in adolescents may be more complicated than in adults because many adolescents will likely rely on their parents for both material support (transportation, money) and emotional support (agreement that treatment is important and valid) for

depression care. Thus, barriers to depression care for adolescents may stem from several sources: adolescent patients, their parents, their PCCs, and systemic factors.

We sought to better understand the perceived barriers of adolescents and their parents in the primary care setting, and to understand to what extent perceived barriers affect receipt of care during the 6 months after depression is detected. Perceived barriers are an important component of the Health Belief Model<sup>34</sup> in which individuals weigh the perceived barriers against the perceived benefits of taking some action to influence decisions about treatment-seeking, which ultimately affects receipt of care. This study addressed 2 research questions: (1) what are the perceived barriers to adolescent depression care as reported by adolescents (with and without depression) and their parents? and (2) are fewer perceived barriers associated with use of depression treatments (counseling and antidepressants) for adolescents with depression during the 6 months after depression is detected?

## METHODS

### Settings and Participants

Data are from 368 adolescents aged 13 to 17 (184 depressed and 184 nondepressed) and 338 of their paired parents who participated in the Teen Depression Awareness Project (TDAP). TDAP was designed to study the impact of depression on adolescent and family functioning and the effect of a motivational intervention on care for depression in primary care settings. We conducted the study in collaboration with 7 primary care health care organizations in Los Angeles and Washington DC (3 of these sites each had more than 1 participating medical office for a total of 11; 2 contributed no patients, yielding data from 9). We selected these clinic partners because they represent a wide range of public and private healthcare settings that deliver care to teens from diverse backgrounds.

### Adolescent and Parent Recruitment

Teens visiting primary care medical offices and 1 of their parents were recruited to participate in the study from January 2005 through March 2006. Teens and parents were approached in waiting rooms and recruited into the study sequentially within each site. Teens and parents were provided information about the study, and those who consented (in-person if present at the time of the visit or by phone and mail) were subsequently contacted by phone and completed an eligibility/diagnostic interview. All depressed teens and a nondepressed matched sample were asked to continue to participate in the longitudinal study, and to complete a baseline computer-assisted telephone interview. Eligibility for the study included current school attendance within 2 years of expected grade level, currently living with parent/guardian, not currently pregnant, English-speaking, and not having a sibling enrolled in the study.

Teens were assessed via telephone for participation in the project using the Diagnostic Interview Schedule for Children<sup>35–37</sup> depression module. Teens who met criteria for depression were invited to participate further in the study. We defined teens as “depressed” if they met criteria for a depres-

sive episode of 2 weeks or more in the prior 6 months, and reported at least 3 depressive symptoms in the prior 2 weeks. We defined teens as “nondepressed” if they reported 2 or fewer symptoms in the prior 6 months. Teens who were between these 2 levels of depression were defined as “sub-threshold” and were thanked for their participation, but not invited to continue in the study. After a depressed teen was enrolled, the next teen that screened as nondepressed from the same clinic and of the same gender was invited to participate, yielding matched pairs of depressed and nondepressed teens by clinic and gender. One parent or legal guardian of each participating teen was also invited to participate in the study; in nearly all cases, this was the parent who provided consent for the teen to participate.

Participating teens and parents were interviewed at baseline and 6 months after the baseline assessment (August 2005 through September 2006) and compensated for time and efforts associated with participation. Spanish-speaking parents were provided materials in Spanish. A total of 5687 teens expressed interest in the study, and 5084 assented to participate and received parent consent. Of these, 4856 completed a full screening assessment, and 4710 of these teens were eligible for the study. This recruitment strategy resulted in equal numbers of depressed and nondepressed teens from each clinic (roughly matching on demographic, insurance, and socioeconomic factors) and in a similar gender ratio in the 2 groups ( $n = 368$ , response rate  $368/375$  eligible = 98%). Figure 1 illustrates the sample flow. All study procedures were approved by the RAND IRB and the IRB's of collaborating health care organizations.

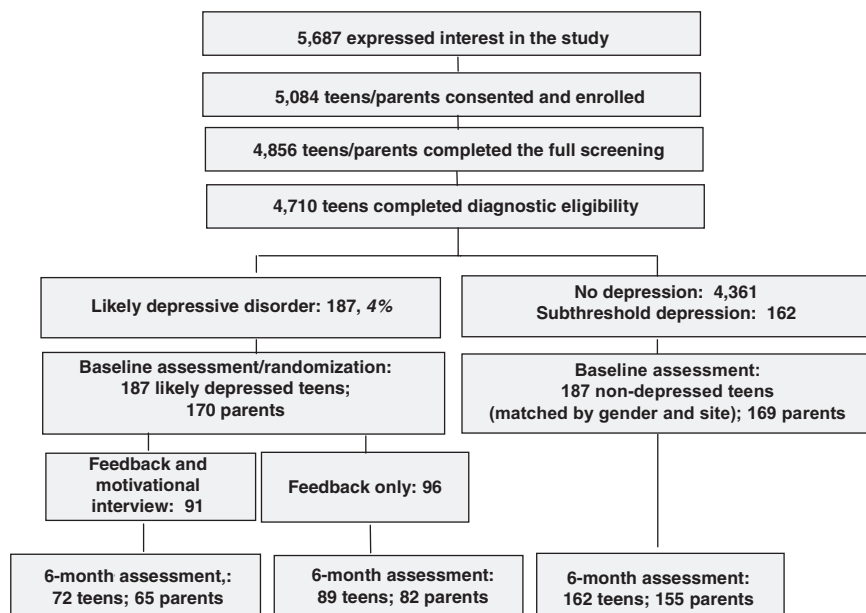
### TDAP Intervention

All participating teens in both the depressed and nondepressed groups, and their parents, received an educational brochure about depression in teens. After depression was detected via the diagnostic telephone interview and baseline interviews were completed, teens, parents, and clinicians were all informed that the teen was likely depressed. A random half of teens with depression were contacted to participate in a motivational interview that encouraged them to think through next steps in understanding and getting help for their depression, seeking to move teens from considering depression care to acceptance of care and ultimately, to actual treatment. These teens were also sent a guide to local mental health resources. However, as the 2 groups of depressed teens did not differ from one another in terms of subsequent use of mental health services, they are considered together for the purposes of this article.

### Measures

#### Barriers to Care

Teen perceived barriers to care were assessed in the baseline interviews with questions adapted from several studies of depression in primary care among adults<sup>38</sup> and teens.<sup>39</sup> Teens were asked to imagine that they needed or wanted care for emotional or personal problems 6 months in the future. Then they were asked to rate 7 barriers on a 5-point Likert agreement scale with “I might not get care because . . .” as the stem to each statement: (1) it would cost too much, (2) of



**FIGURE 1.** Teen depression awareness project (TDAP) sample flow.

what others might think, (3) of difficulties finding or making an appointment with a doctor or therapist, (4) of problems that come up due to my personal responsibilities at school, home, or work, (5) I wouldn't want my family to find out about my depression (asked of teens only), (6) there isn't good care available to me, and (7) I just don't want to. We report these barriers individually and also using an aggregate scale derived by summing across all items. We created 2 scale versions for teens: 1 with all 7 items (Cronbach's  $\alpha = 0.79$ ) and another with only the 6 parallel items asked of both teens and their parents (Cronbach's  $\alpha = 0.75$ ). The 6-item parent perceived barriers scale (Cronbach's  $\alpha = 0.83$ ) was scored identically to the teen version.

To complement the quantitative data on perceived barriers, we conducted 45-minute telephone interviews with a purposive sample of 16 teen-parent dyads (75% of teens and parents called) after baseline assessment and delivery of the motivational interview. Dyads were selected to include approximately equal numbers spanning the 2 study locations, the 2 intervention arms, teen gender and ethnicity, and whether or not the teen had previously received treatment. The semi-structured interview included questions about barriers to, experience with, and receipt of care.

### Use of Treatments for Depression

We assessed teens' receipt of depression treatment during the 6 months between identification of the depression (baseline assessment) and the follow-up assessment using 6 binary indicators representing receipt of counseling and use of antidepressant medications or some combination of the 2. Any use of counseling for depression was defined as positive if a teen reported having received counseling or therapy for personal or emotional problems from a mental health specialist like a psychiatrist, psychologist, social worker or family counselor in a mental health clinic or office, and that at least one of the counseling visits was related to their feeling sad or

depressed. We also specified a more conservative measure, any use of depression counseling with the added criterion of having received at least 4 counseling sessions. This operationalization has been used in other studies in primary care settings.<sup>40</sup> We defined any use of an antidepressant as positive if a teen reported using any antidepressant for depression and also examined a more conservative measure of antidepressant use for at least 1 month in the last 6 months. We refer to these stricter measures as "regular" use compared with "any" use. We also looked at any depression treatment (any depression counseling or use of antidepressants for depression) and regular depression treatment (at least 4 counseling visits or antidepressants for at least 1 month in the past 6 months).

### Covariates

We created binary indicators for teen gender, race/ethnicity (white vs. nonwhite), and insurance type (private vs. public or none) with male, nonwhite and public/no insurance specified as the reference categories in the models.

### Statistical Analysis

Analyses focused on the association between baseline perceived barriers data (collected before to implementation of the motivational interview intervention) and use of treatments for depression at follow-up. We performed bivariate descriptive analyses to present the percent reporting different types of perceived barriers for teens and their parents stratified by depression status using the whole sample. We used bivariate analyses (cross-tabs with  $\kappa$  statistics) to assess consistency between linked teen and parent reports. We also stratified these analyses by depression for the whole sample. Specifically, for each barrier, we calculated the percent of teens for whom both the teen and parent reported that they "somewhat agreed" or "strongly agreed" that it was a barrier.

We also examined the relationship between perceived barriers and use of treatments for depression measured at the

6-month follow-up interview among depressed teens. We present unadjusted bivariate treatment rates and adjusted multivariable logistic regression analyses to evaluate that relationship after adjusting for intracluster correlation among clients within treatment site<sup>41</sup> and the covariates. SAS PROC GLIMMIX<sup>42</sup> was used to adjust for clustering in the models by accommodating study clinic as a random effect. We examined the effect of teen and parent perceived barriers, the difference between their perceptions, and also the moderating effect of teen barriers on service use indirectly through parent perceptions. We present the adjusted odds ratios and 95% confidence intervals for each model coefficient including the standardized score for the perceived barriers scales to illustrate the effect on each measure of treatment use.

The rate of missing information per variable was very low, with 22 (13%) teens with missing data on at least 1 measure used in our multivariable models. Missing data were imputed using multivariate normal-based multiple imputation as implemented by SAS PROC MI to impute missing data at the item level. The bivariate and multivariate analyses were repeated on 5 imputed datasets and results were combined using standard multiple imputation rules<sup>43,44</sup> as implemented in SAS PROC MIANALYZE to obtain parameter estimates and their adjusted standard errors that accounted for the uncertainty due to imputation. Of the 184 teen respondents, 162 were eligible for multivariate analyses because parent data were also available. Of these, 162 respondents, 16 (10%) had at least 1 missing predictor variable.

## RESULTS

### Teen and Parent Characteristics

Table 1 shows the sociodemographic characteristics of study teens and parents. Teens averaged 15.2 years of age were mostly female (78%) and predominantly black (32.7%) or Hispanic (49.3%). Parents averaged 43.8 years of age were also mostly women (89.1%) and predominantly black (33.9%) or Hispanic (45.8%). Forty-six percent of the parents had at least some college education and 37.9% reported household incomes of at least \$50,000. The majority of parents had more than 1 child or adult living in the household (60.7% and 79.6%, respectively) and were married (55.9%).

### Perceived Barriers

Table 2 shows the mean and standard deviation for the aggregate perceived barriers scale and the percent of teens and parents reporting that they “strongly agreed” or “somewhat agreed” with each of the perceived barriers items. These data are stratified by whether or not the teen was depressed. There is a clear and consistent pattern that depressed teens are significantly more likely to perceive barriers to care compared with nondepressed teens. For parents, this pattern is less pronounced with significant differences only for the cost and access items as well as for the overall scale.

The qualitative interviews among a subgroup of teens with depression provide a more in-depth picture of the specific barriers reported in this study. The most often mentioned barriers for teens and parents were that other responsibilities at school, recreational activities, needing to baby-sit for other

**TABLE 1.** Baseline Teen and Parent Characteristics

	Teens (N = 368)		Parents (N = 338)	
	N or Mean	% or SD	N or Mean	% or SD
Age, (yrs); mean (SD)	15.2	1.4	43.8	7.9
Gender				
Male	80	22.0	37	11.0
Female	288	78.0	301	89.1
Race/ethnicity				
White	52	14.2	56	16.7
Black	120	32.7	114	33.9
Hispanic	181	49.3	154	45.8
Other	14	3.8	12	3.6
Education	N/A			
Did not finish high school			92	27.3
High school graduate/GED			90	26.7
Some college			81	24.0
Four yr college degree			40	11.9
Graduate or professional school			34	10.1
Household income	N/A			
Less than \$15,000			59	17.9
\$15,000–\$30,000			81	24.6
\$30,000–\$50,000			65	19.7
\$50,000–\$75,000			49	14.9
\$75,000 or more			76	23.0
Insurance status	N/A			
Private			219	67.0
Public			94	28.7
No insurance			14	4.3
Children in household	N/A			
0			12	3.6
1			121	35.8
2			105	31.1
3+			100	29.6
Adults in household	N/A			
1			69	20.4
2			166	49.1
3+			103	30.5
Marital status	N/A			
Married			189	55.9
Divorced/separated/ widowed			94	27.8
Never married			55	16.3

N/A indicates not applicable.

children, or difficulty getting time off work made it difficult to get care (mentioned by 12 of 16 teens). Perceived stigma was also a concern (mentioned by 4 teens). Specifically, they were not comfortable talking with anyone about their feelings. Access was another type of barrier mentioned by several teens and parents with lack of transportation, long distance to the clinic, or hours the counselor is available. Three parents and 2 teens discussed reluctance to take antidepressants or



**TABLE 2.** Perceived Barriers to Depression Care for Nondepressed (Nondep) and Depressed (Dep) Teens and Their Parents

Barriers Measures	Teens (N = 368)			Parents (N = 339)		
	Nondep	Dep	$\chi^2$ or <i>t</i>	Nondep Teen	Dep Teen	$\chi^2$ or <i>t</i>
Cost too high	18.5	34.8	12.5 <sup>‡</sup>	16.5	27.4	5.8*
Stigma-worry about what others might think	14.7	26.6	8.0 <sup>†</sup>	12.7	14.8	0.3
Access-trouble making appointment	13.6	39.1	30.9 <sup>‡</sup>	16.4	28.1	6.6 <sup>†</sup>
Personal-other responsibilities	24.6	44.6	16.2 <sup>‡</sup>	17.5	23.8	2.0
Stigma-worry about family's perceptions	16.3	45.1	35.9 <sup>‡</sup>	N/A	N/A	N/A
Poor quality-good care not available	9.2	26.6	18.9 <sup>‡</sup>	12.1	19.0	3.0
Don't want care	18.5	34.8	12.5 <sup>‡</sup>	22.0	26.4	0.8
Aggregate barriers scale (mean, SD)	11.4 (5.1)	15.2 (5.6)	7.2 <sup>‡</sup>	10.8 (6.1)	12.3 (5.6)	2.2*

Entries for individual barriers items represent the percent of teens or parents reporting that they "somewhat agree" or "strongly agree" with each item. The aggregate barriers scale is scored as the sum of the 6, 5-point items common to both the teen and parent interviews with a possible range from 5 to 30 points; a higher score indicates a stronger perception of barriers eg, more items were endorsed as being obstacles to getting care. N/A indicates that this item was not asked of parents.

\* $P < 0.05$ .

<sup>†</sup> $P < 0.01$ .

<sup>‡</sup> $P < 0.001$ .

**TABLE 3.** Patterns of Reporting Perceived Barriers (Percent Who Somewhat or Strongly Agree) for and Teens and Parents for Nondepressed and Depressed Teens

Barriers Measures	Nondepressed Teens (N = 167)		Depressed Teens (N = 170)	
	% Agreement	$\kappa$	% Agreement	$\kappa$
Cost too high	3.0	0.01	7.6	-0.08
Stigma-worry about what others might think	3.0	0.09	4.7	0.06
Access-trouble making appointment	4.8	0.21	12.9	0.08
Personal-other responsibilities	6.6	0.15	12.4	0.07
Poor quality-good care not available	2.4	0.14	5.9	0.04
Do not want care	3.6	-0.01	10.6	0.10

Percent agreement represents the percent of teens for whom both the teen and their parent reported that for each barrier they "somewhat agree" or "strongly agreed."

difficulty adhering to them and 2 teens mentioned that they preferred counseling. A few parents also noted insurance coverage problems.

Patterns of concordance between teens and their parents in their perceptions of each of the 6 perceived barriers are shown in Table 3. Concordance is low on nearly all barriers for teens with and without depression.  $\kappa$  statistics are near-zero for all barriers except access ("trouble making an appointment" with a  $\kappa$  of 0.21) among the nondepressed teens. However, agreement was slightly higher among the depressed group (3.0%–6.6% for nondepressed teen dyads and 4.7%–12.9% for depressed teen dyads).

### Relationship Between Barriers and Use of Treatments Among Depressed Teens

Overall, 55% of the depressed teens reported receiving any depression counseling and even fewer (26%) received at least 4 counseling sessions during the 6 months after depres-

sion was identified. Fewer than 1 in 5 teens with depression (17%) reported receiving an antidepressant medication and only 7% reported regular antidepressant use (regular use for at least 1 month in the past 6). The percent of depressed teens receiving any treatment was 56%, and 29% received any regular treatment. There are bivariate associations (Table 4) between 3 of the 7 teen perceived barriers and their reported use of counseling and/or antidepressants 6 months following baseline. Teens who perceived stigma (about what others might think) were less likely to report use any antidepressants or any treatment and there was a trend toward less use across all of the treatment measures. Stigma about family's perceptions was also consistently associated with lower use of depression treatment. Perceiving that good quality care is not available was associated with less use of counseling and treatment. Barriers reported by teens concerning cost, access, other responsibilities, or not wanting care were unrelated to use of treatments for depression.

In multivariate analyses, we found no effect for parent perceptions either directly or as a mediator of teen perceptions and therefore present data only for the teen barriers (Table 5). Teens with higher scores on the perceived barriers scale had a significantly lower odds of receiving an antidepressant ( $P < 0.01$ ), of receiving a regular course of antidepressant therapy ( $P < 0.001$ ), and of receiving any regular treatment, whether counseling or medication ( $P < 0.05$ ). There were a few effects for the covariates; nonminority white teens were more likely to report using an antidepressant (any or regular) and any regular treatment. Girls and the privately insured were less likely to report a regular course of antidepressants.

## DISCUSSION

In this study of teens with and without depression sampled from primary care medical offices, perceptions of barriers were common, particularly for those with depression. Teens and their parents' perceptions of barriers were discordant, and teens with depression who reported more barriers were less likely to receive care. Prior studies<sup>30,42</sup> have exam-

**TABLE 4.** Relationship Between Perceived Barriers to Depression Care (Baseline) and Use of Services for Depression (Follow-Up) Among Depressed Teens (N = 184)

Teen Perceived Barrier	Percent of Teens Using Each Service					
	Any Counseling	At Least 4 Counseling Sessions	Any AD	At Least 1 mo of AD Use	Any Treatment	Four Counseling Sessions OR 2 mo of AD Use
Cost too high						
No (n = 106)	55.7	25.5	19.8	7.6	56.6	28.3
Yes (n = 56)	55.4	28.6	12.5	5.4	55.4	30.3
Stigma-worry what others might think						
No (n = 122)	59.8	30.3	21.3*	8.2	60.7*	32.8
Yes (n = 40)	42.5	15.0	5.0	2.5	42.5	17.5
Access-trouble making appointment						
No (n = 102)	50.0	22.6	14.7	7.8	51.0	25.5
Yes (n = 60)	65.0	33.3	21.7	5.0	65.0	35.0
Personal-other responsibilities						
No (n = 92)	55.4	27.2	18.5	6.5	56.5	30.4
Yes (n = 70)	55.7	25.7	15.7	7.1	55.7	27.1
Stigma-worry about family's perceptions						
No (n = 91)	63.7*	36.3 <sup>†</sup>	25.3 <sup>†</sup>	9.9	64.8*	38.5*
Yes (n = 71)	45.1	14.1	7.0	2.8	45.1	16.9
Poor quality-good care not available						
No (n = 121)	60.3*	28.9	18.2	6.6	61.2*	32.2
Yes (n = 41)	41.5	19.5	14.6	7.3	41.5	19.5
Do not want care						
No (n = 110)	57.3	27.3	18.1	7.3	58.2	30.0
Yes (n = 52)	51.9	25.0	15.4	5.8	51.9	26.9

Teen barriers items are scored as "1" if a teen reported that they "somewhat agree" or "strongly agree" with each item as being obstacles to getting care, "0" otherwise.

\* $P < 0.05$ .

<sup>†</sup> $P < 0.01$ .

<sup>‡</sup> $P < 0.001$ .

AD indicates antidepressant.

**TABLE 5.** Adjusted Odds Ratios (95% CI) for Associations Between Teen Characteristics and Use of Services for Depression (N = 184)

Teen Characteristics and Barriers	Any Counseling	At Least 4 Counseling Sessions	Any AD	At Least 1 Month of AD Use	Any Treatment	Four Counseling Sessions OR 2 Months of AD Use
Intercept	0.83 (0.34, 2.01)	0.36 (0.13, 0.98)	0.18 (0.04, 0.73)	0.09 (0.003, 2.39)	0.82 (0.34, 1.98)	0.35 (0.13, 0.96)
White	2.05 (0.71, 5.91)	1.89 (0.75, 4.74)	4.49 (1.64, 12.34)*	26.0 (3.31, 204.01)*	2.44 (0.79, 7.53)	2.38 (0.97, 5.83) <sup>†</sup>
Female	1.34 (0.61, 2.94)	0.95 (0.38, 2.33)	1.13 (0.38, 3.33)	0.04 (0.005, 0.41)*	1.36 (−0.62, 2.99)	0.94 (0.39, 2.28)
Private insurance	1.11 (0.54, 2.28)	0.86 (0.38, 1.95)	0.64 (0.22, 1.84)	0.01 (0.001, 0.14) <sup>‡</sup>	1.12 (0.54, 2.30)	1.00 (0.44, 2.26)
Perceived barriers <sup>§</sup>	0.86 (0.61, 1.19)	0.75 (0.51, 1.10)	0.52 (0.32, 0.84)*	0.03 (0.004, 0.21) <sup>‡</sup>	0.83 (0.60, 1.16)	0.69 (0.47, 1.01) <sup>†</sup>

\* $P < 0.01$ .

<sup>†</sup> $P < 0.05$ .

<sup>‡</sup> $P < 0.001$ .

<sup>§</sup>Standardized score.

AD indicates antidepressant.

ined how barriers influence provider decisions to treat teen depression and how teen attitudes predict depression treatment need, but we believe ours is the first study to examine

the consistency of teen and parent perceptions of barriers to depression treatment and the association of barriers with use of treatments for depressed teens.

Given the wide endorsement of barriers by teens (including stigma), it may be especially important for PCCs to discuss treatment reluctance and treatment preferences with teens themselves, and ultimately with both the teen and parent. Specifically, better understanding the reasons for the teen's reluctance and preferences can help move the teen toward feeling comfortable with treatment options, and involving parents in such discussions will help parents understand teen's feelings and facilitate parents' role in supporting subsequent treatment or referral to a mental health specialist. Enhancing PCC skills for addressing teen concerns may be a promising strategy for engaging more teens to accept depression treatment. However, parents and teens also perceived external barriers such as cost, poor access, and resistance to obtaining care. This suggests that, in addition to enhanced PCC communication skills, broader efforts to expand access to services are needed. These broader efforts include public education and outreach and eliminating financing barriers.

The greater endorsement of barriers among depressed teens may reflect negative cognitive biases (eg, helplessness, hopelessness) associated with the experience of depression. In contrast, perceived barriers reported by parents of depressed teens were similar to the barriers reported by parents of nondepressed teens. One explanation for this contrast is that parents' perceptions are unaffected by their teens' depression and thus could serve as an important leverage point or "reality check" for their teens, who see many obstacles to receiving care. An alternative explanation for this pattern is that parents are "out-of-touch" with the issues their teens are facing, and that depressed teens have more accurate, experiential-based perceptions of barriers.

We found little consistency between teens and their parents' with regard to perceived barriers especially for the depressed group suggesting that PCCs should target communications about how to seek care both with the teen and the parent, since they are concerned about different barriers, and talking with just one will not cover the diverse issues that might get in the way of the teen receiving care. This finding, of the importance for PCCs to communicate with the family (teen and parent), is consistent with other work that has found that the family plays a significant role in provider motivation to treat.<sup>45</sup>

Teens who reported more barriers were less likely to receive any regular treatment for depression 6 months later. Although reduced odds of receiving counseling were not significant, receipt of antidepressant medications and any regular treatment were significantly lower. Teens may perceive more barriers to taking medications because of the desire to feel normal and concerns about losing their identities eg, if they take a pill, they must be sick,<sup>33</sup> or because of concerns about side effects, such as weight gain and also stigma about medication in particular. This could explain the stronger association between perceived barriers and use of antidepressants.

The finding that girls and those with private insurance were less likely to receive a regular course of antidepressants was counterintuitive. Consistent with previous explanations,<sup>31</sup> it is possible that public insurance plans provide better coverage for antidepressant medications than some private plans. Another explanation is that side effects of many

commonly used selective serotonin reuptake inhibitors, for example, weight gain may be associated with lower acceptance of medication among girls. However, additional research would be needed to test these hypotheses.

Study limitations include reliance on self-reports of barriers because reports by those with no treatment-seeking experience may be less accurate. These perceptions, even if inaccurate, are important, however, as moving from not getting treatment toward being ready to seek and eventually to receive treatment is the goal. In fact, all depressed teens and their parents received feedback about depression regardless of whether they were seeking treatment. Thus, although findings may not generalize to all treatment seekers, they do generalize to depressed teens who are aware of their symptoms. Our estimates of which barriers were most problematic are conservative given that teens with depression (and their parents) report more barriers to care. In addition, we relied on self-reported assessment of service use. Although self-reported survey measures of service use in the past 6 months have previously been used in studies of teens, the accuracy of these reports relative to medical records is not known. Another limitation is that teens with more prevalent depression and/or previous treatment experience may be more likely to report barriers, particularly as a means for refusing care. Our sample size limited the power for detecting associations with service utilization, particularly since treatment rates were low. The sample size also restricted the number of covariates that could be examined in multivariate models even after missing values were imputed. We selected health care organizations serving a diverse patient population with particular ethnic and minority groups in 2 geographic areas, which may not represent other areas of the country. Our study was restricted to teens recruited from primary care waiting rooms, which may under-represent adolescents who tend not to be regular users of health care. Finally, we did not obtain information about the teen's insurance and it is possible that some uninsured parents have patients with public insurance (eg, through the State Children's Health Insurance Plan or SCHIP).

Depression is a serious threat to adolescent health and its identification and treatment are public health priorities. National surveys and guidelines find that depression is common among US students in grades 9 through 12<sup>46</sup> and call for the identification of adolescents at increased risk for suicide including those experiencing depressive symptoms. Effective treatments have been developed for the primary care setting.<sup>39,47</sup> Ongoing efforts seek to improve depression screening tools and reduce burdens on PCCs.<sup>48</sup> Understanding perceived barriers can inform these efforts to improve depression care.

The adult depression literature suggests that patient-centered communication strategies that elicit patients' values and preferences for treatment of depression and helping engage patients into care can lead to improved outcomes.<sup>49,50</sup> This patient-centered approach may also be relevant for teens with depression particularly because teens tend to be less involved in medical decisions. In addition, like adults, the teens in this study, who are receiving care mostly from PCCs, may be selectively more averse to care for depression. Therefore, PCCs treating adolescent depression must gain patient

trust and ensure that patients fully understand recommended treatments; otherwise, adherence with treatment and associated positive outcomes will be limited. Our findings highlight the importance of PCCs engaging in conversations that directly address both teen's and their parents concerns, needs, and priorities for depression care.

## ACKNOWLEDGMENTS

The authors thank the following sites for their participation in this study: Capitol Medical Group-Richard Jones, MD; Kathy McCue, CRNP; Kaiser Permanente Mid-Atlantic-Mark Snyder, Tami Collins, MD, Sima Bakalian, MD; Children's National Medical Center-Larry D'Angelo, MD; Children's Pediatricians and Associates-Ellie Hamburger, MD; Northeast Valley Health Corporation and San Fernando High School, Los Angeles Unified School District-Jan Marquard; White Memorial Medical Center, Family Care Specialists, and the WMMC Family Medicine Residency Program-Rosina Franco, MD; and Kaiser Permanente Southern California-Virginia Quinn, PhD. The authors also thank Scot Hickey, MS, for programming and data management, Mayde Rosen, RN, BSN, for project management, Michael Seid, PhD, and Stephanie Taylor, PhD, for their contributions with instrument development, Daniela Gollnelli, PhD, for the study design, Judy Perlman, MA, from the RAND Survey Research Group for recruitment and data collection support, Sarah Gaillot, MPhil, and Jane McClure, JD, for research assistance, Kelly Kelleher, MD, and Joan Asarnow, PhD, for expert consultation, and Florence "Toni" Christopher for help with manuscript preparation.

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