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Abstract

Many women with depression are untreated or undertreated for their condition. The quality of patient–provider communication may impact the receipt of depression treatment. We examine the relationship between patient–provider communication and receipt of adequate treatment for depression among women. The study sample consisted of women with depression who visited a provider in the previous 12 months in the 2002–2008 Medical Expenditure Panel Survey (N = 3,179). Multivariate regression was used to examine the independent contribution of sociodemographic characteristics, health care factors, patient–provider communication, and respondent language on depression treatment status (none, some, adequate). We found that more than one-third of women with depression in the United States did not receive adequate treatment. Women reporting that providers usually or always listened carefully were more likely to receive adequate treatment (OR = 1.59; 95% CI = 1.10–2.30 and OR = 1.55; 95% CI = 1.07–2.23, respectively). Non-English-speaking women were 50% less likely to receive adequate treatment (OR = 0.49; 95% CI = 0.30–0.80). Having a usual source of care was associated with an increased likelihood of receiving some and adequate treatment (OR = 1.84; 95% CI = 1.24–2.73 and OR = 2.22; 95% CI = 1.61–3.05, respectively). Effective provider listening behaviors may help increase the number of U.S. women with depression who receive adequate treatment. Efforts to improve language access for limited English-proficient women are likely critical for improving treatment outcomes in this population. Additionally, ensuring that women with depression have consistent access to health care services is important for obtaining adequate depression care.

Depression disproportionately affects women (National Institute for Health Care Management [NIHCM] Foundation, [21]) and may adversely impact long-term health and quality of life (Strine et al., [35]). Despite the availability of effective treatments (Work Group on Major Depressive Disorder, [42]), women are often undertreated or even untreated for depression (Young, Klap, Sherbourne, & Wells, [44]). Furthermore, there are racial/ethnic and educational disparities in the receipt of adequate treatment (González et al., [15]; Witt et al., [41]). The quality of depression care may be improved by improving patient–provider communication and ensuring access to culturally and linguistically appropriate care. Problems in patient–provider communication and limited English proficiency (LEP) have been recognized as potential risk factors for disparities in health care quality and outcomes (Jacobs, Agger-Gupta, Chen, Piotrowski, & Hardt, [18]; Smedley, Stith, & Nelson, [31]). Research has shown that providers' interactional style or relational factors can affect depression treatment outcomes, as well as a patient's willingness to comply with treatment (Henshaw et al., [17]; Zuroff & Blatt, [45]). Recent qualitative studies have shown that patients utilizing outpatient mental health services value relationships with providers in which they felt listened to and understood (Mulvaney-Day, Earl, Diaz-Linhart, & Alegria, [20]), and that among women with depression, provider communication style may influence the likelihood of depression treatment use (Henshaw et al., [17]). The few quantitative studies that have examined the role of provider communication behaviors in depression care have found positive communication behaviors to be associated with patient satisfaction, adherence to antidepressant medications, and receipt of guideline-concordant care (Bultman & Svarstad, [11]; Clever et al., [12]). Taken together, these previous works suggest that the

quality of patient–provider communication in visits involving mental health care may be associated with subsequent treatment outcomes. However, given that these studies focused on select geographic areas, the findings from the available research are limited in their generalizability to provider communication behaviors and mental healthcare on a national level. Although improving the relationship between patients and providers by enhancing communication skills and the ability to reach a shared understanding of the diagnosis and treatment options is a commonly recommended intervention for improving depression treatment outcomes (Bollini, Pampallona, Kupelnick, Tibaldi, & Munizza, [10]), to our knowledge, the relationship between provider communication behavior and receipt of depression treatment has not been explored in a national sample of women.

Women with LEP represent an important subgroup for consideration in research related to mental health care quality and outcomes. It is estimated that nearly 55 million people in the United States speak a language other than English at home (U.S. Census Bureau, [36]), and the proportion of people with LEP increased by 80% between 1990 and 2010 (Pandya, Batalova, & McHugh [25]). Among mental health patients, LEP has been associated with negative outcomes including decreased use of mental health services (Bauer, Chen, & Alegria, [6]; Gilmer et al., [14]) and longer duration of untreated illnesses (Bauer et al., [5]). However, little is known about the relationship between LEP and quality of mental health treatment. A recent study of U.S. Latino and Asian American adults did not find a statistically significant difference in the receipt of adequate treatment for mental disorders by language proficiency (Bauer & Alegría, [5]); however, the study sample included individuals with mood disorder, anxiety disorder, or substance use disorder, and therefore, the findings cannot fully speak to the quality of depression care for LEP individuals.

This study adds to the literature by assessing the relationship between provider communication behaviors and language and the likelihood of receiving adequate treatment for depression among women using a nationally representative population-based sample. Patient–provider communication and language barriers represent potentially modifiable aspects of the health care system; therefore, identifying and addressing deficits in these factors may be a key strategy for improving the long-term mental and overall health of women with depression and reducing disparities.

METHODS

Data Source and Study Population
Data are from the 2002–2008 Medical Expenditure Panel Survey (MEPS), a nationally representative sample of the civilian non-institutionalized U.S. population. The study sample includes 3,179 adult women with depression who were interviewed about their health and had at least one visit to a doctor's office or clinic.

Identification of women with depression
Women with depression were identified through the MEPS Household Component survey, where in the Conditions Enumeration Section household respondents were prompted to disclose physical and mental health conditions with the question, "We're interested in learning about health problems that may have bothered ... Health problems include physical conditions, accidents, or injuries that affect any part of the body as well as mental or emotional health conditions, such as feeling sad, blue, or anxious about something" (Agency for Healthcare Research and Quality, [1]). Truncated 3-digit

International Classification of Diseases, Ninth Revision (ICD-9) codes were generated from the respondent interview. Women with ICD-9 code 296 or 311, during any round, were identified as having depression. While the ICD-9 code 296 includes major depressive disorder and other episodic mood disorders, more than 94% of women with depression in the sample were identified using ICD-9 code 311 (depression unspecified).

Study Variables

Independent Variables

Provider communication behaviors

Four items examining how well providers communicate (*How often providers ... (1) listened carefully to you; (2) explained things so you understood; (3) showed respect for what you had to say; (4) spent enough time with you*) were incorporated into the MEPS from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) (Agency for Healthcare Research and Quality, [2]). Adults age 18 years and older who visited a doctor's office or clinic in the previous 12 months (not including emergency-room visits) completed the four communication items. The reference period for each item was the previous 12 months, and responses for each item were rated on a 4-point Likert scale including *never, sometimes, usually*, or *always* (Agency for Healthcare Research and Quality, [2]). Due to small numbers in the *never* category the *never* and *sometimes* categories were combined for the regression analyses.

Language

The question "In which language [does the respondent] prefer to speak at home?" was used to proxy limited English proficiency. Possible responses included English, Spanish, or another language. A dichotomized variable was used in the analyses to compare women reporting a preference for speaking English at home to those reporting any other language.

Control variables

Control variables were included according to the domains of the Andersen Behavioral Model (Andersen, [4]). Predisposing characteristics included race/ethnicity (Hispanic, white [non-Hispanic], black [non-Hispanic], and other [non-Hispanic]), age (18–24, 25–44, 45–64, 65+ years), education status (no or some high school, high school graduate, some college, and college graduate or beyond), participation in the paid workforce, marital status (currently married, previously married, and never married), region of the United States (West, Northeast, Midwest, and South), and urbanicity (urban versus rural as defined by Metropolitan Statistical Area [MSA] status). MSAs are defined by the U.S. Office of Management and Budget (OMB), and are used by federal government agencies for statistical purposes (Nussle, [23]). Health insurance (grouped in the following mutually exclusive categories: no health insurance, only publicly funded health insurance, and any private health insurance coverage [including TRICARE]), the poverty threshold level (percent of poverty threshold: below 100%, 100–199%, 200–399%, and 400% and higher), and having a usual source of care were included as enabling factors. The following need factors were also included in the analyses: comorbid mental health and chronic medical conditions, functional limitation status, SF-12v2 Physical Component and Mental Component Summary Scores, self-rated health status, and use of health services in the previous 12 months. Self-rated health status was assessed with the question, "In general, would you say that your health is excellent, very good, good, fair, or poor?" A dichotomous variable was used to compare

women reporting fair or poor health to those reporting excellent, very good, or good health. To determine use of health services, respondents were asked the number of times they went to the doctor's office or clinic to get care in the previous 12 months (0, 1, 2, 3, 4, 5–9, and 10 or more). The analyses use a dichotomized variable comparing high users (three or more visits) to low users based on recommendations for analyzing data from CAHPS surveys (Agency for Healthcare Research and Quality, [3]).

Dependent Variable
Treatment of depression
Treatment of depression was defined using information about women's prescription medications and psychotherapy. The MEPS Prescription file was used to determine whether women received prescriptions for medications indicated for the treatment of depression, as determined by the National Committee for Quality Assurance, Healthcare Effectiveness Data and Information Set list of National Drug Codes for antidepressant medication management (National Committee for Quality Assurance [NCQA], [22]). The MEPS Outpatient Department Visits and MEPS Office-Based Medical Provider Visits files were used to identify whether women had any visits involving psychotherapy. Prescriptions were assumed to be for a minimum of 30 days, and psychotherapy for a minimum of 30 minutes. An index of the level of "adequacy" of the type and duration of treatment based on evidence-based treatment guidelines (Work Group on Major Depressive Disorder, [42]) was constructed using the two types of treatment mentioned, pharmacotherapy and psychotherapy. The following mutually exclusive treatment categories were defined: no treatment, some treatment, and adequate treatment. Women with depression who report no pharmacotherapy or psychotherapy over the course of the year were categorized as receiving no treatment. Those who report any use of the identified medications or who reported using outpatient or office-based services were categorized as receiving some treatment for depression over the year. Adequate treatment was defined as receiving at least four prescriptions related to depression treatment, or at least eight outpatient or office-based psychotherapy or counseling visits. Adequate treatment has been operationalized in a similar fashion in other studies (Witt et al., [41]).

Analytic Approach
SAS 9.3 software (SAS Institute, Inc., [27]) was used to construct the analytic files and STATA 12 software (StataCorp, [32]) was used to perform all analyses, accounting for the complex design of the MEPS. The standard errors were corrected due to clustering within strata and the primary sampling unit. Survey weights were applied to produce estimates that account for the complex survey design, unequal probabilities of selection, and survey nonresponse.

Descriptive analysis
Chi-squared analyses were used to test for differences in categorical independent variables by depression treatment status. If differences were found in the overall chi-squared tests, each subgroup was tested for statistical significance. Analysis of variance (ANOVA) was used to test for differences in the means of the continuous variables (SF-12v2 Physical Component and Mental Component Summary Scores) by depression treatment status.

Regression analyses

Four separate regression models were fit to examine the relationship between each of the provider communication behaviors and language spoken with adequacy of treatment of depression. Multivariable multinomial logistic regression models were used to estimate the odds of receiving adequate treatment or some treatment, as compared with no treatment, while controlling for sociodemographic and health characteristics.

Missing data strategy

To address the missing data, five random, multiple-imputed data sets were imputed using the *mi impute chained* command in STATA 12 software (StataCorp, [32]). All regression analyses were conducted using the *mi estimate* command on the imputed data sets in order to adjust coefficients and standard errors for the variability between imputations according to the combination rules by Rubin (StataCorp, [32]). Sensitivity analyses were also done comparing the results from the imputed data to those obtained from a complete case analysis using only the data from respondents who had nonmissing values for all study variables (N = 2,999).

TABLE 1 Characteristics of Women With Depression by Depression Treatment Status, 2002–2008 Medical Expenditure Panel Survey

	Total	No treatment	Some treatment[a]	Adequate treatment[b]				
Unweighted N	3,179	781	637	1,761				
Weighted N	4,707,255	1,067,940	950,569	2,688,746				
%	NA	22.7	20.2	57.1				
		N	%	N	%	N	%	p
Communication measures								
Listened carefully								.1823
Never		17	2.5	11	1.3	25	1.0	
Sometimes		97	11.4	71	10.6	173	9.8	
Usually		251	33.7	230	37.6	632	38.0	
Always		416	52.4	325	50.5	931	51.2	
Explained so you understood								.0597
Never		21	2.8	9	1.2	26	1.1	
Sometimes		86	9.4	68	10.2	146	7.8	
Usually		249	32.5	217	34.3	621	36.3	
Always		425	55.3	343	54.3	968	54.8	
Showed respect								.0626
Never		15	1.9	10	0.9	18	0.8	
Sometimes		76	8.7	78	12.2	154	8.5	
Usually		253	33.9	202	33.4	602	35.7	
Always		437	55.5	347	53.5	987	55.1	
Spent enough time								.5584
Never		33	3.2	22	3.2	44	2.3	
Sometimes		118	15.1	99	15.9	224	13.1	
Usually		319	39.5	240	38.0	695	40.5	
Always		311	42.2	276	42.9	798	44.1	

Language spoken								.0000
English		638	90.3	575	94.7	1653	97.0	
Predisposing factors								
Race/ethnicity								.0000
White (non-Hispanic)		415	67.5	437	82.6	1316	84.5	.0000
Black (non-Hispanic)		118	12.2	71	6.6	172	5.9	.0000
Other (non-Hispanic)		51	6.5	26	2.9	75	3.6	.0040
Hispanic		197	13.8	103	7.9	198	6.0	.0000
Age group (years)								.0000
18–24		82	11.2	39	5.7	65	4.1	.0000
25–44		293	39.1	254	39.5	524	29.2	.0000
45–64		286	33.2	240	37.1	878	49.4	.0000
65+		120	16.5	104	17.7	294	17.2	.8794
Education status								.0004
No or some high school		265	22.8	148	16.2	387	15.1	.0000
High school graduate		250	33.9	202	31.8	578	32.5	.7277
Some college		159	24.6	167	27.9	420	25.7	.5025
College or beyond		107	18.6	120	24.2	376	26.7	.0039
Participation in the paid workforce								.0044
Unemployed		333	36.5	278	38.8	907	44.6	
Marital status								.0012
Currently married		315	41.2	288	48.5	797	50.0	.0027
Previously married		305	36.9	232	33.8	700	35.4	.6056
Never married		161	21.9	117	17.7	264	14.6	.0010
Region of United States								.0008
Northeast		87	13.8	84	15.9	294	18.9	.0145
Midwest		189	26.5	145	24.5	425	24.5	.6618
West		241	29.0	160	24.4	357	20.2	.0001
South		264	30.7	248	35.2	685	36.4	.0830
Urbanicity/MSA status								.0103
MSA		634	84.4	481	76.7	1367	81.4	
Enabling factors								
Health insurance status								.0002
Private		408	64.3	381	70.3	1035	69.6	.0687
Public		266	25.1	191	22.1	622	25.5	.3255
None		107	10.6	65	7.6	104	5.0	.0000
Ratio of family income to poverty threshold								.0053

Below 100% (poor)		223	20.3	149	15.4	431	16.6	.0696
100–199% (Near poor/low)		202	22.1	130	18.0	384	18.7	.1371
200–399% (Middle)		207	30.9	184	31.0	451	28.6	.4483
400%+ (High)		149	26.6	174	35.6	495	36.1	.0015
Usual source of care								.0000
Yes		628	82.3	569	91.6	1657	94.2	
Need factors								
Comorbidity status								
Other mental health conditions		156	18.6	162	24.5	622	33.6	.0000
Chronic medical conditions		452	55.3	390	59.0	1286	70.7	.0000
Functional limitation status								.0000
0 out of 5 limitations		490	66.5	385	66.3	850	54.4	.0000
1 out of 5 limitations		85	10.6	62	8.5	161	9.2	.4566
2 or more limitations		206	22.9	190	25.2	750	36.4	.0000
Health status								.0000
Fair/poor health status		396	41.8	281	37.5	1001	49.6	
Use of health services								.0000
High (3 or more visits)		446	58.5	444	71.3	1387	78.0	
Health-Related Quality of Life		Mean	SD	Mean	SD	Mean	SD	p
SF-12 Physical Health Summary Score		46.5	15.5	46.4	15.3	43.0	15.6	.0000
SF-12 Mental Health Summary Score		42.8	14.3	42.2	13.6	40.5	13.5	.0005

- 7 *Notes.* Results from imputed data set 1; MSA, Metropolitan Statistical Area.

- 8 [a]Received some treatment (but less than adequate treatment).

- 9 [b]Received at least four prescriptions for antidepressants and/or eight office-based or outpatient psychotherapy or counseling visits.

RESULTS

Overall, 13.7% of 4,707,255 (unweighted n = 3,179) U.S. women reported depression. Table 1 shows descriptive statistics for all study variables. STATA 12 software does not support the combination of results from chi-squared analysis using imputed data sets (StataCorp, [32]), and given that the results did not vary between data sets, the results using imputed data set number 1 are presented. Among women with depression, 22.7% did not receive any treatment, 20.2% received some treatment, and

57.1% received adequate treatment for depression over the course of the year. More than half of women in this sample reported that providers always listened carefully to them (52.6%), explained things so they could understand (54.6%), and showed respect for what they had to say (55.7%). Less than half of women (43.6%) reported that providers spent enough time with them. Additionally, most of the women in the sample (90.2%) spoke English in the home. No significant differences were found in providers' communication behaviors by depression treatment status, but compared with women not receiving adequate treatment, adequately treated women were more likely to be English speakers (Table 1).

Table 2 presents the adjusted odds ratios (OR)s and 95% confidence intervals (CI) from the multivariable multinomial logistic regression models for each of the provider communication behavior measures and language spoken. Women who reported that providers usually (OR = 1.55; 95% CI = 1.07–2.23) or always (OR = 1.59; 95% CI = 1.10–2.30) listened carefully were more likely to receive adequate treatment than those reporting providers never listened carefully. While the ORs for the remaining behaviors suggested a positive relationship with the likelihood of receiving adequate treatment, none of these findings were statistically significant. Results also indicated that non-English-speaking women were half as likely to receive adequate treatment compared to English speakers. Examination of other covariates of interest revealed that women who reported having a usual source of care were more likely to receive some treatment and were more than twice as likely to receive adequate treatment (OR = 1.84; 95% CI = 1.24-2.73 and OR = 2.22; 95% CI = 1.61-3.05, respectively). Overall, the major conclusions drawn from each of the models were unchanged when a complete case analysis was performed.[1]

TABLE 2 Adjusted Odds of Receiving Treatment Among Women With Depression in the United States, 2002–2008 Medical Expenditure Panel Survey

Independent variables	Listened Carefully		Explained		Showed Respect		Spent Time	
	Some Treatment[a]	Adequate Treatment[b]	Some Treatment[a]	Adequate Treatment[b]	Some Treatment[a]	Adequate Treatment[b]	Some Treatment[a]	Adequate Treatment[b]
	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI
Listened carefully*								
Always	1.12	1.59*						
	(0.73–1.74)	(1.10–2.30)						
Usually	1.22	1.55*						
	(0.77–1.92)	(1.07–2.23)						
Explained so you understood*								
Always			0.85	1.33				
			(0.55–1.32)	(0.91–1.95)				
Usually			0.89	1.33				
			(0.57–1.39)	(0.92–1.94)				
Showed respect*								
Always					0.72	1.35		
					(0.47–1.11)	(0.92–1.99)		
Usually					0.71	1.22		
					(0.47–1.08)	(0.83–1.80)		
Spent enough time*								
Always							0.87	1.33
							(0.59–1.26)	(0.95–1.86)
Usually							0.82	1.25

							(0.57–1.18)	(0.89–1.76)
Language*								
Other	0.95	0.49*	0.96	0.50*	0.97	0.50*	0.98	0.49*
	(0.52–1.73)	(0.30–0.80)	(0.52–1.75)	(0.31–0.82)	(0.53–1.78)	(0.31–0.81)	(0.53–1.79)	(0.30–0.80)
Usual source of care*								
Yes	1.84*	2.22*	1.87*	2.20*	1.88*	2.21*	1.87*	2.19*
	(1.24–2.73)	(1.61–3.05)	(1.26–2.77)	(1.59–3.03)	(1.27–2.78)	(1.60–3.05)	(1.26–2.76)	(1.59–3.03)

Note. OR, odds ratio; CI, confidence interval. Reference values: *Never/sometimes; [†]English; [‡]No. Results combined over five data sets. Analyses are adjusted for the following year 1 patient characteristics: race/ethnicity, age, education status, employment status, marital status, region of United States, Metropolitan Statistical Area status, health insurance status, income, other mental health conditions, chronic medical conditions, functional limitation status, self-rated health status, Health-Related Quality of Life, and use of health services. Asterisk at data indicates significant at *p* <.05.
[a]Received some treatment (but less than adequate treatment).
[b]Received at least four prescriptions for antidepressants and/or eight office-based or outpatient psychotherapy or counseling visits.

DISCUSSION

This national study examined the relationship between provider communication behaviors and language and the likelihood of receiving adequate treatment for depression among women in the United States and found that patient's language and the quality of provider communication were strongly and independently associated with depression treatment status. Specifically, women who reported that providers always or usually listened carefully to them were one and a half times more likely to receive adequate treatment for their depression than those who reported that providers sometimes or never listened carefully to them. Furthermore, non-English-speaking women were 50% less likely to receive adequate treatment compared to their English-speaking counterparts. This study also found that women who had a usual source of care were more likely to receive some and adequate treatment.

Previous studies have suggested that effective communication may lead to improved depression treatment outcomes (Schwenk, Evans, Laden, & Lewis, [29]). This study provides evidence to further support this idea and provides new evidence to support an association between a specific communication behavior and the receipt of appropriate depression treatment for women. There are several potential mechanisms that could account for the association between providers' listening behaviors and the likelihood of receiving adequate depression treatment. First, women who perceive that providers are listening to them during their health care encounters may be more likely to feel that their values, preferences, and health beliefs were taken into consideration when formulating the diagnosis and treatment plan. As a result, these women may have more trust in the diagnosis and treatment plan, which may lead to an increased likelihood of initiating and adhering to treatment. It is also possible that providers who have good interpersonal skills as demonstrated by their ability to

listen also have increased knowledge and expertise regarding depression diagnosis and management, thus increasing the likelihood of recommending guideline-concordant care. Moreover, perceiving technical competence in a provider has been identified by women with depression as a key factor for seeking and using depression treatment (Henshaw et al., [17]). In addition to facilitating the establishment of a connection with a provider (Bennett, Boon, Romans, & Grootendorst, [7]), women with depression have also indicated that a provider's willingness and ability to listen influence the amount of control they feel over treatment options (Henshaw et al., [17]). Women who feel an increased sense of control over the treatment course may be more encouraged and motivated to accept and adhere to depression treatment. Future research is needed to better elucidate the mechanisms by which providers' listening behaviors affect the receipt of depression treatment. Specifically, qualitative studies among women with depression may be beneficial for generating hypotheses in this area from which clinical interventions can be developed and tested.

Our finding regarding provider's listening behavior may have important implications for medical education and training. The presence of communication skills training and assessment in medical education has been well documented (Berkhof, van Rijssen, Schellart, Anema, & van der Beek, [8]). However, the communication skills training curriculum often focuses on styles and techniques for asking questions in the medical interview (Yedidia et al., [43]) with little attention paid to teaching effective listening skills. Providers may be able to demonstrate their commitment to listening to patients by exploring in greater detail patient statements about symptoms, ideas, or expectations. In addition, attempts should be made to validate patient concerns by expressing empathy and legitimizing concerns (Stewart, Meredith, Ryan, & Brown, [34]). In fact, research has shown that patients with depression whose concerns were explored and validated during medical encounters were more likely to be prescribed appropriate medication (Epstein et al., [13]).

Given the reciprocal nature of communication, there may also be benefits to programs and interventions that train patients to communicate more effectively with their providers. Research in nonmental health care has shown that interventions that focus on patients' question-asking skills and their willingness to raise concerns or request clarification can be successful in increasing patient participation in the medical encounter (Harrington, Noble, & Newman, [16]). In mental health care, recent work suggests that interactive web-based programming featuring actors simulating a patient discussing treatment concerns may be an effective method for empowering patients with mental illness to engage more fully in the medical encounter by asking more questions about treatment and disclosing more lifestyle information (Steinwachs et al., [33]). Efforts to improve the communication skills of both patients and providers may represent a balanced approach to improving the quality of the health care interaction.

This study found evidence that language is an important factor for the receipt of adequate depression treatment. While previous research has identified LEP as a barrier to mental health service use (Sentell, Shumway, & Snowden, [30]), the findings of this study suggest that even when they are able to interact with the health care system, individuals with LEP may be at risk for suboptimal depression treatment. Language has long been recognized as a vital factor in how health care services are delivered and received (QI Solutions Inc, [26]). Specifically, in mental health care services, an evaluation in a patient's nonprimary language has been shown to be associated with an

increased likelihood of an incomplete or distorted mental status assessment (Bauer & Alegría, [5]). Interpreters are frequently used during medical interactions to overcome potential language barriers, and use of professional medical interpreters has been associated with improved clinical care and outcomes for patients with language barriers (Karliner, Jacobs, Chen, & Mutha, [19]). Increasing access to medical interpreters within mental health care settings is a critical component of strategies for addressing disparities in the quality of care for individuals with LEP, but this alone is unlikely to be enough. System-wide interventions to promote culturally and linguistically appropriate services such as providing patient education materials in the languages of the groups represented in the service areas, collecting and updating information about patient spoken and written language preferences, and providing ongoing education and training in culturally and linguistically appropriate service delivery for staff (Office of Minority Health, [24]) are also likely to be necessary for improving outcomes in the LEP population.

There is growing evidence to support the feasibility and effectiveness of collaborative care models involving the integration of behavioral/mental health professionals into the primary care process of treating mental health conditions (Unutzer & Park, [37]; Williams et al., [39]). Key aspects of collaborative care include communication and coordination of care; patient education, activation, and support; monitoring of symptoms, adherence, and side effects; and provider education (Williams et al., [39]). While the use of an evidence-based collaborative approach to depression treatment may be useful for improving outcomes for all patients, the use of this approach in conjunction with the promotion of culturally and linguistically appropriate services may be extremely beneficial for LEP individuals.

Additionally, LEP may be a proxy for low health literacy or cultural preferences. Research has shown low health literacy to be associated with poorer health outcomes, poorer use of health services, and poorer medication adherence (Berkman, Sheridan, Donahue, Halpern, & Crotty, [9]). However, these studies have not focused on mental health care. The available research on depression literacy has focused on the public's ability to correctly identify the signs and symptoms associated with depression (Wang et al., [38]), as so little is known about the relationship between health literacy and the quality of treatment for depression. People with lower health literacy may have decreased knowledge about the diagnosis of depression and the importance of adequate treatment. They may also lack the skills and resources necessary to effectively interact with the health care system. Health literacy is not assessed in the MEPS, and therefore, this study was unable to examine its effect on depression treatment status. More research is needed to explore the relationship between health literacy and adequacy of treatment for depression.

Our findings also highlight the importance of having a usual source of care for women with depression. Not only is continuity of care important for mental health treatment for these women, but research has also shown that among women with psychological distress, having a usual source of care is associated with improved outcomes such as receipt of timely preventive care (Witt et al., [40]). Policies and practices to facilitate reliable access to a consistent source of care for women with depression are necessary to ensure optimal mental and physical health outcomes for these women.

Several potential limitations of this study should be noted. First, these analyses were cross-sectional, so causal associations cannot be inferred. Additionally, it should be noted that it is possible that women who did not receive adequate treatment reported less positive ratings of providers' communication behaviors because of the persistent sadness and difficulty with concentration that are part of the illness of depression having influenced the recall and interpretation of the communication that occurred (Schenker, Stewart, Na, & Whooley, [28]). Second, the available measures of provider communication behaviors are limited in their sensitivity and specificity. Specifically, the communication behavior questions are not specific to the individual provider charged with diagnosing and treating the patient for depression and thus may have limited sensitivity in their ability to assess the relationship between provider communication behaviors and depression treatment status. However, the global nature of the survey items provides a systemwide view of the relationship between the communication experiences of women with depression and the likelihood to receiving adequate depression treatment. Third, the study lacked an objective measure of respondent's language proficiency; however, language preference has been used as a measure of LEP in other research examining the relationship between language and health service use (Gilmer et al., [14]). A concern with using language preference to proxy LEP is that it is possible that language preference serves more as a proxy for other factors and characteristics that were not included in the analysis but may influence treatment, such as acculturation or individual and cultural beliefs and preferences. Fourth, determination of the adequacy of pharmacotherapy treatment was based on household reported information; therefore, misclassification of treatment status could have occurred. Additionally, given that information on the prescribed treatment plan was unavailable, this study was unable to determine the specific types (e.g., cognitive behavioral therapy or interpersonal therapy) or quality of psychotherapy method being used. Fifth, women with depression were identified using household informant reports instead of clinical diagnoses, and this may limit the generalizability of the findings. Finally, information about severity of depression was not available in the MEPS public use files, so it could not be controlled for in this study. However, general measures of functional status, health-related quality of life, comorbid mental health, and chronic medical conditions were included to address this issue.

This study has important strengths. First, the results are based on national, population-based data, providing policymakers and practitioners with information on the relationships between provider communication behaviors and language spoken with depression treatment status. Additionally, the large numbers of individuals and the breadth of information included in the MEPS database allowed for the estimation of regression models that controlled for several key predictors of depression treatment.

In conclusion, this study shows that effective provider listening behaviors may help increase the number of U.S. women with depression who receive adequate treatment. Moreover, efforts to improve access to culturally and linguistically appropriate services for non-English-speaking women may also be a useful strategy for improving treatment outcomes in this population. Finally, ensuring reliable access to continuous care is important for improving the health and mental health of women with depression.

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Footnotes

Results from the complete case analyses can be obtained by contacting the corresponding author.

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