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Favorable Ratings of Providers' Communication Behaviors Among U.S. Women with Depression: A Population-based Study Applying the Behavioral Model of Health Services Use

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Abstract

Background

Little is known about the relationships between sociodemographic characteristics and ratings of provider communication behavior among women with depression in the United States. This study uses the Andersen Behavioral Model to examine the relationships among predisposing, enabling, and need factors and ratings of perceived patient–provider communication in women with depression.

Methods

The sample consisted of women with depression who visited any provider in the previous 12 months in the 2002–2008 Medical Expenditure Panel Survey ($n = 3,179$; weighted $n = 4,707,255$). Multivariate logistic regression was used to examine the independent contribution of predisposing, enabling, and need factors on providers' communication behavior measures.

Findings

Black (non-Hispanic) women were more likely to report that providers always listened carefully (odds ratio [OR], 1.40; 95% confidence interval [CI], 1.01–1.94), explained so they understood (OR, 1.53; 95% CI, 1.10–2.11), and showed respect for what they had to say (OR, 1.39; 95% CI, 1.01–1.92). Women participating in the paid workforce and those without a usual source of care were at increased risk for less favorable experiences.

Conclusions

Participation in the paid workforce and lack of a usual source of care were associated with an increased likelihood of less optimal communication experiences.

Implications for Practice and/or Policy

Ensuring that women with depression have reliable access to a continuous source of care and expanding the availability of nonemergent, after-hours care may be instrumental for improving patient–provider communication in this population.

Introduction and Background

Depression disproportionately affects women and may negatively impact their physical health (National Institute for Health Care Management Foundation, 2010). In addition to being at increased risk for suicidal behaviors (Zhang, McKeown, Hussey, Thompson, & Woods, 2005), depressed women are more likely to engage in poor personal health behaviors, including smoking, lack of exercise, and binge or heavy drinking (Strine et al., 2008). Depressive symptoms have also been found to be associated with an increased risk of stroke morbidity and mortality (Pan, Sun, Okereke, Rexrode, & Hu, 2011) and have been identified as a potential risk factor for the development of chronic illnesses such as diabetes (Engum, 2007). Along with its implications for women's health, depression may also negatively impact the health and well-being of their children (Schwebel and Brezaussek, 2008, Stewart, 2007).

Despite the availability of effective treatments (Work Group on Major Depressive Disorder, 2000), women are often undertreated or even untreated for depression (Kessler et al., 2007, Young et al., 2001). Moreover, there are racial and educational disparities in the receipt of appropriate depression

treatment among women (Witt et al., 2011). The quality of depression care may be improved by effective patient–provider communication. High-quality communication behaviors in the medical interaction have been associated with improved outcomes (Carcaise-Edinboro and Bradley, 2008, Zolnierek and Dimatteo, 2009). Although much of communication research has focused on the general health care setting, the few studies that have examined this topic in depression care have also found positive communication behaviors to be associated with patient satisfaction, adherence to antidepressant medications, and receipt of guideline-concordant care (Bultman and Svarstad, 2000, Clever et al., 2006). Moreover, the quality of the relationship with their psychotherapists has been identified as a crucial factor among patients receiving psychiatric care (Johansson & Eklund, 2003).

Previous studies have shown that in the general U.S. adult population, patients' perceptions of patient–provider communication vary by demographic and other individual patient characteristics such that the most economically disadvantaged subpopulations are less likely to report favorable ratings (DeVoe, Wallace, & Fryer, 2009). Additionally, those with depressive symptoms are also less likely to report favorable ratings of their communication with their personal physician or nurse (Martino et al., 2011), yet little is known about the relationships between sociodemographic characteristics and ratings of provider communication behaviors among this vulnerable population on a national level. Understanding these relationships may be of great importance for developing interventions and policies aimed at improving health and mental health outcomes for women with depression.

Using the Andersen Behavioral Model (Andersen, 1995), this study aimed to identify which predisposing, enabling, and need factors are associated with optimal patient evaluations of providers' communication behaviors among women with depression within a population-based sample. This study also determined whether disparities exist in ratings of providers' communication behaviors among women with depression and explored whether particular subgroups may be at risk for the propensity toward lower ratings of perceived patient–provider communication.

Methods

Sample

Data are from the 2002–2008 Medical Expenditure Panel Survey (MEPS), a nationally representative sample of the civilian noninstitutionalized population in the United States. The study sample includes 3,179 (weighted $n = 4,707,255$) adult women with depression who were interviewed about their health and had at least one visit to any doctor's office or clinic. Women with depression were identified through the MEPS Household Component where in the Conditions Enumeration Section respondents were asked if they had experienced any “health problems as well as mental or emotional health conditions, such as feeling sad, blue, or anxious about something” (Agency for Healthcare Research and Quality, 2002). Truncated three-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. Although 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).

Measures

Dependent Variable

Patient's ratings of providers' communication behaviors was measured using four items about how well providers communicate—1) How often health providers listened carefully to you; 2) How often health providers explained things so you understood; 3) How often providers showed respect for what you had to say; and 4) How often health providers spent enough time with you—that were incorporated into the MEPS from the health plan version of the Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys (Agency for Healthcare Research and Quality, 2004). Information on each communication item was obtained from adults age 18 and older who had at least one visit to any doctor's office or clinic in the previous 12 months (not including visits to an emergency room). 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, 2004).

Independent Variables

Explanatory variables were identified using the Andersen Model, a behavioral model of health services utilization (Andersen, 1995). This model conceptualizes health service utilization and outcomes as the result of predisposing, enabling, and need factors. Predisposing factors are existing conditions that are related but not directly responsible for health service utilization. Enabling factors facilitate or impede the use of services. Need factors indicate the perception, existence, or severity of conditions requiring health services. The model includes health care ratings, specifically satisfaction with care, as an explicit outcome.

Predisposing Factors

This study identified age (18–24, 25–44, 45–64, ≥65 years), race/ethnicity (White [non-Hispanic], Black [non-Hispanic], other [non-Hispanic], and Hispanic), 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 status) as predisposing factors. Metropolitan Statistical Areas are defined by the U.S. Office of Management and Budget, and used by federal government agencies for statistical purposes (Nussle, 2008).

Enabling Factors

Enabling factors included health insurance status (no health insurance, only publicly funded, and any private), poverty status, language spoken (English or other), and having a usual source of care. Poverty status was classified using percent of poverty threshold levels. The percentage of poverty was determined by dividing the family income by the applicable poverty line based on family size and composition. The resulting percentages were then grouped into five categories in relation to the federal poverty line; negative or poor (<100%), near poor (100% to <125%), low income (125% to <200%), middle income (200% to <400%), and high income (≥400%; Agency for Healthcare Research and Quality, 2004). In 2008, the U.S. federal poverty level was \$21,200 for a family of four, such that

families of four earning less than \$21,200 annually were considered to be poor (<100% of the federal poverty line; U.S. Department of Health & Human Services, 2008).

To determine if women had an appropriate usual source of care they were asked two questions: “Is there a particular doctor's office, clinic, health center, or other place that you usually go if you are sick or need advice about your health?” and if yes, “Is your provider, or does your provider work at a clinic in a hospital, a hospital outpatient department, an emergency room at a hospital, or some other kind of place?” Women were classified as not having a usual source of care if they responded that they did not have a place that they usually go for care or responded yes to having a place but identified that their provider was or worked at an emergency department.

Need Factors

The following need factors were examined in the analyses: comorbid mental health and chronic medical conditions, functional limitation status, self-rated health status, health-related quality of life (HRQoL), and use of health services. Comorbid mental health and chronic medical conditions were identified using truncated three-digit ICD-9 codes generated from the respondent interview, where women were asked if they had experienced any chronic medical conditions. Two dichotomous variables were constructed to identify the presence of a comorbid mental health condition or a chronic medical condition. Additionally, women were classified as having a functional limitation if they reported limitations (because of an impairment or a physical or mental health problem) in any one of the following categories: 1) work, 2) housework, 3) school, 4) social activities, or 5) cognitive abilities. A count of functional limitations was created based on how many of the five individual limitations each woman reported, categorized as no, one, or two to five limitations. HRQoL was assessed using the Short Form-12 (version 2) Physical Component and Mental Component Summary Scores. To assess self-rated health status, women were asked to rate their health by responding to 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 in any round to women reporting excellent, very good, or good health in all rounds. Use of health services was determined by asking respondents the number of times they went to any doctor's office or clinic to get care in the previous 12 months. The number of visits was dichotomized to compare high users (≥ 3 visits) with low users. This classification was based on recommendations for analyzing data from Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys (Agency for Healthcare Research and Quality, 2011).

Statistical Analysis

SAS 9.3 software (SAS Institute Inc., 2011) was used to construct the analytic files and STATA 12 software (StataCorp, 2011) was used to perform all analyses, accounting for the complex design of the MEPS. The standard errors were corrected owing 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. In all tables presented, the reported percentages have been weighted to produce nationally representative estimates. Univariate and multivariable logistic regression models were fit to examine associations between predisposing, enabling, and need factors and the odds of reporting “always” compared with “not always” for each communication item. Sensitivity analyses were conducted using other cut points but this approach to

dichotomization was chosen because it most clearly answered the research question as reporting “always” is reflective of the optimal health care experience.¹

Missing Data Strategy

To address the missing data, five random, multiple-imputed datasets were imputed using the *mi impute chained* command in STATA 12 software (StataCorp, 2011). All variables included in the regression models in addition to measures of patients' perceptions of providers' communication behaviors from the year prior to entering the MEPS were used to impute the missing data. Analyses were conducted using the *mi estimate* command in STATA software on the imputed datasets to adjust coefficients and standard errors for the variability between imputations according to the combination rules by Rubin (StataCorp, 2011).

Results

Table 1 shows descriptive statistics for all study variables. Of the 4,707,255 (unweighted $n = 3,179$) respondents, more than half of women in this sample reported that providers always listened carefully to them (51.2%), explained things so they could understand (54.8%), and showed respect for what they had to say (54.7%). Additionally, 43.4% of women reported that providers always spent enough time with them. Ninety-five percent of respondents spoke English in the home, 60.5% were 45 years old or older, 80.3% were White (non-Hispanic), and 90.9% had a usual source of care. More than half of the sample attended college (50.3%) or were participating in the paid workforce (58.4%). Approximately 17% of women were living below 100% of the poverty threshold, and about 34% were living at 400% or above. About 28% of women reported having a comorbid mental health condition and about 65% reported a chronic medical condition (not including depression).

Table 1. Description of Sample (Unweighted $n = 3,179$; Weighted $n = 4,707,255$)

Study Variables	Weighted Percent	Weighted Mean	SD
Predisposing factors			
Race/ethnicity			
White (non-Hispanic)	80.3		
Black (non-Hispanic)	7.5		
Hispanic	8.2		
Other (non-Hispanic)	4.1		
Age group (yrs)			
18–24	6.0		
25–44	33.5		
45–64	43.3		
≥65	17.2		
Education status			
No or some high school	17.0		
High school graduate	32.7		
Some college	25.8		
College or beyond	24.5		
Employment status			
Not participating in paid workforce	41.6		

Marital status			
Currently married	47.7		
Previously married	35.4		
Never married	16.9		
Region of U.S.			
Northeast	17.1		
Midwest	25.0		
South	34.9		
West	23.0		
Urbanicity/MSA status			
Urban	81.1		
Enabling factors			
Health insurance status			
Private	68.5		
Public	24.7		
None	6.8		
Ratio of family income to poverty threshold			
<100% (poor)	17.2		
100–199% (near poor/low)	19.3		
200–399% (middle)	29.6		
≥400% (high)	33.9		
Language spoken			
English	95.0		
Usual source of care			
Yes	90.9		
Need factors			
Comorbidity status			
Other mental health conditions	28.4		
Chronic medical conditions	64.9		
Count of functional limitations			
0	59.6		
1	9.4		
2	6.4		
3	9.1		
4	8.9		
5	6.8		
Health and mental health status			
SF-12 Physical Health Summary Score		44.5	16.3
SF-12 Mental Health Summary Score		41.4	13.3
Fair/poor mental health status			
Fair/poor health status	45.4		
Number of visits to a provider			
0	6.2		
1	8.6		
2	13.0		

3	12.3		
4	13.2		
5–9	25.0		
≥10	21.7		
Communication measures			
Listened carefully			
Never	1.4		
Sometimes	10.4		
Usually	37.0		
Always	51.2		
Explained so you understood			
Never	1.5		
Sometimes	8.7		
Usually	35.0		
Always	54.8		
Showed respect			
Never	1.1		
Sometimes	9.3		
Usually	34.9		
Always	54.7		
Spent enough time			
Never	2.7		
Sometimes	14.1		
Usually	39.8		
Always	43.4		

Abbreviations: MSA, Metropolitan Statistical Area; SD, standard deviation; SF, Short Form.
Results combined over 5 datasets.

Table 2 presents the crude odds ratios (ORs) of women with depression reporting that their providers always performed each of the communication items according to predisposing, enabling, and need factors. Among predisposing factors, bivariate analyses revealed that being Black (non-Hispanic) and residing in the South were associated with an increased likelihood of reporting that providers always explained things in a way women could understand. Additionally, residing in the Midwest was associated with an increased likelihood of reporting that providers always spent enough time. With regard to enabling factors, having a usual source of care was associated with reporting that providers always listened, explained, and spent enough time. Living at 400% or above the poverty threshold was positively associated with reporting that providers always explained and spent enough time. Among need factors, better physical and mental HRQoL were found to be associated with an increased likelihood of reporting always for all four provider communication behaviors.

Table 2. Characteristics of U.S. Women with Depression Reporting Optimal Ratings of Providers' Communication Behaviors, 2002–2008 Medical Expenditure Panel Survey (Unadjusted); (Unweighted $n = 3,179$; Weighted $n = 4,707,255$)

Independent Variables	(Always vs. Usually, Sometimes, Never)			
	Listen (OR 95% CI)	Explain (OR 95% CI)	Respect (OR 95% CI)	Time (OR 95% CI)
Predisposing factors				
Race/Ethnicity (ref. = White [non-Hispanic])				
Black (non-Hispanic)	1.28 (0.95–1.73)	1.35* (1.01–1.82)	1.21 (0.90–1.62)	0.96 (0.70–1.31)
Other (non-Hispanic)	0.68 (0.44–1.04)	0.55* (0.35–0.85)	0.58* (0.37–0.91)	0.61* (0.40–0.92)
Hispanic	1.08 (0.83–1.39)	0.99 (0.78–1.25)	1.19 (0.94–1.49)	0.84 (0.66–1.07)
Age (ref. = 18–24 years)				
25–44	0.97 (0.66–1.42)	1.29 (0.88–1.89)	0.87 (0.58–1.31)	1.10 (0.71–1.68)
45–64	1.02 (0.70–1.50)	1.26 (0.87–1.81)	1.01 (0.69–1.48)	1.37 (0.90–2.07)
≥65	1.38 (0.90–2.10)	1.34 (0.89–2.02)	1.20 (0.79–1.82)	1.55 (0.99–2.43)
Education status (ref. = No or some high school)				
High school graduate	1.01 (0.81–1.26)	1.24 (0.98–1.56)	1.01 (0.81–1.27)	1.15 (0.91–1.45)
Some college	0.81 (0.64–1.02)	1.16 (0.89–1.51)	0.89 (0.70–1.13)	0.98 (0.76–1.26)
College or beyond	0.75* (0.59–0.95)	1.27 (0.97–1.66)	0.96 (0.76–1.23)	0.97 (0.75–1.25)
Employment status				
Not participating in paid workforce	1.16 (0.99–1.35)	0.94 (0.80–1.10)	0.99 (0.84–1.17)	1.10 (0.93–1.29)
Marital status (ref. = currently married)				
Previously married	1.10 (0.93–1.31)	1.11 (0.94–1.32)	1.09 (0.91–1.30)	1.07 (0.90–1.26)
Never married	0.94 (0.73–1.21)	0.93 (0.73–1.17)	0.98 (0.76–1.27)	0.82 (0.63–1.08)
Region of US (ref. = West)				
Northeast	1.12 (0.82–1.53)	1.24 (0.95–1.62)	1.00 (0.76–1.32)	1.18 (0.92–1.50)
Midwest	1.14 (0.87–1.48)	1.24 (0.97–1.58)	1.06 (0.84–1.34)	1.30* (1.03–1.64)
South	1.02 (0.82–1.28)	1.29* (1.02–1.61)	1.09 (0.87–1.35)	1.11 (0.90–1.38)
Urbanicity/MSA status (ref. = rural)				
Urban	0.92 (0.74–1.14)	0.97 (0.80–1.17)	0.88 (0.70–1.11)	0.83 (0.68–1.01)
Enabling factors				
Health insurance status (ref. = none)				

Private	0.91 (0.68–1.24)	1.27 (0.92–1.75)	1.11 (0.80–1.54)	1.12 (0.82–1.52)
Public	1.04 (0.75–1.46)	1.09 (0.77–1.53)	1.03 (0.73–1.45)	1.08 (0.78–1.51)
Ratio of family income to poverty threshold (Ref. = <100%)				
100–199% (near poor/low)	1.36* (1.03–1.81)	1.28 (1.00–1.65)	1.35* (1.04–1.76)	1.23 (0.96–1.58)
200–399% (middle)	1.04 (0.82–1.32)	1.22 (0.96–1.56)	1.11 (0.88–1.40)	1.14 (0.91–1.44)
≥400% (high)	1.03 (0.80–1.32)	1.37* (1.08–1.73)	1.25 (0.98–1.58)	1.32* (1.04–1.67)
Language spoken (ref. = other)				
English	0.90 (0.69–1.19)	0.99 (0.75–1.31)	0.85 (0.64–1.12)	1.21 (0.90–1.62)
Usual source of care (ref. = no)				
Yes	1.39* (1.03–1.89)	1.55* (1.15–2.09)	1.28 (0.95–1.73)	1.41* (1.01–1.98)
Need factors				
Comorbidity status				
Other mental health conditions	0.74* (0.62–0.88)	0.83* (0.69–0.99)	0.81* (0.68–0.96)	0.89 (0.74–1.06)
Chronic medical conditions	0.90 (0.75–1.08)	0.96 (0.80–1.16)	0.93 (0.78–1.11)	1.05 (0.88–1.25)
Functional limitation status (ref. = 0 out of 5 functional limitations)				
1 out of 5 functional limitations	0.92 (0.69–1.23)	0.84 (0.64–1.09)	0.81 (0.62–1.05)	0.77 (0.59–1.01)
2 to 5 out of 5 functional limitations	0.76* (0.64–0.91)	0.68* (0.56–0.82)	0.64* (0.54–0.75)	0.75* (0.63–0.90)
Health and mental health status				
SF-12 Physical Health Summary Score	1.01* (1.00–1.02)	1.01* (1.01–1.02)	1.01* (1.01–1.02)	1.01* (1.00–1.02)
SF-12 Mental Health Summary Score	1.02* (1.02–1.03)	1.02* (1.02–1.03)	1.03* (1.02–1.04)	1.02* (1.02–1.03)
Fair/poor health status	0.68* (0.58–0.79)	0.62* (0.52–0.73)	0.64* (0.55–0.74)	0.70* (0.60–0.83)
Use of health services				
High user	0.82* (0.68–0.99)	0.80* (0.66–0.97)	0.81 (0.66–1.01)	0.80* (0.66–0.96)

CI, confidence interval; MSA, Metropolitan Statistical Area; OR, odds ratio; ref., reference category; SF, short form.

Results combined over 5 datasets. Interpretation of significance at the 95% level was based on CI limits before rounding.

* $p < .05$.

Table 3 presents the results from the multivariable logistic regression models used to compare the odds of reporting “always” with “not always” for each communication behavior. Among the predisposing factors, after adjusting for all covariates, women with depression who were Black (non-Hispanic) had an increased likelihood of reporting that providers always listened carefully to them (OR, 1.40; 95% confidence interval [CI], 1.01–1.94), explained so they understood (OR, 1.53; 95% CI, 1.10–2.11), and showed respect for what they had to say (OR, 1.39; 95% CI, 1.01–1.92) compared with their White (non-Hispanic) counterparts. Women with at least some college education had a decreased likelihood of reporting that providers always listened carefully to them compared with non-high school graduates. Not participating in the paid workforce was positively associated with reporting that providers always listened carefully (OR, 1.30; 95% CI, 1.06–1.61), explained so they understood (OR, 1.28; 95% CI, 1.04–1.58), and spent enough time (OR, 1.33; 95% CI, 1.08–1.63). Women who had been previously married (OR, 1.24; 95% CI, 1.01–1.53) had an increased likelihood of reporting that providers always explained so they understood compared with women who remained married. Compared with women residing in the West, women in the South had an increased likelihood of reporting that providers always explained so they understood (OR, 1.34; 95% CI, 1.06–1.70).

Table 3. Characteristics of U.S. Women with Depression Reporting Optimal Ratings of Providers Communication Behaviors, 2002–2008 Medical Expenditure Panel Survey (Unweighted $n = 3,179$; Weighted $n = 4,707,255$)

Independent Variables	Providers “Always” Listened	Providers “Always” Explain	Providers “Always” Respect	Providers “Always” Time
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Predisposing factors				
Race/ethnicity (ref. = White [non-Hispanic])				
Black (non-Hispanic)	1.40* (1.01–1.94)	1.53* (1.10–2.11)	1.39* (1.01–1.92)	1.09 (0.77–1.53)
Other (non-Hispanic)	0.79 (0.51–1.22)	0.66 (0.41–1.05)	0.70 (0.45–1.10)	0.72 (0.47–1.10)
Hispanic	1.10 (0.76–1.59)	1.10 (0.79–1.55)	1.30 (0.91–1.86)	1.00 (0.72–1.38)
Age (ref. = 18–24 years)				
25–44	1.05 (0.67–1.64)	1.24 (0.80–1.93)	0.96 (0.60–1.52)	1.12 (0.70–1.79)
45–64	1.17 (0.73–1.86)	1.18 (0.75–1.84)	1.17 (0.75–1.84)	1.40 (0.88–2.25)
≥65	1.21 (0.70–2.10)	1.05 (0.63–1.75)	1.16 (0.70–1.93)	1.32 (0.79–2.21)
Education status (ref. = No or some high school)				
High school graduate	0.96 (0.76–1.22)	1.14 (0.89–1.46)	0.97 (0.76–1.23)	1.02 (0.78–1.33)
Some college	0.73* (0.56–0.95)	1.00 (0.74–1.35)	0.79 (0.60–1.04)	0.84 (0.63–1.13)
College or beyond	0.66* (0.50–0.87)	1.03 (0.75–1.43)	0.81 (0.61–1.09)	0.79 (0.57–1.08)
Employment status				
Not participating in the paid workforce	1.30* (1.06–1.61)	1.28* (1.04–1.58)	1.24 (0.98–1.56)	1.33* (1.08–1.63)
Marital status (ref. = currently married)				
Previously married	1.06 (0.88–1.29)	1.24* (1.01–1.53)	1.14 (0.93–1.40)	1.12 (0.91–1.38)
Never married	0.96 (0.71–1.29)	1.03 (0.78–1.37)	1.07 (0.80–1.44)	0.98 (0.73–1.32)
Region of U.S. (ref. = West)				
Northeast	1.10 (0.80–1.52)	1.20 (0.91–1.57)	0.98 (0.74–1.30)	1.14 (0.89–1.48)
Midwest	1.09 (0.82–1.45)	1.18 (0.91–1.52)	1.04 (0.81–1.33)	1.24 (0.97–1.59)
South	1.04 (0.82–1.33)	1.34* (1.06–1.70)	1.14 (0.90–1.44)	1.12 (0.90–1.41)
Urbanicity/MSA status (ref. = rural)				
Urban	0.95 (0.76–1.20)	0.95 (0.77–1.16)	0.86 (0.67–1.11)	0.84 (0.68–1.03)
Enabling factors				

Health insurance status (ref. = none)				
Private	0.82 (0.60–1.13)	1.11 (0.79–1.57)	1.05 (0.74–1.49)	0.94 (0.68–1.30)
Public	1.02 (0.72–1.44)	1.18 (0.84–1.65)	1.13 (0.79–1.62)	1.11 (0.79–1.57)
Ratio of family income to poverty threshold (Ref. = <100%)				
100–199% (near poor/low)	1.27 (0.94–1.72)	1.16 (0.88–1.53)	1.19 (0.88–1.59)	1.14 (0.88–1.48)
200–399% (middle)	1.07 (0.80–1.42)	1.12 (0.83–1.51)	1.02 (0.76–1.35)	1.12 (0.85–1.48)
≥400% (high)	1.04 (0.75–1.44)	1.19 (0.86–1.65)	1.07 (0.77–1.50)	1.27 (0.94–1.72)
Language spoken (ref. = other)				
English	1.02 (0.70–1.50)	0.83 (0.56–1.24)	0.93 (0.62–1.40)	1.09 (0.73–1.63)
Usual source of care (ref. = no)				
Yes	1.44* (1.06–1.96)	1.53* (1.14–2.07)	1.26 (0.92–1.71)	1.26 (0.88–1.78)
Need factors				
Comorbidity status				
Other mental health conditions	0.84 (0.70–1.01)	0.93 (0.76–1.12)	0.96 (0.80–1.15)	1.02 (0.85–1.21)
Chronic medical conditions	0.90 (0.73–1.12)	1.10 (0.90–1.34)	0.99 (0.81–1.23)	1.08 (0.89–1.32)
Functional limitation status (ref. = 0 out of 5 functional limitations)				
1 out of 5 functional limitations	1.02 (0.75–1.38)	0.99 (0.76–1.28)	0.89 (0.67–1.18)	0.84 (0.63–1.12)
2–5 out of 5 functional limitations	0.95 (0.72–1.25)	0.97 (0.74–1.28)	0.82 (0.62–1.08)	0.96 (0.73–1.25)
Health and mental health status				
SF-12 Physical Health Summary Score	1.01* (1.00–1.02)	1.02* (1.00–1.03)	1.01* (1.00–1.02)	1.02* (1.01–1.03)
SF-12 Mental Health Summary Score	1.02* (1.01–1.03)	1.02* (1.01–1.03)	1.03* (1.02–1.03)	1.02* (1.01–1.03)
Fair/poor health status	0.75* (0.61–0.93)	0.79* (0.63–1.00)	0.81 (0.64–1.02)	0.89 (0.70–1.12)
Use of health services				
High user	0.97 (0.79–1.20)	0.89 (0.71–1.11)	0.96 (0.76–1.21)	0.88 (0.71–1.08)

CI, confidence interval; MSA, Metropolitan Statistical Area; OR, odds ratio; ref., reference category; SF, short form.

Results combined over 5 datasets. Interpretation of significance at the 95% level was based on CI limits before rounding. Each covariate is adjusted for all of the others.

* $p < .05$.

With regard to enabling factors, multivariable analyses revealed that women with depression who had a usual source of care had an increased likelihood of reporting that providers always listened carefully (OR, 1.44; 95% CI, 1.06–1.96) and explained things so they could understand (OR, 1.53; 95% CI, 1.14–2.07). Among need factors, after adjusting for all covariates, having better physical and mental HRQoL was positively associated with reporting that providers always performed each of the four communication behaviors. Additionally, women with depression who reported poor perceived physical health had a decreased likelihood of reporting that providers always listened carefully (OR, 0.75; 95% CI, 0.61–0.93) and explained so they understood (OR, 0.79; 95% CI, 0.63–1.00).

Discussion

This population-based study examined differences in the perceptions of health care providers' communication behaviors among women with depression in the United States. Notably, this study found that not all women with depression perceive that health care providers are consistently performing key communication behaviors. Specifically, disparities were found based on race/ethnicity, access to health care, employment status, and health status.

First, Black (non-Hispanic) women with depression were more likely to report that providers always listened carefully, explained so they understood, and showed respect for what they had to say. Although some previous work among a nationally representative sample of U.S. adults has found no evidence for differences in reporting of provider communication behaviors based on race/ethnicity (Rutten, Augustson, & Wanke, 2006), the findings of this study contribute to a growing body of literature that suggests that race/ethnicity does play a role in patients' perceptions of providers' communication behaviors (DeVoe et al., 2009, Ok et al., 2008). This pattern of more positive ratings of providers' communication behaviors among Black (non-Hispanics) has also been documented among the general U.S. adult population (DeVoe et al., 2009). This positive association between being Black (non-Hispanic) and ratings of providers' communication behaviors seems to be inconsistent with the unequal treatment that is typically associated with minority status in the health care system (Smedley, Stith, & Nelson, 2003). However, the MEPS only asks questions pertaining to the quality of the health care interaction of those patients who had seen a provider in the previous 12 months. Therefore, women who had limited access to the health care system (i.e., owing to having experienced suboptimal interactions in the past) were not represented in the current sample. Research is needed to determine how barriers to care, specifically negative experiences within the health care system over the life course, influence subsequent health care utilization and ratings on patient reported outcomes for women with depression.

This study also found that, among women with depression, having a usual source of care was associated with an increased likelihood of women reporting that providers always listened carefully and explained things so they could understand. Consistent with previous population-based studies (DeVoe et al., 2008, Rutten et al., 2006), this finding highlights the importance of having a usual source of care. Continuity of care is not only important for establishing effective health care communication 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 services (Witt et al., 2009). Although access to a consistent source of care has been identified as a key component of ensuring high-quality health care (Eisenberg & Power, 2000), efforts are needed to

ensure that women are satisfied with the quality of their interactions with their usual source of care as dissatisfaction has been shown to increase the likelihood of the inappropriate use of health services (Sarver, Cydulka, & Baker, 2002). Policies and practices to ensure that women with depression have reliable access to longitudinal care may be instrumental for improving patient–provider communication within this population.

Additionally, this study found that women with depression who were not participating in the paid workforce had an increased likelihood of reporting that providers always listened carefully, explained things to they understood, and spent enough time with them. Working long hours may limit a woman's ability to interact with the health care system (Fell et al., 2007, Witt et al., 2011), especially during regular office hours. According to a 2009 national survey, only 29% of U.S. primary care practices offered after-hours services whereby patients could see a provider in a nonemergent setting (Schoen et al., 2009). This limited access may force many women to seek care from providers in settings that accommodate nontraditional hours, such as emergency rooms and urgent care centers, but where time and other resources are in short supply, thus impeding more favorable interactions with providers (Rutten et al., 2006). Expanding the availability of nonemergent after-hours care may be a promising strategy for improving the quality of health care interactions for women in the paid workforce with depression.

Previous research has shown poor mental health to be associated with less positive ratings of patient–provider communication (Rutten et al., 2006, Schenker et al., 2009). This study found that, among women with depression, having better physical and mental HRQoL was associated with an increased likelihood of reporting always on all four provider communication behaviors. Women with more severe depressive symptoms and as a result worse HRQoL may have increased difficulty engaging with providers and may be limited in their ability to express their concerns, ideas, and expectations as precisely as providers expect them to (Gask, Rogers, Oliver, May, & Roland, 2003). Additionally, these patients may have more complicated medical problems, which could make it more challenging for providers to engage with them. Moreover, patients with worse physical and mental health and those with negative affect have been shown to be less well-liked by physicians (Hall, Horgan, Stein, & Roter, 2002) and receive more negative verbal and nonverbal communication cues (Hall, Roter, Milburn, & Daltroy, 1996). For women with poor HRQoL, difficulty engaging and increased negativity may be adversely affecting their relationships with their providers and subsequent communication behaviors. Alternatively, it is possible that the persistent sadness and difficulty with concentration that are part of the illness of depression influence the recall and interpretation of the communication that occurs in a health care interaction (Schenker et al., 2009).

This study found that women with depression who had at least some college education were less likely to report always about providers' listening behaviors than non-high school graduates. As theorized by Linder-Pelz (1982), judgments on the quality of care may be influenced by personal beliefs and prior expectations of care. Specifically, there may be a discrepancy between expectations of how carefully providers should listen and the perception of how carefully providers actually did listen. Educational attainment has been identified as a predictor of expectations regarding health care provider behaviors. Specifically, those with more education tended to perceive themselves as an active participant in the health care delivery and valued the exertion of as much self-control over their health as possible (Jung,

Baerveldt, Olesen, Grol, & Wensing, 2003). Patients with such preferences may also expect that their providers display a patient-centered pattern of communication. A key aspect of patient centeredness is understanding the individual's experience of illness by exploring both the presenting symptoms and the associated psychological and social perspectives (Mead & Bower, 2000). Therefore, when a provider is overly focused on the biomedical aspect of depression, women expecting a patient-centered approach may feel that their concerns and needs have not been heard.

Several potential limitations of this study should be noted. First, these analyses were cross-sectional so causal associations cannot be inferred. Additionally, the directionality of the relationship between having a usual source of care and responding positively about providers' communication behaviors is uncertain, given that it is possible that women either choose to enter care relationships with providers who perform these behaviors well or that having a consistent access to care leads to improvements in communication over time. Second, the available measures of provider communication behaviors are not specific to the individual provider charged with diagnosing and treating the patient for depression. Rather, these survey questions ask respondents about health providers generally thus likely providing an overall assessment of perceptions of providers' communication behaviors rather than information about specific encounters. Although this may limit the usefulness of these results for quality improvement efforts among individual providers, it does provide a system-wide view of the communication experiences of women with depression. Additionally, information about providers' communication behaviors was obtained through self-reports of patient experiences as opposed to direct observation of clinical practice. As such, the reported ratings may be subject to recall bias and are also likely to be more reflective of patient's perceptions of provider behaviors. Future research should apply objective measures of patient-provider communication to determine if and how providers behave differently in interactions with women with depression from diverse backgrounds. Third, the MEPS does not collect information on potentially important covariates such as patient and provider attitudes, expectations, and preferences; therefore, this study is unable to control for these factors. Given that these factors are likely to be key determinants of patient ratings of health care providers' behaviors studies that include information on these items are needed to help explain the disparities seen in perceptions of providers' communication behaviors. Finally, the women with depression in this study were identified using household informant reports instead of clinical diagnosis so the results may not be generalizable to those with a clinical diagnosis.

This study has important strengths. First, the results are based on national, population-based data, providing policymakers and practitioners with information about the health care communication experiences of women with depression; however, more research using objective measures of patient-provider communication are needed to guide and support policy decisions. Furthermore, owing to the large sample size and the richness of the MEPS dataset, several key predictors of favorable perceptions of providers' communication behaviors could be investigated together in one model, allowing for adjusted estimates of the contributing effect of each characteristic.

In conclusion, this study demonstrates that patient-provider communication experiences among women with depression vary by key sociodemographic and access to health care characteristics. Notably, women participating in the paid workforce and those without a usual source of care may be at increased risk for less optimal communication experiences with their providers. Future research is

needed to examine the relationship between suboptimal patient–provider communication and the receipt of adequate treatment for depression among women and to explore the potential role of provider communication behaviors as a mediator of disparities in the quality of depression treatment.

Implications for Practice and/or Policy

These findings have potential implications for both clinical practice and policy. At the clinical practice level, the study findings can assist individual providers in the identification of potential subgroups of patients at risk for reporting suboptimal communication experiences. These study findings also highlight the need for policies and practices aimed at improving the quality of the health care interactions for women with depression. Ensuring that women with depression have reliable access to a continuous source of care and expanding the availability of nonemergent, after-hours care may be instrumental for improving patient–provider communication for this population.

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¹Results from the sensitivity analyses can be obtained by contacting the corresponding author.