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Usual Primary Care Provider Characteristics of a Patient-Centered Medical Home and Mental Health Service Use

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BACKGROUND: The benefits of the patient-centered medical home (PCMH) over and above that of a usual source of medical care have yet to be determined, particularly for adults with mental health disorders.

OBJECTIVE: To examine qualities of a usual provider that align with PCMH goals of access, comprehensiveness, and patient-centered care, and to determine whether PCMH qualities in a usual provider are associated with the use of mental health services (MHS).

DESIGN: Using national data from the Medical Expenditure Panel Survey, we conducted a lagged cross-sectional study of MHS use subsequent to participant reports of psychological distress and usual provider and practice characteristics.

PARTICIPANTS: A total of 2,358 adults, aged 18–64 years, met the criteria for serious psychological distress and reported on their usual provider and practice characteristics.

MAIN MEASURES: We defined "usual provider" as a primary care provider/practice, and "PCMH provider" as a usual provider that delivered accessible, comprehensive, patient-centered care as determined by patient self-reporting. The dependent variable, MHS, included self-reported mental health visits to a primary care provider or mental health specialist, counseling, and psychiatric medication treatment over a period of 1 year.

RESULTS: Participants with a usual provider were significantly more likely than those with no usual provider to have experienced a primary care mental health visit (marginal effect [ME]=8.5, 95 % CI=3.2–13.8) and to have received psychiatric medication (ME=15.5, 95 % CI=9.4–21.5). Participants with a PCMH were additionally more likely than those with no usual provider to visit a mental health specialist (ME=7.6, 95 % CI=0.7–14.4) and receive mental health counseling (ME=8.5, 95 % CI=1.5–15.6). Among those who reported having had any type of mental health visit, participants with a PCMH were more likely to have received mental health counseling than those with only a usual provider (ME=10.0, 95 % CI=1.0–19.0).

CONCLUSIONS: Access to a usual provider is associated with increased receipt of needed MHS. Patients who have a usual provider with PCMH qualities are more likely to receive mental health counseling.

KEY WORDS: patient-centered medical home; primary care; mental health services; Affordable Care Act; race.
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INTRODUCTION

One in five adults (18.6 %) is likely to experience a mental health disorder during their lifetime,[1] and the prevalence of these disorders is even greater in populations with chronic health conditions such as diabetes, asthma, or cardiovascular disease.[2,3] While effective treatments are available, fewer than half of individuals with a mental health disorder (41 %) receive any mental health services (MHS), and only one-third (31 %) receive MHS that meet minimum standards.[4,5] Consequently, mental health disorders are often associated with disruptions in relationships, education, and employment, as well as lost productivity, poor health outcomes, increased risk of suicide, and premature mortality.[6–12] Primary care is often the first place for treatment of mental disorders,[13] and this is expected to increase with promulgation of the integrated care approach established by the Affordable Care Act (ACA).[14] Primary care providers (PCPs) are increasingly charged with screening, diagnosing, treating, and referring patients for treatment of mental health disorders.[15] Given the high prevalence and detrimental consequences associated with mental health disorders, and the importance of primary care in delivering MHS,[13] it is important to understand the factors that influence optimal mental healthcare in this setting. This is particularly the case now as the integration of MHS into primary care is being enhanced as a result of patient-centered medical home (PCMH) reform measures.[16–20]

The PCMH is a team-based approach to delivering primary care services that are accessible, comprehensive, well-coordinated, patient-centered, and quality-driven.[21,22] At the heart of this approach is the usual provider (PCP, clinic, or team of providers), who works with patients to develop treatment plans, coordinates patients' preventive, acute, and chronic disease treatments, and refers patients to community and social support services when needed. Support for the PCMH model is based on the foundation that patients fare better when they have a usual source of care (often defined as a routine place of care or personal physician). Patients who report having a usual source of care also report greater trust and satisfaction with their provider[23] are more likely to receive preventive screenings and treatment for chronic health conditions[24–26] and report fewer unmet service needs.[24] In addition to the known benefits of having a usual source of care, evidence suggests that the PCMH may be even more important than traditional models of care for the treatment of chronic health disorders.[27] Specifically, PCMH qualities of access, comprehensiveness, and patient-centeredness have been associated with improved quality of care for adults with diabetes, better health outcomes for veterans, and lower healthcare expenditures among Medicare beneficiaries.[16,28–32]

In the area of MHS, the benefits of the PCMH model over past approaches to a usual source of care remain unknown. Prior studies that have examined associations between usual sources of care and the use of MHS have often included all types of providers and settings (including the emergency room), without a specific focus on primary care. Moreover, the potentially beneficial PCMH qualities of access, comprehensiveness, and patient-centeredness have not been investigated in the context of MHS utilization.

This study draws upon prior definitions of usual source of care based on the goal of the ACA to provide all patients with a usual source of care, and on PCMH priorities of accessible, comprehensive, and patient-centered care, in order to classify types of providers as reported by participants in the Medical Expenditure Panel Survey.[33,34] We hypothesized that patients with a usual provider would be more likely than those with no usual provider to receive any MHS, and that those with a PCMH would be even more likely to receive MHS than those with only a usual provider. Moreover, because the PCMH enhances care coordination and access to medical specialist providers,[31,32] we further hypothesized that patients with a PCMH would be more likely to visit a mental health specialist provider (MHP) than patients with only a usual provider.

METHODS

Design. We conducted a lagged cross-sectional study of panel data to estimate MHS use following measurement of usual source of care and the need for MHS.

Data. We obtained data from the Medical Expenditure Panel Survey (MEPS), a nationally representative household-based survey of healthcare use, satisfaction with care, and cost of services in the U.S.[35] The MEPS has a longitudinal overlapping panel survey design. Each year a new panel of participants is recruited from the prior year's National Health Interview Survey, a nationally representative sample of household members living in non-institutionalized civilian quarters.[36] Once recruited, MEPS participants are interviewed five times over two calendar years. We used data from the 2004–2011 Household Component files. including measurements of types of usual provider (collected at the round 2 interview) and subsequent MHS use (collected at round 3–5 interviews). Study procedures were approved by the UCLA Institutional Review Board.

Analytic Sample. From the full MEPS sample, we restricted our analysis to adults aged 18–64 who participated in 2 full years of MEPS (n=56,530), and further to the subset of household respondents who were questioned about their healthcare provider and practice characteristics in the household component interview (n=33,084). Participants' responses to the 6-item Kessler Psychological Distress Scale (K-6), a measure of recent (past 30 days) psychological distress, were then employed to limit the study sample to those with a probable need for MHS.[37] Given the fact that adults with serious psychological distress are known to have an increased likelihood of meeting criteria for serious mental illness,[38,39] we used a standard cutoff of 13 or higher[40,41] to identify participants with serious psychological distress at the round 2 interviews (n=2358). The final sample included 2358 household respondents aged 18–64 with serious psychological distress.

Defining Type of Usual Provider. The MEPS asks participants whether they have a regular doctor or place of care they would go to when sick or in need of medical advice. Participants responding "yes" are asked to describe the type of provider (e.g., primary care physician, cardiologist, etc.) and type of place where care is rendered (e.g., outpatient clinic, emergency room, etc.). For this study, participants were considered as having a usual provider if they reported either a regular PCP (e.g., general practitioner, family medicine, nurse practitioner) or regular outpatient clinic (e.g., physician's office or hospital outpatient clinic) where they would seek care. Usual providers were further classified as either PCMH or not based on participants' ratings of provider characteristics (Table 1).

Twelve MEPS items were selected to capture PCMH qualities of comprehensive approaches to care, patient-centeredness, and enhanced access based on their face validity and use in prior studies.[33,34] Participant responses to each of the 12 items were dichotomized as positive (1) or not (0), and tetrachoric correlations were used to assess internal consistency of items belonging to each PCMH care dimension.

Table 1 Characteristics of Usual Providers for Adults with Serious Psychological Distress* (*N*=2358)†

Usual provider characteristics	Percentage (%)‡
1. Participant has a primary care provider or outpatient clinic where they usually go when sick or in need of medical advice	78.3
2. Provider delivers comprehensive services	
a. Is this the place/provider that you would go for new health problems? *(Yes)*	96.1
b. Is this the place/provider that you would go for preventive health services? *(Yes)*	96.6
c. Is this the place/provider that you would go for ongoing health problems? *(Yes)*	96.6
d. Is this the place/provider that you would go for referral to a specialist? *(Yes)*	95.2
e. Does this place/provider usually ask about prescription medication and treatments other doctors may have given? *(Yes)*	76.3
3. Provider delivers patient-centered services	
a. Does this place/provider present and explain all options to you? *(Yes)*	87.9
b. If there were a choice between treatments, how often would the place/provider ask you to help make the decision? (*Always/Usually*)	70.4
c. How often does the place/provider show respect for medical, traditional and alternative treatments that you are happy with? (*Always/Usually*)	76.0
4. Enhanced access to providers	
a. How difficult is it to contact a medical person by telephone during regular business hours about a health problem? (*Not too difficult/Not at all difficult*)	72.2
b. Does this provider have office hours on the evenings or weekends? *(Yes) or* How difficult is it to contact a medical person at the provider's office after their regular hours in case of urgent medical needs? (*Not too difficult/Not at all difficult*)	54.6
c. Does the place/provider speak the language you prefer or provide translation services for you? *(Yes)*	99.6
Type of usual provider	
No usual provider (none of the above criteria)	21.8
Usual provider (criteria 1, but not all 4)	57.1
PCMH (all of the above criteria 1, 2, 3, and 4)	21.1

**Serious psychological distress defined as a score of 13 or higher on the 6-item Kessler Psychological Distress Scale*
† Data from the Medical Expenditure Panel Survey Longitudinal Data files, Panels 9–15 (2004–2011)
‡Weighted percentage that met each PCMH criteria. All items were treated as 1/0 indicator variables where positive responses ("yes," "usually" or "always," and "not at all difficult" or "not too difficult") were coded 1 and all other responses ("no," "sometimes" or "never", "somewhat difficult" or "very difficult," and "don't know") were coded 0

Providers were coded as "comprehensive" if they asked about treatments delivered by other providers and if participants would go to this provider for new and ongoing health problems, preventive health services, and referral to specialists (α=0.95). Providers were coded as "patient-centered" if participants reported that their provider "usually" or "always" explained treatment options, asked them to participate in treatment decisions, and showed respect for their treatment decisions (α=0.86). Providers were coded as "accessible" if participants reported that it was "not too difficult" or "not at all difficult" to reach a provider during regular office hours, on weekends, or after hours, and if the provider spoke the patient's language or offered translation services (α = 0.74). Providers were then classified as a "PCMH" if they met all criteria of comprehensiveness, patient-centeredness, and enhanced access. Construct validity was determined using a single item of perceived healthcare quality, "Using any number from 0 to 10, where 0 is the worst healthcare possible and 10 is the best healthcare possible, what number would you use to rate all your healthcare in the last 12 months?"

Mental Health Service Use. *Visits to a PCP* included any outpatient or office-based visit to a PCP where the reason for the visit included a mental health condition, counseling, or drug treatment (indicated by ICD-9 codes and MEPS inquiry of services received in outpatient visits). *Visits to an MPH* included all visits to a psychiatrist, psychologist, or social worker. *Counseling* was determined by self-report of such treatments provided during each healthcare visit. *Psychiatric medications* included those classified as psychotropic drugs and that were prescribed for a mental health condition (indicated by ICD-9 codes). We created a summary variable, *Any MHS Use*, to indicate participants who received any of the above types of MHS.

Demographic Measures. We controlled for covariates previously identified as important predictors of healthcare access and health service use based on the Gelberg-Andersen Behavioral Model for Vulnerable Populations.[42,43] Predisposing characteristics included age, race, gender, U.S. versus foreign-born nativity, marital status, and general healthcare attitudes. Enabling resources included type of insurance, household income, years of education, language spoken at home, and geographic residence. Need covariates included self-reported mental health ratings (i.e., *how would you rate your mental health*), physical health composite scores from the Medical Outcomes Study 12-Item Short-Form Health Survey (SF-12),[44] and number of self-reported chronic health conditions. We also controlled for survey year based on when participants entered an MEPS panel, to account for historic trends.

Statistical Analyses. All statistical analyses were conducted using Stata 13.0 software.[45] We applied longitudinal survey weights to account for participants' selection into MEPS, dropout during the 2-year follow-up period, and post-stratification in order to provide estimates that were generalizable to the U.S. population. The longitudinal weights included in the MEPS public use files were adjusted to account for the pooling of participants from panels 9–15. Multiple imputation procedures were employed to estimate missing data for variables of interest (approximately 15 %).[46,47] Analyses were conducted using the multiple imputation (mi estimate) package in Stata, which averages the model estimates across imputed datasets and produces pooled standard errors according to Rubin's rules.[48,49]

We used design-adjusted chi-square tests to compare MHS outcomes and sociodemographic characteristics of adults who

Table 2 Characteristics of Participants* Who Reported Having a PCMH† vs. a Usual Provider or No Usual Provider (*N*=2358)‡

	Type of usual provider				
	No usual provider	Usual provider	PCMH		
Unweighted N (weighted %)	**530 (22)**	**1337 (57)**	**491 (21)**		
Sociodemographic characteristics	Weighted percentage			*p* value§	Group difference‖
Age (years)				<0.001	
18–34	40.1	22.4	24.3		1<2=3
35–50	38.4	38.1	36.6		1=2=3
55–64	21.5	39.5	39.1		1<2=3
Female gender	64.6	69.6	75.0	0.11	1=2=3
Race/ethnicity				<0.001	
Latino	20.9	14.4	13.0		1>2=3
Non-Latino white	58.2	67.2	65.2		1<2=3
Non-Latino black	14.6	14.4	13.0		1=2=3
Non-Latino Asian	3.6	2.2	1.7		1=2=3
Non-Latino other	2.7	4.1	3.1		1=2=3
Foreign/Island nativity	19.5	12.6	9.8	0.003	1>2=3
Marital status				<0.001	
Single, never married	40.0	24.1	25.3		1>2=3
Married	27.7	34.5	38.7		1<2=3
Separated, divorced, widowed	32.4	41.4	36.0		1<2=3
Mental health rated fair/poor	45.2	55.3	50.4	0.003	1<2=3
Chronic health conditions				<0.001	
0	39.7	19.5	20.9		1>2=3
1	25.1	19.2	19.5		1>2=3
2 or more	35.1	61.3	59.5		1<2=3
Physical health functioning				<0.001	
Lowest quartile	47.0	63.8	66.3		1<2=3
Middle quartiles	30.6	19.3	17.7		1>2=3
Highest quartile	22.4	16.9	16.0		1>2=3
Any physical health limitation	33.8	53.1	55.6	<0.001	1<2=3
Education				0.15	
Less than high school	31.4	25.7	27.1		1=2=3
High school	35.2	37.2	37.5		1=2=3
Some college	23.5	24.6	24.5		1=2=3
Four or more years of college	9.9	12.5	10.9		1<2=3
Insurance				<0.001	
Uninsured	55.4	25.4	23.3		1>2=3
Private insurance	22.2	35.0	36.8		1<2=3
Medicaid only	16.2	21.6	19.9		1<2=3
Medicaid+Medicare	2.3	6.8	9.5		1<2=3
Medicare only	3.8	11.1	10.4		1<2=3
Income relative to FPL				<0.001	
Poor (0–133 % FPL)	50.8	42.1	38.4		1>2=3
Low income (133–200 % FPL)	22.6	16.2	18.7		1>2=3
Middle income (200–400 % FPL)	18.5	27.9	25.3		1<2=3
High income (>400 % FPL)	8.1	13.8	17.6		1<2=3
Geographic region				0.003	
Northeast	7.2	15.7	26.6		1<2<3
Midwest	19.1	22.2	21.4		1=2=3
South	47.0	38.5	35.0		1>2>3
West	26.7	23.7	17.0		1=2>3
Live in metropolitan statistical area	81.9	80.2	80.9	0.54	1=2=3
Healthcare attitudes					
Don't need insurance	11.3	3.5	2.4	<0.001	1>2=3
Health insurance not worth the costs	31.2	24.1	17.4	0.02	1<2<3
More likely than others to take risks	30.6	19.3	15.6	<0.001	1>2=3
Can overcome illness	19.9	11.5	9.9	0.001	1>2=3
Survey year¶				0.72	
2004–2006	45.2	44.9	55.4		1=2<3
2007–2008	32.7	35.4	26.9		1=2<3
2009–2010	22.1	19.7	17.6		1=2=3
	Weighted mean				
Overall healthcare rating (0–10)	6.1	7.0	7.7	<0.001	1<2<3
Dependent variables	Weighted percentage				
Any mental health (MH) service use	28.5	57.1	59.2	<0.001	1<2=3
MH visit with primary care provider	10.7	24.4	21.3	<0.001	1<2=3
Visit with MH specialist	14.9	25.3	28.3	<0.001	1<2=3
Counseling or psychotherapy	14.6	25.5	29.0	<0.001	1<2=3
Psychiatric medication	23.3	51.2	53.1	<0.001	1<2=3

**Sample includes adults (aged 18–64) with serious psychological distress, defined as a score of 13 or higher on the 6-item Kessler Psychological Distress Scale*
†PCMH defined as a usual primary care provider or clinic that delivers accessible, comprehensive, patient-centered services
‡Data from the Medical Expenditure Panel Survey Longitudinal Data files, Panels 9–15 (2004–2011)
§p value for chi-square test of differences in sociodemographic characteristics and dependent variables by type of usual provider
‖Arrows indicate group difference significant at the $p < 0.05$ level
¶Start of 2-year cohort. For example, 2010 cohort data was collected from 2010–2011

Table 3 Multivariable Logistic Model Examining the Relationship Between Type of Usual Provider and Mental Health Services Use (*N*=2358)*

	Odds ratio	CI	*p* value
Type of usual provider			
No usual provider (ref)	1.0		
Usual provider†	2.11	(1.55, 2.87)	<0.001
PCMH‡	2.30	(1.59, 3.34)	<0.001
Race/ethnicity			
Non-Latino white (ref)	1.0		
Latino	0.98	(0.64, 1.47)	0.91
Non-Latino black	0.58	(0.42, 0.79)	0.001
Non-Latino Asian	0.57	(0.22, 1.49)	0.25
Non-Latino other	0.78	(0.39, 1.55)	0.47
Foreign/Island nativity	0.48	(0.29, 0.79)	0.004
Age (years)			
18–34 (ref)	1.0		
35–49	1.01	(0.71, 1.44)	0.96
50–64	0.95	(0.64, 1.41)	0.80
Female gender	1.62	(1.24, 2.12)	<0.001
Marital status			
Married (ref)	1.0		
Single, never married	0.83	(0.60, 1.15)	0.27
Separated, divorced, widowed	1.02	(0.76, 1.36)	0.90
Mental health rated fair/poor	2.58	(2.01, 3.31)	<0.001
Chronic health conditions			
0 (ref)	1.0		
1	1.09	(0.74, 1.57)	0.66
2 or more	1.95	(1.38, 2.76)	<0.001
Physical health functioning			
Lowest quartile	1.07	(0.73, 1.57)	0.74
Middle quartiles	0.86	(0.56, 1.31)	0.47
Highest quartile (ref)	1.0		
Any physical health limitation	1.03	(0.77, 1.37)	0.86
Any self-reliant healthcare attitude	0.79	(0.62, 0.99)	0.04
Geographic region			
Northeast (ref)	1.0		
Midwest	0.82	(0.52, 1.30)	0.39
South	0.67	(0.44, 1.01)	0.05
West	0.76	(0.48, 1.25)	0.29
High school or less education level	0.83	(0.64, 1.09)	0.18
Insurance			
Uninsured (ref)	1.0		
Public insurance	2.34	(1.72, 3.18)	<0.001
Private insurance	1.60	(1.17, 2.21)	0.003
Income relative to FPL			
Below 133 % FPL (ref)	1.0		
133–200 % FPL	0.83	(0.59, 1.16)	0.27
200–400 % FPL	1.03	(0.76, 1.39)	0.87
Greater than 400 % FPL	0.85	(0.54, 1.33)	0.48
Survey year§			
2004–2006 (ref)	1.0		
2007–2008	1.02	(0.78, 1.32)	0.89
2009–2010	1.09	(0.79, 1.51)	0.60

**Data from the Medical Expenditure Panel Survey Longitudinal files, Panels 9–15 (2004–2011). Sample includes household respondents (aged 18–64) with serious psychological distress, defined as a score of 13 or higher on the 6-item Kessler Psychological Distress Scale*

†"Usual provider" defined as a usual primary care provider or clinic that did not meet all PCMH criteria (accessible, comprehensive, and patient-centered)

‡"PCMH" defined as a usual primary care provider or clinic that delivered accessible, comprehensive, and patient-centered services

§Start of 2-year cohort. For example, 2010 cohort data was collected from 2010–2011

reported having no usual provider, a usual provider, or a PCMH. Multivariable logistic regression models were employed to examine the association between usual provider type and MHS use, after controlling for the measured predisposing, enabling, and need covariates. Logistic model coefficients were converted to marginal effects while holding all covariates at their observed values.[50] Sensitivity analyses were performed to examine associations of number of PCMH qualities (0–3) with overall healthcare ratings and MHS use (Appendix A).

RESULTS

PCMH Indicators. Usual provider characteristics are presented in Table 1. One in five (22 %) adults reported no usual provider, 57 % reported a usual provider with fewer than three measured PCMH qualities ("usual provider"), and 21 % reported a usual provider with all of the measured PCMH qualities ("PCMH").

Participant Characteristics and Type of Usual Provider. Bivariate results indicated significant differences in sociodemographic characteristics, healthcare ratings, and MHS use between participants with and without a usual provider (Table 2). Compared to participants with a usual provider, those with no usual provider tended to be younger, single, and uninsured; lived in households with the lowest income; were frequently Latino and foreign-born; less frequently reported two or more chronic health conditions, physical health limitations, and "fair" or "poor" mental health ratings; and experienced better overall physical health functioning (p values < 0.01). Compared to those with a usual provider only, participants with a PCMH were less likely to live in the southern U.S. region and to endorse attitudes of self-reliance, such as "health insurance is not worth the costs."

In unadjusted models, there were associations between type of usual provider, healthcare ratings, and MHS use. Those with a usual provider rated their healthcare better than those with no usual provider, and those with a PCMH rated their healthcare even better than those with a usual provider only (p < 0.001). Participants with a usual provider were more likely than those with no usual provider to report mental health visits to a PCP or MHP, and to receive counseling and psychiatric medication treatment (*p* values < 0.001).

Type of Usual Provider and Mental Health Service Use. Several patient characteristics were associated with an increased likelihood of MHS use, including female gender, fair/poor mental health ratings, two or more chronic health conditions, and public or private insurance ($p < 0.001$; Table 3). Non-Latino black race and foreign-born nativity were associated with a decreased likelihood of MHS use (p < 0.01).

After controlling for demographic covariates, analysis showed that participants who reported a usual provider (with or without PCMH qualities) were more likely than those with no usual provider to receive any MHS (Table 4; marginal

Table 4 Logistic Regression Results Examining the Relationship between Type of Usual Provider and Mental Health Service Use

	Marginal effect (95 % CI)*		
Type of mental health service	**Usual provider† vs. no usual provider**	**PCMH‡ vs. no usual provider**	**PCMH vs. usual provider**
Any mental health service	15.2 (9.0, 21.4)	17.0 (9.5, 24.5)	1.8 (−4.5, 8.0)
Visit with primary care provider	8.5 (3.2, 13.8)	6.3 (−0.1, 12.7)	−2.2 (−7.4, 3.0)
Visit with mental health specialist	4.9 (−0.7, 10.6)	7.6 (0.7, 14.4)	2.6 (−3.0, 8.2)
Counseling or psychotherapy	5.1 (−0.7, 10.9)	8.5 (1.5, 15.6)	3.4 (−2.3, 9.2)
Psychiatric medication	15.5 (9.4, 21.5)	16.8 (9.4, 24.2)	1.4 (−4.8, 7.6)

Abbreviations: PCMH patient-centered medical home
**Logistic regression model results. Marginal effects indicate the predicted change in the probability of mental health service use when patients have a usual non-PCMH provider, PCMH provider, or no usual provider, holding covariates at their observed value. Confidence interval ranges above 0 are statistically significant at the $p < 0.05$ level*
†"Usual provider" defined as a usual primary care provider or clinic that did not meet all PCMH criteria (accessible, comprehensive, and patient-centered)
‡"PCMH" defined as a usual primary care provider or clinic that delivered accessible, comprehensive, patient-centered services

effect [ME]=15.2 %, 95 % CI=9.0–21.4). There was no statistical difference in the probability of MHS use for those with a PCMH versus a usual provider only (ME=1.8 %, 95 % CI=−4.5–8.0).

When specific types of MHS were examined, participants with a usual provider were more likely than those with no usual provider to have experienced a mental health visit to a PCP (ME=8.5, 95 % CI=3.2–13.8) and to have received psychiatric medication (ME=15.5, 95 % CI=9.4–21.5). Only participants with a PCMH (and not those with a usual provider only) were additionally more likely than those with no usual provider to visit an MHP (ME=7.6, 95 % CI=0.7–14.4) and to receive mental health counseling (ME=8.5, 95 % CI=1.5–15.6).

To further explore the relationship between engagement with a PCMH and types of mental health treatment, we examined MHS use among participants with a usual provider and any reported mental health visit (Table 5). Conditional on any visit, those with a PCMH were more likely than those with only a usual provider to receive mental health counseling (ME=10.0, 95 % CI=1.0–19.0), but no more likely to receive a psychiatric medication (ME=−2.5, 95 % CI=−9.7–4.6).

DISCUSSION

National investigations of MHS use associated with PCMH reforms have been only rarely reported.[51] Our study found that having a usual provider, regardless of PCMH qualities, was positively associated with MHS use. We also observed that alignment of care with PCMH priorities appeared to influence the types of MHS that patients received. Compared to participants with no usual provider, patients with evidence of psychological need who reported having a PCMH were more likely to visit a mental health specialist and receive mental health counseling treatment during a subsequent 12-month period. The importance of these findings is heightened by the ACA insurance expansions[13] and states' adoption of PCMH reforms[,17] which are expected to significantly increase the number of adults with mental disorders who will have access to PCMH providers.

Given that we did not find a significant difference in overall probability of MHS use for those with a PCMH vs. usual provider only, our findings suggest that expanding

Table 5 Logistic Regression Results Examining the Relationship between the Patient-Centered Medical Home and Types of Mental Health Services, Conditional on Any Mental Health Visit

	Probability of mental health service use*		
	Usual provider†	**PCMH‡**	**Marginal effect§**
Type of mental health service	**% (SE)**	**% (SE)**	**Δ (95 % CI)**
Counseling or psychotherapy	59.7 (2.8)	69.7 (4.1)	10.0 (1.0, 19.0)
Psychiatric medication	85.2 (1.9)	82.6 (3.3)	−2.5 (−9.7, 4.6)

Abbreviations: PCMH patient-centered medical home
**Predicted probability estimated from a multivariate logistic regression model. Control variables included age, race/ethnicity, gender, nativity, marital status, mental health ratings, number of chronic conditions, physical health functioning, geographic residence, education, type of insurance, income, and survey year*
†"Usual provider" defined as a usual primary care provider or clinic that did not meet all PCMH criteria (accessible, comprehensive, and patient-centered)
‡"PCMH" defined as a usual primary care provider or clinic that delivered accessible, comprehensive, patient-centered services
§Marginal effects indicates the difference in predicted probability of mental health service use for patients with a PCMH vs. a usual provider only, holding covariates at their observed value

patient contact with a usual source of care should be a first target of interventions designed to improve patients' access to MHS. Associations between having a usual provider and use of MHS were observed even after controlling for traditional access factors such as education, insurance, and household income, underscoring the value, above and beyond traditional access factors, in having a relationship with a healthcare provider.[25]

In contrast to what we observed with patients who had a usual provider, we found that participants with a PCMH provider were more likely to visit MHPs and receive counseling treatment. It may be the case, then, that aligning care towards the PCMH model will increase referrals to mental health specialists.[31,32] Several strategies have been recommended for improving the coordination of care between PCPs and MHPs, including co-location of MHPs within primary care settings, the use of depression care managers, and standardized procedures for tracking mental health referrals. Few opportunities exist, however, for healthcare practices to report efforts in implementing these recommended reforms.[52,53] Because there is a greater emphasis of shared care among PCPs and MHPs under the ACA, there is also a need to develop measures and systems of reporting to track progress towards these goals.

We also observed that among those who experienced any mental health visit, participants who reported a PCMH were more likely to receive counseling than those with simply a usual provider. This is an important distinction, as the addition of counseling to pharmacotherapy treatment, especially for racial/ethnic minorities, is sometimes more effective in treating mental health disorders than pharmacotherapy alone.[54–56] Because counseling is often recommended in combination with pharmacotherapy for patients with severe disorders,[57,58] our findings suggest the PCMH may enhance the quality of mental healthcare for those in need. Indeed, our finding that patients with a PCMH rated their healthcare better than patients with a usual provider only offers preliminary evidence of a quality benefit associated with the PCMH.

LIMITATIONS

The findings in this study should be considered in light of certain limitations. First, we were unable to comprehensively measure PCMH qualities (including co-location of MHPs, quality improvement initiatives, and payment reforms) that are likely to be important for MHS in primary care settings.[59–63] Second, our analyses were cross-sectional, raising concerns of reverse causality bias. It may be the case that patients with prior MHS use are more likely to describe their provider as a usual source of care. To partially control for reverse causality bias, our measure of MHS use was collected after the measure of usual source of care. Third, participants were grouped according to self-reported experiences with providers and practices, potentially introducing selection bias. Fourth, while increasingly used to assess PCMH reforms,[27,64,65] patient-reported experiences with providers/practices may not fully match to PCMH processes of care.[66] Additional studies that include provider- and practice-level data for investigating associations between PCMH characteristics and MHS use are needed. Lastly, adults who were homeless, institutionalized, or living in military quarters were excluded from MEPS, limiting the generalizability of findings for those groups who often have higher rates of serious mental illness.[67–70]

CONCLUSIONS

This study contributes new evidence of the benefits of having a usual provider for adults with documented needs for MHS. Our results suggest that healthcare reform efforts to provide individuals with a usual provider may also serve to address mental healthcare needs. Additionally, models of primary care that emphasize accessible, whole-person, and patient-centered approaches may influence the types of treatment that patients receive. This may provide an added benefit to the management and control of chronic health disorders that comprise a significant volume of the workload in the primary care setting. Additional studies of primary care models that can increase MHS utilization for patients in need will enhance the effectiveness and value of ACA healthcare reform.

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Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

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APPENDIX

Table 6 Sensitivity Analyses Examining the Relationships between Number of PCMH Qualities on Healthcare Ratings and Mental Health Services Use

			Mental health visit*	
	Rating of healthcare (0–10)	Any mental health service	Primary care provider	Mental health specialist
Number of PCMH qualities	b (SE)	b (SE)	b (SE)	b (SE)
No usual provider	1.0	1.0	1.0	1.0
Usual provider+0 PCMH qualities	−0.23 (0.31)	0.57 (0.25)†	0.81 (0.43)‡	0.00 (0.30)
Usual provider+1 PCMH quality	0.69 (0.24)†	0.81 (0.18)§	0.50 (0.24)†	0.34 (0.23)
Usual provider+2 PCMH qualities	1.24 (0.24)§	0.69 (0.18)§	0.58 (0.24)†	0.36 (0.22)
Usual provider+3 PCMH qualities	1.48 (0.24)§	0.79 (0.19)§	0.44 (0.26)	0.46 (0.23)†

**Regression models run separately for each healthcare outcome. Linear regressions were used to estimate healthcare ratings (from 0 to 10), and logistic regression methods were used to estimate log odds of reporting each type of mental health service use. Control variables included age, race/ethnicity, gender, nativity, marital status, and mental health ratings, number of chronic conditions, physical health functioning, geographic residence, education, and type of insurance, income, and survey year*
†$p < 0.05$; ‡$p < 0.01$; §$p < 0.001$