Assessing Primary Care Contributions to Behavioral Health: A Cross-sectional Study Using Medical Expenditure Panel Survey

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Abstract

Objectives: To assess primary care contributions to behavioral health in addressing unmet mental healthcare needs due to the COVID-19 pandemic. **Methods:** Secondary data analysis of 2016 to 2018 Medical Expenditure Panel Survey of non-institutionalized US adults. We performed bivariate analysis to estimate the number and percentage of office-based visits and prescription medications for depression and anxiety disorders, any mental illness (AMI), and severe mental illness (AMI) by physician specialty (primary care, psychiatry, and subspecialty) and medical complexity. We ran summary statistics to compare the differences in sociodemographic factors between patients with AMI by seeing a primary care physician versus those seeing a psychiatrist. Binary logistic regression models were estimated to examine the likelihood of having a primary care visit versus psychiatrist visit for a given mental illness. **Results:** There were 394 023 office-based visits in the analysis sample. AMI patients seeing primary care physician were thrice as likely to report 1 or more chronic conditions compared to those seeing psychiatrist. Among patients with a diagnosis of depression or anxiety and AMI the proportion of primary care visits ([38% vs 32%, $P < .001$], [39% vs 34%, $P < .001$] respectively), and prescriptions ([50% vs 40%, $P < .001$], [47% vs 44%, $P < .05$] respectively) were higher compared to those for psychiatric care. Patients diagnosed with SMI had a more significant percentage of prescriptions and visits to a psychiatrist than primary care physicians. **Conclusion:** Primary care physicians provided most of the care for depression, anxiety, and AMI. Almost a third of the care for SMI and a quarter of the SMI prescriptions occurred in primary care settings. Our study underscores the importance of supporting access to primary care given primary care physicians' critical role in combating the COVID-19 related rise in mental health burden.

Keywords

behavioral health, primary care, COVID-19 related mental health

Introduction

Nearly 80% of the US population reported experiencing mental stress due to the Covid-19 pandemic.[1] While still early, there is mounting evidence that the COVID-19 pandemic has already had a serious impact on the mental health of the general population. The pandemic itself has generated contamination concerns, family bereavement and grief, and fear of uncertainty. Disruptions to daily life, closure of schools, businesses and lengthy quarantines have increased social isolation, depression, and loneliness. The economic crisis has increased anxiety, and emotional distress.[2,3] According to a report by Centers for Disease Control and Prevention in early months of the COVID-19, a little less than half of US adults reported having issues with mental health or substance use, a third of them reported having symptoms of depression or anxiety, over quarter of them reported PTSD like symptoms and one-tenth of them had suicidal ideation.[4]

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Researchers anticipate a mental health crisis with a surge in depression, generalized anxiety disorders, substance abuse disorders, and post-traumatic stress disorders.[5-7] They also fear that these problems will worsen over time and may last long after the COVID-19 pandemic is over.[8-10] For instance, the Kaiser Family Foundation study reported rise in the proportion of US adults experiencing anxiety or depression, which increased by 245% (from 11% in October 2019 to 38% in 2020).[10] A survey of psychologists in September 2020 (6 months into the pandemic) showed that 3 out of 4 psychologists reported an increase in patients with anxiety and nearly 2 in 3 psychologists saw an increase in patients with depression (APA report).[11] Studies also showed an increase in the prescriptions for antianxiety and antidepressant medications after the onset of COVID-19 pandemic.[12] This increased demand for mental health care has burdened the mental health care system with increase in wait times ranging anywhere from 4 to 6 months.[11] Almost 1 in 5 adults with anxiety or depression did not receive needed care.[10]

Primary care physicians have the training and expertise required to treat mental illness[13] and they are often the first place a patient with mental health concerns presents. Given their comprehensive scope of practice, they are uniquely qualified to treat mental illness in the context of other disease processes. Prior studies showed primary care physicians provided a considerable volume of office-based mental health services,[14] see a wide variety of mental illnesses, and prescribe various psychotropic medications.[15] There will undoubtedly be a surge of patient with unmet mental health needs due to the COVID-19 pandemic. Yet, the data examined in these studies is nearly a decade old and does not examine patient level predictors of which type of mental health provider is seen. It is imperative to assess the behavioral health capacity of primary care to understand how to bolster psychiatric health care in the US. Our main objective was to understand the contributions of primary care to meet health care needs by examining the percentage of mental illness related office visits and prescriptions by physician specialty. In addition, we examined patient level sociodemographic factors that may predict provision of services by a primary care physician as opposed to a psychiatrist.

Methods

We used the 2016 to 2018 Medical Expenditure Panel Survey (MEPS) data, a nationally representative survey of civilian non-institutionalized population. MEPS provides estimates of healthcare utilization and expenses in the US. Respondents are interviewed 5 times during a 2-year study period. We assessed the number and proportion of visits and volume of psychiatric medications in office-based settings for a given mental illness by the physician specialty and medical complexity. Physician specialty included (1) primary care (family medicine, general practice, internal medicine, pediatrics, and geriatrics), (2) psychiatry, and (3) subspecialty. Using ICD-10 codes, we determined the diagnosis of depression or anxiety, any mental illness (AMI), and severe persistent mental illness (SMI). We also examined medications used in managing depression and anxiety,[16,17] AMI, and SMI.[18]

Our outcome of interest was a dichotomous variable indicating the likelihood of visiting a primary care physician versus a psychiatrist and the explanatory variable was having depression or anxiety, AMI (excluding depression/anxiety), and SMI. Our covariates included age (continuous), binary gender (male, female), 3 categories for education (less than high school, high school, and more than high school) and insurance coverage (private, public, and uninsured), 4 groups for race/ethnicity (non-Hispanic White, non-Hispanic Black, non-Hispanic Other, and Hispanic), and region (South, Northeast, Midwest, and West), number of chronic conditions (0, 1, 2 and 3, or more conditions), and dichotomous variables for the employment status (employed and not employed), marital status (married and not married), and poor health status (yes and no).

We ran summary statistics to compare the differences in sociodemographic characteristics of the patients reporting any mental illness seeing a primary care physician versus a psychiatrist. Chi-squared tests and *t*-tests were performed to look at the significant differences between patients seeing a primary care physician and those seeing a psychiatrist. The unit of analyses was the individual patient for descriptive statistics.

For bivariate analysis, we first summed the total number and percentage of office-based visits for a given mental illness by physician specialty. We then compared the proportion of office-based visits for a given mental illness by physician specialty and the number of chronic conditions. Finally, we calculated total number of prescriptions and the proportion of these prescriptions written by primary care physicians, psychiatrists, and other subspecialties.

We performed multiple binary logistic regressions with physician specialty (primary care physician coded as "1" vs psychiatrist coded as "0") as the outcome, and mental disorder (depression/anxiety, AMI, and SMI) as the explanatory variable adjusting for the covariates. We also examined the trends in proportion of visits and prescriptions by physician specialty from 2008 to 2018. The unit of analyses was the visit for regression analyses. We used Stata 16.0 to analyze the data and, conducted all analyses using survey weights to obtain nationally representative estimates.[19] The Institutional Review Board, American Academy of Family Physicians exempted this study from full review as it is based on secondary data analysis of deidentified MEPS data.

Results

There were nearly 394 023 office-based visits in the 2016 to 2018 analysis sample. Of the 2905 unique patients with AMI seeing psychiatrist or primary care physician, 58% of them visited primary care physician and 42% visited a psychiatrist (Table 1). There were no differences in patients seeing a psychiatrist versus a primary care physician by age, gender, income, and insurance coverage. Compared to the psychiatrists, patients seeing primary care physician were more likely to reside in West (23.0% vs 18.5%, $P<.05$) and 3 times more likely to have 2 or more chronic conditions (9.1% vs 3.9%, $P<.01$). Whereas patients visiting psychiatrist were more likely to be college educated (48.2% vs 42.8%, $P<.05$), residing in Northeast (20.5% vs 15.9%, $P<.05$), and reported no chronic conditions (84.1% vs 77.3%, $P<.01$).

Compared to the psychiatrists and subspecialists, the proportion of visits to primary care physicians was higher for patients with a diagnosis of depression or anxiety (38% vs 32%, 30%, $P<.001$), and AMI (39% vs 34%, 27%, $P<.001$) (Table 2). Of the 49.2 million prescriptions for depression or anxiety in 2016 to 2018, primary care physicians prescribed half of the antidepressants and anxiolytics (50%). While psychiatrists prescribed 40% of the medications for depression and anxiety (37%), and the rest by subspecialists 10% (Table 3). A higher proportion of AMI prescriptions were written by primary care physicians compared to psychiatrists and subspecialists (47%, 44%, and 10%%, respectively). Mean number of prescriptions per visit for AMI was 5.3 (SD 7.3) for primary care physicians, 6.7 (SD [7.9] for psychiatrist and 4.3 [SD 6.4] for subspecialists).

Patients diagnosed with SMI had a more significant proportion of visits (52%, 28%, 20%) and prescriptions (69%, 26%, 5%) to a psychiatrist than primary care physicians or subspecialists. Although the proportion of visits and prescriptions to primary care physicians in comparison to psychiatrists declined from 2008 to 2018, primary care physicians had a higher proportion of visits each year examined except in 2018 (Supplemental Figure 1). Furthermore, primary care physicians saw patients with higher complexity: as the number of chronic conditions increased, the proportion of primary care visits also increased (Figure 1).

Our regression results demonstrated no differences in odds ratios for visits to primary care physician versus psychiatrist among respondents reporting depression/anxiety and any mental illness (excluding depression and anxiety) (Supplemental Table 1). However, patients with severe mental illness had lower odds of having a primary care physician visit than psychiatrist visit (OR 0.16, 95% Confidence Interval 0.10-20, $P<.01$).

Table 1. Distribution of Demographic Characteristics of Respondents with Any Mental Health Problem by Physician Specialty.

Characteristics	Primary care physicians (n = 1695¥)	Psychiatrists (n = 1210‡)	P-value
Gender			
Male	47.0	47.6	.8252
Female	53.0	52.4	
Age in years			
Age (mean)	35.2	35.6	.6901
Education			
<12 years	31.5	28.6	.2332
HS/GED	20.6	19.2	.4436
Post HS	42.8	48.2	.043
Education missing	5.1	4.1	.2687
Income			
<200% FPL	38.6	43.1	.0853
≥200% FPL	61.4	56.9	
Insurance coverage			
Private	62.1	57.8	.0743
Public	34.5	39.0	.0524
Not insured	3.3	3.2	.8847
Race/ethnicity			
White, NH	72.6	68.7	.0648
Black, NH	7.6	12.2	.0003
Other, NH	6.3	5.1	.2759
Hispanic	13.5	14.1	.7133
Census region			
South	36.9	38.2	.5809
Northeast	15.9	20.5	.0115
Midwest	24.0	21.9	.2578
West	23.0	18.5	.0297
Employment status			
Employed	42.4	40.7	.4953
Not employed	57.6	59.3	
Marital status			
Married	28.1	24.5	.0919
Not married	71.9	75.5	
Poor health			
Poor health yes	20.9	23.1	.2766
Poor health no	79.1	76.9	
Number of chronic conditions			
0	77.3	84.1	.0002
1	13.5	12.0	.2977
2	6.5	2.9	.0001
3 or more	2.6	1.0	.0053

Source: Author's Analysis of Medical Expenditure Panel Survey, 2016-2018.
Abbreviations: FPL, federal poverty level; HS/GED, high school or general education development; PCP, primary care physician; Psych, psychiatrist; Spec, Sub-specialist.
Survey weights averaged over the 3 years of pooled data (2016-2018) were used in obtaining national estimates.
¥Represents 62.1 million.
‡Represents 42.2 million.

Table 2. Distribution of Number and Proportion of Office-Based Visits for a Given Mental Illness by Physician Specialty.

Mental health disorder	Primary care physicians		Psychiatrists		Subspecialists		Total
	n	%	n	%	n	%	
Depression/anxiety	90,966,383	37.8	77,420,260	32.2	72,030,596	30.0	240,417,239
Any mental illness (AMI)	118,132,645	39.0	102,013,330	33.6	83,100,777	27.4	303,246,752
Severe persistent mental illness (SMI)	13,536,559	28.4	24,755,169	51.8	9,457,083	19.8	47,748,811

Source: Author's Analyses of the Medical Expenditure Panel Survey data (2016-2018).
Estimates were weighted using survey weights averaged over the 3 years pooled MEPS data (2016-2018) to obtain national estimates of office-based visits for a given mental health disorder.

Table 3. Number and Proportion of Prescriptions for a Given Mental Illness by Physician Specialty.

Mental health disorder	Primary care physicians		Psychiatrists		Subspecialists		Total
	n	%	n	%	n	%	
Depression/anxiety	24,431,712	49.7	19,643,927	40.0	5,091,484	10.3	49,167,213
Any mental illness (AMI)	26,283,543	46.7	24,633,623	43.7	5,424,743	9.6	56,341,999
Severe persistent mental illness (SMI)	1,802,213	26.3	4,708,392	68.8	333,259	4.9	6,843,959

Source: Author's Analyses of the Medical Expenditure Panel Survey data (2016-2018).
Estimates were weighted using survey weights averaged over the 3 years pooled MEPS data (2016-2018) to obtain national estimates of office-based visits for a given mental health disorder.
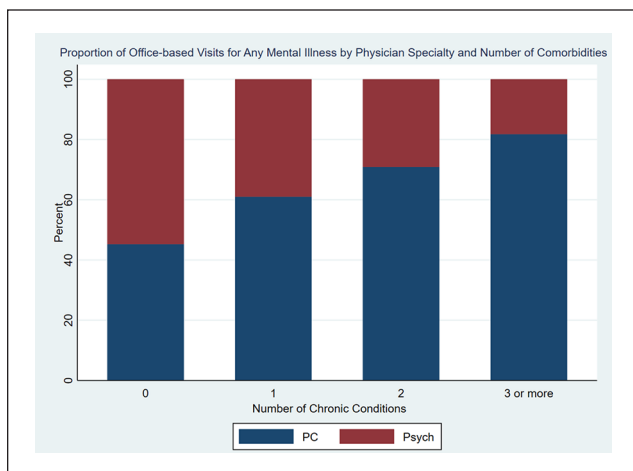

Figure 1. Proportion of office-based visits for any mental illness by physician specialty and number of chronic conditions.
Source: Authors' Analyses of the Medical Expenditure Panel Survey data (2016-2018).
Abbreviations: PC, primary care physicians; Psych, psychiatrists.
Estimates were weighted using survey weights averaged over the 3 years of pooled data (2016-2018) to obtain national estimates of total office-based visits for Any Mental Illness.

Discussion

Using MEPS data, we showed primary care physicians provided a significant proportion of care for those with mental health disorders. Nearly 4 out of 10 visits for depression or anxiety and AMI are to primary care physicians. Primary care physicians also provide over one-third of the care and write a quarter of the prescribed medications for patients with severe mental illness. These findings are consistent with previous studies[14,15] that showed that primary care physicians provide a substantial number of mental health services in ambulatory settings and write higher number of prescription medications for several types of mental health conditions.

Our finding that non-Hispanic Black respondents were more likely to see a psychiatrist for AMI is consistent with a previous a study by Henry et al.[20] However, this contrasts with results from prior studies[21] and merits further investigation.

Our findings are particularly timely in the context of our current healthcare environment. There will undoubtedly be a surge of patient with unmet mental health needs due to the COVID-19 pandemic. One of the strategies in disaster preparedness is to examine the capacity of the workforce and core competencies in providing healthcare for those affected. The imminent mental healthcare crisis due to COVID-19 disaster is no different. The historic pattern of primary care provision of mental health services that we demonstrate in this study, sheds light on capacity of primary care to address mental health needs post-COVID-19.

Primary care physicians are essential in addressing the nations mental health crisis. Their role as first contact providers of comprehensive and continuous care makes them well suited to treat any mental illness.[22] They are well trained to address mental health needs,[13] and currently provide the largest proportion of mental healthcare in the United States. Furthermore, primary care is accessible to all

patients regardless of geography[23] or ability to pay.[24] In contrast with mental health specialists who practice mostly in urban areas, primary care physicians practice in urban and rural areas, are more likely to take all types of insurance,[24] are the major providers of care in safety-net settings and see patients of all ages, making them the first contact for patients in all demographics with mental illness.[25]

In addition to being accessible, visiting a primary care physician may carry less stigma for many patients.[26] Many primary care physicians have a relationship with a patient before the onset of their mental illness, which allows for quicker recognition of the disease process. It also provides a deeper understanding of the medical comorbidities, social context, and community factors that may contribute to the diagnosis of mental illness. Furthermore, they can also identify high risk patients and screen them for common mental health problems. For patients with comorbid medical conditions, seeking care from a primary care physician who can treat a comprehensive set of medical conditions is important. Our study supports others that have shown that many patients with mental health conditions seen in primary care settings have at least 1 concurrent medical illness.[27-29] During the COVID 19 pandemic the comprehensiveness a primary care physician can provide can be particularly beneficial, not only to reduce the number of visits a patient with multiple comorbidities needs, but also because patients who have recovered from COVID-19 may have complex medical, and psychiatric symptoms needing concurrent medical and mental health services.[25] Furthermore, primary care physicians who work in a collaborative care model where behavioral health workers are integrated into the primary care clinic may be even more effective in treating patients with concurrent physical and mental health concerns.[30]

There is growing evidence of a looming mental health crisis and rise in underserved populations needing mental health services. A recent national study that compared rates of emergency department visits in 2020 to that in 2019, showed an upsurge in mental health conditions, suicide attempts, drug and opioid overdose, intimate partner violence, and suspected child abuse and neglect increased.[31] Although increased provision of tele-mental health during the COVID-19 pandemic could have compensated for some of the shortage in mental health workforce, the access issues persist. Addressing mental health issues in primary care settings not only improves access to mental health care but, for some patients, also reduces the stigma associated with seeking care in mental health clinics.[26] In addition, integrated behavioral and primary care models have shown to be effective in delivery of high-quality mental health care and in treating physical and mental health problems in primary care settings, particularly during the COVID-19 crisis.[25]

Limitations

The current study used cross-sectional MEPS data to analyze mental health services utilization in primary care office-based settings. Since we used non-claims-based data to examine primary care contributions to the behavioral health care, the number of prescriptions written are a proxy for patients with mental illness it limits our ability to obtain accurate estimates. Given that many patients with psychological issues present with psychosomatic symptoms and those with medical conditions may present with psychological comorbidities in the primary care settings, using diagnosis codes solely may not capture all the primary care visits for mental health issues. The estimates thus obtained may have been underestimated. The data is based on respondent's recollection of events and diary and subject to recall bias. The physicians' specialty is based on the perception of the patient, and there may be some misclassification, particularly of primary care physicians. However, MEPS data are a standard, are well validated, and considered a robust and honest estimate of health care provision in the United States.

Conclusion

An already strained and underfunded mental health system coupled with a worsening shortage of primary health workforce could exacerbate the unmet need for mental health care. Given the critical role of primary care in diagnosis and treating mental illness, support for primary care practices is essential to address the additional mental illness burden related to COVID-19.

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