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Estimates of Mental Health Problems in a Vulnerable Population within a Primary Care Setting

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Abstract: We examined the prevalence of mental disorders in a primary care setting affiliated with a large academic medical center. We also examined whether there were racial differences in mental health disorders. Patients were seeking medical care in an outpatient medical clinic; mental health data were available for them via medical records (n=767). Overall, 45% of patients had a diagnosed mental health problem; the most commonly reported form of mental disorder was depression. African Americans (OR= 1.88; CI: 1.21–2.91) were more likely than Whites to have a diagnosed mental health problem. These results suggest a strong mental health treatment need among patients seeking primary care in urban settings. The evidence garnered from this study underscores the need to detect and treat mental health problems systematically within outpatient primary care clinics that serve similarly vulnerable populations.

Key words: Race/ethnicity, socioeconomic status, mental health, primary care.

Mental health problems are a major source of disability worldwide.^{1–3} Characterized by a variety of debilitating disorders that result in an annual cost of \$185 billion in productivity loss and treatment (e.g., absenteeism, disability claims), mental health is a major, though often overlooked, U.S. public health concern.^{4,5} Often, mental health problems are first detected within primary care settings, and there has been increased emphasis on detection and treatment within primary care when patients are seeking treatment for other chronic diseases.^{2,6,7} Yet, there is a paucity of information known about the true prevalence of mental disorders in primary care settings and even less is known about the burden of mental health among racial/ethnic minority patients.⁸

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Adverse social and economic conditions contribute to the development of mental health problems. For instance, poverty is significantly associated with the development of depression.⁹ Individuals who are chronically exposed to stress are more likely to develop mental health problems.^{10,11} The confluence of social and economic factors along with mental health problems make those who are already vulnerable even more vulnerable in regard to their health.¹² There are links between mental health problems and poor health behaviors (e.g., sedentary lifestyle, obesity) as well as physical health conditions such as heart disease and diabetes.¹³⁻¹⁵ Mental health problems are associated with poorer self-care and overutilization of the emergency room, particularly among racial/ethnic minorities.^{16,17} Patients with type 2 diabetes (T2DM) are twice as likely as others to have depression.^{14,18,19} Comorbid mental health problems and diabetes has been linked to less adequate self-care (e.g., poorer diet, physical inactivity, medication compliance, and poorer glycemic control), and poorer quality of life.²⁰⁻²⁴ Further, there are associations between poverty and the development of mental health problems, particularly anxiety, and depression.²⁵⁻²⁷ Findings from numerous studies indicate the successful treatment of mental disorders, such as depression, improves the physical health of individuals.^{7,18,19,28,29,30}

Previous research has highlighted the difficulty of estimating the true burden of mental disorder in urban settings and that mental disorders may be underdiagnosed, particularly among African Americans and other underserved populations.^{2,31-33} Within urban settings, vulnerable populations, such as the poor or members of racial/ethnic minority groups, bear a disproportionate burden of physical morbidities and premature mortality; mental health problems may contribute to this disproportionate burden.^{34,35} In order to direct screening and outreach efforts properly, practitioners, hospital systems, and public health officials must develop a greater understanding of the mental health needs of vulnerable, underserved populations. Considering that many Americans seek mental health services in primary care settings, examining local data from primary care settings may be helpful in characterizing the mental health needs of these communities and provide direction for the allocation of public health resources to address mental health needs.^{6,7}

Although St. Louis was a site of the Epidemiologic Catchment Area Study in the 1980s, more information about the current mental health needs in St. Louis is needed. Nationwide, African Americans experience greater levels of social and economic disadvantage than Whites.³⁶⁻³⁸ Social and economic disadvantage are associated with poorer mental and physical health outcomes.³⁹⁻⁴² The median income for African Americans (\$31,677) in the St. Louis region is significantly lower than that of Whites (\$51,465).⁴³ The unemployment rate for African Americans is a startling 18% compared with just 6.2% for Whites. Additionally, African Americans have an elevated risk of physical morbidities and premature mortality compared with Whites.⁴⁴ In St. Louis City, adults spend an average of 4.1 days a month in poor mental health and nearly a quarter of African Americans in St. Louis City and St. Louis County rate their health as fair or poor compared with the overall 18% and 16% of St. Louis City and County residents who rate their health as fair or poor, respectively.⁴⁴ African Americans have greater rates of high blood pressure and low birth weight, and greater risk of mortality, than the general St. Louis population. This study examined the prevalence of mental disorders

in a primary care setting affiliated with a large academic medical center in St. Louis. A secondary goal of this study was to examine whether common predictors of mental health problems, particularly gender, income, employment status, marital status, and insurance type, were associated with mental health disorders in this population. We were especially interested in whether there were racial differences in mental health disorders. To achieve the goals of this study, we analyzed a dataset that contained information drawn from a survey administered to patients in the waiting room of a primary care facility and data abstracted from electronic medical records.

Methods

Setting. This study was conducted in the primary care clinic of a large urban hospital, the Primary Care Medicine Clinic in the Center for Outpatient Health (COH) at Barnes-Jewish Hospital in St. Louis. The clinic serves as the site for ambulatory care training for a large internal medicine residency with about 150 residents. Trainees provide primary care to the patients and have a continuous relationship with them over their three years of training. The clinic provides a broad range of services for patient care including social work, pharmacy, nutrition, and foot care. Residents are supervised by faculty physicians appointed by Washington University in St. Louis. In one year, the COH at Barnes-Jewish Hospital served 16,907 unique patients; 64% African American, 30% White, and 6% other. The majority of patients are female (67%), between 35–64 years of age (59%) and live in St. Louis City (46%) or St. Louis County (31%). About 40% of patients are covered by Medicare; 40% by Medicaid; and 3% uninsured.

Data collection. Participants in this study were recruited between July 2013 and April 2014. Patients in the waiting rooms of the COH were approached by trained data collectors and asked to complete a survey in English. Surveys were administered by study staff on different days of the week and at different times of day; data collectors approached all patients in the waiting room during their shifts as data collectors. Part-time graduate research assistants and a full-time research assistant constituted the study staff; they were involved in data collection and entry efforts. Inclusion criteria were that participants be at least 18 years old, be a patient at the COH, and speak English. There is a portion of non-English speaking patients who are seen at the COH; we limited our sample to only participants who spoke English and did not administer the survey in any other languages. Participants were asked to complete a self-administered written questionnaire and an orally administered survey component. The oral component of the survey was administered by a trained data collector who recorded responses in private spaces, such as conference rooms, that were available within the COH. All participants completed an oral consent process and signed a written consent form before completing the survey. As part of the consent process participants could opt-in to have information abstracted from their electronic medical record and merged with survey data.

Approximately 26% (n=1,110) of those approached were ineligible to participate in the study because they were not patients, did not speak English, or had previously taken the survey. Among eligible participants, 44% (n=1,380) agreed to participate and gave consent to trained data collectors. Of the 1,380 patients who consented, 975

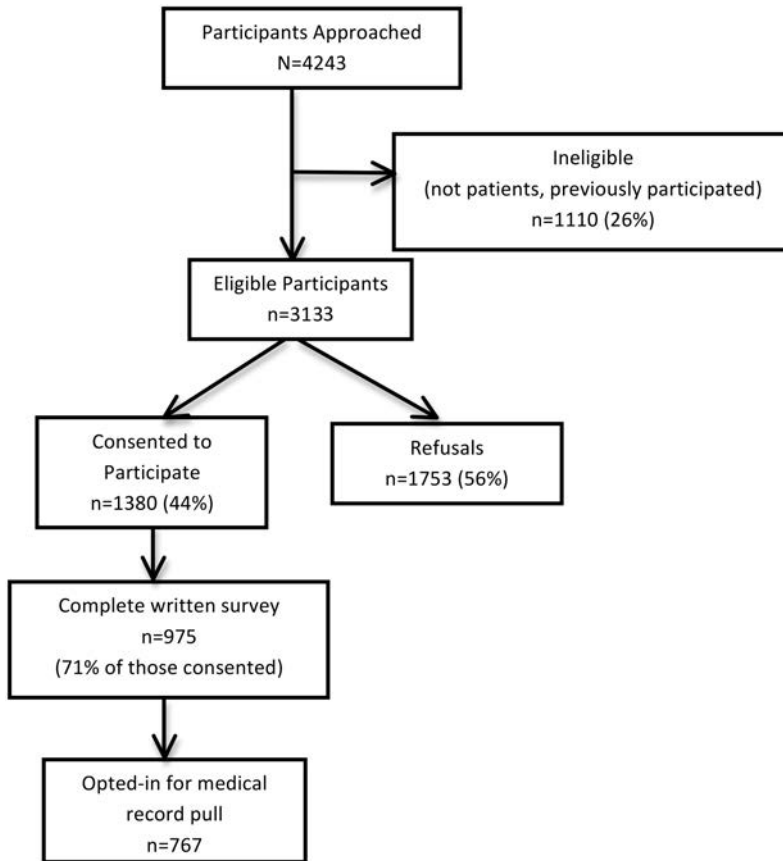


Figure 1. Study recruitment flowchart.

(71%) completed the written survey. Among those with complete written surveys, 767 (79%) opted-in to have data abstracted from their electronic medical record (Figure 1).

Participants completed the questionnaires and oral survey while waiting for their appointments with clinic staff and physician. The primary reason for incomplete surveys was inadequate time between the start of the survey and when the clinic was ready to begin the patient evaluation. There were no significant differences in gender between individuals with complete surveys and those with incomplete surveys. African Americans made up the majority (75%) of non-completers although they made up 63% of the total number of participants who completed the survey. Survey respondents were generally similar to the underlying COH primary care clinic patient population with respect to gender, age, race, and location of residence (St. Louis City, St. Louis County, Other).

Outcome. History of any mental health problem was obtained from patients' electronic medical record and used as the primary outcome for this study. This was coded as a dichotomous (yes/no) variable. For each participant that opted in for medical record review, information from their medical records was abstracted by trained research assistants. A review was conducted of all clinical notes from the participant's

first visit to the clinic up to, and including, their visit on the day they consented to participate in the survey. As part of the study protocol a manual including screen shots was developed to make this a systematic process across the research assistants. The participant was recorded as having a disease or mental illness if it was noted in any of the progress notes, including diagnosis, procedures, and medications.

Independent variables. We examined the distribution of mental health problems in the sample across the sociodemographic factors, listed below, that had been identified as key factors in previous research.^{26,31,33,45–47,48–50,51,52} Gender was a dichotomous variable coded as male/female. Race was self-reported and coded a three-value variable—African American, White, or other. Household income was a categorical variable with four options (\leq \$9,999, \$10,000–29,999, \$30,000–49,999, and \$50,000 or more). Employment status was a categorical variable with two categories, working (full-time, part-time, and student) and not currently in the workforce (retired, disabled, unemployed, and homemaker). Marital status was coded into three categories, married/partner, divorced/separated/widowed, and never married. Insurance status included six categories (private, Medicaid, Medicare, uninsured, combination of Medicaid and Medicare, and combination of private and public). Body mass index was calculated from height and weight listed in patients' electronic medical records and categorized according to National Institutes of Health guidelines (underweight: less than 18.5 BMI; normal weight: 18.5 BMI to less than 25 BMI; overweight: 25 BMI to less than 30 BMI; obese: 30 or higher BMI). Personal history of common chronic diseases and conditions derived from medical records (namely diabetes, hypertension, asthma, stroke, and heart disease) was collected. In addition, the number of visits each patient made to the emergency department and the COH within the past 12 months was derived from medical records. We did not have an a priori rationale for categorizing number of visits, nor are there clinical guidelines, so number of COH and emergency room visits was categorized into quartiles.

Data were analyzed using SAS/STAT Software Version 9.4 for Windows (Cary, NC); statistical significance was assessed as $p < .05$. We limited analyses to patients with complete surveys for whom mental health status was available through their medical records. These considerations resulted in a sample n of 767. We used chi-square tests to examine bivariate associations among categorical variables. We used multivariable logistic regression to examine the effects of race on odds of mental health problems while controlling for known covariates.

Results

Overall, 45% of the sample had a mental health problem (see Table 1). The most common type of mental disorder in this sample was depression (37%). Other types of mental disorders included anxiety (5%), bipolar disorder (5%), schizophrenia (4%) and schizoaffective disorder (2%) (data not shown). Type of mental health problem was drawn from patients' electronic medical record.

As indicated in Table 2, we examined whether there were significant relationships between common predictors of mental health status, such as race and gender, and likelihood of being diagnosed with a mental health problem in this population. There was a

Table 1.**SOCIODEMOGRAPHIC CHARACTERISTICS OF SAMPLE^{a,b}**

Variables	n= 767 % (n) or M (SE)
Mental Health Problem	44.85 (344)
Age	52.17 (0.44)
Gender	
Men	32.98 (246)
Women	67.02 (500)
Race	
African American	61.23 (447)
White	30.55 (223)
Other	8.22 (60)
Income (household)	
<\$9,999	47.36 (314)
\$10–29,999	36.35 (241)
\$30–49,999	7.09 (47)
≥ \$50,000	9.20 (61)
Employment Status	
Working	18.08 (128)
Not In Workforce	81.92 (580)
Marital Status	
Married/ Partnered	23.87 (175)
Separated/Divorce/Widowed	43.11 (316)
Never Married	33.02 (242)
Body Mass Index	
Underweight	1.32 (9)
Average weight	14.66 (100)
Overweight	21.26 (145)
Obese	62.76 (428)
# of Outpatient Visits	
0–3 visits	25.86 (196)
4–7 visits	25.33 (192)
8–14 visits	27.97 (212)
Greater than 15 visits	20.84 (158)
# of Emergency Room Visits	
0 visits	43.71 (330)
1 visit	24.24 (183)
2 visits	12.19 (92)
3 or more visits	19.87 (150)
Chronic Disease	
Hypertension	67.65 (506)
Diabetes	38.17 (284)
Asthma	22.72 (162)
Heart Disease	18.82 (140)
Stroke	7.64 (56)

(Continued on p. 314)

Table 1. (continued)

Variables	n= 767 % (n) or M (SE)
Insurance Type	
Private Insurance	6.01 (45)
Medicaid	33.24 (249)
Medicare	10.95 (82)
Uninsured	25.90 (194)
Dual Eligible	20.56 (154)
Private and Public	3.34 (25)

^aPercentages with sample size are presented.
^bN reflects participants who opted-in for medical record abstraction.

significant difference in prevalence of mental health problems between men and women. Women were more likely to have a mental health problem compared with men ($\chi^2=15.46$; $p<.001$). A greater proportion of Whites (46%) had a diagnosed mental health problem compared with African Americans (43%). Patients who coded into the other race category had the highest rates of mental illness (52%). However, these differences were not statistically significant in bivariate analyses. Patients who were not currently in the workforce were more likely to have a mental health problem compared with patients who reported that they were currently working ($\chi^2=3.82$; $p=.05$). There were significant differences in prevalence of mental health problems across marital status as patients who were separated, divorced, or widowed or who were never married had greater prevalence of mental health problems compared with married or partnered patients ($\chi^2=19.11$; $p<.001$).

Medicaid patients were most likely to have a diagnosis of mental health problems (54%) compared with those with other types of insurance. Patients who had three or more emergency room visits were more likely to have a mental health problem compared with those who did not visit the emergency room or who had one or two visits ($\chi^2=7.70$; $p=.05$). There were no significant differences in the likelihood of mental health conditions by household income. There were no significant associations between body mass index or number of outpatient visits and history of mental health problems in this sample. Age was inversely related to mental health problems (OR: 0.98; CI: 0.97–0.99).

Next, we constructed multivariable logistic regression models to examine the effects of race on odds of mental health problems while controlling for known covariates. As shown in Table 3, Model 1 depicted the relationship between race and odds of mental health problems while adjusting for sociodemographic factors, namely, age, gender, household income, employment status, and marital status as well as body mass index. In Model 2, we added health insurance coverage and the number of times patients visited the outpatient center and hospital emergency room within the past 12 months. These

Table 2.**RELATIONSHIPS BETWEEN SOCIDEMOGRAPHIC FACTORS AND MENTAL HEALTH CONDITIONS**

Variables	%	n
Gender		
Men	32.98	86
Women	50.2	251
χ^2 , df=1	15.46; <.001	
Race		
African American	43.13	201
White	46.19	109
Other	52.31	34
χ^2 , df=2	2.19; .335	
Household Income		
≤ \$9,999	46.82	147
\$10–29,999	43.15	104
\$30–49,999	42.55	20
≥ \$50,000	40.98	25
χ^2 , df=3	1.23; .796	
Employment Status		
Working	36.72	47
Not in Workforce	46.21	268
χ^2 , df=6	3.82; .05	
Marital Status		
Married/ Partnered	30.29	53
Separated/Divorce/Widowed	49.37	156
Never Married	48.76	118
χ^2 , df=2	19.11; <.001	
Insurance Type		
Private Insurance	26.67	12
Medicaid	53.82	134
Medicare	41.46	34
Uninsured	37.11	72
Dual Eligible (Medicaid and Medicare)	50.7	78
Private and Public	40.0	10
χ^2 , df=5	21.38; <.001	
Body Mass Index		
Underweight	44.44	4
Normal weight	41.0	41
Overweight	43.45	63
Obese	48.13	206
χ^2 , df=3	2.18; .537	

(Continued on p. 316)

Table 2. (continued)

Variables	%	n
# of Outpatient Visits		
0–3 visits	40.31	79
4–7 visits	48.44	93
8–14 visits	42.92	91
Greater than 15 visits	51.27	81
χ^2 , df=3	5.48; .139	
# of Emergency Room Visits		
0 visits	48.48	160
1 visit	37.16	68
2 visits	43.48	40
3 or more visits	50.0	75
χ^2 , df=3	7.70; .053	
Age	.98 (.97–.99)	

factors could be indicators of overall physical health and mental health status. Contrary to bivariate results, after adjusting for pertinent covariates in Model 1, we found that compared with Whites, African Americans were significantly more likely to have a mental health problem (OR: 1.67; CI: 1.11–2.50) and this association remained after adjusting for additional covariates in Model 2 (OR: 1.88; CI: 1.21–2.91). Patients who reported other races were also more likely to have mental health problems compared with Whites after adjusting for all covariates (OR: 2.58; CI: 1.10–5.98).

Similar to bivariate analyses, multivariable regression analyses indicate that men were less likely to have been diagnosed with mental health problems compared with women (OR .47; CI: .31–.72). Marital status was significantly related to odds of mental health problems. Patients who reported that they were separated, divorced or widowed (OR: 2.46; CI: 1.43–4.21) as well as those who were never married (OR: 2.56; CI: 1.46–4.48) were more likely to have been diagnosed with mental health problems compared with married/partnered patients. Age continued to be inversely associated with mental health problems (OR: .98; CI: .96–.99). There were no significant relationships between household income levels and mental health problems. For health insurance status, Medicaid patients had higher likelihood of mental health problems than uninsured patients (OR: 2.27; CI: 1.31–3.94). Number of outpatient visits and emergency room visits were not significantly related to mental health problems.

Discussion

The prevalence of mental health problems in this sample, collected in a primary care setting, was 45%. These included mood, anxiety, and serious mental disorders such as schizophrenia, although depression was the most common mental health problem. Lifetime estimates of mental health problems in primary care settings range from 11% to 46% is in the United States.^{52–55}

Table 3.**RACIAL DIFFERENCES AND MENTAL HEALTH PROBLEMS IN MULTIVARIABLE LOGISTIC REGRESSION MODELS**

Variables	Model 1 (n= 521) OR (95% CI)	Model 2 (n=521) OR (95% CI)
Race (ref= White)		
African American	1.67 (1.11–2.50)	1.88 (1.21–2.91)
Other Race	2.41 (1.07–5.44)	2.58 (1.10–5.98)
Age	.97 (.95–.99)	.98 (.96–.99)
Gender (ref= Women)		
Men	.48 (.32–.73)	.47 (.31–.72)
Household Income (ref= ≤ \$9,999)		
\$10–29,999	.95 (.63–1.43)	.98 (.64–1.50)
\$30–49,999	1.02 (.49–2.16)	1.26 (.57–2.79)
≥ \$50,000	1.02 (.53–1.99)	.99 (.49–1.99)
Employment Status		
Not in Workforce	1.89 (1.13–3.16)	1.47 (.82–2.61)
Marital Status (ref=Married/ Partnered)		
Separated/Divorce/Widowed	2.56 (1.53–4.30)	2.46 (1.43–4.21)
Never Married	2.57 (1.51–4.36)	2.56 (1.46–4.48)
Body Mass Index (ref= Normal weight)		
Underweight	1.61 (.23–11.16)	1.54 (.19–12.39)
Overweight	1.42 (.76–2.65)	1.46 (.76–2.80)
Obese	1.58 (.92–2.70)	1.49 (.85–2.62)
Insurance Type (ref= Uninsured)		
Private		.83 (.34–2.03)
Medicaid		2.27 (1.31–3.94)
Medicare		1.53 (.72–3.24)
Dual Eligible		2.02 (1.09–3.73)
Private and Public		2.91 (.99–8.56)
# of Outpatient Visits (ref= 0–3 visits)		
4–7 visits		1.08 (.62–1.88)
8–14 visits		.79 (.45–1.37)
Greater than 15 visits		1.16 (.66–2.10)
# of Emergency Room Visits (ref= 0 visits)		
1 visit		.67 (.41–1.07)
2 visits		.67 (.36–1.24)
3 or more visits		.98 (.58–1.66)

In bivariate analyses, there were no significant racial/ethnic differences in prevalence of mental health problems, although the overall rate was slightly higher in Whites compared with African Americans. However, after adjusting for covariates, racial differences emerged indicating that African Americans had significantly greater odds of having a mental health problem compared with Whites after adjusting for important

confounding factors. Patients that were coded into the other race category, including Hispanics and Asians, had a higher prevalence of mental health problems compared with Whites. Findings from national psychiatric epidemiologic studies indicate that African Americans typically have lower rates of diagnosed mental disorder, particularly depression, than Whites.⁵⁶ These findings differ from previous psychiatric epidemiologic studies which indicate lower levels of depression among African Americans than among Whites.^{46,56} However, the present study included any mental health problems, rather focusing on one particular disorder (such as depression) as most previous studies have. There were not enough cases for each mental health problem to compare races/ethnicities and test for differences across individual conditions.

Additionally, results from previous studies that have examined racial/ethnic differences in screening and detection of mental health problems in similar primary care settings, such as the Medical Outcomes Study, indicate that clinicians are less likely to detect mental health problems among African Americans and other racial/ethnic minority groups.^{2,31,57} The racial differences in mental health conditions, particularly the finding that people of color are more likely to have a mental health diagnosis than Whites, could also indicate that within St. Louis, providers are doing a good job of diagnosing mental disorders within primary care settings. Structurally, there is a mental health clinic in the same building as the primary care clinic from which patients in this study were drawn; this could allow for easy referral of patients. There were significant associations between gender and mental health problems observed, as female patients were significantly more likely to have had a diagnosis of a mental health problem compared with males. This finding is consistent with most studies in the mental health literature, which indicate greater prevalence of mental disorders among women.^{45,58}

Surprisingly, there was no relationship found in the present study between income and mental health problems. However, the majority of patients in this sample were African American and, overall, the sample was low-income. Despite the large sample size for this study, it is possible that there may not have been enough variance in the sample to detect significant differences between levels of income. Employment status was a significant predictor of mental health problems. Patients who were working were less likely to have a mental health problem than those who were not in the workforce at the time of the study. This finding is consistent with previous studies that have demonstrated that being employed is protective against the development of mental health conditions.^{47,59} An additional concern for the vulnerability of patients in this sample is that they have likely experienced a lifetime of disadvantage, including low incomes and unstable employment. This could increase the likelihood of mental health problems.^{37,60-63}

Poor mental health may contribute to physical health problems and to overall disparities in health.^{34,35,64} In a vulnerable population, such as our sample, in which individuals have likely suffered a lifetime of disadvantage such as growing up in poverty as well as having low educational attainment and poor access to health promoting resources, these factors simultaneously increase the risk of mental disorders and pose as risks to the physical health of individuals over time. The results of this study indicate that screening for and treatment of mental disorders in vulnerable populations like this, that regularly access primary care, is absolutely critical to improving the overall qual-

ity of care for these vulnerable populations. It is possible that there is unmet mental health need within vulnerable communities among members who do not readily access primary care.

Primary strengths of this study included the setting and the fact that mental health problems were not self-reported. Rather, diagnoses were pulled directly from the patients' medical records. There are several important limitations that should be noted when interpreting results. First, patients who did not have any information in their electronic medical record about mental health problems (e.g. diagnoses, medications, ICD-9 codes) were coded as "no" mental health problems. This could mean that mental health problems were under or over-estimated. This could negatively affect the ability to accurately estimate the prevalence of mental health problems in this sample. This sample was largely poor and patients were seeking treatment for a broad array of physical health problems. It is possible that this underserved population might not be generalizable to a more general population. Physical health problems are often associated with mental health problems. It is possible that this population is sicker than a more general population and thus more likely to be screened for, referred, and treated for mental health problems. Further, this patient population had regular access to primary medical care, with an average of nine visits to the primary care clinic per year. Additionally, the COH is a comprehensive outpatient health facility that includes mental health services through another clinic in the same building. This access level could differ from individuals in the broader community and for people from other urban areas throughout the country that might not have access to such comprehensive primary medical care. Future research efforts are also needed to characterize more adequately the mental health needs of people in community settings, not just those who regularly engage with health care systems.

Wittchen et al. suggest that the detection and treatment of mental disorders in primary care settings could be described as the "rule of diminishing halves" in which mental health problems are only recognized in half of patients who suffer from them, only half of those who suffer are treated, and only half of patients in treatment are treated effectively.⁸ This study makes a substantial contribution to the mental health literature by examining the prevalence of mental disorder within a highly vulnerable sample seeking medical treatment. Additionally, there is not much information available about the prevalence of mental disorders in primary care in the St. Louis area. Results from this study offer a number of ways forward. For instance, future studies should determine the initial age of mental health diagnosis and the duration of symptoms when patients are first identified in urban primary care settings. Another need is to determine whether diagnosis of mental disorders resulted in effective treatment among patients in this setting and how long it takes for patients to seek treatment and/or fill drug orders. Further, this study was set in a comprehensive outpatient health facility that includes mental health services in the same facility. This finding provides further support for efforts to integrate behavioral health into primary care settings.

The results from this study have a number of implications for primary care. The overall vulnerability of the population and the prevalence of mental health problems overall is high. The findings from this study indicate that there may be a substantial mental health need for vulnerable populations in similar primary care settings where

patients are socially and economically disadvantaged. There are multiple competing health issues in this sample, as patients in this population may be more likely to access health care to treat a chronic disease or other health condition. Thus providers are tasked with managing multiple health conditions in a population in which patients may already be overwhelmed. Patients' ability to adhere to medical orders and to self-manage physical health conditions could be substantially affected by mental health problems. Further, patients may have problems obtaining proper medical treatment and adhering to treatment regimens due to poor socioeconomic position as well as impaired psychological functioning. There could also be physiological links between mental health problems and physical health conditions. Additionally, Medicaid patients had the highest prevalence of mental health problems. It is possible that patients who were on Medicaid had greater mental health need due to their overall socioeconomic position and perhaps this is an indicator of the effect of social and economic disadvantage over the life course. On the other hand, this finding indicates the importance of access to health care in obtaining a proper mental health diagnosis and subsequently, treating these patients.

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