

GEORGE WARREN

BROWN

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

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# Background

- Mental health is a major, though often overlooked, U.S. public health concern
  - Major source of disability in the U.S. and worldwide
  - Estimated annual cost of \$185 billion in productivity loss and treatment (e.g., absenteeism, disability claims)

# Mental Health in Primary Care

- Mental health problems are often first detected within primary care settings
- Emphasis on detection and treatment when patients are seeking treatment for other chronic diseases
  - Patients with Type 2 diabetes (T2DM) are twice as likely to have depression

# Mental Health and Physical Health

- 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)
- Successful treatment of mental disorders improves the physical health of individuals

# Study Rationale

- More information about the current mental health needs in St. Louis is needed
- Difficulty of estimating the true burden of mental disorder in urban settings
- Mental disorders may be underdiagnosed, particularly for racial/ethnic minorities and other underserved groups

# Study Aims

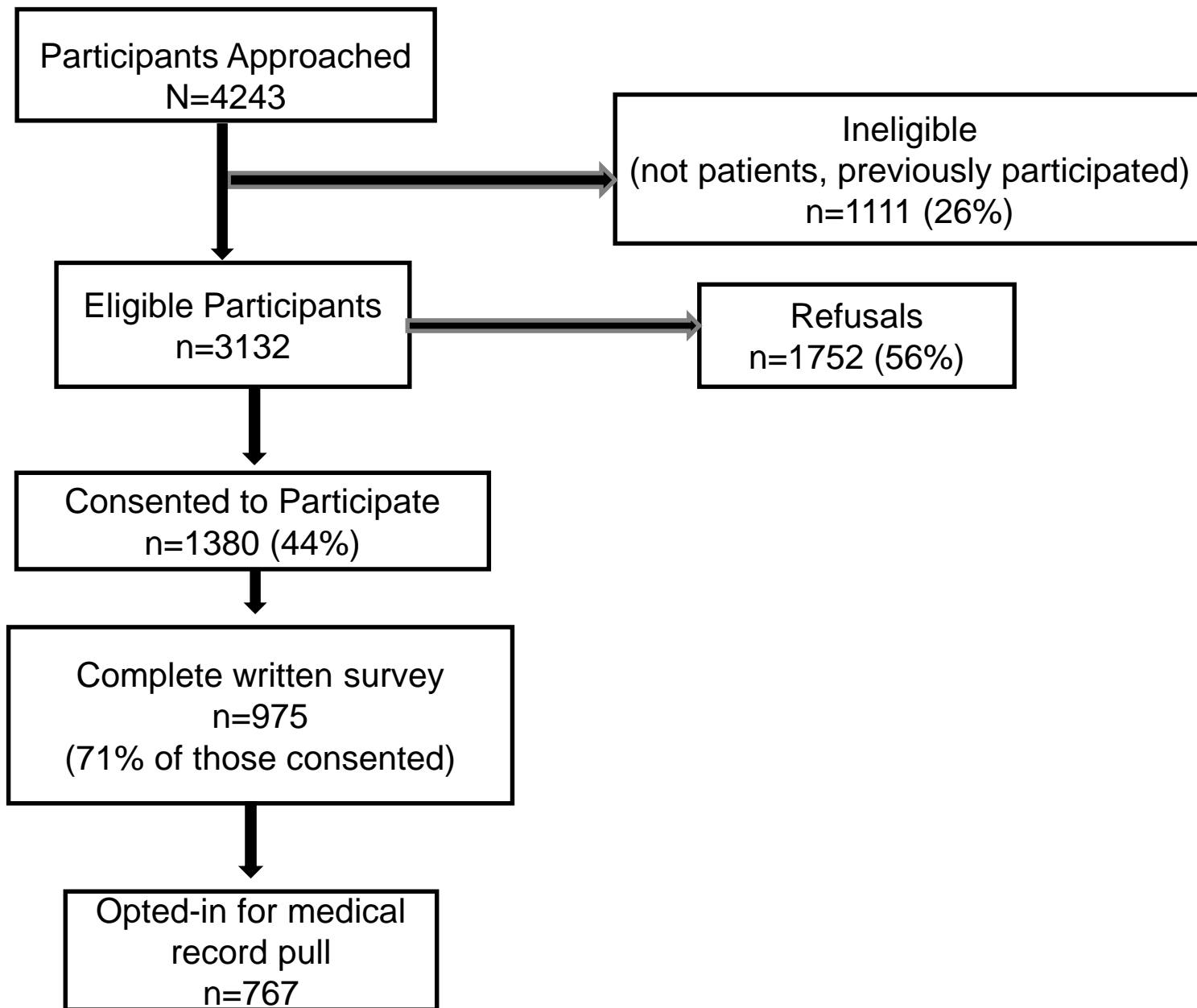
- Estimate prevalence of mental disorders in a primary care setting affiliated with a large academic medical center in St. Louis
- Examine whether common predictors of mental health problems were associated with mental health disorders in this population

# Methods

- **Setting:** the Primary Care Medicine Clinic in the Center for Outpatient Health (COH) at Barnes-Jewish Hospital in St. Louis
- **Data collection:** Participants recruited between July 2013 and April 2014
  - Participants were at least 18 years old, a patient at the COH, and spoke English
  - Patients in the waiting rooms of the COH were approached by trained data collectors
  - Participants were asked to complete a self-administered written questionnaire and an orally administered survey component



**Figure 1. Study Recruitment Flowchart**



# Covariates

- Age
- Race (what is your race?)
  - African American
  - White
  - Other
- Income
- Employment status
- Marital status
- Insurance status
- Health care utilization (COH and ED visits)

# Race Coding

```
race=.;
if quest_63b=1 and quest_63a in (0,.) and quest_63c in (0,.) and quest_63d in (0,.) and quest_63e in (0,.) then
race=1;
else if quest_63b=1 and (quest_63a=1 or quest_63c=1 or quest_63d=1 or quest_63e=1) then race=6;

else if quest_63a=1 and quest_63b in (0,.) and quest_63c in (0,.) and quest_63d in (0,.) and quest_63e in (0,.) then
race=2;
else if quest_63a=1 and (quest_63b=1 or quest_63c=1 or quest_63d=1 or quest_63e=1) then race=6;

else if quest_63c=1 and quest_63a in (0,.) and quest_63b in (0,.) and quest_63d in (0,.) and quest_63e in (0,.) then
race=3;
else if quest_63c=1 and (quest_63a=1 or quest_63b=1 or quest_63d=1 or quest_63e=1) then race=6;

else if quest_63d=1 and quest_63a in (0,.) and quest_63b in (0,.) and quest_63c in (0,.) and quest_63e in (0,.) then
race=4;
else if quest_63d=1 and (quest_63a=1 or quest_63b=1 or quest_63c=1 or quest_63e=1) then race=6;

else if quest_63e=1 and quest_63a in (0,.) and quest_63b in (0,.) and quest_63c in (0,.) and quest_63d in (0,.) then
race=5;
else if quest_63e=1 and (quest_63a=1 or quest_63b=1 or quest_63c=1 or quest_63d=1) then race=6;
else race=99;

if race=1 then race2cat=1;
else if quest_63a=1 then race2cat=2;
else race2cat=3;
```

# Outcome

- History of any mental health problem from patients' electronic medical record
  - Coded as a dichotomous variable

# Analysis

- Data were analyzed using SAS/STAT Software Version 9.4 for Windows (Cary, NC)
- Chi-square tests used to examine bivariate associations among categorical variables
- Multivariable logistic regression used to examine the effects of race on odds of mental health problems while controlling for known covariates

# RESULTS

**Table 1. Sociodemographic Characteristics of Sample (n= 767)**

Variables	% (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)
Employment Status	
Working	18.08 (128)
Not In Workforce	81.92 (580)
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)

# Results

- 45% of the sample had a mental health problem
- The most common type of mental disorder in this sample was depression (37%)



Table 2. Relationships between sociodemographic factors and mental health conditions		
Variables	%	n
Gender		
Men	32.98	86
Women	50.2	251
$\chi^2$ , df=1	15.46; <0.001	
Race		
African American	43.13	201
White	46.19	109
Other	52.31	34
$\chi^2$ , df=2	2.19; 0.34	
Employment Status		
Working	36.72	47
Not in Workforce	46.21	268
$\chi^2$ , df=6	3.82; 0.05	
Marital Status		
Married/ Partnered	30.29	53
Separated/Divorce/Widowed	49.37	156
Never Married	48.76	118
$\chi^2$ , df=2	19.11; <0.001	
Insurance Type		
Private Insurance	26.67	12
Medicaid	53.82	134
Medicare	41.46	34
Uninsured	37.11	72

# Results

- 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%)

# Results

- Patients not currently in the workforce were more likely to have a mental health problem compared with patients who reported that they were currently working ( $\chi^2= 3.82$ ;  $p=.05$ )
- Marital status was association with diagnosis of mental health problems ( $\chi^2= 19.11$ ;  $p<.001$ )

# Results

- Medicaid patients were most likely to have a diagnosis of mental health problems (54%)

	Model 1 (n= 521)	Model 2 (n=521)
Variables	OR (95% CI)	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	0.97 (0.95- 0.99)	0.98 (0.96- 0.99)
Gender (ref= Women)		
Men	0.48 (0.32- 0.73)	0.47 (0.31- 0.72)
Household Income (ref= ≤ \$9,999 )		
\$10- 29,999	0.95 (0.63- 1.43)	0.98 (0.64- 1.50)
\$30- 49,999	1.02 (0.49- 2.16)	1.26 (0.57- 2.79)
≥ \$50,000	1.02 (0.53- 1.99)	0.99 (0.49- 1.99)
Employment Status		
Not in Workforce	1.89 (1.13- 3.16)	1.47 (0.82- 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 (0.23- 11.16)	1.54 (0.19- 12.39)
Overweight	1.42 (0.76- 2.65)	1.46 (0.76- 2.80)
Obese	1.58 (0.92- 2.70)	1.49 (0.85- 2.62)

# Results

- After adjusting for pertinent covariates, African Americans were significantly more likely to have a mental health problem (OR: 1.67; CI: 1.11- 2.50)
  - This association remained after adjusting for additional covariates in Model 2 (OR: 1.88; CI: 1.21- 2.91)
- Marital status was significantly related to odds of mental health problems
  - Sep/Wid/Div (OR: 2.46; CI: 1.43- 4.21)
  - Never married (OR: 2.56; CI: 1.46- 4.48)

# Results

- Medicaid patients had higher likelihood of mental health problems than uninsured patients (OR: 2.27; CI: 1.31- 3.94)

# Results

- Age was inversely associated with mental health problems (OR: 0.98; CI: 0.96- 0.99).
- There were no significant relationships between household income levels and mental health problems



# Study Strengths

- Strengths of this study included the setting
  - Comprehensive outpatient health facility that includes mental health services
  - Mental health diagnoses were pulled directly from medical records

# Limitations

- 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
  - Mental health problems may have been under or over-estimated

# Limitations

- This underserved population might not be generalizable to a more general population
  - Sample was largely poor
  - Patient population had regular access to primary medical care, with an average of nine visits to the primary care clinic per year
  - Patients may have been sicker than a more general population and thus more likely to be screened for, referred, and treated for mental health problems

# Conclusions

- Substantiate mental health need for vulnerable populations in similar primary care settings
  - Socially and economically disadvantaged
  - Multiple competing health issues among patients
- Population may be more likely to access health care to treat a chronic disease/ physical health conditions than mental health conditions

# Conclusions

- Adherence and self-management could be impacted by mental health problems
- Findings underscore the importance of access to health care in obtaining a proper mental health diagnosis and treatment

# Diabetes and Depression

- Only 19% of patients in this sample had good diabetes control based on their tested HbA<sub>1c</sub> levels
- Patients diagnosed with mental health conditions in this study were more likely to have good diabetes control

# Future Directions

- BJC administrative data
- Mental health needs of people in community settings
  - Focus group study to better understand experience of those who seek treatment for mental health conditions