Published in final edited form as:
Gen Hosp Psychiatry. 2008 ; 30(1): 20–25. doi:10.1016/j.genhosppsych.2007.08.015.

Major Depression, Depression Treatment, and Quality of Primary Medical Care

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Abstract

Objective—This study investigated the association between diagnosis of major depression, treatment for major depression, and receipt of appropriate primary medical care.

Method—As part of the 1999 National Health Interview Survey, a nationally representative sample of 30,801 adults was administered the Composite International Diagnostic Interview–Short Form. Multivariate analyses examined the association between 12-month major depression and each of four cardinal features of primary care: access, comprehensiveness, coordination, and continuity, stratified by whether depressed individuals received care for depression in primary care, specialty mental health care, or no treatment.

Results—Overall, persons with depression had statistically significant problems in all four domains of primary care (8/10 indicators total). However, patterns differed substantially based on depression treatment status. Persons with untreated depression had difficulties in access (3/3 measures) and comprehensiveness of care (5/5 measures) but not with coordination (0/1 measure) and continuity (0/1 measures). In contrast, persons with depression who received specialty treatment had more difficulties in coordination (1/1 measures) and continuity (1/1 measures) of primary care. Persons treated for depression in primary care reported the fewest difficulties in any of the four domains of primary care (0/10 measures).

Conclusions—Major depression was associated with significant challenges in receipt of primary care, however, these problems varied based on whether and where depression treatment is received.

Introduction

High-quality primary medical care is a cornerstone of health and health care. [1] The core domains of primary care include access (initial receipt of care), comprehensiveness (receipt of a full range of services), coordination (organization across providers and systems), and continuity (use of a single provider over time).[2] These four constructs, individually and in aggregate, have been found to be associated with better health outcomes,[2] particularly for

vulnerable and underserved populations. [3] Understanding factors that facilitate or impede each of the elements of primary care is critical for improving clinical and public health. [4]

Major depression is among the most common and disabling chronic illnesses. In any given year, 6.7% of the US population has an episode of major depression,[5] and the prevalence may be even higher in primary care settings. [6] The burden of depression is experienced not only directly, via its effects on quality of life, but also through its effects on use of medical services. Symptoms such as anxiety and somatic complaints may lead to overuse of certain medical services.[7,8], At the same time, symptoms such as lack of motivation and hopelessness may lead to underuse of needed services, such as reduced use of mammography, [9,10] preventive services,[11] diabetes care, [12-14] and decreased adherence to medical regimens. [15]

Inasmuch as depression raises challenges in quality of care, timely and effective treatment of depression might be expected to mitigate those difficulties, allowing patients to use the health system more effectively. At the same time, treatment of multiple conditions often raises challenges in quality due to challenges in coordinating care. [16] For depression, these difficulties might be expected to be particularly problematic for persons treated in the specialty sector, which entails care across multiple providers, often across several locations.

Using a nationally representative survey, this study seeks to better understand the relationship between depression and medical treatment by examining the association of depression with each the four key constructs of primary care. Results are examined by whether individuals received treatment for depression, and if so, whether that therapy was provided in primary care or a specialty mental health setting. The goal is to better disentangle the impact of depressive symptoms and treatment of those symptoms on use of medical services.

Methods

The study used data from the 1999 National Health Interview Survey, the largest annual health survey in the United States. The 1999 survey interviewed a nationally representative sample of 30,801 adults from across the United States.

Probable Major Depression

The survey included the depression module of the Composite International Diagnostic Interview–Short Form. Compared to the full CIDI, the CIDI-SF has demonstrated a sensitivity of 89.6% and specificity of 93.9% for a DSM-III-R diagnosis of major depression.[17] The current study used the scoring algorithm for depression recommended by the developers of the CIDI-SF. A score of 3 or more (out of a possible 7) is the recommended cutpoint for identifying probable major depression. [18] The independent variable used in the study was 12-month probable major depression as assessed by that instrument.

Use of Mental Health Services

The survey asked respondents “During the past 12 months, have you seen or talked to any of the following health care providers about your own health…a mental health professional such as a psychiatrist, psychologist, psychiatric nurse, or clinical social worker?” A positive response to this question was used to indicate specialty mental health treatment (whether or not the patient also reported depression treatment in primary care). A separate question asked whether the respondent had talked to their regular medical provider about their depressive symptoms during the past 12 months. Persons who answered affirmatively to this second question but did not report specialty mental health use were coded as having received

depression treatment in primary care; and those who responded negatively to both were considered untreated.

Primary Medical Care

Items in the NHIS were identified that corresponded to each of the four constructs of primary care, using operational definitions identified in the primary care literature.[2,3,19] Problems in access were defined as absence of a usual source of care, use of the Emergency Room for routine or preventive services, and greater than 24 months since last visiting a physician. Lack of comprehensiveness was defined as absence of each of five preventive and immunization services, recommended by the US Preventive Services Task Force (USPTF) and the CDC Advisory Committee on Immunization Practices, in the populations and age groups for whom evidence supports their use (for the USPTF, these include “A” and “B” recommendations) .[20,21] Difficulties in coordination were coded if there was a report that the primary care provider failed to ask about other prescription medications. Challenges in continuity were noted if the respondent reported changing the usual source of care within the past 12 months.

Potential Moderating Variables

The National Health Interview Survey asked respondents to identify their age, gender, income, race, and insurance status (private, Medicare, Medicaid, other, and uninsured). A checklist of 14 chronic general medical conditions was used to generate a total count of medical conditions.

Analytic Strategy

Four mutually exclusive groups were generated; persons without major depression, persons with 12-month major depression who were treated in specialty mental health care (with our without primary care treatment), persons with 12-month major depression who were treated in primary care, and persons with major depression that was not treated in either specialty mental health or primary care.

Next, a series of logistic regression models were constructed, with each modeling one of the primary care indicators as a function of major depression, adjusted for gender, race, age, poverty status, insurance coverage, and number of chronic medical conditions. Separate models were constructed that compared each of the three groups to the group without depression. To simplify presentation, 95% confidence intervals were used as a means of assessing statistical significance (lack of inclusion of 1 in the confidence interval) and, among depressed persons, difference across the three categories of depressed persons. Non-overlap of confidence intervals provides a relatively conservative test compared to p values (i.e. if confidence intervals do not overlap, then the comparable statistical test would always indicate a statistically significant difference).[22]

All statistical analyses were conducted using SUDAAN, version 9. (Research Triangle Institute, Research Triangle Park, N.C.) to accommodate the complex sample design of the NHIS and the sampling weights.

Results

Characteristics of Persons with and Without Depression

A total of 7.2% of the total sample met CIDI-SF criteria for probable 12-month major depression. Among persons meeting criteria for major depression, 29% reported receiving specialty mental health services, 31% reported receipt of depression services through their regular medical provider, and 40% received no treatment in the past 12 months.

As compared with the nondepressed respondents, persons with depression were significantly more likely to be younger and female (Table 1). They were approximately twice as likely to have incomes below the poverty line and be uninsured as persons without depression, and had nearly three times the number of chronic medical conditions. (Table 1).

Access to Primary Care

In adjusted models, persons with major depression were, overall, no more or less likely to have a usual source of care than persons without major depression. However, this distribution varied considerably across the three depression treatment groups. Persons who were untreated for depression were 1.55 times more likely than nondepressed persons to lack a usual source of care (95% CI: 1.44-1.66); in contrast, persons in specialty treatment were no more or less likely to have a primary care provider than nondepressed individuals (OR=0.91, (0.88-1.04). As anticipated, persons in primary care treatment for depression were significantly less likely to lack a usual source of care than nondepressed persons (OR=0.82 (0.72-0.92)). Individuals with depression were more likely to report using the emergency room for routine preventive services than nondepressed individuals (OR=1.19 (1.14-1.24). This association was significant for individuals who were untreated (OR=1.35 (1.24-1.46) for those who were treated in the specialty mental health sector (OR=1.60 (1.51-1.69). Those in primary care treatment were less likely to use the emergency room for routine or preventive services (OR=0.8 (0.70-0.90).

Persons with depression were, on average, 1.21 times less likely to have failed to see a medical provider within the past 24 months (95% CI: 1.12-1.30). However, this result was primarily driven by persons who were not treated for depression, who were 1.51 times less likely to have seen a medical provider during that time (95% CI: 1.39-1.63). Persons in specialty treatment for depression were neither more nor less likely than nondepressed persons to use primary care services (OR=1.01 (0.96-1.07)), and those treated in primary care were significantly more likely to have seen a medical doctor in the past 24 months (OR=0.86 (0.77-0.95)).

Comprehensiveness of Primary Care

Depressed patients were significantly more likely to have failed to have received four of five recommended preventive services (fecal occult blood test; mammography; PAP smear, and influenza vaccine) than nondepressed patients Persons who were depressed but untreated for depression were more likely to have failed to receive each of the five tests, with odds of lack of receipt of services ranging from 1.10 (for blood pressure) to 1.51 (for influenza vaccine). Persons treated in the specialty mental health sector were more likely to have failed to receive mammography (OR=1.22 (1.03-1.44), but had comparable rates of use of other preventive services as nondepressed individuals. Finally, depressed persons treated in primary care were significantly more likely to have obtained PAP smears (OR=0.82 (0.90-0.98) and mammograms (OR=0.74 (0.62-0.86) than persons without depression.

Coordination of Primary Care

Persons with major depression in specialty treatment, were nearly two-thirds times more likely than those without major depression to report that their primary care physician did not inquire about medications being prescribed by other providers (OR= 1.64 (1.34–1.94)). This association was not significant for depressed persons who were untreated (OR=0.98 (0.88-1.08)) or in treatment in primary care (OR=1.06 (0.95-1.17)).

Continuity of Primary Care

In multivariate models, persons with major depression were more likely to have changed a usual source of care during the past year (OR=1.18 (1.14-1.22). This association was primarily driven by persons in the specialty sector, who were more than 2 times more likely to have

switched providers during the last year (OR=2.1 (2.01-2.09). In contrast, there was no association between depression and provider switching for depressed persons without a current primary care provider (OR=0.96 (0.88-1.02) or those receiving treatment through their regular provider (OR=0.91 (0.83-1.00).

Discussion

In this national sample, untreated depression was associated with problems in obtaining access to primary care, and in receipt of a comprehensive range of services. Persons with specialty mental health treatment for depression had fewer problems in these two domains, but reported more difficulties in coordination and continuity of care. The findings have implications both for future studies of the association between depression and use of health services, and for efforts to improve medical care for this population.

From a research perspective, the study's findings suggest that the method used for identifying depression may have a substantial impact on the findings of the relationship between major depression and use of health services. Studies using administrative data commonly use claims for depression and other mental illness as a proxy for defining depression caseness. The current study serves as a reminder that symptoms of mental disorders and treatment for those disorders may have different, and at times competing, effects on use of mental health services. It is important that studies be explicit in describing how they define mental disorders, since the method of case definition may affect the findings.

Regardless of treatment status, persons with depression had nearly three times as many chronic medical conditions as people without depression, a finding that is consistent with a substantial literature documenting a consistent association between depression and a range of chronic medical illnesses.[23] At the same time, persons with depression were more than twice as likely to be to be uninsured or below the poverty line as nondepressed persons. High need for medical care, coupled with poor access and poor quality of care characterize a vulnerable population. [24] Because of these twin vulnerabilities of high morbidity and poor medical care, the National Association of State Mental Health Program Directors has recently called for persons with depression and other serious mental disorders to be considered a health disparities population in state and federal policy initiatives. [25]

Even after adjusting for income, comorbidity, and insurance status, persons with depression who were not receiving mental health care were more likely to lack a primary care provider, to have had a longer time since visiting the primary care provider, and to have lower rates of appropriate preventive services than persons without depression. Depressive symptoms such as poor motivation and hopelessness may make it difficult for depressed persons to obtain care or follow through with recommended treatments Addressing those symptoms, in turn, is likely to be an important step for improving primary care in persons with depression. However, as demonstrated in studies of depression and diabetes, addressing depression alone may be insufficient to improve medical outcomes.[12,26] Research by one of the authors (WJK) is currently underway to examine strategies that address both depression and comorbid conditions.

In this study, depressed persons who were treated in the specialty mental health sector reported better access to, and comprehensiveness of, primary care than persons without such treatment. In contrast to depressed persons not receiving specialty mental health care, persons in specialty mental health care were no less likely to have a primary care provider, and actually had more visits to that provider than nondepressed individuals. Receipt of appropriate mental health care may help depressed persons to better engage and follow through with primary health care.

While receiving specialty mental health care for depression was associated with reduced problems in obtaining access and comprehensiveness of care, it was also associated with increased barriers to coordination and continuity of service delivery. Persons with depression who were in specialty treatment were more than 50% more likely to report that their PCP failed to ask them about their other medications and were more likely to they used the emergency room for routine preventive care. Specialty mental health treatment may also lead to problems in obtaining or maintaining health insurance, leading to problems in continuity of primary medical care and unmet medical needs.[27] Several limitations should be considered in interpreting the study findings. First, the NHIS had only limited information on depression treatment; the survey did not provide information on content, intensity, or structure of depression care. Affirmative responses about speaking to a primary or mental health provider might not always indicate treatment for depression. Second, the cross-sectional nature of the data makes it difficult to disentangle the temporal or causal association between depressive symptoms, care for depression, and use of primary care services. For instance, it is possible that problems in continuity of primary care led individuals to seek care from specialty mental health providers, rather than vice versa Alternatively, unmeasured characteristics of persons treated in primary care versus specialty settings may partly underlie the observed differences in medical treatment received in these two groups. Finally,, both the medical and mental health systems have continued to evolve since 1999, and it is possible that the relationship between depression and primary medical care have also changed during that time. Despite these limitations, the 1999 NHIS is the only survey of which we are aware to simultaneously provide a diagnostic depression instrument and detailed information on use of primary care medical services.

The study's findings suggest at least two factors may be considered in efforts to improve primary medical care in persons with depression. Successful treatment of depression may have the potential to mitigate not only the burden of illness, but also depression's adverse effects on access to, and comprehensiveness of, medical services. However, specialty mental health treatment may also be associated with difficulties in coordination and continuity of medical care. Models that target treating depression in primary care may have the potential to improve depressive symptoms while not jeopardizing, and perhaps improving, quality of medical care.

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Table 1

Characteristics of Study Sample (n=30,801)

	Non Depressed (n=27,861)	Depressed (n=2,220)				Depressed vs. Non-Depressed
		Total (n=2,220)	Received Specialty MH Treatment (n=644)	Received MH Treatment in Primary Care (n=688)	Untreated (n=888)	
Age (SE)	46.9 (SE=0.18)	42.2 (SE=0.41)	41.6 (SE=0.56)	43.4 (SE=0.55)	40.1 (SE=0.61)	P<0.001
Male Gender	45.1%	30.2%	29.8%	30.9%	34.9%	P<0.001
Below Poverty Line	9.2%	21.7%	21.1%	19.4%	21.0%)	P<0.001
Race (%)						P=0.26
Hispanic	8.8%	7.8%	6.6%	8.1%	8.3%	
White	76.0%	76.0%	82.1%	74.9%	74.3%	
Black	11.7%	11.9%	8.5%	12.1%	14.4%	
Other	3.5%	4.3%	2.7%	4.9%	2.6%	
Insurance (%)						
Private	69.3%	52.3%	51.7%	55.5%	48.9%	P<0.001
Medicare	8.6%	7.0%	9.0%	6.8%	6.8%	
Medicaid	2.9%	7.1%	9.7%	8.7%	6.2%	
Other	15.3%	24.2%	21.2%	23.2%	55.1%	
Uninsured	4.0%	8.8%	8.4%	5.6%	11.1%	
Number of Chronic Conditions	1.1 (SE=0.05)	3.0 (SE=0.14)	3.2 (SE=0.20)	4.1 (SE=0.22)	2.2 (SE=0.19)	P<0.001

Table 2

Association between Major Depression and Problems with Receipt of Primary Medical Care, by Treatment Status

	Overall: Depressed vs. Non Depressed	Depressed with No Treatment vs. Non-Depressed	Depressed with Specialty Treatment vs. Non-Depressed	Depressed with Primary Care Treatment vs. Non-Depressed
Problems with Access				
No usual Source of Care	1.01 (0.95-1.07)	1.55 (1.44-1.66)	0.91 (0.88-1.04)	0.82 (0.72-0.92)
Use of ER for routine or preventive care	1.19 (1.14-1.24)	1.35 (1.24-1.46)	1.60 (1.51-1.69)	0.80 (0.70-0.90)
>24 months since last saw MD	1.21 (1.12-1.30)	1.51 (1.39-1.63)	1.01 (0.96-1.07)	0.86 (0.77-0.95)
Problems with Comprehensiveness				
No Blood Pressure	0.99 (0.95-1.04)	1.10 (1.01-1.11)	1.01 (0.84-1.18)	0.99 (0.90-1.08)
No Fecal Occult Blood Test (Women and Men >50 years)	1.11 (1.04-1.18)	1.21 (1.13-1.29)	0.96 (0.80-1.12).	0.98 (0.86, 1.10)
No PAP smear (women <65)	1.17 (1.11-1.23)	1.43 (1.30, 1.56)	1.17 (0.94-1.46)	0.82 (0.90, 0.98)
No Mammogram (Women >40)	1.22 (1.18-1.26)	1.32 (1.22, 1.42)	1.22 (1.03-1.44)	0.74 (0.62, 0.86)
No Flu shot (Women and Men age >50)	1.24 (1.18-1.30)	1.51 (1.40, 1.62)	1.11 (0.90-1.36)	0.95 (0.88-1.02)
Problems with Coordination				
PCP failed to ask about other RX meds	1.14 (1.10-1.18)	0.98 (0.88-1.08)	1.64 (1.34 – 1.94)	1.06 (0.95-1.17)
Problems with Continuity				
Changed Usual source of care during past 12 months	1.18 (1.14-1.22)	0.96 (0.88-1.02)	2.10 (2.01-2.09)	0.91 (0.83-1.00)

* = Adjusted for race, sex, age, above/below poverty line ratio, insurance coverage, and number of chronic medical conditions.