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When depression is diagnosed, older adults are as likely as younger adults to be prescribed pharmacotherapy and psychotherapy

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ABSTRACT

Objective: This study examined age group differences in the rates of depression diagnosis and treatment using a national probability sample.
Methods: Using data from the 2012 National Ambulatory Medical Care Survey (n=62,723 visits by patients aged 18+ years), we used bivariate and multivariable binary logistic regression analyses to test age group differences in antidepressant medication (ADM) and psychotherapy prescribed/ordered or provided at visits during which depression was diagnosed.
Results: Visits by older adults were less likely to result in a depression diagnosis than visits by younger individuals: 2.46% and 1.80% in the 65–74 and 75+ age groups, compared to 4.06%, 4.24% and 4.12% in the 18–29, 30–49 and 50–64 age groups, respectively. Of all visits involving diagnosed depression, 65.88% included prescribing/ordering or providing ADM and 19.01% included psychotherapy ordering or providing, without significant age group difference. Prescribing/ordering or providing ADM occurs frequently during visits to physicians regardless of specialty, while psychotherapy was ordered or provided mostly during visits to psychiatrists.
Conclusions: During ambulatory care visits in which depression was diagnosed, older adults were as likely as younger adults to be prescribed/provided treatment; however, in more than 30% of visits by depressed older adults neither ADM nor psychotherapy was prescribed.

1. Introduction

Research has shown that rates of depression diagnosis and antidepressant medication (ADM) treatment among older adults (age 65+) in the United States have been increasing. For example, a study of Medicare fee-for-service beneficiaries between 1992 and 2005 found that the proportion of older adults who received a depression diagnosis doubled from 3.2% to 6.3%, and the proportion receiving ADM increased from 53.7% to 67.1% of those diagnosed, whereas the proportion receiving psychotherapy declined from 26.1% to 14.8% [1]. Although ADM use among older adults has been increasing, studies have also found that rates of both ADM and psychotherapy for depressed older adults are lower than for younger adults. A study based on a large national claims database of managed care plans from 2003 to 2006 showed that among patients diagnosed with a new episode of depression, 26% of older adults (age 65+), compared to 34% of those aged 25–64 years, received ADM, and the rates of psychotherapy were 13.0% vs. 34.4%, respectively [2,3]. A study of chronically ill members of a Medicare Advantage program who received a depression diagnosis between November 2008 and January 2010 (i.e., after Medicare Part D prescription drug benefits were implemented in 2006) again found that a lower proportion of those aged 65+ years (65%) compared to younger participants (72%) received any depression care (defined as at least one ADM prescription or at least one specialty mental health visit) [4]. Of those who received any depression care, a lower proportion of older adults (67%) than younger adults (75%) also received an ADM prescription for 90 days or two or more specialty visits [4]. Similarly, findings based on Veterans Health Administration (VA) data show that only 36% of veterans aged 65+ years, compared to 75% of veterans aged 18–35 years and 59% of veterans aged 36–64 years with a newly diagnosed depression, anxiety disorder, or posttraumatic stress disorder received any mental health assessment and/or treatment during fiscal year 2010 [5].

Although these previous studies are informative, their samples were Medicare fee-for-service or managed care beneficiaries or veterans, limiting the studies' generalizability. In the present study, we provide recent national estimates of depression diagnoses and treatment prescription/ordering or provision in ambulatory care settings in the United States using a national probability sample of visits by adults. Specifically, we examine age group differences in the rates of depression diagnosis (i.e., major depressive disorder [MDD], dysthymia and depression not elsewhere classified [NEC]) and prescribing/ordering or providing ADM and psychotherapy at the sampled visits. The study hypotheses were as follows: (H1) rates of diagnosed depression will be lower among visits by older age groups (65–74 and 75+ years) than among younger and middle age groups (18–29, 30–49 and

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50–64 years), and (H2) of visits involving a depression diagnosis, those by members of older age groups will have lower odds of having been prescribed/ordered or provided ADM and/or psychotherapy, controlling for patients' gender, race/ethnicity, number of other diagnosed health conditions, Medicaid as the expected payer, and specialty, region, and metropolitan statistical area (MSA) status of the treating physician's practice.

2. Methods

2.1. Data and sample

The data for this study came from the public-use, micro-data file of the 2012 National Ambulatory Medical Care Survey (NAMCS), a national probability sample survey of visits to office-based physicians who were sampled from the master files of the American Medical Association and the American Osteopathic Association, excluding federally employed physicians and physicians in the specialties of anesthesiology, pathology, and radiology. (The 2012 public-use data file also excludes community health center physicians.) In most cases, Census field representatives abstracted information from patients' medical charts using a laptop computer and an automated survey instrument. In a small number of cases, physicians or their staff entered the requested information on a Census laptop or through a web portal using a modified version of the automated instrument. Data were obtained for a total of 76,330 sampled visits, representing 923,629,953 weighted visits, by patients of all ages [6]. In this study, we focused on 62,723 sampled visits, representing 757,585,140 weighted visits, by adult patients (aged 18+ years). Since sampled visits from each practice (100% sample from small practices and 20% sample from very large practices) were limited to one reporting week (of 52 weeks), the likelihood of repeated visits by the same patient is extremely low. We used the NAMCS-provided weighting variables to produce national estimates of the utilization of ambulatory medical care services to office-based physicians and the rates of depression diagnosis and of ADM and/or psychotherapy that were "ordered, supplied, administered, or continued" during the recorded physician visits.

2.2. Measures

2.2.1. Age group

To compare age groups, we divided the sampled visits into those by the following age groups of patients: 18–29, 30–49, 50–64, 65–74 and 75+ years.

2.2.2. Depression diagnosis (Dx)

In NAMCS, all "provider's diagnoses for *this visit*" on the automated patient record were coded according to the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) [7]. Visits including the ICD-9-CM codes of 296.2x (MDD, single episode), 296.3x (MDD, recurrent episode), 296.82 (atypical depressive disorder), 300.4 (dysthymia) and 311 (depression NEC), regardless of its order (i.e., Dx 1, Dx 2, or Dx3), were defined as those with *diagnosed depression* and the focal depression in this paper. Diagnoses of bipolar disorder and adjustment disorder were not addressed in this study.

2.2.3. ADMs

The NAMCS recorded up to 10 medications that were "ordered, supplied, administered, or continued" for each visit, and antidepressant drugs were identified from the Multum classification [8] of therapeutic classes/drug categories of "psychotherapeutic agent; antidepressants." Antidepressants were further classified into seven subcategories: selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), phenylpiperazine antidepressants, tricyclics, tetracyclics, monoamine oxidase inhibitors and miscellaneous antidepressants.

2.2.4. Psychotherapy

The NAMCS defined psychotherapy as "all treatment involving the intentional use of verbal techniques to explore or alter the patient's emotional life in order to effect symptom reduction or behavior change." Psychotherapy was identified from medical record review of medical history, medical encounters, orders and prescriptions, progress notes, test results or other information [6].

2.2.5. Mental health counseling, excluding psychotherapy

The NAMCS defined this as "general advice and counseling about mental health issues and education about mental disorders, and referrals to other mental health professionals for mental health counseling." Mental health counseling was also listed as a nonmedication treatment service "*ordered or provided*." Given that the treatment component in mental health counseling was not specific, we examined it for descriptive purposes only.

2.2.6. Control variables

These were (1) patient's gender, (2) patient's race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, non-Hispanic Asian and Non-Hispanic Other), (3) patient's number of medical conditions [arthritis, asthma, cancer, cerebrovascular disease, chronic obstructive pulmonary disease, chronic renal failure, congestive heart failure, diabetes, hypertension and ischemic heart disease (range 0–9)], (4) physician specialty [general/family practice, internal medicine, psychiatry and other specialty (pediatrics, general surgery, obstetrics and gynecology, orthopedic surgery, cardiovascular diseases, dermatology, urology, neurology, ophthalmology, otolaryngology, oncology, allergy and other)], (5) census region of physician practice (Northeast, Midwest, South and West), and (6) MSA designation for physician practice (MSA vs. non-MSA).

2.3. Statistical analysis

Analyses were conducted with Stata/MP 14's svy function to account for the 2012 NAMCS's stratified, two-stage sampling design (physicians were selected in the first stage and visits in the second stage). Stata's subpop command was used for all subsample analyses (e.g., visits by patients aged 18+ and those with a depression diagnosis) to ensure that variance estimates incorporate the full sampling design. All estimates presented are weighted to produce nationally representative rates except for sample sizes (i.e., number of visits). Standard errors for all study variables show stable estimates. First, we used χ^2 tests to compare rates of the current diagnosed depression in the sample visits by patients' age group (H1) and other characteristics. Second, we used χ^2 tests to examine treatments prescribed/ordered or provided during patients' visits for current diagnosed depression by age group and by physician specialty. Third, we used hierarchical binary logistic regression analyses to examine age group differences in prescribing/ordering or providing ADM and psychotherapy for current diagnosed depression (H2). In the first stage, age group was the only predictor of ADM and psychotherapy (dependent variables) entered; in the second stage, age group, gender and race/ethnicity (Asians and other races were combined due to small sample sizes) were the predictors entered; in the third stage, all other control variables were entered. For psychotherapy, given the large odds ratio (OR) for psychiatrists as providers, we also ran a model without the provider variable and a model for psychiatry visits only. Variance inflation factor diagnostics [9] showed that multicollinearity among the predictors was not a concern.

3. Results

3.1. Sample characteristics and rates of depression in visits by age group and other characteristics

Table 1 shows that of all visits (n=62,723) by those 18+ year olds, 16.69% were by the 65–74 age group and 16.0% were by the 75+ age