Healthcare Use Among Older Primary Care Patients with Minor Depression

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Objective: *To determine the rate of healthcare utilization for older primary care patients by depression status.* **Design:** *Cross-sectional data analysis.* **Setting:** *Primary care practices, western New York state.* **Participants:** *753 patients aged 65 years and older.* **Measures:** *Diagnostic depression categories were determined using the Structured Clinical Interview for DSM-IV (SCID). The Cornell Services Index (CSI) measured outpatient medical visits. Demographic, clinical, and functional variables were obtained from medical records and interview data.* **Results:** *41.23% had subsyndromal or minor depression (M/SSD) and 53.15% had no depression. The unadjusted mean number of outpatient medical visits was greater in those with M/SSD (3.96 visits within 3 months) compared to those without depression (2.84), with a significant difference after adjusting for demographic, functional, and clinical factors.* **Conclusion:** *Those with M/SSD had higher rates of healthcare utilization compared with those without depressive symptoms. Future research should examine whether interventions for older adults with M/SSD reduce healthcare utilization.* (Am J Geriatr Psychiatry 2014; 22:207–210)

Key Words: Geriatric, minor depression, healthcare utilization

Although uncertainty remains about the best way to categorize various depressive disorders, there is growing consensus for a spectrum model. At the severe end lies major depressive disorder (MDD), with subsyndromal or minor depression (M/SSD) at the mild end. Few studies have characterized the healthcare utilization of older primary care patients with M/SSD. One such study observed increased utilization in congestive heart failure patients, but attributed increases to health problem severity[1]; another study reported increases, but found differences less compelling when adjusting for other relevant covariates, such as demographic factors, chronic disease, and functional limitations.[2] The current data are from a heterogeneous sample of older primary care patients characterized with M/SSD using well-defined criteria. The objective was to test the hypothesis that there would be a higher rate of healthcare utilization for those with M/SSD compared with those without depression.

METHODS

Participants and Procedures

This is a cross-sectional analysis of data collected during a prospective cohort study of older primary care patients[3] whose purpose was to describe outcomes and characterize predictors of late-life depressive disorders. Individuals aged 65 and older who presented to primary care practices on designated days were eligible and approached for enrollment. Subjects were required to give written informed consent in English and a face-to-face intake interview administered by a trained rater. Approval

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for this study was obtained by the University of Rochester research subjects review board, and the Montefiore Medical Center and Weill Cornell Medical College internal review boards.

Measures

The diagnostic categories of depressive illness were determined using the Structured Clinical Interview for Diagnostic and Statistical Manual-IV (SCID).[4] MDD was defined as the presence of depressed mood or anhedonia with at least four other depressive symptoms for at least 2 weeks. M/SSD was defined as 1) minor depression (depressed mood or anhedonia with at least one but no more than three additional depressive symptoms for at least two weeks); or 2) subsyndromal depression (a minimum of two depressive symptoms at either "subthreshold" or "threshold" levels by SCID criteria, with at least one being depressed mood or anhedonia, yet not meeting criteria for MDD, minor depression, or dysthymia). Dysthymia was excluded based on differences in course and symptomatology. All others were "nondepressed." The 24-item Hamilton Rating Scale for Depression (HRSD) measured depressive symptom severity.[5]

Healthcare utilization was determined using the Cornell Services Index (CSI), a standardized measure of the quantity and characteristics of services used.[6] The CSI is a 12-item self-report questionnaire that records the frequency and duration of services in different healthcare settings for the preceding 90-day period. The Cumulative Illness Rating Scale (CIRS), completed by the physician-investigator (JML), assessed medical illness burden.[7] The Instrumental Activities of Daily Living (IADL)[8] measured higher-order activities of daily living, such as financial management and meal preparation. The Mini-Mental Status Examination (MMSE) determined cognitive functioning.[9] Demographic information was obtained from patient report and medical record review.

Data Analysis

Data for these analyses were collected at baseline. Descriptive statistics were presented as relative frequencies for categorical variables, and means and standard deviations (SDs) for continuous variables. Differences between depression categories were tested using χ^2 or Fisher's exact tests for categorical variables and ANOVA for continuous variables. Missing data were corrected by multiple imputation procedure, which replaces each missing value multiple times producing a valid statistical inference under the Missing at Random assumption.[10] Almost 70% of the observations had one or more missing covariates, and all covariates had at least one missing value. The missing data patterns were not monotone; therefore the MCMC option of SAS Proc MI was used (SAS Procedure Guide, 8th edition, Cary, NC, 1999). Because Proc MI uses joint normal model, each covariate is first tested for normality and then transformed via Box-Cox transformation if departure from normality is significant.

A generalized linear model was needed because the dependent variable (number of outpatient visits) was a count variable. The Negative Binomial regression model with the log likelihood function was chosen because of its fit for the data and ease of interpretation. MDD was included in the regression model for descriptive purposes, but not discussed in detail. All demographic and clinical variables were included in the final model as is custom with Negative Binomial regression. Statistical analyses were performed using SAS statistical software (1999).

RESULTS

Of the 756 consented individuals, 753 had some form of baseline data. Descriptive statistics were performed prior to imputation. The average age for the sample was 75.12 years (SD: 6.87), 63.44% (472 of 744) were women, 91.94% (684 of 744) were white, and 0.54% were (4 of 744) Hispanic. The average years of education obtained were 14.11 (SD: 4.10), and 51.14% (380 of 743) were married, living with spouse.

Depression rates were 41.23% (308 of 747) with M/SSD and 53.15% (397 of 747) without depression. Compared with the nondepressed, the group with M/SSD had significantly more women (73.79% [227 of 308], versus 54.66% [217 of 397], Pearson $\chi^2 = 27.71$, df = 2, $p < 0.01$), greater depression severity (HRSD: 10.49 [SD: 5.55] versus 6.20 [SD: 4.16], $F = 223.96$, df = 2, $p < 0.01$), more medical burden (CIRS: 7.84 [SD: 3.09] versus 7.10 [SD: 2.78], $F = 19.03$, df = 2, $p < 0.01$), and greater IADL impairment (2.33 [SD: 4.04] versus 1.63 [SD: 3.78], $F = 14.56$, df = 2,