Sociodemographic Disparities in Dosing and Monitoring of Antidepressant Medications Among Florida Medicaid Enrollees

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Introduction

Sociodemographic disparities in the diagnosis and treatment of major depression are prevalent in privately insured populations. While Medicaid relieves many of the financial barriers faced by enrollees seeking treatment for mental illness, troubling health disparities are still an unfortunate reality for many patients. The present study examined the effects of gender, race/ethnicity, and age on the likelihood of receiving treatment that adheres to the American Psychiatric Association (APA) guidelines for proper dosage and monitoring of antidepressant medications.

Background

Major Depressive Disorder (MDD) is a psychological disorder that impairs daily function and decreases quality of life. Numerous studies indicate that women, Caucasians, and middle-aged adults have higher rates of depression.

Several explanations have been offered to account for these discrepancies, including biological predisposition, differences in treatment-seeking behaviors, and provider bias. MDD is treatable in 80-90% of cases, yet the majority of individuals with MDD receive no treatment for their symptoms. Furthermore, demographic differences in antidepressant dosage levels and patient monitoring are not well understood. Previous research often focused on whether different demographic groups received any MDD treatment rather than quality of care.

The Study

This study evaluated pharmaco-therapeutic treatment using the APA clinical practice guidelines for proper antidepressant dosage levels and monitoring, which allowed for identification of disparities and an examination of undertreatment and overtreatment. Three study aims were addressed:

AIM 1: Determine the sociodemographic characteristics of Medicaid enrollees who receive a diagnosis for MDD and those who receive antidepressant medications.

AIM 2: Examine the relationships between gender, race/ethnicity, age, and the likelihood of receiving treatment that adheres to APA clinical practice guidelines for medication dosage levels.

AIM 3: Examine relationships between gender, race/ethnicity, age, and the likelihood of receiving treatment that adheres to APA clinical practice guidelines for patient monitoring.

Study Methods

This study analyzed two and a half years (July 1, 2003 to December 31, 2005) of Florida Medicaid eligibility, fee for service and pharmacy claims data. Subjects were identified using ICD-9-CM diagnostic codes for MDD, and only continuously enrolled individuals with at least one inpatient or two outpatient claims were included in the analysis. Excluded were individuals who at the beginning of the study were either 1) under age 18, 2) living in a nursing home, 3) enrolled in a Medicaid managed care plan, or 4) diagnosed with co-occurring schizophrenia or bipolar disorder. Of the 15,950 enrollees who met study criteria, 14,890 (93.4%) received at least one antidepressant during the study period.

Data were collected by the Centers for Medicare and Medicaid Services (CMS) and provided by the Florida Agency for Health Care Administration (AHCA). A z-test was used to identify significant demographic differences between the
general Florida Medicaid population ($N = 1,042,750$), the MDD-diagnosed population ($N = 15,950$), and the antidepressant-receiving population ($N = 14,890$). Chi-square analyses, analyses of variance, and binary logistic regressions were conducted to determine whether gender, race/ethnicity, and age predicted dosage levels and monitoring when controlling for health status (as measured by the Charlson Index), length of time on medications, and Medicare eligibility. Proper dosing was determined using claims data for Medicaid-reimbursed services. Individuals with average daily anti-depressant dosages below the APA-recommended guidelines were coded as undermedicated, while those whose dosages were above recommended dosages were designated over-medicated. Adequate monitoring was defined using behavior outpatient visits.

Patients with fewer than three visits during the first 90 days after receiving their first antidepressant prescription or with no visits during the subsequent 90 days were considered inadequately monitored.

**Study Findings**

**AIM 1:** Determine the sociodemographic characteristics of Medicaid enrollees who receive a diagnosis for MDD and those who receive antidepressant medications.

Women, Latinos, and adults ages 35 to 74 were overrepresented in the MDD-diagnosed population relative to the general Medicaid population, while men, Caucasians, African Americans, Asian Americans, young and advanced age adults were underrepresented. While most people who received a MDD diagnosis also received pharmacotherapy (93.4%), a disproportionate number of African Americans, Caucasians, and men did not.

**AIM 2:** Examine the relationships between gender, race/ethnicity, age, and the likelihood of receiving treatment that adheres to APA clinical practice guidelines for medication dosage levels.

Most patients (69.3%) received dosages that adhered to APA guidelines, while 17.4% received inappropriate low doses and 13.3% received inappropriate high doses (see Figure 1). Chi square analyses revealed that gender did not influence the dosages received, while race/ethnicity and age did influence the dosages received. African Americans and Latinos were significantly more likely to receive antidepressant dosages below the recommended guidelines, while Caucasians were more likely to receive dosages above the recommended guidelines. African Americans were 81% more likely than Caucasians to receive inappropriate low doses, while they were less than half as likely to receive inappropriate high doses of medication. Moreover, racial/ethnic differences in dosage levels remained significant even when age, health status, and length of time on medication were taken into account.

The effect of age on the likelihood of receiving adherent dosages was significant, even when controlling for health status and length of treatment (see Figure 2). Young adults ages 18 to 34 and adults over 65 were more likely to receive low dosages. Adults ages 75 and over were the most likely to be undermedicated. Adults ages 35-64 were most likely to be overmedicated.

**AIM 3:** Examine relationships between gender, race/ethnicity, age, and the likelihood of receiving treatment that adheres to APA clinical practice guidelines for patient monitoring.

Slightly over half (54.5%) of all enrollees who received antidepressant medication received adequate monitoring. Gender, race/ethnicity, and age are all significant predictors of adequate monitoring, even when health status, Medicare eligibility, and length.
Men were less likely than women to receive adequate monitoring (49.9% vs. 55.9%). With regard to race, Caucasians were least likely to receive adequate monitoring. Among single-eligible Medicaid enrollees, Caucasian and African American patients received less adherent monitoring than Latinos. With regard to age, recipients over 75 years old were significantly less likely to be adequately monitored than recipients 65-74. Recipients ages 65-74 were less likely than recipients under age 65 to be adequately monitored.

Discussion and Policy Implications

Significant racial/ethnic and age disparities were found in the dosage levels received by Florida Medicaid enrollees, and significant racial/ethnic, age, and gender disparities were found in patient monitoring.

Men, Caucasians, African Americans, Asian Americans, young adults, and advanced age adults were underrepresented in the MDD-diagnosed population relative to the general Florida Medicaid population. These findings are consistent with earlier studies indicating men and African Americans are underdiagnosed for depression and less likely to receive appropriate medication. In the present study, Asian Americans were least likely to receive a MDD diagnosis. This finding supports research that highlights a particularly strong stigma against mental illness in certain Asian American populations and a tendency among providers to regard depressed Asian Americans as “problem free.” Further research is needed to determine how these different diagnostic and pharmacology rates are due to provider bias, patient preference, stigma, or other factors.

Latino Medicaid enrollees were vastly overrepresented in the MDD-diagnosed population and were also more likely to receive antidepressants. It is possible that Latino enrollees in Florida saw providers who were well-versed in their cultural and linguistic norms, which underscores the important role cultural and linguistic competence plays in reducing underdiagnosis and undertreatment.

The age distribution of MDD-diagnosed enrollees in our study confirmed previous findings illustrating that depression is most prevalent among middle-age adults. This finding likely reflects the difficulty of recognizing MDD in advanced age patients.

The finding that dosage levels fell rapidly from age 55 onward does not necessarily indicate improper medical care. Clinical practice guidelines recommend reducing dosages to about half the regular dose for elderly and medically frail patients. However, the guidelines do not specify which patients are considered “elderly,” leaving this decision to clinical judgment. Indeed, a limitation of study findings is that it remains unclear how much of the rampant undermedication among older adults reflects their declining health (the Charlson Index scores suggest very little) and how much is unwarranted. Future research should address this limitation by investigating the clinical effects these low dosages may have on older patients.

Young adult enrollees also tended to be undermedicated. One possible explanation for this finding is physician concern about side effects, particularly suicide ideation. There is some evidence of a “spillover effect” on physicians’ prescribing behavior toward young adult patients since the introduction of FDA black box warnings. Even though adults over 25 are not at elevated suicide risk, physicians err on the side of caution and prescribe conservative dosage levels. This caution may explain some of the troubling rates of undermedication among 18-34 year olds in the current study.
Racial disparities were also found in dosage levels, with Caucasians receiving significantly higher dosages than African Americans and Latinos. However, contrary to previous literature, Caucasians did not experience more adherent care than African Americans and Latinos. While Caucasians were less likely to be undermedicated, they were more likely to be overmedicated, and there were no significant racial differences in overall adherence rates. This finding underscores the importance of evaluating care in relation to clinical practice guidelines to examine whether racial disparities might be due in part to the overtreatment of Caucasians.

It is possible that ethnopsycho-pharmacologic differences account for some of the lower dosages among African Americans, as research shows that slow metabolism is more prevalent in African Americans than in Caucasians. However, an examination of patients who received medication for fewer than 31 days suggests that Caucasians are prescribed higher dosages from the start. Such differential treatment is not permitted by APA guidelines and has been condemned as prejudicial and bad medicine by many experts, including the Surgeon General. Further study, including qualitative interviews with providers, is needed to gain insight into their dosing decisions for particular demographic groups.

Moreover, the undermedication of African Americans and Latinos may have important implications for increasing the effectiveness of MDD treatment. African Americans and Latinos have high attrition rates from pharmacotherapy, which may be due to a perception that psychotropic medications are ineffective. One reason patients discontinue pharmacotherapy prematurely is that they do not feel the clinical effects, and this phenomenon may be more pronounced among African Americans and Latinos if they receive overall lower dosages. Additional research is needed to determine the effect of inappropriately low dosages on minority patients’ attitudes toward their medication efficacy and willingness to continue treatment.

Finally, inadequate monitoring appears to be a widespread problem, as nearly half of Medicaid recipients examined did not receive APA-recommended monitoring. After controlling for Medicare eligibility, significant risk factors for inadequate monitoring included male gender, Caucasian race, and advanced age. This is alarming in light of evidence that elderly Caucasian men are the demographic most likely to commit suicide. While it is beyond the scope of this study to establish the connection between lack of monitoring and depression-related suicide, the present findings are troubling and suggest the need for closer monitoring of older Caucasian men. The finding that Caucasians were less likely than Latinos to receive adequate monitoring was unexpected, as previous literature suggests the opposite. It is possible that doctors monitor minorities more closely in an effort to encourage patient compliance since minorities have higher attrition rates and are more likely to be wary of medication.

Conclusion

In sum, it appears that race/ethnicity and age affected the dosage levels received by Florida Medicaid enrollees, while race/ethnicity, age, and gender affected monitoring. Establishing evidence-based medical practices across the spectrum of clinical settings should increase standardized care, but it must be implemented in a manner that recognizes and remedies the prevalent undertreatment of many of the most vulnerable patients. It is imperative for Medicaid providers and administrators to understand the nature of these disparities, including the causes, effect on patients, and means to reduce them in the future.

For More Information

This policy brief is based on research conducted by Roseanna Sommers, Airia Papadopoulos, MPH, and Elizabeth Vaquera, PhD as part of the Louis de la Parte Florida Mental Health Institute Research Experience for Undergraduates (REU) summer program funded by the National Science Foundation. It also utilizes data provided by the Florida Agency for Health Care Administration (AHCA). For further information, contact Roseanna Sommers or Airia Papadopoulos at:

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