



Examining psychotropic medication use among youth in the U.S. by race/ethnicity and psychological impairment



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ARTICLE INFO

Article history:

Received 18 July 2016

Revised 6 December 2016

Accepted 7 December 2016

Available online xxxx

Keywords:

Psychopharmacology

Youth

Racial/ethnic disparities

ABSTRACT

Objective: Clinical practice guidelines underscore the need for careful evaluation of the risk-benefit ratio of psychotropic medications treating mental health disorders among youth. While it is well known that racial/ethnic disparities exist in psychotropic medication use, little is known about whether these differences are driven by over-prescribing among white youth, under-prescribing among minority youth, or both. To build evidence in this area, this study examined racial/ethnic differences in the prescription of psychotropic medications among youth with and without psychological impairment.

Methods: Secondary data on two-year medication use from the 2004–2011 Medical Expenditure Panel Surveys were analyzed. We capitalized on two-year panel data, creating variables that allow for differential sequencing of psychological impairment and medication prescription (e.g., impairment in year 1 or year 2, and a psychotropic medication fill in year 2). Statistical differences were determined using unadjusted rate comparisons and logistic regression models, after adjustment for socio-contextual and health status characteristics.

Results: Compared to Black and Latino youth with psychological impairment, White youth were more likely to be prescribed psychotropic medications when impaired. Among youth never having psychological impairment, White youth were also more likely to be prescribed medications compared to their racial/ethnic minority counterparts.

Conclusions: Differences in rates of medication use among youth with and without impairment suggest poor medication targeting across racial/ethnic groups. These results, combined with recent psychotropic medication risk warnings and concerns over increases in psychotropic medication use among youth, suggest that a continued emphasis on accurate targeting of prescribing patterns is needed across racial/ethnic groups.

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1. Introduction

U.S. data from the 2001–2004 National Comorbidity Survey-Adolescent Supplement (NCS-A) demonstrate that just 14.2% of adolescents meeting DSM-IV criteria for a mental health disorder received treatment with at least one psychotropic medication prescription, suggesting high rates of unmet need among youth with disorders, for which

specific medication treatments exist. Low rates of inappropriate use were also reported: <2.5% of adolescents in the sample were prescribed a psychotropic medication without a 12-month mental health disorder [1]. These data were collected before a period of dramatic increases in youth antipsychotic medication [2,3] and stimulant use [4,5]. Analyses of this kind contend with popular media reports [6,7] that raise concerns about overuse of psychotropic medications in youth.

Subsequent to the time of the NCS-A, notable declines in antidepressant use were identified after an FDA black box warning in the U.S. raised concerns about increased rates of suicidal ideation among youth using antidepressant medications [8,9]. Recent evidence shows increases in the rate of suicide attempts among youth in the years following the FDA warnings, which may be related to significant reductions in the diagnosis and treatment of depression [10]. These

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dramatic changes in the use of psychotropic medications among youth in the past decade show a need for updated research to inform the field's knowledge of appropriate targeting of medication use among youth.

In the U.S., racial/ethnic differences in psychotropic medication use are an important public health issue because it suggests the need to improve access to medications for certain groups, curb overuse among other groups, or both. Evidence from community samples and insurance claims data shows that White youth are significantly more likely to fill psychotropic medication prescriptions than racial/ethnic minority youth. At the same time, the extent of racial/ethnic differences in medication use varies across categories of psychotropic medications. For example, White youth are twice as likely to fill prescriptions for antipsychotics [11,2], approximately two to nine times more likely to fill stimulant prescriptions [4,12], and approximately four times as likely to fill antidepressant prescriptions compared to Black and Latino youth [13].

An important limitation of previous research is the failure to determine if medication use is appropriate given the diagnosis or level of impairment. One exception found that Black, Latino, and Asian adolescents with major depression in the last year were less likely than Whites to receive antidepressants [14]. Another older study of Medicaid claims reported Black-White disparities and Latino-White disparities in access and adherence to antidepressants (for depression) and antipsychotics (for schizophrenia) [15].

The presence of both risks and benefits of psychotropic medication use suggests that researchers should use caution in identifying racial/ethnic differences in psychotropic medication utilization. While a robust body of evidence demonstrates their effectiveness in the treatment of mood, psychotic, anxiety, developmental, and behavioral disorders, psychotropic medications can cause severe side effects in youth [16, 11,17,18,1]. Atypical antipsychotic side effects may include weight gain, hyperglycemia, cardiovascular morbidity, and endocrine abnormalities [19,13,1,20], while SSRIs may be associated with increased suicidal ideation [21]. For youth with a clinical need for psychotropic medications, the benefits often outweigh the risks [22]. For those without a clinical need, however, their use may represent an unnecessary risk to patients and an inefficient use of health system resources.

Disparities studies, in the context of FDA risk warnings, further highlight the complexity of defining “disparity” in psychotropic medication use. For example, Depetris and Cook [23] identified that disparities in youth antidepressant use were considerably diminished after the FDA issued a black box warning of suicidal ideation. In this case, a reduction in disparities after the medication warning reflected increased use by racial/ethnic minorities of a psychotropic medication but also increased relative exposure to risk. Similarly, Dusetzina et al. [24] found that the rates of olanzapine use declined more slowly among Latinos compared to Whites after the FDA issued an advisory of the metabolic risks of atypical antipsychotics. These differing trends in olanzapine use identified a greater risk among Latinos compared to Whites in the presence of lower risk alternative medications.

In this study, we used 2-year panel data to identify youth with psychological impairment in the year prior to and/or concurrent with the period of medication use studied. Recent health services research has demonstrated that level of psychological impairment, as measured by the Columbia Impairment Scale [25], is a valid and useful approach to studying psychotropic use among youth, even when specific diagnostic information is not available in national surveys [5]. We build on this research by examining the match between psychotropic medication use and psychological impairment among non-Latino white, Black, and Latino youth using a recent, nationally representative U.S. community sample. We assessed differences in psychotropic medication fills using three groups: 1) all youth with mental health impairment, allowing us to estimate differences in indicated medication use; 2) all youth that filled a psychotropic medication prescription, allowing us to measure the racial/ethnic variation in indicated and non-indicated use; and

3) all youth, to generate estimates of national differences in psychotropic medication use.

2. Methods

2.1. Data

Data used in this study come from Panels 9–15 (corresponding to years 2004–2011) of the Household Component of the Medical Expenditure Panel Surveys (MEPS) for children and adolescents age 5–17 (referred to as “youth” from here forward). The MEPS is a nationally representative sample of noninstitutionalized U.S. civilians that is administered in both English and Spanish. We assessed rates of any psychotropic medication use for non-Latino White, non-Latino Black, and Latino youth. Institutional Review Board approval was obtained for this study.

2.2. Dependent variables

Psychotropic medication use in these data was defined as a fill of any medication classified as a psychotropic drug according to the Multum classification system [26]. This method of identification of psychotropic medication use requires not only that a prescription be written by a clinician, but also that the youth or a caregiver fills the prescription. However, a limitation remains that this is not a measure of whether the youth actually took the medication. We capitalized on the two-year panel data to generate dependent variables of “non-indicated use” (a variable describing *overuse* where an individual had no mental health impairment in year 1 and year 2 but had medication use in year 2), “indicated use” (an individual had mental health impairment in year 1 or year 2 and medication use in year 2), and “non-use” (a variable describing unmet need, where an individual had mental health impairment in year 2 but no medication use in year 2) (Table 1). In sensitivity analyses, we use a more restrictive definition of “non-indicated use” as *overuse* when an individual had no mental health impairment in year 1 or year 2, no medication use in year 1, and initiation of medication use in year 2. This more restrictive definition recognizes that it is possible that a youth may have no measured health impairment for two years due to successful treatment with medication. We acknowledge that evidence-based guidelines for psychotropic medication use are more specific in defining appropriate use of specific medications for specific disorders, as determined by FDA approval. However, our categorization provides useful information, particularly given the dearth of research on differences in overall psychotropic medication use among those with and without impairment and the absence of more specific diagnostic information in recent nationally representative datasets. Further, we note that such guidelines often recommend psychotherapy as a treatment for pediatric mental disorders alone or in combination with medications. Thus, we measure disparities using the above definitions, with the goal of comparing medication use, as opposed to assessing national quality metrics that require greater specificity of diagnosis and treatment type.

To provide more descriptive information of the types of psychotropic drugs that are typically used by the youth population, we assessed the percentage of whites, Blacks, and Latino youth with any use of antidepressants, antipsychotics, and stimulants (see Table 2). We defined these psychotropic drug categories using Multum classification codes available in the MEPS.

Table 1
Definitions for three dependent variables.

| Variable name | Psychological impairment | Filled medication in year 2 |
|-------------------|--------------------------|-----------------------------|
| Indicated use | Yes (either year 1 or 2) | Yes |
| Non-indicated use | No (years 1 and 2) | Yes |
| Non-use | Yes (year 2) | No |

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