Racial Disparities in Antipsychotic Prescribing among Foster Youth: A Single Institution Study

Lisa Durette *

Posted Date: 8 November 2024

doi: 10.20944/preprints202411.0627.v1

Keywords: Antipsychotics; Foster Care; Psychiatry; Racial Disparity; Pediatric Psychiatry; Polypharmacy

 doi:10.20944/preprints202411.0627.v1

Article

Racial Disparities in Antipsychotic Prescribing among Foster Youth: A Single Institution Study

Lisa Durette [1,2]

[1] Kirk Kerkorian School of Medicine at UNLV, 625 Shadow Ln, Las Vegas, NV 89106; lisa.durette@unlv.edu

[2] Center for Community Solutions

Abstract: Background/Objectives: Youth in foster care are highly vulnerable to psychiatric medication overuse and polypharmacy, particularly concerning the racial disparities affecting antipsychotic prescriptions. This study investigates the racial patterns in antipsychotic prescribing to African American versus European American foster youth at a single mental health institution in Southern Nevada, identifying key disparities in treatment. **Methods**: We conducted a retrospective analysis of 1,507 foster youth patients aged 3-19 years who attended an outpatient behavioral health clinic from 2013 to 2020. Demographic data were collected, and chi-square analyses were applied to evaluate the association between socially defined race and antipsychotic prescriptions. **Results**: Of the total clinic patients, 105 received atypical antipsychotic prescriptions, with African American youth overrepresented in this group compared to the clinic's general foster population ($X2$ (3, $N = 105$) = 1,672.9, $p < .01$). European American and other races were underrepresented.**Conclusions**: The data highlight racial disparities in prescribing practices, with African American foster youth significantly more likely to receive atypical antipsychotic medications. Addressing provider and caregiver biases may mitigate these disparities, emphasizing the need for culturally competent clinical care.

Keywords: Antipsychotics; Foster Care; Psychiatry; Racial Disparity; Pediatric Psychiatry; Polypharmacy

1. Introduction

1.1. Antipsychotic Use

Youth in foster care constitute a vulnerable population that often struggles with intricate mental health challenges. An area that remains inadequately explored in this Las Vegas population is the impact of systemic racism on their therapeutic interventions, specifically concerning the use of atypical antipsychotics. Addressing this critical issue, this paper synthesizes and draws on findings from previous studies. DosReis et al. which noted that African American youth in foster care were twice as likely to be prescribed antipsychotic medications compared to their European American counterparts [1]. Similarly, an analysis by Leslie et al. 2021 found that racially and ethnically marginalized youth in foster care were more likely to receive prescriptions for multiple psychiatric medications [2]. Such disparities suggest a pervasive racial bias within prescribing patterns in child psychiatry, particularly affecting those youth served by the foster care system. Our paper aspires to highlight these systemic issues, stressing the need for culturally and linguistically aware clinical practices to ensure equitable mental health care for all youth in foster care.

Psychotropic medications involve a range of pharmaceuticals, including antidepressants, anti-anxiety medications, stimulants, antipsychotics, and mood stabilizers and prove many uses, such as fluoxetine for major depressive disorder and methylphenidate for ADHD. However, the 'on-label' use of these medications among pediatric patients remains tightly limited by FDA-approved indications, particularly in the case of atypical antipsychotics. This includes medications such as aripiprazole, olanzapine, and risperidone to treat diagnoses such as bipolar I, schizophrenia, and aggression in youth diagnosed with autism spectrum disorder. Usage of antipsychotics in youth has expanded to include a range of other conditions, such as psychosis, treatment-resistant depression, personality disorder, and autism spectrum disorder [3]. Paradoxically, despite limited safety data or

 doi:10.20944/preprints202411.0627.v1

scant evidence supporting heightened efficacy through polypharmacy, antipsychotic prescribing has surged in the foster youth population, alongside concurrent use of different psychotropics [4].

Antipsychotic medications are commonly prescribed for "off-label" uses, even in the absence of FDA approval, with scant longitudinal data supporting the safety or efficacy of their use beyond the acute phase of treatment. The prevailing category of antipsychotics, known as second generation antipsychotics (SGAs), are often selected over first-generation antipsychotics due to perceived safety and efficacy. Youth in the latency stage (ages 6-11) are a population particularly susceptible to adverse effects from these drugs. The negative repercussions of youth being overprescribed antipsychotics encompass a wide spectrum of health challenges, including hyperglycemia and hypertriglyceridemia [5]. This elevates the risk of developing type 2 diabetes. In addition to serious vascular risks associated with hyperglycemia, there is also risk of early-onset weight gain, which can be attributed to insufficient insulin production, alongside insulin resistance. Adolescents approaching the age of puberty may also face repercussions of hormonal dysregulation due to hyperprolactinemia resulting from antipsychotic use [6]. Elevated prolactin levels have inhibitory effects on gonadotropin-releasing hormones in the hypothalamus, risking amenorrhea, gynecomastia, and galactorrhea. Long term side effect profiles of atypical antipsychotic use in pediatrics are still being investigated.

1.2. Foster Youth and Antipsychotics

Antipsychotic use in pediatric patients typically stems from behavioral concerns from guardians, such as aggression, even when clinical diagnostic criteria for specific DSM5 disorders are not met. Among those prescribed antipsychotics, foster youth are a particularly vulnerable demographic for excessive medication use and polypharmacy due to the underlying trauma which led to their entering the foster system as well as increased rates of mental health issues, barriers to consistent health care, inconsistencies in caregivers (including shifts in clinical teams during foster home transitions), and limited monitoring of medications compared to many non-foster counterparts [7]. A comprehensive study conducted by the U.S. Government Accountability Office in 2011 revealed a significant discrepancy: foster youth in five analyzed states were prescribed psychotropic medications at a significantly higher rate than non-foster youth in five states analyzed [8]. This could be as much as double to quadruple times the amount prescribed to non-foster youth.

Alongside higher rates of antipsychotic prescribing among foster youth, this demographic is also susceptible to the issue of [9, 10]. After identifying 30+ days of concurrent antipsychotic use among youth in foster care compared to disabled or low-income youth under Medicaid, 19% of foster care youth and 24% of foster care/adopted youth were taking concomitant antipsychotics for over 180 days, compared to other populations (<15%). The cumulative effect of multiple antipsychotics may result in exacerbated side effects, drug-drug interactions, and long-term health risks for this vulnerable population. Additionally, a report by the Office of Inspector General found that of five states studied, 34% of youth in foster care treated with psychotropic medications were not receiving treatment planning or medication monitoring [11].

There is limited literature studying antipsychotic trends in Nevada youth, and a targeted study may be key to advocating for legislation to universally monitor polypharmacy, similar to what other states have done. Over the past decade, California addressed the overuse of antipsychotic medications in foster care involved youth through numerous legislative actions. The state instituted Treatment Authorization Request (TAR) forms and began requiring preauthorization for psychotropic prescribing to youth under the age of 5 [12]. This later expanded to include all youth prescribed any psychotropic or antipsychotic medications. Finally, The California Guidelines for the Use of Psychotropic Medication with Children in Foster Care outlined the legislation requiring stronger advocacy, court-approved prescribing, and authorization requirements for all antipsychotic prescribing to youth [13].

1.3. Racial Disparities in School System

The issue of racial bias has cast a troubling shadow over the American school system for generations, perpetuating disparities that negatively impact the experiences of youth from

 doi:10.20944/preprints202411.0627.v1

marginalized populations. Toro et al. conducted a comprehensive study illuminating disparities between African American and European American students at a mid-Atlantic high school. The study followed students across three years and exposed those African American students faced more frequent and harsher disciplinary measures compared to European American students [14]. For minor infractions such as cell phone use, dress code violations, and inappropriate language use, 26% of African American students received at least one suspension compared to only 2% of European American students who committed the same transgressions. This stark contrast underscores the pervasiveness of racial bias in the education system. This pattern in treatment between socially defined races is also exhibited when examining antipsychotic prescribing in foster youth.

1.4. Foster Youth, Socially Defined Race, and Antipsychotics

Among youth enrolled in Medicaid, a noteworthy disparity emerged in the prescription rates of psychotropic medications, favoring European American youth compared to marginalized populations. This was found in a comprehensive study including a cohort of over 5.8 million Medicaid-enrolled youth from 2005-2009 [15]. Subsequent analyses corroborated these findings, attributing them to the higher frequency of psychiatric care received by European American children, in general. The differences in prescription rates can be attributed to a myriad of factors. The most prominent may be the disconcerting inequality in healthcare accessibility, often placing families from marginalized populations at a disadvantage and creating barriers to quality and consistent mental health care. Additionally, deeply entrenched cultural attitudes towards mental health treatment within various communities may influence reluctance to seek treatment. This racial trend varies among youth in foster care, all of whom typically undergo evaluation by healthcare professionals as a standardized procedure during their admission to the care process.

By analyzing the experiences of foster youth of marginalized populations and examining use of atypical antipsychotics, racial disparities come to the forefront when examining antipsychotic prescribing patterns. It eliminates convoluting factors such as access to care and cultural attitudes towards psychiatric care. This study will illuminate the racial trends in antipsychotic prescribing in foster youth at a single institution.

2. Methods

This study involved a comprehensive analysis of data derived from 1507 youth patients who were treated in an outpatient behavioral health program directly connected to a county foster care agency spanning October 2012 through June 2022. This dataset was collected, anonymized, and then analyzed using SPSS 28.

Youth are referred into this clinical treatment program directly through the county foster care agency and represent approximately 10% of the total youth in county foster care at any given time. Youth are referred to this program by their county agency foster care case worker specifically due to concerns of problematic behaviors placing the youth at risk for placement disruption or acute psychiatric hospitalization. The cohort of foster youth in treatment at this clinic reflect youth in long-term congregate care in both the county's youth shelter and group foster home placements, as well as youth in kinship foster care placements. All youth treated in this clinic have been identified by foster care case workers as having severe mental or behavioral health problems.

Demographic variables were collected for each patient, including socially defined race, ethnicity, age, and sex assigned at birth. Medical information included medication names, dosages, prescription dates, and provider names. Excel was used to aggregate and sort these data. Each variable was coded and sorted, primarily by medication category. For this sub-analysis, quantitative data on socially defined race and ethnicity were prioritized, then age to isolate latency age youth, and finally those prescribed atypical antipsychotics.

Racial/Ethnic categories included African American non-Hispanic, European American non-Hispanic, Hispanic/Latino, and other. Others included those of two or more socially defined races, Asian or Pacific Islander, or Native American. To contextualize the racial distribution of youth in our

 doi:10.20944/preprints202411.0627.v1

study, we used a national database to identify specific demographic profiles of the foster youth and non-foster youth in the US and Nevada [16].

Chi-square goodness-of-fit was employed to explore if ethnicity was correlated with atypical antipsychotic medication prescribing among foster youth. Using a contingency table, we calculated the Chi-square test statistic based on squared differences between observed and expected values. Post-hoc analysis examined standardized residuals greater than 1.96 to determine which observed values statistically differed from expected values.

3. Analysis

3.1. Demographic Comparison of NV Youth to NV Foster Youth

A Chi-Square goodness of fit test reveals that the Nevada foster population is significantly different from the overall breakdown of race and ethnicity in all of Nevada, X^2 (3, N = 7,927) = 9,348.7, $p < .01$. Analysis of standardized residuals suggests that European American and Hispanic/Latino youth are underrepresented in the Nevada foster care population while African American youth are overrepresented as would be expected from the surrounding population. The clinic's foster treatment population also significantly differs from Nevada's race and ethnicity breakdown of youth, X^2 (3, N = 1,507) = 1,672.9, $p < .01$. Post hoc analysis suggests that European American, Hispanic/Latino, and other socially defined races are underrepresented, while African Americans are overrepresented.

3.2. Demographic Comparison of NV and NV Foster Youth to Clinic Foster Youth

The clinic's foster treatment population also significantly differs from Nevada's race and ethnicity breakdown of youth, X^2 (3, N = 1,507) = 1,672.9, $p < .01$. Post hoc analysis suggests that European American, Hispanic/Latino, and other socially defined races are underrepresented, while African Americans are overrepresented.

The clinic's foster population is also significantly different from Nevada's foster youth, X^2 (3, N = 1,507) = 72.4, $p < .01$ European American youth are underrepresented, while African American and other race youth are overrepresented.

3.3. Clinic Foster Youth Prescribed Psychotropics

Of the 1,507 total clinic patients, 302 received a prescription for at least 1 prescribed medication. The race and ethnicity of those receiving prescriptions is significantly different from what the clinic's foster care population would expect, X^2 (3, N = 302) = 38.4, $p < .01$ African American patients were more likely to receive prescriptions, while Hispanic/Latino and other were less likely. (See Table 1)

3.4. Clinic Foster Youth Prescribed Antipsychotics

Furthermore, 105 patients in the analysis received an atypical antipsychotic prescription. The socially defined race and ethnicity of those patients are significantly different from the clinic's patient population, X^2 (3, N = 105) = 1,672.9, $p < .01$. Antipsychotic prescriptions were more likely to be prescribed to African American patients than expected, while European American and other races are only slightly underrepresented. (See Table 1)

3.5. Latency Age Population

4. Discussion

Data from this sub-analysis supports current literature that African American youth in foster care are more likely to be prescribed atypical antipsychotic medications than European American youth [1, 2]. Overall, 105 youth in this clinic were prescribed antipsychotic medications, 35 of whom fell between the latency age range of 6-11. Of this latency age population, 57 constituted non-Hispanic European American, 100 non-Hispanic African American, 52 Hispanic/Latino, and 4 other non-Hispanic (Asian Pacific Islander, and Native American). Of these, there was a statistically significant difference between the number of African American youth prescribed antipsychotics compared to European American counterparts. Several factors may contribute to the differences in antipsychotic

 doi:10.20944/preprints202411.0627.v1

prescribing between patient populations. Like the data presented earlier, that school disciplinary actions were inconsistently applied across socially defined races for the same behaviors, foster care case workers may have discrepant interpretations of the same behaviors in European American versus African American youth. For example, 'aggression', a frequent chief complaint of clinic visits, may be over-attributed to African American youth v/s their peers, which may influence prescribing patterns. Guardians and caregivers may demand medication for youth to manage behavior in lieu of engaging in psychosocial interventions. In addition, marginalized youth may be more likely to be placed in congregate care settings in which the impact of systemic racism is multiplied because of the number of staff involved in their care compared to that of a family placement youth.

Differences in healthcare treatment for youth of marginalized populations is also influenced by the specialty of the provider, which found significant racial/ethnic differences in medication utilization for those seen by a primary care physician (PCP) versus psychiatrist [17]. For instance, Hispanic/Latino youth seen by a PCP for major depressive disorder were less likely to receive pharmacotherapy. Racial disparities were significantly more prevalent in youth treated by a PCP, and this variation was reduced in the population seen by psychiatrists.

Interestingly, the clinic's prescribing physicians represent wide racial diversity. Patients treated in this clinic are cared for by child & adolescent psychiatry fellows and attending physicians affiliated with the local medical school. Physicians treating these youth include both males and females, both English and Spanish speaking physicians, and represent African, east Indian, European American, and Asian/Pacific Islander. In the Institute of Medicine's book *Unequal Treatment*, male and female physicians are demonstrated through various studies as exhibiting different biases towards specific racial groups; however, the patterns of racial biases described in the literature do not seem to be reflected in this clinic's treatment patterns [18].

The patient population included in this analysis is from a specialty clinic practicing with a focus on foster care involved youth and attention to judicious use of prescribing psychotropic medication to mitigate polypharmacy [19]. Youth included in this analysis came to the treatment setting both treatment naïve and already prescribed medications; the treatment team was then tasked to either continue, taper or discontinue medications which had already been prescribed. This analysis represents a subset of foster youth referred to specialty care due to foster care case workers' referral based on perceived psychiatric instability – many of whom had no prior individual or family systems therapy or other psychosocial treatment modalities, and all of whom shared a history of trauma. This analysis does not address youth in southern Nevada NOT treated in this clinical setting. Considering the outcomes of this data from a specialized clinic and small subset of foster youth population, the authors believe it is highly likely disproportional prescribing of antipsychotics amongst socially defined races is a significant problem in our community. It is imperative that the state take appropriate measures to lessen the racial disparity present in foster care health and dangers of polypharmacy on health outcomes. Since the publication of California's revised guidelines, their state has seen a dramatic drop of 58% in antipsychotic prescribing among the foster youth demographic, identified in a 10-year analysis from 2011-2020 [12]. For those in the latency age stage, European American, African American, Hispanic/Latino, Native American, and Asian/Pacific Islanders saw decreases between 38% to 59%. Adoption of similar legislation locally, akin to California's guidelines may promote reduction in the use of these medications to foster youth.

Addressing inherent bias within psychiatric care for foster children is of paramount importance. Providers, as well as caretakers and those representing this vulnerable population, play a crucial role in ensuring equitable and effective treatment. Bias, whether conscious or unconscious, can lead to the disparate treatment of these individuals, particularly when it comes to prescribing atypical antipsychotics. These disparities have profound consequences for the mental and emotional well-being of youth and the future state of health. Polypharmacy can increase negative health outcomes in children [20]. The racial disparities in the prescribing of atypical antipsychotics among foster youth in this specialized clinical environment underscores a need for physicians and the broader healthcare system to practice culturally and linguistically aware medicine. The vast majority (90%) of southern Nevada foster care involved youth receive their medical care in non-specialized settings, such as

 doi:10.20944/preprints202411.0627.v1

primary care, general psychiatry, advanced practice nursing clinics and community clinical settings [19].

It is imperative that all medical professionals engage in ongoing education and training to enhance cultural competence and promote unbiased decision making in the treatment of foster youth of marginalized populations. In addition, the same cultural and linguistic competency training needs to extend to foster care system case workers who represent the youth in their care, as well as any other caregivers or guardians representing the best interest of the youth in the foster care system. Thorough monitoring and assessment protocols should be established to ensure medications are safely prescribed based on a thorough diagnostic process and individualized need, rather than perpetuating systemic inequities. Recognizing and mitigating bias within the system is a fundamental step towards providing quality care, regardless of an individual's racial or ethnic background, fostering a more inclusive and equitable healthcare environment.

Author Contributions: Conceptualization, Chea, Durette; Methodology, Chea; Software, Rudig; Validation, Chea, Durette, and Rudig; Formal Analysis, Rudig; Investigation, Chea, Durette; Resources, Chea, Durette, Rudig; Data Curation, Chea, Durette, Rudig; Writing – Original Draft Preparation, Chea; Writing – Review & Editing, Chea, Durette, and Rudig; Visualization, Rudig; Supervision, Durette; Project Administration, Durette; Funding Acquisition, Chea.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Patient consent was waived due to the retrospective nature of the study and the use of anonymized data.

Data Availability Statement: Data supporting the reported results can be requested from the corresponding author, subject to institutional data-sharing policies.

Acknowledgments: The authors sincerely thank Dr. Andrea Deyrup, M.D, Ph.D., for her insights, edits and contributions to the language selected in this paper. Dr. Deyrup's expertise in racial bias in medicine is instrumental in growing our understanding of the topic. .

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. DosReis, S., Ross, M.E., Zito, J.M., Safer, D.J. (2019). Racial Disparity in Antipsychotic Prescription Patterns for Youths in Foster Care. Pediatrics, 143(4), e20183291
2. Leslie, L.K., Raghavan, R., Zhang, J., Aarons, G.A. (2021). Rates of Psychotropic Medication Use Over Time Among Youth in Child Welfare/Child Protective Services. Journal of the American Academy of Child & Adolescent Psychiatry, 60(1), 132–141.)
3. Bushnell, G. A., Crystal, S., & Olfson, M. (2021). Trends in Antipsychotic Medication Use in Young Privately Insured Youth. *Journal of the American Academy of Child and Adolescent Psychiatry*, *60*(7), 877–886. https://doi.org/10.1016/j.jaac.2020.09.023
4. CMS. (2015). Atypical Antipsychotic Medications: Use in Pediatric Patients. https://www.guideline.gov
5. Tosur, M., Viau-Colindres, J., Astudillo, M., Redondo, M. J., & Lyons, S. K. (2020). Medication-induced hyperglycemia: Pediatric perspective. In *BMJ Open Diabetes Research and Care* (Vol. 8, Issue 1). BMJ Publishing Group. https://doi.org/10.1136/bmjdrc-2019-000801
6. Rosenbloom, A. L. (2010). Hyperprolactinemia with Antipsychotic Drugs in Youth and Adolescents. International Journal of Pediatric Endocrinology, 2010, 1–6. https://doi.org/10.1155/2010/159402
7. Harrison, J. N., Cluxton-Keller, F., & Gross, D. (2012). Antipsychotic Medication Prescribing Trends in Youth and Adolescents. Journal of Pediatric Health Care, 26(2), 139–145. https://doi.org/10.1016/j.pedhc.2011.10.009
8. FOSTER YOUTH HHS Could Provide Additional Guidance to States Regarding Psychotropic Medications. United States Government Accountability Office. (2014).
9. DosReis, S., Yoon, Y., Rubin, D. M., Riddle, M. A., Noll, E., & Rothbard, A. (2011). Antipsychotic treatment among youth in foster care. Pediatrics, 128(6). https://doi.org/10.1542/peds.2010-2970
10. Davis, D. W., Lohr, W. D., Feygin, Y., Creel, L., Jawad, K., Jones, V. F., Williams, P. G., Le, J., Trace, M., & Pasquenza, N. (2021). High-level psychotropic polypharmacy: a retrospective comparison of youth in foster care to their peers on Medicaid. *BMC Psychiatry*, *21*(1). https://doi.org/10.1186/s12888-021-03309-9

 doi:10.20944/preprints202411.0627.v1

11. Levinson, D. R. (2018). Office of Inspector General Treatment Planning and Medication Monitoring Were Lacking for Youth in Foster Care Receiving Psychotropic Medication.
12. Nunes, J. C., Naccarato, T., & Stafford, R. S. (2022). Antipsychotics in the California Foster Care System: A 10-Year Analysis. *Journal of Child and Adolescent Psychopharmacology*, *32*(7), 400–407. https://doi.org/10.1089/cap.2022.0040
13. California Guidelines for the Use of Psychotropic Medication with Youth and Youth in Foster Care. (2018).
14. Toro, J. D. W., & Wang, M.-T. (2022). Supplemental Material for The Roles of Suspensions for Minor Infractions and School Climate in Predicting Academic Performance Among Adolescents. *American Psychologist*. https://doi.org/10.1037/amp0000854
15. Cataife, G., and Weinberg, D. A. (2015). Racial and ethnic differences in antipsychotic medication use among youth enrolled in Medicaid. *Psychiatric Services*, *66*(9), 946–951. https://doi.org/10.1176/appi.ps.201400045
16. The Annie E. Casey Foundation. (2021). Youth in foster care by race and Hispanic origin: Kids count data center. https://datacenter.aecf.org/ [Accessed July 1, 2023].
17. Yucel, A., Essien, E. J., Sanyal, S., Mgbere, O., Aparasu, R. R., Bhatara, V. S., Alonzo, J. P., & Chen, H. (2018). Racial/ethnic differences in the treatment of adolescent major depressive disorders (MDD) across healthcare providers participating in the Medicaid program. *Journal of Affective Disorders*, *235*, 155–161. https://doi.org/10.1016/j.jad.2018.04.045
18. Institute of Medicine. (2003). Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. The National Academies Press.
19. Cosme, C., Rudig, N. O., Borsellino, P., Chea, D., Krider, R., Durette, L. (2024). Prescribed psychotropic medication patterns among treated Foster Care enrollees: a single institution study. *Front. Psychiatry*. 14:1278233. doi: 10.3389/fpsyt.2023.1278233
20. Luby, J. L. (2016). Suicidal Cognitions and Behaviors in Early Childhood: Why Does It Arise and What Does It Mean? *Journal of the American Academy of Child & Adolescent Psychiatry*, *55*(10), S81. https://doi.org/10.1016/j.jaac.2016.09.481