

Disparities in Psychiatric Diagnosis and Treatment for Youth with Systemic Lupus Erythematosus: Analysis of a National US Medicaid Sample

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ABSTRACT. Objective. To estimate the national prevalence and racial/ethnic differences in psychiatric diagnoses and pharmacologic treatment in a US Medicaid beneficiary population of youth with systemic lupus erythematosus (SLE).

Methods. We included youth aged 10 to 18 years with a diagnosis of SLE (defined as ≥ 3 outpatient visit claims with an International Classification of Diseases, 9th ed. code of 710.0, each > 30 days apart) in the US Medicaid Analytic Extract database from 2006 and 2007. This database contains all inpatient and outpatient Medicaid claims from 49 states and the District of Columbia. We calculated the prevalence of psychiatric diagnoses and treatment, and used logistic regression to compare depression and anxiety diagnoses, antidepressant, and anxiolytic use among racial/ethnic groups.

Results. Of 970 youth with SLE, 15% were white, 42% were African American, 27% were Latino, and 16% were of other races/ethnicities. Diagnoses of depression were present for 19%, anxiety for 7%, acute stress/adjustment for 6%, and other psychiatric disorders for 18%. Twenty percent were prescribed antidepressants, 7% were prescribed anxiolytics, 6% were prescribed antipsychotics, and 5% were prescribed stimulants. In adjusted analyses, African Americans were less likely than whites to be diagnosed with depression (OR 0.56, 95% CI 0.34–0.90) or anxiety (OR 0.49, 95% CI 0.25–0.98), or to be prescribed anxiolytics (OR 0.23, 95% CI 0.11–0.48).

Conclusion. We present population-level estimates showing high psychiatric morbidity in youth with SLE, but less prevalent diagnosis and treatment in African Americans. Mental health interventions should address potential racial/ethnic disparities in care. (First Release May 1 2016; J Rheumatol 2016;43:1427–33; doi:10.3899/jrheum.150967)

Key Indexing Terms:

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Systemic lupus erythematosus (SLE) is a chronic autoimmune condition affecting multiple organs, causing significant morbidity associated with the central nervous system (CNS) and kidney disease. Youth represent about 20% of

people with SLE, and they may be at greater risk for CNS disease than adults¹. SLE disproportionately affects African American, Latino, and Asian youth, and these groups often have more severe disease manifestations compared with whites¹, including psychiatric syndromes related to CNS disease. Studies in adults with SLE have demonstrated racial/ethnic disparities in healthcare outcomes, with higher cardiovascular event rates and mortality in African Americans with endstage lupus nephritis compared with whites². While there are known racial/ethnic disparities in endstage renal disease and mortality for children with SLE^{3,4}, little is known about disparities in psychiatric outcomes.

Depression, anxiety, and other psychiatric disorders can be caused by CNS disease attributable to SLE⁵, but also by the psychological distress of coping with chronic disease, or other psychosocial and genetic factors. Youth with SLE are at particular risk for depression and anxiety because pediatric-onset SLE is most common in adolescent females, a group at peak risk for mood and anxiety disorders⁶. Regardless of cause, depression and anxiety in youth with SLE need appropriate treatment because these disorders are associated with poor medication adherence, quality of life,

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and work functioning, and increased healthcare use in adults with SLE^{7,8}. In the general adolescent population, traditionally underserved racial/ethnic minority groups are less likely to receive psychiatric treatment than whites⁹. Our previous study found that minority youth with SLE have higher rates of depression symptoms and suicidal ideation than white youth with SLE¹⁰. The proportion of participants in our study who received mental health treatment was low, but the small sample prohibited comparisons by race/ethnicity. To our knowledge, no published study to date has compared rates of psychiatric diagnoses and treatment between racial/ethnic groups of youth with SLE.

Estimating these potential disparities is the first step to improving access and reducing disparities in psychiatric care. In this cross-sectional study of US Medicaid-enrolled youth with SLE, we sought to estimate psychiatric morbidity and differences in this morbidity by race/ethnicity. Medicaid is the largest public health program in the United States, providing health insurance to more than 60 million low-income individuals across the nation¹¹. Within this vulnerable population, we aimed to characterize health disparities by comparing the following between racial/ethnic groups: (1) the prevalence of depression and anxiety, and (2) the prevalence of psychotropic medication use.

MATERIALS AND METHODS

The Institutional Review Board at the Children's Hospital of Philadelphia exempted our study because we used deidentified data.

Data source and sample. Data were extracted from the Centers for Medicare and Medicaid Services (CMS) Medicaid Analytic Extract data files from January 1, 2006, to December 31, 2007. These files contain information on all health services billed through Medicaid insurance for enrollees from 49 states and the District of Columbia. Maine was excluded because it did not submit Medicaid claims to CMS in 2005–07. These claims data include service date, type, location, provider, and associated International Classification of Diseases, 9 ed. (ICD-9) code, as well as patient demographic information such as date of birth, sex, self-identified race/ethnicity, and postal code. The sample included all individuals between the ages of 10 and 18 years with a diagnosis of SLE, defined as having ≥ 3 outpatient visit claims with a recorded ICD-9 primary diagnosis code for SLE of 710.0, each recorded at least 30 days apart¹². To be in the sample, individuals had to be continuously enrolled in Medicaid for all 24 months. This study period length was chosen to maximize identification of both diagnosis and treatment of psychiatric conditions because treatment may occur several months after an initial diagnosis.

Exposure and outcome variables. The exposure of interest was race/ethnicity categorized into the following mutually exclusive groups: African American, Latino, other (included Asian, Pacific Islander, Native American, and other), and white. Self-reported race/ethnicity data was collected from a single question on the enrollment questionnaire completed as part of the Medicaid eligibility paperwork. Subjects without an identified racial/ethnic category were dropped from our analysis. The outcomes of interest were (1) prevalence of psychiatric diagnoses, and (2) prevalence of prescribed psychotropic medications. Psychiatric diagnoses were identified by a primary or secondary ICD-9 diagnosis code for a psychiatric disorder on inpatient and outpatient claims and categorized as follows:

1. Depression: 296.2, 296.3, 296.82, 298, 300.4, 309.0, 309.1, 311, and 313.1.

2. Anxiety: 300.00–300.02, 300.09, 300.2, 300.3, 309.21, 309.24, 309.81, and 313.0.

3. Adjustment/acute stress: 308, 309.21, 309.22, 309.23, 309.28, 309.29, 309.4, 309.82, 309.83, 309.89, and 309.9.

4. Other psychiatric disorders (including schizophrenic, bipolar, psychotic, delusional, dissociative, attention deficit, conduct, tic, autistic, learning, substance-related, and eating disorders): 291, 292, 303–305, 295.0–295.9, 296.0, 296.1, 296.4, 296.5, 296.6, 296.7, 296.80, 296.81, 296.89, 297, 298.1, 298.2, 298.3, 298.4, 298.8, 298.9, 299.0, 299.1, 299.8, 299.9, 300.1, 300.5–300.8, 301, 302, 306, 307.1–307.5, 307.8, 309.3, 312, 313.2, 313.3, 313.81–313.83, 313.89, 313.9, 314.0–314.2, 314.8, 314.9, and 315.

We used a single diagnosis code to maximally identify psychiatric diagnoses because of the low sensitivity of these codes in administrative data, which is likely because of undercoding¹³. We included primary and secondary diagnoses to identify frequently comorbid medical and psychiatric diagnoses, as well as comorbid depression and anxiety diagnoses⁶. Using National Drug Codes, prescribed psychiatric medications were identified by a pharmacy claim for the following medication categories: (1) antidepressants (selective serotonin reuptake inhibitors, serotonin and norepinephrine reuptake inhibitors, tricyclics, monoamine oxidase inhibitors, and miscellaneous), (2) anxiolytics (benzodiazepines and miscellaneous), (3) antipsychotics (typical, atypical, and miscellaneous), and (4) stimulants.

Covariates. We obtained the following covariate data on all subjects: age, sex, location, presence of SLE nephritis, presence of seizures/stroke, glucocorticoid use, and the number of outpatient medical visit claims. Age was determined at the time of first SLE claim during the study period. Location (urban vs rural) was determined using the 2006 Rural Urban Commuting Area (RUCA) codes to categorize subject postal codes as urban versus rural. RUCA codes are a census-based classification scheme that can be used to characterize urban and rural status by census tract and postal code (depts.washington.edu/uwruca/ruca-download.php). The presence of SLE nephritis at any point during the study period (yes vs no) was identified using an algorithm for ICD-9 diagnosis and procedure codes previously validated for identifying SLE nephritis in administrative claims data¹². To examine the effect of nonpsychiatric CNS disease on the psychiatric outcomes, we included the presence of seizures/stroke as a marker of neurologic CNS disease because these have been validated for administrative data in the pediatric population^{14,15}. The presence of seizures/stroke at any point during the study period (yes vs no) was identified by at least 1 ICD-9 code in any position for seizures or cerebrovascular disease. Glucocorticoid use (yes vs no) during the study period included any pharmacy claim for the following medications: prednisone, methylprednisolone, dexamethasone, hydrocortisone, prednisolone, and cortisone. We included a covariate for outpatient medical visits as a potential marker of SLE disease activity, which has been associated with psychiatric conditions such as depression in SLE^{16,17,18}, and/or opportunity for psychiatric symptom detection. The number of outpatient medical visit claims during the study period was determined by the number of claims without a psychiatric diagnosis code (primary or secondary) for the following visit types: physician, nurse practitioner, outpatient hospital, or other clinic visits.

Statistical analysis. We performed descriptive analyses to summarize the characteristics of our sample, using 1-way ANOVA and chi-square tests to assess differences by racial/ethnic group for continuous and categorical variables, respectively. Estimates of psychiatric disorder prevalence and psychotropic medication use were calculated using all eligible subjects as the denominator. Unadjusted and adjusted logistic regression analyses were performed to test for differences by racial/ethnic group in prevalence of each of the following: depression diagnoses, anxiety diagnoses, antidepressant use, and anxiolytic use. Covariates for adjusted analyses included age, sex, urban versus rural location, presence of SLE nephritis, presence of seizures/stroke, glucocorticoid use, and the number of outpatient medical visits. Coefficients are reported as OR with 95% CI and 2-sided p values. A 2-tailed p value of < 0.05 was considered statistically significant. We performed data preparation and analyses using SAS statistical software, version 9.3.

RESULTS

We identified 970 youth with SLE in the sample, of which 83% were female, 36% had nephritis, and 16% had neurologic CNS disease. The mean age was 14.7 years (SD 2.0). The cohort was composed of 15% whites, 42% African Americans, 27% Latinos, and 16% other race/ethnicity. There were statistically significant differences between racial/ethnic groups in age, location, the presence of nephritis, and glucocorticoid use (Table 1). Nineteen percent were diagnosed with depression, 7% with anxiety, 6% with acute stress, and 18% with other psychiatric diagnoses. Twenty percent had a claim for antidepressants, 7% for anxiolytics, 6% for antipsychotics, and 5% for stimulants (Table 2). Of the 236 subjects with a psychiatric diagnosis, 145 (61%) had a claim for at least 1 psychotropic medication. Of the 734 subjects without a psychiatric diagnosis, 125 (17%) had a claim for at least 1 psychotropic medication.

In unadjusted analysis, African American youth with SLE were significantly less likely to be diagnosed with depression (OR 0.49, 95% CI 0.31–0.78) or anxiety (OR 0.42, 95% CI 0.21–0.83) than whites. African Americans were also less likely than whites to have claims for antidepressants (OR 0.58, 95% CI 0.37–0.92) or anxiolytics (OR 0.27, 95% CI 0.13–0.48). There were no statistically significant differences between whites and the other racial/ethnic groups in the

diagnosis of depression or antidepressant claims. However, despite similar prevalence to whites for anxiety diagnosis, Latinos (OR 0.44, 95% CI 0.23–0.85) and those of other race/ethnicity (OR 0.44, 95% CI 0.20–0.95) were significantly less likely to have claims for anxiolytics.

In adjusted analysis, African Americans were less likely than whites to be diagnosed with depression (OR 0.56, 95% CI 0.34–0.90; Table 3) or anxiety (OR 0.49, 95% CI 0.25–0.98), and were significantly less likely to have claims for anxiolytics (OR 0.23, 95% CI 0.11–0.48). There were no statistically significant differences between whites and the other racial/ethnic groups in adjusted analyses for depression and anxiety diagnoses or treatment. Older age was significantly associated with depression diagnosis (OR 1.16, 95% CI 1.06–1.27), antidepressant use (OR 1.18, 95% CI 1.08–1.30), and anxiolytic use (OR 1.21, 95% CI 1.04–1.41). The presence of SLE nephritis had significant negative associations with depression diagnosis (OR 0.60, 95% CI 0.41–0.89), anxiety diagnosis (OR 0.56, 95% CI 0.31–1.00), and antidepressant use (OR 0.62, 95% CI 0.42–0.91). The presence of neurologic CNS disease was significantly associated with antidepressant use (OR 2.08, 95% CI 1.37–3.17) and anxiolytic use (OR 5.67, 95% CI 3.25–9.90). Increased number of outpatient medical visits was significantly associated with depression diagnosis (OR 1.02,

Table 1. Demographic characteristics of adolescents with SLE. Values are n (%) unless otherwise specified.

Characteristics	Full Cohort, n = 970	White, n = 141 (15)	African American, n = 410 (42)	Latino, n = 265 (27)	Other, n = 154 (16)	p
Age, yrs, mean (SD)	14.7 (2.0)	15.0 (1.8)	14.8 (2.0)	14.4 (2.0)	14.3 (2.0)	< 0.01
Female	805 (83)	120 (85)	337 (82)	220 (83)	128 (83)	0.89
Location						< 0.01
Urban	822 (85)	108 (77)	346 (84)	244 (92)	124 (81)	
Rural	148 (15)	33 (23)	64 (16)	21 (8)	30 (19)	
SLE nephritis	345 (36)	34 (24)	149 (36)	93 (35)	69 (45)	< 0.01
Seizures/stroke	155 (16)	24 (17)	70 (17)	22 (14)	22 (14)	0.77
Glucocorticoid use	821 (85)	107 (76)	361 (88)	225 (85)	128 (83)	< 0.01
Outpatient visits, median (IQR)	15 (9–23)	14 (10–25)	15 (8–24)	15 (8–23)	16 (10–23)	0.62

SLE: systemic lupus erythematosus; IQR: interquartile range.

Table 2. Psychiatric diagnoses and treatment for adolescents with systemic lupus erythematosus. Values are n (%).

Variables	Full Cohort, n = 970	White, n = 141	African American, n = 410	Latino, n = 265	Other, n = 154
Psychiatric diagnosis					
Depression diagnosis	181 (19)	36 (26)	59 (14)	58 (22)	28 (18)
Anxiety	72 (7)	16 (11)	21 (5)	24 (9)	11 (7)
Acute stress/adjustment	60 (6)	9 (6)	28 (7)	19 (7)	4 (3)
Other psychiatric disorder	175 (18)	35 (25)	76 (19)	41 (15)	23 (15)
Psychotropic medication use					
Antidepressants	198 (20)	35 (25)	66 (16)	60 (23)	37 (24)
Anxiolytics	68 (7)	21 (15)	17 (4)	19 (7)	11 (7)
Antipsychotics	61 (6)	9 (6)	25 (6)	13 (5)	14 (9)
Stimulants	45 (5)	15 (11)	17 (4)	6 (2)	7 (5)

Table 3. Regression analyses of psychiatric diagnosis and treatment by race/ethnicity. Shown are estimates from the unadjusted and adjusted regression analyses for race/ethnicity on the outcomes of interest among the entire sample. Covariates for all adjusted analyses included age, sex, location, presence of SLE nephritis, presence of seizures/stroke, glucocorticoid use, and number of outpatient medical visits.

Variables	Depression	Anxiety Unadjusted OR (95% CI)	Antidepressants	Anxiolytics
Race/ethnicity				
White	—	—	—	—
African American	0.49 (0.31–0.78)	0.42 (0.21–0.83)	0.58 (0.37–0.92)	0.27 (0.13–0.48)
Latino	0.82 (0.51–1.32)	0.78 (0.40–1.52)	0.89 (0.55–1.43)	0.44 (0.23–0.85)
Other	0.65 (0.37–1.13)	0.60 (0.27–1.34)	0.96 (0.56–1.63)	0.44 (0.20–0.95)
Adjusted OR (95% CI)				
Race/ethnicity				
White	—	—	—	—
African American	0.56 (0.34–0.90)	0.49 (0.25–0.98)	0.68 (0.41–1.12)	0.23 (0.11–0.48)
Latino	0.95 (0.57–1.56)	0.95 (0.47–1.90)	1.11 (0.65–1.87)	0.51 (0.25–1.06)
Other	0.80 (0.45–1.44)	0.71 (0.31–1.62)	1.29 (0.72–2.31)	0.49 (0.21–1.11)
Age, yrs	1.16 (1.06–1.27)	1.08 (0.95–1.24)	1.18 (1.08–1.30)	1.21 (1.04–1.41)
Female	1.13 (0.71–1.79)	1.61 (0.75–3.45)	1.29 (0.79–2.11)	1.51 (0.68–3.36)
Rural location	0.82 (0.50–1.34)	1.66 (0.90–3.05)	1.06 (0.66–1.70)	1.86 (0.99–3.50)
SLE nephritis	0.60 (0.41–0.89)	0.56 (0.31–1.00)	0.62 (0.42–0.91)	0.91 (0.51–1.62)
Seizures/stroke	1.24 (0.79–1.94)	1.27 (0.67–2.41)	2.08 (1.37–3.17)	5.67 (3.25–9.90)
Glucocorticoid use	0.71 (0.46–1.10)	0.85 (0.44–1.64)	0.69 (0.44–1.09)	1.21 (0.54–2.73)
Outpatient visits	1.02 (1.01–1.03)	1.01 (1.01–1.02)	1.04 (1.03–1.05)	1.01 (1.00–1.02)

Estimates with significant p values < 0.05 are shown in bold face. The reference group is denoted by —. SLE: systemic lupus erythematosus.

95% CI 1.01–1.03), anxiety diagnosis (OR 1.01, 95% CI 1.01–1.02), antidepressant use (OR 1.04, 95% CI 1.03–1.05), and anxiolytic use (OR 1.01, 95% CI 1.00–1.02; Table 3).

DISCUSSION

Our study represents the largest to date, to our knowledge, to examine the prevalence of psychiatric disorders and associated racial/ethnic disparities in a national sample of Medicaid-enrolled youth with SLE, a vulnerable population representing about 50% of youth with SLE in the United States³. The US Department of Health and Human Services Healthy People 2020 initiative recognizes mental health as a high priority health issue that must be addressed to achieve improved overall health¹⁹. This initiative also prioritizes the achievement of health equity through elimination of health disparities²⁰. Psychiatric comorbidity and health disparities have the potential for additive negative effect on clinical and psychosocial outcomes for youth with SLE, particularly as they transition to adult care. Our results emphasize the need to heighten awareness of these issues for this patient population.

Our findings indicate high psychiatric morbidity in youth with SLE. Although smaller studies have yielded conflicting results regarding prevalence of psychiatric disorders compared with healthy peers^{10,21,22,23}, our data indicate that youth with SLE are at higher risk. Medicaid-enrolled youth in 2007 had a prevalence of depression of 4%, anxiety of 1%, and other psychiatric diagnoses of 14%²⁴; we found a much

higher prevalence at 19%, 7%, and 24% in youth with SLE. Given that psychiatric diagnoses are likely to be undercoded in claims data¹³ and that symptomatic youth are likely underdiagnosed¹⁰, our results may actually underestimate the prevalence of psychiatric disorders in youth with SLE. The high prevalence of psychiatric diagnoses was paralleled by high psychotropic medication use in youth with SLE. While 4% of Medicaid-enrolled youth used psychotropics in 2007²⁴, 20% of youth with SLE used psychotropic medications. Our findings suggest that youth with SLE with a psychiatric diagnosis are generally receiving appropriate treatment, although a portion of youth received psychotropic medications without psychiatric diagnoses, possibly for undercoded psychiatric disorders or other medical indications. We included these youth in our analysis of psychiatric treatment because sample size considerations precluded analysis stratified by psychiatric diagnosis status.

The high level of psychotropic medication use in youth with SLE raises important safety and monitoring considerations. In 2009 the American Academy of Child and Adolescent Psychiatry released a practice variable on psychotropic medication use addressing the need for prescribing physicians to maximize the benefits of these medications by reducing ineffective and inappropriate use of the medications²⁵. A key principle is the implementation of a psychiatric treatment and monitoring plan in communication with other health professionals involved in the patient's care. Given the complexities of SLE management

involving potential SLE-related psychiatric manifestations and medication interactions, it is paramount that appropriate communication occurs between rheumatologists and other clinicians prescribing psychotropic medications, such as psychiatrists, primary care physicians, and adolescent medicine physicians. We cannot determine from the claims data whether monitoring plans are being implemented or communicated, but attention to ensuring appropriate safety and monitoring of psychotropic medications in youth with SLE is needed.

We also found significant racial/ethnic disparities in mental healthcare in our sample of publicly insured youth with SLE. A conceptual framework for health disparities research proposed by Kilbourne, *et al*²⁶ identifies patient, provider, and health system factors as key determinants of disparities. Patient factors include those related to race/ethnicity, socioeconomic status, biology, culture, familial contexts, beliefs, and preferences. African American youth with SLE in our sample were less likely than whites to receive diagnoses for depression or anxiety and less likely to be prescribed anxiolytics, even after controlling for patient-level demographics and disease-related factors. Because the individuals in our study all had Medicaid insurance, our results suggest that financial access to care was less of an issue, but we could not assess other socioeconomic factors such as income or education levels in the claims data.

Regarding biological effects, there is little difference by race/ethnicity in the community prevalence of psychiatric disorders among youth⁶, which argues against a difference in biological occurrence of depression and anxiety between racial/ethnic groups of healthy youth. However, among youth with SLE, our previous study found non-white youth to have higher rates of depression and suicidal ideation symptoms than their white counterparts¹⁰. Because non-white groups often have more severe SLE manifestations compared with whites¹, it is possible that psychiatric disorders attributable to SLE are more prevalent in African American and other non-white youth. We could not determine SLE disease activity from the claims data, and our results may underestimate disease severity because codes for SLE nephritis and seizures/stroke were only identified during the study period. However, we think these limitations would likely lead to a nondifferential bias without significant effect on the association of race/ethnicity with depression/anxiety diagnoses and treatment. In combination with prior findings indicating similar or possibly greater occurrence of depression and anxiety disorders in African American youth with SLE, our results suggest that disparities in psychiatric care for these youth are likely because of underdiagnosis and undertreatment.

Patient cultural and familial contexts, beliefs, and preferences, as well as provider and healthcare system level factors, may be contributing to underdiagnosis and undertreatment of psychiatric disorders in African Americans in our cohort. For

example, cultural stigma of mental health may affect the willingness of youth and parents to seek mental healthcare. There may also be racial/ethnic differences in preferred modalities of psychiatric treatment because of cultural beliefs and preferences. Our results may overestimate psychiatric treatment disparities if African Americans are more likely than whites to receive nonpharmacological treatment such as cognitive behavioral therapy, which we were unable to estimate from the claims data. On the provider level, clinician knowledge/attitudes, cultural competence, and competing demands during clinical encounters may influence patient and provider engagement in discussion of mental health, and differences in provider communication have been found to influence mental health referral and/or choice of treatment^{9,27}. Healthcare system factors related to services organization, financing, and delivery can also lead to disparities in access, continuity, comprehensiveness, and coordination of care. We could not examine the above factors in the claims data. More investigation is therefore needed to understand the potential contribution of these multilevel factors to observed disparities, and to develop interventions for improved mental healthcare of African American youth with SLE. Additionally, while we did not find differences between whites and Latinos or those of other race/ethnicities, our analysis was limited by small numbers of these groups, and further study may identify potential racial/ethnic barriers to mental healthcare for these groups.

In addition to race/ethnicity, we assessed the risk for psychiatric diagnosis and treatment posed by other characteristics of our cohort. As expected, we found that increasing age was associated with a higher prevalence of depression diagnosis and psychotropic medication use, paralleling data from the general adolescent population⁶. Interestingly, we did not find differences by sex as expected, given that adolescent females are generally at increased risk for mood and anxiety disorders⁶. It is possible that male youth with SLE are more likely to have mood and anxiety disorders than those in the general population, or that female youth with SLE are at greater risk for these disorders but more likely to be underdiagnosed and undertreated than males. Regarding SLE disease characteristics, the presence of seizures/stroke was associated with increased antidepressant and anxiolytic use, but not depression or anxiety diagnoses; this may explain some of the psychotropic medication use in those without psychiatric diagnoses. Nonpsychiatric indications include the use of benzodiazepines as antiepileptics and tricyclic antidepressants for comorbid migraine in seizure disorders, as well as tricyclic antidepressants and serotonin/norepinephrine reuptake inhibitors for poststroke pain syndromes and autonomic instability.

Surprisingly, the presence of nephritis was associated with lower prevalence of depression and anxiety diagnosis and treatment. Given that depression and anxiety are common in youth with chronic kidney disease^{28,29}, we would not expect

a low occurrence of these psychiatric disorders in those with SLE nephritis. This leads us to suspect a lower detection and treatment of psychiatric disorders in this group, possibly because of reduced attention to mental health and/or increased care coordination challenges in the setting of high medical complexity. This finding deserves further study because psychiatric comorbidity in addition to the SLE nephritis, a severe SLE manifestation that more commonly affects non-white groups¹², is likely to convey an increased risk for healthcare disparities with resulting adverse clinical and psychosocial outcomes.

Frequent outpatient medical visits were associated with depression and anxiety diagnoses and treatment, possibly attributable to several things. First, psychiatric disorders caused by SLE-related CNS disease could lead to increased medical visits because of higher SLE severity. Second, psychiatric disorders (either comorbid or attributable to SLE) could contribute to poor treatment adherence, leading to increased medical visits for active disease. Depression has been associated with poor adherence and suboptimal healthcare use in adults with SLE⁷; however, a study of youth with SLE found depression symptoms (largely previously undiagnosed) to be inversely associated with frequency of outpatient medical visits¹⁰. This observation raises a third potential reason for our finding — those with psychiatric symptoms and frequent medical visits may have increased opportunities for psychiatric symptom detection/treatment. Our cross-sectional analysis did not permit examination of the temporal relationships between psychiatric disorders, SLE disease, treatment adherence, and healthcare use. Longitudinal investigation may elucidate causal relationships to inform strategies for optimizing healthcare use in youth with SLE and psychiatric disorders.

Our study provides population-level estimates for the prevalence of psychiatric diagnoses and treatment, as well as associated racial/ethnic disparities in a national sample of publicly insured youth with SLE. Our findings indicate high psychiatric morbidity in this cohort, as well as racial/ethnic disparities in both diagnosis and pharmacologic treatment, particularly for African Americans. With growing evidence of the negative effect of psychiatric comorbidity on clinical and psychosocial outcomes for patients with SLE, our results emphasize the importance of addressing disparities in mental healthcare for youth with SLE.

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