Mental Health–Related Burden Among Patients With Sickle Cell Disease With Medicaid Coverage

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INTRODUCTION

- Patients with sickle cell disease (SCD) can suffer from a multitude of SCD-related complications, which often begin early in life and can compromise physical and mental well-being, especially when associated with acute and chronic pain.[1,2]
- Findings from several studies have shown that mental health–related conditions, such as depression and anxiety, are highly prevalent among patients with SCD, even in childhood and adolescence.[2-6]
- In the Unites States (US), SCD primarily affects Black Americans in under-resourced communities.[7]
- The diagnosis and care of mental health–related conditions among patients with SCD may be inadequate, leading to poorer outcomes.
- To determine best care practices in the US for such patient groups, it is important to gain a better understanding of the clinical burden of mental health–related conditions among Medicaid-covered patients with SCD.

OBJECTIVES

- To assess the prevalence of mental health–related conditions and associated healthcare resource utilization (HCRU) of adult and pediatric patients with SCD, using a large Medicaid database.

METHODS

Study Population

- Adult (≥18 years) and pediatric (<18 years) patients with ≥3 inpatient or outpatient SCD-related diagnoses (primary or secondary) on different days[8] between July 1, 2016, and December 31, 2019, were selected from the MarketScan Medicaid database.
  - The earliest SCD-related diagnosis date was defined as the index date.
- Patients were required to have continuous enrollment in Medicaid for 6 months before the index date (baseline period) and ≥12 months after the index date (follow-up period).
- Patients with hematopoietic stem cell transplant or bone marrow transplant prior to the index date were excluded from the study population.

Measurements

- Patient demographic and clinical characteristics were analyzed for each patient during the baseline period and index date.
- The prevalence of mental health–related conditions and associated HCRU was evaluated during the follow-up period.
  - The mental health–related conditions evaluated included depression, anxiety, and attention deficit/hyperactivity disorder (ADHD), which were identified by International Classification of Diseases Tenth Revision (ICD-10) codes.

RESULTS

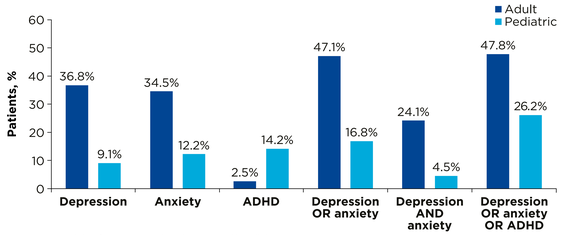
- A total of 10,367 patients with SCD were included in the study population; 54.2% were adult patients and 45.8% were pediatric patients (**Table 1**).
- During a median 47 months of follow-up, 36.8% of adult patients with SCD had claims for depression, 34.5% for anxiety, and 2.5% for ADHD (**Figure 1**).
- During a median follow-up of 50 months, 9.1% of pediatric patients with SCD had claims for depression, 12.2% for anxiety, and 14.2% for ADHD (**Figure 1**).

Table 1. Demographic and Clinical Characteristics of Patients With SCD

	All (N=10,367)		Adult (n=5622)		Pediatric (n=4745)	
Age, mean (SD), y	23.0 (16.6)		35.1 (13.2)		8.8 (4.8)	
Age group, y						
≤3	850	8.2%	0	0.0%	850	17.9%
4-11	2357	22.7%	0	0.0%	2357	49.7%
12-17	1538	14.8%	0	0.0%	1538	32.4%
18-30	2607	25.2%	2607	46.4%	0	0.0%
31-44	1719	16.6%	1719	30.6%	0	0.0%
45-54	715	6.9%	715	12.7%	0	0.0%
55-64	414	4.0%	414	7.4%	0	0.0%
≥65	167	1.6%	167	3.0%	0	0.0%
Sex, n (%)						
Female	5669	54.7%	3387	60.3%	2282	48.1%
Male	4698	45.3%	2235	39.8%	2463	51.9%
Race/ethnicity, n (%)*						
Black	8242	79.5%	4745	84.4%	3497	73.7%
White	184	1.8%	94	1.7%	90	1.9%
Hispanic	96	0.9%	35	0.6%	61	1.3%
Other	69	0.7%	32	0.6%	37	0.8%
Follow-up, months						
Mean (SD)	39.4 (15.2)		38.8 (15.3)		40.2 (15.0)	
Median	49		47		50	

*Not all patient information was available in the database.
SCD, sickle cell disease.

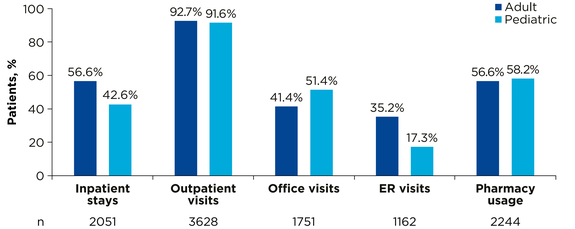
Figure 1. Prevalence of Mental Health–Related Conditions in the Follow-Up Period Among Adult and Pediatric SCD Patients



ADHD, attention deficit/hyperactivity disorder; SCD, sickle cell disease.

- Across all adult patients with SCD and a mental health diagnosis (n=2687), the proportion of patients with mental health–related inpatient stays was 56.6% (**Figure 2**), the mean number of inpatient stays was 0.9, and the mean length of an inpatient stay was 5.2 days.
- Across all pediatric patients with SCD and a mental health diagnosis (n=1242), the proportion of patients with mental health–related inpatient stays was 42.6% (**Figure 2**), the mean number of inpatient stays was 0.4, and the mean length of an inpatient stay was 2.0 days.

Figure 2. Proportion of Patients With Mental Health–Related HCRU in the Follow-Up Period Among Those With SCD and a Mental Health Diagnosis*



*Outpatient visits are any healthcare services that are not inpatient admissions, including office visits, ER visits, lab, imaging, etc. Office visits are indicated by the database as "office visits".
ER, emergency room; HCRU, healthcare resource utilization; SCD, sickle cell disease.

- Antidepressant use was more prevalent in adult (28.8%) than pediatric (7.9%) patients, as was anxiolytic/sedative/hypnotic use (40.1% vs 17.1%); ADHD medication use was more prevalent in pediatric (10.7%) than adult (4.5%) patients (**Table 2**).

Table 2. Mental Health–Related Medication Use Among Adult and Pediatric Patients With SCD

Patients, n (%)	Adult	Pediatric
Antidepressants	1618 (28.8%)	373 (7.9%)
Anxiolytic/sedative/hypnotic	2253 (40.1%)	811 (17.1%)
ADHD medication	255 (4.5%)	506 (10.7%)

ADHD, attention deficit/hyperactivity disorder; SCD, sickle cell disease.

LIMITATIONS

- Similar to other retrospective claims databases, the MarketScan Medicaid database consists of claims submitted by healthcare providers for reimbursement; as such, claims may contain possible coding errors, coding for the purpose of rule-out, and undercoding/overcoding.
- Furthermore, the mental health–related conditions of the study populations herein were identified by ICD-10 codes in the administrative claims data, and the diagnoses were not confirmed by physician notes or other methods.
- Regarding pharmacy use, the data only reflect prescriptions filled by patients and may not capture all medications that were actually taken by patients.
- Lastly, the SCD patient populations in this study represent those with Medicaid coverage and thus, while the study findings are generalizable to such patients with SCD across the US, they may not be generalizable to patients with different insurance types or no insurance.

CONCLUSIONS

- The findings of this study indicate that mental health–related conditions are highly prevalent among adult and pediatric patients with SCD covered by Medicaid and are associated with significant use of healthcare resources.
- Treatment of mental health–related conditions in patients with SCD may be improved by identifying those who would benefit from clinical pharmacy services, case management programs, and/or mental health–related services and assessments.

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DISCLOSURES

- **Andrew Campbell:** Consultant: Global Blood Therapeutics. **Andy Nguyen:** Employee: Global Blood Therapeutics. **Crystal Henderson:** Employee: Global Blood Therapeutics. **Anne Beaubrun:** Employee: Global Blood Therapeutics. **Melissa Lingohr-Smith** and **Jay Lin:** Employees: Novosys Health, which received research funds from Global Blood Therapeutics in connection with conducting this study and preparation of this poster. **Tanisha Smith:** Consultant: Global Blood Therapeutics.
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