

Mental Health Conditions and Symptoms in Pediatric Hospitalizations: A Single-Center Point Prevalence Study

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ABSTRACT

BACKGROUND: Children and adolescents necessitating hospitalization for physical health conditions are at high risk for mental health conditions; however, the prevalence of mental health conditions and symptoms among hospitalized children and adolescents is uncertain. The objective of this study was to determine the proportion of hospitalized children and adolescents who have diagnosed mental health disorders or undiagnosed mental health problems.

METHODS: In this single-center point prevalence study of hospitalized children between the ages of 4 and 21 years, patients or their parents reported known mental health diagnoses and use of services using the Services Assessment for Children and Adolescent, and they reported patient mental health symptoms using the Pediatric Symptom Checklist, 17-item form (PSC-17).

RESULTS: Of 229 eligible patients, 119 agreed to participate. Demographic characteristics of patients who enrolled were not statistically significantly different from those of patients

who declined to participate. Among participants, 26% (95% confidence interval [CI], 18%–35%) reported a known mental health diagnosis. On the PSC-17, 29% (95% CI, 21%–38%) of participants had a positive screen for mental health symptoms. Of those with a positive screen, 38% (95% CI, 21%–55%) had no known mental health diagnosis, and 26% (95% CI, 12%–43%) had not received ambulatory mental health services in the 12 months before hospitalization.

CONCLUSIONS: Mental health conditions and symptoms are common among patients hospitalized in a tertiary children's hospital, and many affected patients are not receiving ambulatory mental health services.

KEYWORDS: children's hospital; hospital pediatrics; mental health; psychiatry; psychology

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WHAT'S NEW

In one tertiary free-standing children's hospital, 26% of children and adolescents ages 4 to 21 years who were hospitalized for a medical or surgical indication reported having a mental health diagnosis, and 29% had a positive screen for mental health symptoms.

MENTAL HEALTH CONDITIONS are common, affecting approximately 20% of US children and adolescents.¹ Children with chronic physical health conditions are at particularly high risk of experiencing a mental health condition, with estimates of the prevalence of a comorbid mental health condition ranging from 20% to 50% in various chronic conditions.^{2,3} Children with chronic illnesses are more likely to be hospitalized than their physically healthy peers; thus, hospitalized children are at high risk

of experiencing mental health conditions. In children hospitalized for medical or surgical indications, having a mental health condition is associated with higher inpatient utilization and worse hospital outcomes.^{4–8}

Resource allocation to improve hospital care and reduce disproportionate hospital utilization for children with mental health conditions depends on an accurate understanding of the scope of the population of hospitalized children affected by mental health conditions. To date, studies on the prevalence of mental health conditions in hospitalized patients have either focused more specifically on developmental disorders⁹ or relied on administrative data.¹⁰ Administrative data might be unreliable for identifying patients with known mental health conditions because of physician documentation and administrative coding practices,^{4,11} and administrative data cannot identify undiagnosed mental health conditions. Current

estimates suggest that 13% of hospitalized children are affected by mental health conditions¹⁰; however, current data might underestimate the proportion of hospitalized patients in need of mental health support.

The objective of this study was to determine the proportion of hospitalized children with diagnosed mental health disorders and with mental health symptoms. We determined the presence of known, previously-diagnosed mental health conditions, presence of mental health symptoms, and use of mental health services in the 12 months before hospitalization.

METHODS

SETTING AND PATIENTS

We conducted a point prevalence study of mental health conditions, mental health symptoms identified on mental health screening, and use of outpatient mental health services among hospitalized children at the Children's Hospital of Philadelphia (CHOP). CHOP is a 535-bed free-standing children's hospital that serves as a community hospital for children residing in the city of Philadelphia, a regional referral center for eastern Pennsylvania, southern New Jersey, and Delaware, and a tertiary care center for distant referrals. CHOP comprises 20 inpatient units dedicated to general medical care, subspecialty medical care, critical care, or surgical care. CHOP does not have an inpatient psychiatric unit.

Patients eligible for inclusion in the study were children and adolescents between 4 and 21 years of age hospitalized for a medical or surgical condition on an inpatient unit at CHOP. Because the aim of the study was to identify patients with mental health needs that might otherwise go unrecognized in the course of usual hospital care, patients hospitalized for a primary psychiatric condition (eg, suicidal ideation, eating disorder) were excluded, because these patients routinely receive a psychiatric evaluation. We also excluded patients who were within the first 6 weeks of receiving an initial cancer diagnosis, because of the routine provision of psychosocial evaluation and treatment at the time of a new cancer diagnosis at CHOP. Finally, we excluded patients with significant cognitive impairment precluding completion of study questionnaires, patients who were not medically stable (eg, end of life care, acutely escalating medical interventions), and families in which the consenting party did not speak or read English. Because of CHOP's international medicine program, the most common language other than English spoken by families whose children are admitted to CHOP is Arabic, and study measures have not been validated in Arabic. Eligible patients who required parental consent for study participation and whose parents were not at the bedside at the time of study recruitment and could not be reached by telephone or in person after 3 attempts were categorized as having declined participation in the study.

To determine the point prevalence of mental health conditions among patients hospitalized at CHOP, we determined the point prevalence of mental health conditions

on each of CHOP's 20 inpatient medical, surgical, and intensive care units separately. We selected a goal sample size of at least 100 patients to obtain a confidence interval (CI) of approximately 10% around the point estimate of the prevalence of previously diagnosed mental health conditions. To recruit at least 100 patients, we approached all eligible patients on each hospital unit on 2 unique dates. Each unit had 2 unique study recruitment dates at least 3 months apart, to minimize the number of patients who would be eligible for inclusion in the study more than once. Thus, study procedures were conducted on 40 unique dates.

Patient hospitalizations were classified into 4 categories: general medical, subspecialty medical, critical care, or surgical. General medical patients were admitted to Adolescent Medicine or General Pediatrics teams. Subspecialty medical patients were admitted to subspecialty medical teams, including Allergy, Cardiology, Endocrinology, Gastroenterology, Hematology, Immunology, Nephrology, Neurology, Oncology, Pulmonology, and Rheumatology. Surgical patients were admitted to General Surgery, Otorhinolaryngology, Neurosurgery, Orthopedic Surgery, or Urology teams. Critical care patients were hospitalized in a cardiac, medical, or surgical intensive care unit.

MEASURES

After providing informed consent for study participation, enrolled subjects or their parents completed 2 study questionnaires: the 17-item form of the Pediatric Symptom Checklist (PSC-17)¹² and an abbreviated form of the Services Assessment for Children and Adolescents (SACA),¹³ with the addition of a question asking participants to indicate whether the subject had ever received a diagnosis of autism or any of the conditions identifiable on the Schedule for Affective Disorders and Schizophrenia for School-Age Children, Present and Lifetime version.¹⁴ PSC-17 results were used to identify mental health symptoms, and responses to SACA questions were used to ascertain whether the patient had previously received a mental health diagnosis or services. These instruments were selected because they are valid and reliable in high-risk outpatient populations, and no validated mental health screening tools exist for pediatric medical inpatients. For subjects younger than 14 years old, the parent completed all study questionnaires. For subjects 14 to 17 years old, the parent and the subject completed study questionnaires. If the subject was 18 years or older, the subject completed all study questionnaires. Patient age, sex, race, ethnicity, primary hospital admitting service, and spoken language were obtained from the medical record.

ANALYSIS

Prevalence estimates include all enrolled patients in the denominator. Elevated scores on the PSC-17 were defined according to standard recommended cutoffs for referral in outpatient practice: a score ≥ 5 on the internalizing subscale (52% sensitivity and 74% specificity for detection of an anxiety disorder; 54% sensitivity and 80%

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