Annals of Epidemiology 39 (2019) 1–7

Contents lists available at ScienceDirect

Annals of Epidemiology

Original article

Psychiatric disorders in the U.S. transgender population

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ARTICLE INFO

Article history:
Received 21 April 2019
Accepted 28 September 2019
Available online 4 October 2019

Keywords:
Transgender
Psychiatric disorders
Anxiety
Depression
Psychosis
Mental illness
Trans men
Trans women
Hospitalization

ABSTRACT

Purpose: The purpose of the study was to determine the prevalence and odds of mental disorder diagnoses at discharge in U.S. transgender hospital encounters as compared with cisgender hospital encounters using nationally representative data.

Methods: The National Inpatient Sample was used to identify 25,233 transgender and 254,437,363 cisgender inpatient encounters from 2007 to 2014. Univariate analyses were performed to compare the prevalence of mental disorders and comorbid medical diagnoses at the time of discharge. Multivariable analyses controlling for medical comorbid diagnoses were performed to assess the multivariable odds of mental disorder diagnoses in transgender versus cisgender hospital encounters. The prevalence of medical comorbid diagnoses in transgender encounters with and without mental disorder diagnoses was also compared.

Results: The prevalence of mental disorder diagnoses was higher in transgender hospital encounters (77% vs. 37.8%, $P < .001$). The prevalence of each examined mental disorder diagnosis was significantly higher in transgender hospital encounters. A multivariable analysis demonstrated significantly higher odds of all mental disorder diagnoses (odds ratio [OR] = 7.94; confidence interval [CI], 7.63–8.26; $P < .001$), anxiety (OR = 3.44; CI, 3.32–3.56; $P < .001$), depression (OR = 1.63; CI, 1.57–1.70; $P < .001$), and psychosis (OR = 2.46; CI, 2.36–2.56; $P < .001$) among transgender versus cisgender inpatient encounters. Transgender encounters with a mental disorder diagnosis had a higher prevalence of chronic medical comorbid diagnoses as compared with transgender encounters without mental disorder diagnoses.

Conclusions: Our findings suggest a high prevalence and significantly higher odds of mental disorder diagnoses in the transgender population as compared with the cisgender population using data that are nationally representative of the U.S. population.

Introduction

Mental health disorders are common, with an estimated prevalence in U.S. adults of 18.9% in 2016 [1]. Although a large body of literature exists characterizing psychiatric illness in various subsets of the U.S. population, there is a paucity of data quantifying the prevalence of psychiatric illness and its burden in the adult transgender population. The term transgender is used to refer to persons whose gender identity differs from their natal sex [2–4]. The incongruence between gender identity and natal sex can result in gender dysphoria or psychological distress associated with decreased functioning that is common in the transgender population. Transgender individuals are also subject to numerous disparities as compared with the general populace. These disparities include increased rates of discrimination, economic hardship, homelessness, poor access to health care, receipt of substandard

The authors have no conflicts of interest to disclose.

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https://doi.org/10.1016/j.annepidem.2019.09.009
1047-2797/

health care services, physical and verbal abuse, psychiatric illness, and sexual assault [5].

In the past decade, a small but growing body of literature has shed light on the subject of psychiatric illness within the transgender community. The literature suggests an increase in the rates of mood, personality, and psychotic disorders, suicide, as well as various forms of substance abuse, including misuse of tobacco, alcohol, and illicit substances [5–11]. These findings were corroborated by data derived from several surveys, the largest of which was the 2015 U.S. Transgender Survey [5–11]. In an effort to address the health care disparities and characterize the health care needs of this underserved population, the U.S. Department of Health and Human Services Healthy People 2020 initiative and the National Institute of Medicine have called for prioritizing research on transgender and gender nonconforming patients using nationally representative data [2,12].

The present study examined the prevalence and odds of mental disorder diagnoses in transgender hospital encounters as compared with cisgender hospital encounters using data from the National Inpatient Sample (NIS) from 2007 through 2014. In addition, differences in the presence of medical comorbidities and the financial burden of disease in transgender hospital encounters with and without concomitant mental disorder diagnoses were analyzed.

Methods

Data source

Weighted discharge records from the NIS for the years 2007 through 2014 were used to identify the study population. The NIS is the largest publicly available all-payer inpatient database in the United States and is a part of the Healthcare Cost and Utilization Project, sponsored by the Agency for Healthcare Research and Quality [13]. To create the NIS, the State Inpatient Databases are used as a sampling frame, which contains discharge data for >95% of US community hospital encounters. Discharges from the State Inpatient Databases are first stratified by the following hospital characteristics: U.S. census division, urban or rural location, teaching status, ownership, and bed size. From these strata, a random sample of discharges is selected from a list of discharge diagnoses that are arranged based on discharge characteristics (e.g., DRG, admission month). This systematic stratified random sample constitutes the NIS sample unit, which includes approximately 20% of all U.S. community hospital discharges [13].

In its current rendition, the NIS contains discharge records for nearly 7 to 8 million yearly inpatient encounters from over 1050 nonfederal acute care hospitals from 45 states, excluding long-term acute care and rehabilitation facilities. Each discharge record lists one primary discharge diagnosis and up to 24 secondary discharge diagnoses [13]. Weighted discharge data from the NIS can be used to estimate nationwide provisions of care and is representative of over 97% of U.S. community hospital discharges (>90% between 2007 and 2014) [13]. This study was exempted from the institutional review board review as the NIS eliminates patient-specific identifiers from the data.

Study population

Adult transgender inpatient encounters were extracted using *International Classification of Diseases, Ninth Revision* (ICD-9 CM) codes 302.5×, 302.6, and 302.85, which were selected based on the methodology of prior studies examining the transgender population [12]. Using Clinical Classifications Software (CCS) codes (Supplementary Table 1), transgender encounters with select mental disorder diagnoses (mood disorder, depression, psychosis, anxiety disorder, screening and history of mental health and substance abuse, suicide and intentional self-inflicted injury, schizophrenia and other psychotic disorders, personality disorders, attention deficit, conduct, and disruptive behavior disorder, and impulse control disorder) were identified. CCS is a diagnosis and procedure categorization plot that merges a large number of related ICD-9 CM codes into fewer categories that have been standardized and comprehensively used in previous analyses [14]. Transgender hospital encounters were subdivided into two groups based on the presence or absence of a mental disorder diagnosis at discharge.

Study variables

Demographics including age, gender, race/ethnicity, median household income for ZIP code of patient (expressed in quartiles), insurance status, admission day (weekday vs. weekend), type of admission (elective vs. nonelective), and medical comorbid diagnoses at the time of discharge were compared between the transgender hospital encounters with and without mental disorder diagnoses. Hospital characteristics analyzed among the transgender hospital encounters with and without mental disorder diagnoses were hospital size, the location/teaching status of the hospital (rural, urban nonteaching, and urban teaching), and the hospital's geographic region (Northeast, Midwest, South, and West).

Outcomes

The primary endpoints were the prevalence and odds of mental disorder diagnoses in transgender versus cisgender hospital encounters and the prevalence of chronic medical comorbid diagnoses in transgender hospital encounters with and without mental disorder diagnoses.

Statistical analysis

IBM SPSS Statistics version 24.0 (IBM Corp., Armonk, NY) was used for all analyses. The Pearson χ^2 test was used for categorical measures and Student's *t*-test for continuous measures. A *P*-value of <.05 was used as the threshold for clinical significance. We performed univariate analyses to compare demographic characteristics and medical comorbidities among the transgender encounters with and without mental disorder diagnoses. Clinically significant variables in the univariate analysis including demographic information (age, gender, and race), median household income by ZIP code, payer status, hospital characteristics, medical comorbid diagnoses, and gender-affirming surgery status were entered into a multivariable analysis and controlled to assess the multivariable odds of mental disorders within the transgender population. The results were expressed in terms of an adjusted odds ratio (OR) and a 95% confidence interval (CI). Clustering and stratification (complex survey techniques available within SPSS) were applied to the data.

Results

The demographic characteristics of the adult transgender (n = 25,233) and cisgender (n = 254,437,363) hospital encounters studied are detailed in Table 1. Transgender patients were younger than cisgender patients (mean age ~40 years vs. 57 years, $P < .01$). Although white patients comprised the vast majority of both study groups, the transgender patient group had a higher proportion of African American inpatient encounters (18.9% vs. 14.6%, $P < .01$). There was a higher rate of nonelective admission in transgender hospital encounters than in cisgender hospital encounters (79.3% vs. 73.7%, $P < .01$.). Transgender hospital encounters were

Table 1
Baseline characteristics of cisgender versus transgender inpatient hospital encounters

Variables	Cisgender (N = 254,412,130)	Transgender (N = 25,233)	Overall (N = 254,437,363)	*P*
Age (y) at hospitalization				<.001
Mean ± SD	57.2 ± 20.7	40.3 ± 14.7	57.2 ± 20.8	
18–44 y	29.7%	60.5%	29.7%	
45–64 y	29.1%	34.3%	29.1%	
≥65 y	41.3%	5.2%	41.3%	
Sex				<.001
Male	40.3%	57.9%	40.3%	
Female	59.7%	42.1%	59.7%	
Race				<.001
White	68.7%	66.9%	68.7%	
African American	14.6%	18.9%	14.6%	
Hispanic	10.5%	7.2%	10.5%	
Asian/Pacific Islander	2.4%	1.9%	2.4%	
Native American	0.7%	0.7%	0.7%	
Other	3.1%	4.2%	3.1%	
Type of admission				<.001
Nonelective	73.7%	79.3%	73.7%	
Elective	26.3%	20.7%	26.3%	
Median household income national quartile for patients' ZIP Code*				<.001
0–25th percentile	29.5%	33.7%	29.5%	
26–50th percentile	26.2%	26.1%	26.2%	
51–75th percentile	23.7%	20.9%	23.7%	
76–100th percentile	20.7%	19.4%	20.7%	
Primary expected payer				
Medicare	45.5%	27.9%	45.5%	
Medicaid	15.4%	26.9%	15.4%	
Private including HMO	29.9%	25.8%	29.9%	
Self-pay/no charge/other	9.2%	19.3%	9.2%	
Location/teaching status of hospital				<.001
Rural	12.1%	6.7%	12.1%	
Urban nonteaching	39.6%	33.8%	39.6%	
Urban teaching	48.3%	59.5%	48.3%	
Region of hospital				<.001
Northeast	19.8%	24.3%	19.8%	
Midwest	23.1%	24.2%	23.1%	
South	38.7%	21.6%	38.7%	
West	18.4%	29.9%	18.4%	

$P < .05$ indicates statistical significance.
HMO = Health Maintenance Organization.
* Signifies a quartile classification of the projected median household income of residents in the patient's ZIP code, derived from https://www.hcup-us.ahrq.gov/db/vars/zipinc_qrtl/nisnote.jsp.

associated with a lower ZIP code-specific median household income than cisgender hospital encounters (0–25th percentile: 33.7% vs. 29.5%, $P < .01$) and were more likely to be enrolled in Medicaid (26.9% vs. 15.4%, $P < .01$). Transgender hospital encounters were more common at teaching facilities (59.5% vs. 48.3%, $P < .01$) than cisgender hospital encounters, particularly in the Northeastern (24.3% vs. 19.8%) and Western (29.9% vs. 18.4%, $P < .01$) regions of the United States.

Of the 25,233 transgender inpatient encounters identified from 2007 through 2014, 19,348 (76.7%) had at least one mental disorder diagnosis. In comparison, 37.8% of cisgender hospitalization encounters had at least one mental disorder diagnosis in the same time (Fig. 1). Transgender inpatient encounters were more than three times likely to have a mood disorder diagnosis than cisgender inpatient encounters. Personality disorders and psychotic disorders were also significantly more prevalent in transgender hospital encounters, with a greater than 20-fold and greater than 3-fold higher prevalence, respectively, as compared with cisgender inpatient encounters. A multivariable analysis that controlled for demographic characteristics, hospital characteristics, and all medical comorbidities revealed a remarkably higher odds of all-cause psychiatric disorders (OR = 7.94; CI, 7.63–8.26; $P < .001$), anxiety (OR = 3.44; CI, 3.32–3.56; $P < .001$), depression (OR = 1.63; CI, 1.57–1.70; $P < .001$), and psychosis (OR = 2.46; CI, 2.36–2.56; $P < .001$) in the transgender encounter group as compared with the cisgender encounter group (Table 2).

Table 3 displays the encounter and hospital-level characteristics of the inpatient transgender population with and without psychiatric illness. Transgender patients with psychiatric diagnoses were younger (18–44 years, 61.6%) and more likely to be white than those without psychiatric comorbidities. Transgender encounters with psychiatric disorder diagnoses were more likely to present for nonelective admissions, particularly in urban teaching hospitals in the Midwest and Northeast, than transgender patients without psychiatric disorders. Higher rates of economic hardship were observed in transgender encounters with psychiatric disorder diagnoses as compared with those without, with greater than 60% of those with a psychiatric diagnosis having a ZIP code–specific median household income less than the 50th percentile. Finally, less than 1 in 4 transgender encounters with psychiatric disorder diagnoses had private insurance, as compared with about 1 in 3 in those without psychiatric disorder diagnoses.

Table 4 displays the medical comorbid diagnoses in transgender hospital encounters with psychiatric disorder diagnoses as compared with those without. Transgender encounters with psychiatric diagnoses had a notably higher frequency of alcohol abuse (15.2% vs. 2.2%, $P < .001$), drug abuse (25.5% vs. 7.0%, $P < .001$), chronic pulmonary diseases (20.9% vs. 13.4%, $P < .001$), hypertension (27.9% vs. 24.8%, $P < .001$), and hypothyroidism (7.6% vs. 5.0%,

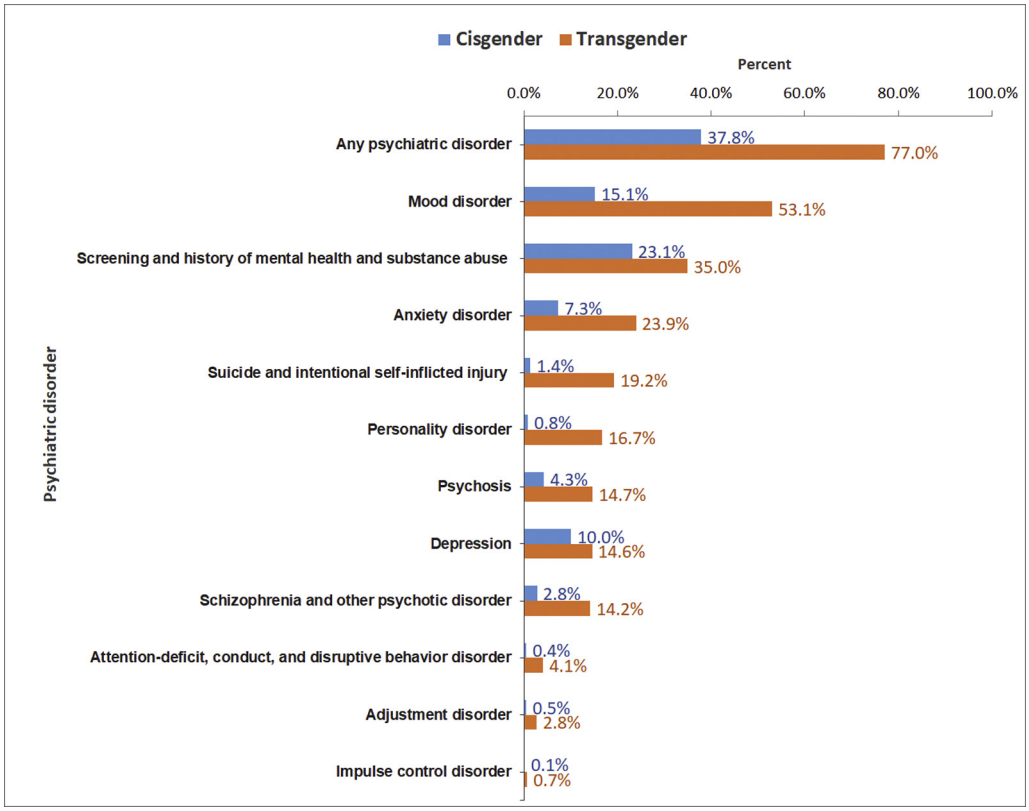

Fig. 1. Prevalence of psychiatric disorders in cisgender and transgender inpatient hospital encounters.

$P < .001$). In contrast, renal failure, vascular disease, valvular heart disease, AIDS, and congestive heart failure were more prevalent in transgender hospital encounters without psychiatric diagnoses ($P < .001$).

Discussion

Current research on the mental health of the lesbian, gay, bisexual, and transgender community is limited, particularly in the adult transgender population [15]. One of the important barriers is that until recent times, there was no systematic data collection of gender identity and sexual orientation at the national level. For instance, of 50 states participating in the 2017 Behavioral Risk Factor Surveillance System, only 28 states have asked questions about sexual orientation and gender identity [16]. In contrast to prior survey-based studies on the subject, the present study is not limited by sample size, a reliance on survey data, or a focus on a subgroup of the transgender population that limits generalizability (e.g., transgender youth or trans women only) [5–11].

The present study demonstrates remarkably higher odds of psychiatric disorder diagnoses in transgender adult inpatient encounters than in cisgender inpatient encounters, elucidating the importance of mental health as a central component in the treatment approach of the transgender patient. In addition, it is the first study to delineate the divergent prevalence of medical comorbid diagnoses and differing demographic characteristics in the transgender populations with and without mental disorder diagnoses.

Psychiatric disorder diagnoses were greater than 2-fold more common in transgender inpatient encounters, with greater than three-quarters of transgender inpatient encounters having at least one psychiatric disorder diagnosis listed in the hospital discharge record. Every examined psychiatric disorder diagnosis was significantly more common in transgender inpatient encounters than cisgender inpatient encounters with varying magnitudes of difference. Self-harm and suicide were greater than 13 times more common in transgender patient encounters and were listed as discharge diagnoses in nearly one-fifth of all transgender inpatient encounters. A previous study analyzing suicidal attempts and its predictors among 515 transgender individuals reported an independent association of gender-based discrimination and victimization with attempted suicide [17].

Mood disorders were greater than 3 times as common in hospitalized transgender encounters with a prevalence exceeding 50%. The prevalence of mood disorder diagnoses in cisgender inpatient encounters was 15.1%, much higher than the prevalence in the general population ranging from 9.5% to 9.9% [18,19]. Of the mood disorders, our data suggest that anxiety disorders are far more common than depressive disorders in the transgender population, which differed from our findings in hospitalized cisgender patients. A report from the U.S. National Comorbidity Survey-Replication showed a higher prevalence of anxiety disorders (21.3%) compared with depression (9.3%) in the general adult population [19]. However, it is important to remember that the data presented

Table 2
Odds of psychiatric disorder diagnoses in transgender inpatient hospital encounters

Disorder	Analysis type	Odds ratio	95% CI	*P*
Any psychiatric disorder	Univariate	5.51	5.35–5.68	<.001
	Multivariate	7.94	7.63–8.26	<.001
Anxiety	Univariate	3.99	3.87–4.10	<.001
	Multivariate	3.44	3.32–3.56	<.001
Depression	Univariate	1.53	1.48–1.59	<.001
	Multivariate	1.63	1.57–1.70	<.001
Psychosis	Univariate	3.86	3.73–4.00	<.001
	Multivariate	2.46	2.36–2.56	<.001

$P < .05$ indicates statistical significance.

Table 3
Characteristics of transgender inpatient hospital encounters with versus without psychiatric diagnoses

Variables	Transgender without psychiatric disorders (N = 5885)	Transgender with psychiatric disorders (N = 19,348)	Overall transgender inpatients (N = 25,233)	*P*
Age (y) at hospitalization (Mean ± SD)				<.001
Mean ± SD	42.7 ± 15.3	39.6 ± 14.5	40.3 ± 14.7	
18–44	56.9%	61.6%	60.5%	
45–64	34.7%	34.3%	34.4%	
≥65	8.3%	4.1%	5.1%	
Race				<.001
White	59.5%	69.3%	66.9%	
African American	21.2%	18.2%	18.9%	
Hispanic	9.7%	6.4%	7.2%	
Asian/Pacific Islander	3.8%	1.3%	1.9%	
Native American	0.6%	0.8%	0.7%	
Other	5.2%	3.9%	4.2%	
Type of admission				<.001
Nonelective	60.5%	85.0%	79.3%	
Elective	39.5%	15.0%	20.7%	
Median household income national quartile for patient ZIP code*				<.001
0–25th percentile	27.5%	35.6%	33.7%	
26–50th percentile	23.9%	26.7%	26.1%	
51–75th percentile	23.8%	20.0%	20.9%	
76–100th percentile	24.9%	17.7%	19.4%	
Primary expected payer				<.001
Medicare	19.8%	30.4%	27.9%	
Medicaid	18.0%	29.7%	26.9%	
Private including HMO	32.5%	23.8%	25.8%	
Self-pay/no charge/other	29.6%	16.1%	19.3%	
Location/teaching status of hospital				<.001
Rural	3.4%	7.7%	6.7%	
Urban nonteaching	41.3%	31.5%	33.8%	
Urban teaching	55.3%	60.8%	59.5%	
Region of hospital				<.001
Northeast	22.7%	24.8%	24.3%	
Midwest	14.9%	27.1%	24.2%	
South	18.8%	22.4%	21.6%	
West	43.6%	25.7%	29.9%	

$P < .05$ indicates statistical significance.
HMO = Health Maintenance Organization.
* Signifies a quartile classification of the projected median household income of residents in the patient's ZIP code, derived from ZIP code-demographic data obtained from Claritas. Derived from https://www.hcup-us.ahrq.gov/db/vars/zipinc_qrtl/nisnote.jsp.

in this study are representative of hospital encounters, whereas National Comorbidity Survey-Replication was a national face-to-face household survey. Depressive symptoms may relate to the effects of societal stigma, discrimination, and prejudice [17,20].

Psychotic disorders were also 3-fold higher in transgender encounters at 14.7% versus 4.3% in the cisgender encounters. Although there is a dearth of research on hospitalizations among the adult transgender population with psychosis [21], a study using

Table 4
Medical comorbid diagnoses in transgender inpatient hospital encounters without versus with concomitant psychiatric diagnoses

Comorbidities	Without psychiatric disorder (n = 5885)	With psychiatric disorder (n = 19,348)	*P*
	N (%)	N (%)	
Acquired immune deficiency syndrome	332 (5.6%)	810 (4.2%)	**<.001**
Alcohol abuse	128 (2.2%)	2950 (15.2%)	**<.001**
Rheumatoid arthritis/collagen vascular diseases	62 (1.1%)	192 (1.0%)	.681
Congestive heart failure	193 (3.3%)	444 (2.3%)	**<.001**
Chronic pulmonary disease	791 (13.4%)	4045 (20.9%)	**<.001**
Coagulopathy	163 (2.8%)	471 (2.4%)	.150
Diabetes, uncomplicated	538 (9.1%)	2057 (10.6%)	**.001**
Diabetes with chronic complications	165 (2.8%)	472 (2.4%)	.119
Dyslipidemia	687 (11.7%)	2886 (14.9%)	**<.001**
Drug abuse	414 (7.0%)	4931 (25.5%)	**<.001**
Hypertension	1458 (24.8%)	5404 (27.9%)	**<.001**
Hypothyroidism	296 (5.0%)	1463 (7.6%)	**<.001**
Liver disease	292 (5.0%)	911 (4.7%)	.426
Fluid and electrolyte disorders	1070 (18.2%)	2629 (13.6%)	**<.001**
Obesity	602 (10.2%)	2203 (11.4%)	**.013**
Peripheral vascular disorders	119 (2.0%)	331 (1.7%)	.114
Pulmonary circulation disorders	77 (1.3%)	157 (0.8%)	**<.001**
Renal failure	429 (7.3%)	647 (3.3%)	**<.001**
Valvular heart disease	89 (1.5%)	194 (1.0%)	**.001**

Bolded values indicates statistical significance of $P < .05$.

electronic medical records to examine young transgender individuals found a pronounced increase in the prevalence of psychosis among transgender adolescents [22]. Regarding comorbidities, although transgender patients with psychiatric disorders were more likely to have hypertension, uncomplicated diabetes, hyperlipidemia, hypothyroidism, and chronic obstructive pulmonary disease, those without psychiatric disorders were at a notably higher risk of heart failure, valvular heart disease, renal failure, AIDS, and peripheral vascular disease. In a manner consistent with the findings of prior, limited studies, our study also found that patients with psychiatric disorders are far more likely to engage in high-risk behaviors than their peers, with a greater than 7-fold increase in alcohol abuse and greater than 3-fold increase in drug abuse [8,23]. A combination of high-risk behaviors and lack of financial means reduce the chances that transgender patients who suffer from psychiatric disease will be able to receive appropriate psychiatric care, which likely lead to the higher prevalence of nonelective hospital admissions observed.

The highest prevalence of psychiatric disorders in the transgender population studied was in whites, followed by African American and Latin American individuals. This finding contrasts with a recent study that demonstrated the highest and lowest prevalence of psychiatric illness in Latin American and African American transgender individuals, respectively. The findings of the study were limited by a small sample size and differed from the present study in that the present study exclusively examined hospital-level encounters [23].

The findings of our study should be interpreted within the context of numerous limitations. NIS data are subject to the inherent limitations of cross-sectional data. Every admission is a separate data point, and individual patients cannot be followed longitudinally, which can lead to an overestimation of the prevalence of disease. This limitation holds true for all groups being compared; therefore, the effects of this limitation were likely mitigated to some extent.

To determine the gender identity of the transgender patients in this study, we assumed that the gender reported in NIS data was representative of the reported gender identity of the patient. Although there is increasing societal awareness of the importance of appropriately addressing the transgender population with pronouns that reflect their gender identity, there is little documentation that addresses appropriate assignment of gender during hospital registration, making transgender status difficult to assess systematically within the health care system [24]. As such, it is not possible to determine whether the individuals assigned as trans male or trans female in the present study are appropriately categorized. This limitation underscores a significant barrier to research in the transgender population; outcome data in this patient population are limited if there is not a universal, clearly defined standard for documentation of gender identity and natal sex in the medical record. Although the World Professional Association for Transgender Health and Electronic Health Records (EHR) working group recommended EHR systems vendors and developers to elicit more comprehensive gender identity information [25,26], it would take time to implement such standards broadly at national level. When such a standard exists, nationally representative data can be used to more reliably study transgender subgroups and address the disparity of outcome data in this underserved patient population. The advent of ICD 10 codes served as a missed opportunity to temporarily address this glaring disparity until demographic information for gender identity could be standardized. This major limitation is not relevant to the comparisons of psychiatric disease between transgender and cisgender individuals or between transgender individuals with and without psychiatric disease and likely does not significantly affect the validity of these findings.

Given that NIS data represent only inpatient encounters, the true prevalence of psychiatric disorders may be under-represented or over-represented. This is particularly true in transgender patients, given prior survey data that suggest they are less likely to seek medical treatment because of fear of discrimination, mistreatment, and uncertainty about receiving prejudiced-free care.

This study, based on the NIS discharge sample, demonstrates findings consistent with previously published survey data suggesting that transgender patients have an increased incidence of psychiatric disease. Furthermore, the study highlights the most common medical comorbidities in the transgender populations with and without mental disorder diagnoses. Medical providers should be knowledgeable of these findings when providing care for a transgender patient. The integration of information that clearly identifies transgender individuals in the EHR should remain the focus for health care facilities so that care systems can be developed to better identify and address the unique needs of these patients. Future studies with longitudinal patient data as opposed to hospital discharge data would further clarify the prevalence of psychiatric disease in this population.

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Appendix

Supplementary Table 1
International Classification of Diseases, Ninth Revision, Clinical Modification and Clinical Classification Software codes used to identify psychiatric disorders in transgender inpatient hospital encounters

Psychiatric Disorders	ICD-9 CM or CCS codes
Depression	300.4, 301.12, 309.0, 309.1, 311
Psychosis	295.00–298.9, 299.10, 299.11
Mood disorders	CCS 657
Anxiety disorders	CCS 651
Schizophrenia and other psychotic disorders	CCS 659
Suicide and intentional self-inflicted injury	CCS 662
Screening and history of mental health and substance abuse	CCS 663
Personality disorders	CCS 658
Attention deficit, conduct, and disruptive behavior disorders	CCS 652
Impulse control disorders, not elsewhere classified	CCS 656

The CCS for ICD-9-CM is a diagnosis and procedure categorization scheme that can be used in many types of projects analyzing data on diagnoses and procedures. CCS is based on the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM), a uniform and standardized coding system. The ICD-9-CM's multitude of codes—over 14,000 diagnosis codes and 3900 procedure codes—are collapsed into a smaller number of clinically meaningful categories that are sometimes more useful for presenting descriptive statistics than are individual ICD-9-CM codes.
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