

ORIGINAL ARTICLE

Prevalence of diagnosed eating disorders in US transgender adults and youth in insurance claims

Katarina A. Ferrucci MS^{1,2}  | Kate L. Lapane PhD² | Bill M. Jesdale PhD²¹Clinical and Population Health Research Program, Graduate School of Biomedical Sciences, University of Massachusetts Medical School, Worcester, Massachusetts, USA²Department of Population and Quantitative Health Sciences, University of Massachusetts Medical School, Worcester, Massachusetts, USA

Correspondence

Katarina A. Ferrucci, Clinical and Population Health Research Program, Graduate School of Biomedical Sciences, University of Massachusetts Medical School, 55 Lake Ave North, Worcester, MA 01655, USA.
Email: katarina.ferrucci@umassmed.edu

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Abstract

Objective: We estimated the prevalence of diagnosed eating disorders, overall and by select demographics, among commercially insured individuals identified as transgender in a national claims database.**Methods:** From the 2018 IBM[®] MarketScan[®] Commercial Database, there were 10,415 people identifiable as transgender based on International Classification of Disease (ICD-10) codes and procedure codes, specific to gender-affirming care, from inpatient and outpatient claims. Eating disorders were identified from ICD-10 codes and included anorexia nervosa, bulimia nervosa, binge eating disorder, eating disorder not otherwise specified, avoidant restrictive feeding and intake disorder, and other specified feeding and eating disorders. We estimated the prevalence of specific eating disorders diagnoses by selecting patient characteristics.**Results:** Of individuals receiving some form of gender-affirming care, 2.43% (95% confidence interval: 2.14%–2.74%) were diagnosed with an eating disorder: 0.84% anorexia nervosa, 0.36% bulimia nervosa, 0.36% binge eating disorder, 0.15% avoidant restrictive feeding and intake disorder, 0.41% other specified feeding and eating disorders, and 1.37% with an unspecified eating disorder. Among transgender-identifiable patients aged 12–15 years, 5.60% had an eating disorder diagnosis, whereas 0.52% had an eating disorder diagnosis in patients aged 45–64 years.**Discussion:** In patients identifiable as transgender, with receipt of gender-affirming care, the prevalence of diagnosed eating disorders was low compared to extant self-reported data for eating disorder diagnosis in transgender individuals. Among this population, eating disorders were highest in adolescents and young adults. Clinically verified prevalence estimates for eating disorder diagnosis in transgender people with a history of gender-affirming care warrant further investigation.**Public Significance:** The present study aims to provide clinically validated, contemporary prevalence estimates for diagnosed eating disorders among a medically affirmed population of transgender adults and children in the United States. We report low prevalence of having any eating disorder relative to prevalence estimates reported in prior literature without clinical validation. These findings may be explained by access to affirming care and medical care generally.

KEYWORDS

disordered eating, eating disorders, gender identity, healthcare claims, TGNC, transgender

1 | INTRODUCTION

In the United States, 1.4 million adults and ~150,000 youth aged 13–17 years identify as transgender (Conron, 2020; Flores et al., 2020). Transgender is a broad term that can be used to describe people whose gender identity is different from the gender assigned at birth. Some transgender people identify as neither a man nor a woman, or as a combination of male and female, and may use one or several terms to describe their gender identity. Often these individuals are referred to as gender diverse (National Center for Transgender Equality, 2018). Transgender and gender diverse individuals are more likely than cisgender individuals to develop a range of chronic physical and mental health conditions in their lifetime (Cicero et al., 2020; Dragon et al., 2017). This population additionally may face stigmatization based on others' perceptions of their outward appearance, particularly among those who may physically present as what is perceived by an onlooker as visibly transgender (i.e., assumed to not be cisgender based on the onlooker's ideas of what appearance constitutes identifying with a particular gender).

Both groups may experience social incongruence between gender and others' perceptions of their gender conformity. Incongruence that is internalized and affects well-being is referred to as gender dysphoria (Zucker et al., 2016). This incongruence, a discomfort with one's physical body and a lack of body satisfaction, can increase vulnerability for the development of eating disorders (Diemer et al., 2018; Gordon et al., 2016; Grossman & D'Augelli, 2007). Those with eating disorders are characterized as having an excessive preoccupation with food, eating, and body image (American Psychological Association, 2021). People with eating disorders are at an elevated risk for suicide, hospitalization, and poor health outcomes—including but not limited to cardiac arrhythmias, dehydration and electrolyte disorders, gastrointestinal issues, nutritional deficiencies, anemia, and amenorrhea (Bulik et al., 2008; Casiero & Frishman, 2006; Sato & Fukudo, 2015). In a multiyear, longitudinal study, Franko et al. (2013) reported a standardized mortality ratio of 7.7 in the first 10 years, among a sample of 246 (assumed cisgender) women with diagnosed anorexia nervosa and bulimia nervosa. While all eating disorders are associated with a high all-cause and suicide mortality, anorexia nervosa has the highest mortality rate among them (Arcelus et al., 2011; Chesney et al., 2014; Franko et al., 2013).

Despite a common desire among members of transgender and gender diverse populations to have their gender medically affirmed through hormone therapies and/or surgeries, many face barriers to both general and gender-affirming care and may endure discrimination from health care providers (Forbes-Roberts, 2018; Hines et al., 2019). Many transgender and gender diverse people resort to unsafe methods, including disordered eating behaviors (Guss et al., 2017) to align their body with their gender identity and suppress secondary sex characteristics (Turan et al., 2015) largely through restrictive eating and overexercise, placing them at greater risk for developing eating disorders (Diemer et al., 2015; Gordon et al., 2016). About 75% of transgender and gender diverse college students with eating disorders reported attempted suicide in the last 12 months (Duffy et al., 2019),

whereas ~42% of cisgender patients with eating disorders have attempted suicide (Suokas et al., 2014). Considering high all-cause and suicide mortality among cisgender individuals and transgender individuals, eating disorders pose a tremendous threat to the lives of those who suffer from them.

The current understanding of eating disorder prevalence in transgender populations is primarily based on medium-sized self-report studies from transgender youth and young, college-age adults (White et al., 2011). Two studies that used data from the American College Health Association–National College Health Assessment II have reported similar prevalence of self-reported past-year eating disorder diagnosis among two samples of self-identifying transgender and gender diverse students; Diemer et al. (2015) reported 15.8% ($n = 479$) of transgender students and Duffy et al. (2019) reported 17.6% ($n = 678$) of transgender students. Diemer et al. (2015) additionally found transgender students to be 4.6 times as likely to be diagnosed with an eating disorder as cisgender students. At the community level, one study leveraged self-report data from a cross-sectional study of transgender individuals over the age of 18 years ($n = 452$) and found that 7.4% had ever been diagnosed with anorexia nervosa or bulimia nervosa (Diemer et al., 2018). Among these individuals, 55% self-reported having accessed gender-affirming medical services, which have been shown to reduce eating disorder symptomology (Ålgars et al., 2012; Jones et al., 2018; Testa et al., 2017; Uniacke et al., 2021).

Most eating disorder literature in the general population has focused on youth and college-age adults; to our knowledge, estimates of eating disorders among older transgender individuals do not exist. Jaworski et al. (2019) analyzed the International Classification of Disease (ICD)-10 codes for anorexia nervosa, atypical anorexia nervosa, bulimia nervosa, and atypical bulimia nervosa in a sample of (assumed cisgender) Polish men who received care through the National Health Fund between 2010 and 2017 and found that eating disorder prevalence dropped significantly among those older than 20 years of age. Another study that examined the prevalence of eating disorders among a nationally representative sample of (assumed cisgender) US adults found that the average age of onset for anorexia nervosa, bulimia nervosa, and binge eating disorder ranged from 19 to 25 years, and the average current age of the same individuals with these conditions ranged from 39 to 45 (Udo & Grilo, 2018). In the same study, hazard ratios for all three conditions were inversely associated with age, relative to those 60 years and older, such that those between 18 and 29 years old were 3.86–5.81 times as likely to be diagnosed with an eating disorder as those 60 years of age and older, those 30–44 years were 2.77–5.45 times as likely and those 45–59 years were 2.37–2.52 times as likely. While eating disorders in assumed cisgender aging populations are much less common than in assumed cisgender youth, as evidenced here, they may persist into middle age and are as equally detrimental to the health of older adults as they are to others. Thus, we advocate that it is important to produce clinically validated estimates of the prevalence of eating disorder diagnoses across all age groups in this population, as self-report studies report high numbers of transgender youth and adults with past year eating disorder diagnoses.

In addition to a paucity of estimates among an older cohort of transgender adults, clinically validated eating disorder prevalence estimates among large samples of transgender individuals do not exist. Within the United States, records of medical billing claims (i.e., billing for medical procedures and services provided to patients) are consolidated in several databases (Commercial, Medicaid, & Medicare Supplemental and Coordination of Benefits), which may be made accessible to researchers and institutions seeking to examine a range of health outcomes, cost of care, and care utilization among other areas of interest. While gender identity is not routinely recorded in these datasets, methods to identify transgender individuals through diagnostic and procedure codes have been developed (Dragon et al., 2017; Ewald et al., 2019; Proctor et al., 2016; Progovac et al., 2018). In this study, we have adapted these methods to provide estimates of the prevalence of specific eating disorder diagnoses and describe patient-level characteristics associated with having any diagnosed eating disorder among commercially insured transgender people receiving gender-affirming medical interventions.

2 | METHODS

2.1 | Participants

We used the IBM® MarketScan® Commercial Database (2018). This data resource provides nationwide patient-level data for a commercially insured population (health insurance provided to employees of a company, as well as their spouses and/or dependents, which are most often their children; IBM Watson Health, 2019). The data resource allows linkages of medical billing claims across different settings and services (e.g., inpatient, outpatient, emergency room visits, and prescription medications). Because these data are de-identified, this study was not considered human participants research by the Institutional Review Board at the University of Massachusetts Chan Medical School.

2.1.1 | Sample of transgender individuals

We identified 11,169 individuals with evidence of receipt of gender-affirming care in inpatient (i.e., inpatient services; records that summarize information about a hospital admission, including up to 15 diagnosis codes and 15 procedure codes), and outpatient (up to 4 diagnosis codes and 1 procedure code) databases within the 2018 IBM® MarketScan® Commercial Database. This was the most recent year available to the research team. In accordance with prior literature, we used ICD-10 diagnosis codes for gender identity disorder: F64.0, F64.1, F64.2, F64.8, and F64.9 and/or history of sex reassignment: Z87.890, as well as Procedure Coding System (ICD-10-PCS) and Healthcare Common Procedure Coding System (HCPCS) procedure codes for male to female bottom surgery: 0W4M070, 0W4M0J0, 0W4M0K0, 0W4M0Z0, 55970 and female to male bottom surgery: 0W4N071, 0W4N0J1, 0W4N0K1,

0W4N0Z1, 55980 (Dragon et al., 2017; Ewald et al., 2019; Proctor et al., 2016; Progovac et al., 2018). We excluded patients who lacked continuous coverage throughout 2018 and those who either lacked mental health coverage or whose mental health claims were not visible to the research team ($n = 313$). The remaining 10,415 patients comprised the final transgender sample.

Individuals without continuous coverage were excluded because insured individuals are identified in the IBM® MarketScan® Commercial Database with an insurance enrollee identification number that may change when they change employers or when an abrupt change in status (such as disability) intervenes. Additionally, not all insurance plans cover mental health utilization on parity with physical health. Our choice to include only those with continuous coverage was in an effort to capture as many people with complete information as possible given these limitations.

2.2 | Measures

2.2.1 | Operational definition of eating disorders

Using all data included in the inpatient, inpatient services, and outpatient databases from 2018, we used ICD-10 diagnostic codes for eating disorders in any diagnosis field for anorexia nervosa (F50.0X), bulimia nervosa (F50.2X), binge eating disorder (F50.81), avoidant/restrictive food intake disorder (F50.82), other specified eating disorders (F50.89), and an overall eating disorders category that includes eating disorders (broadly), unspecified eating disorders, and eating disorder unspecified (F50.X, F50.8X not including F50.81, F50.82, F50.89, F50.9X) (based on 5th ed.; DSM-5; American Psychiatric Association, 2013).

2.2.2 | Covariates

Covariates included age, region of medical service within the United States, relationship to plan-holder, sex reported on claims, and type of insurance coverage. Our sample included all patients aged 64 years and younger, grouped into six age groups: <11, 12–15, 16–18, 19–24, 25–44, and 45–64 years to reflect a relatively small number of informative age groups. Patients were categorized based on their relationship to plan holder (i.e., the plan holder, their spouse, or a child/dependent of the plan holder). Sex categories, female and male, were maintained from the variable's original format and reflected a mixture of sex at birth and current gender. Categories for the US region of service were also maintained from the region variable, in five categories: Northeast, North Central, South, West, or unknown. Race/ethnicity, education, and income are not available in the IBM® MarketScan® Commercial Database. Other demographics that were available, namely plan holder employment type (salary/hourly), unionization status, and employer industrial sector were not analyzed in this analysis due to excessive missingness and/or lack of relevance to the topic at hand.

2.3 | Statistical analysis

2.3.1 | Data analysis

Analyses were conducted using SAS 9.4 (Cary, NC, 2011). Descriptive statistics for patient characteristics were calculated. Characteristics of transgender people receiving gender-affirming medical interventions were stratified by age and presence of any eating disorder and proportions were generated with 95% confidence intervals (CIs).

3 | RESULTS

3.1 | Descriptive statistics

Our sample consisted of 10,415 transgender-identified individuals. Almost 60% of the sample was described as female on claims (59.2%, which may be sex at birth or current gender), 63% were younger than 24 years old. Nearly one third (32.2%) were identified as being the primary plan holder, 62.6% were the child of a plan holder, and 5.2% were the spouses of the plan holder (Table 1).

3.2 | Eating disorder prevalence

Among individuals identifiable as transgender from claims, we found that unspecified feeding and eating disorders (1.37%, 95% CI [1.16–1.62]) were the most commonly diagnosed eating disorders, followed by anorexia nervosa (0.84%, 95% CI [0.67–1.03]), other specified feeding and eating disorders (0.41%, 95% CI [0.30–0.56]), bulimia nervosa (0.36%, 95% CI [0.26–0.50]), binge eating disorder (0.36%, 95% CI [0.25–0.49]), and avoidant restrictive feeding and intake disorder (0.15%, 95% CI [0.09–0.25]; Table 2). The median age of individuals with diagnosed eating disorders ranged from 15 for avoidant restrictive feeding and intake disorder to 22 for binge eating disorder.

Those diagnosed with any eating disorder were more likely to be young, reported as female on claims; the proportion diagnosed with eating disorders was similar across all US geographic regions (Table 3). Figure 1 displays the prevalence of any diagnosed eating disorder for these patients identifiable as transgender, within 5-year age groups.

4 | DISCUSSION

Our study is the first to provide contemporary national estimates of clinically diagnosed eating disorders among US transgender individuals. Using national claims data from individuals, covering a diversity of insurers, providers, and commercially insured individuals, we found that 2.43% of transgender individuals had a diagnosis of an eating disorder in 2018. The prevalence of any eating disorder was highest among those younger than 24 years of age, and among patients coded as female on claims.

TABLE 1 Demographic characteristics of transgender people identified in a database of those with commercial insurance, 2018.

	N = 10,415
	Percentage
Sex reported on claims	
Male	40.8
Female	59.2
Age group (years)	
<11	2.5
12–15	10.8
16–18	18.1
19–24	31.6
25–44	26.0
45–64	11.1
Plan type	
Basic/major medical/comprehensive	2.1
Preferred provider organization	49.9
High-deductible/consumer-driven	20.3
All other health plans ^a	25.8
missing	1.9
Relationship to plan holder	
Self	32.2
Spouse	5.2
Child/other	62.6
US region of service	
Northeast	21.4
North Central	24.1
South	31.3
West	22.8
missing	0.4

^aAll other health plans include: exclusive provider organization, health maintenance organization, and point-of-service.

Our estimate of the prevalence of clinically diagnosed eating disorders is lower than previous reports of any eating disorder among transgender individuals. Prior studies have reported that 7.4–17.6% of transgender individuals self-reported eating disorders (Diemer et al., 2015, 2018; Duffy et al., 2019). We found that the highest prevalence of eating disorders was in those aged 12–15 years (5.60%) and 16–18 years (3.93%). These findings are consistent with general population age trends that highlight a greater prevalence of onset of disordered eating among those between the ages of 15 and 21 (Hudson et al., 2007; Isomaa et al., 2009; Keski-Rahkonen et al., 2007). We additionally found that 0.84% of our sample was clinically diagnosed with anorexia nervosa and 0.36% with bulimia nervosa. These estimates are lower than previous reports. In a survey of almost 500 transgender adults, Nagata, Murray, et al. (2020) found that 4.1% of transgender women and 4.2% of transgender men reported being told by a clinician that they had anorexia nervosa, closely followed by 2.9% and 3.2% with bulimia nervosa.

TABLE 2 Proportion and measures of the age distribution of specific eating disorder diagnosis among claims-identified transgender individuals, 2018.

Diagnoses	Number of patients	Proportion % (95% confidence interval)	Median age (25th – 75th percentile)
Anorexia nervosa	87	0.84 (0.67–1.03)	17 (16–20)
Bulimia nervosa	38	0.36 (0.26–0.50)	19 (16–23)
Binge eating disorder	37	0.36 (0.25–0.49)	22 (17–25)
Avoidant restrictive feeding and intake disorder	16	0.15 (0.09–0.25)	15 (14–20)
Other specified feeding and eating disorders	43	0.41 (0.30–0.56)	18 (15–22)
Unspecified feeding and eating disorders	143	1.37 (1.16–1.62)	17 (15–20)
Any eating disorder	253	2.43 (2.14–2.74)	18 (15–22)

TABLE 3 Prevalence of any eating disorder diagnosis across claims-identified transgender individuals.

Diagnoses	Number of patients with any eating disorder	Prevalence estimate (95% confidence interval)
Sex (on claims)		
Male (n = 4252)	73	1.72 (1.35–2.15)
Female (n = 6163)	180	2.92 (2.51–3.37)
Age group (years)		
0–11 (n = 256)	1	0.39 (0.01–2.16)
12–15 (n = 1125)	63	5.60 (4.33–7.11)
16–18 (n = 1883)	74	3.93 (3.10–4.91)
19–24 (n = 3287)	77	2.34 (1.85–2.92)
25–44 (n = 2709)	32	1.18 (0.81–1.66)
45–64 (n = 1156)	6	0.52 (0.19–1.13)
Region of service		
Northeast (n = 2229)	63	2.83 (2.18–3.60)
North central (n = 2509)	69	2.75 (2.15–3.47)
South (n = 2377)	65	2.00 (1.54–2.54)
West (n = 2377)	54	2.27 (1.71–2.95)

The discrepancy between our prevalence estimates based on clinically diagnosed eating disorders and estimates based on self-reported eating disorders may be explained by low rates of clinical diagnosis generally; only 1 in 10 people living with eating disorders receive clinical treatment (Noordenbos, 2002). This may be because there are low levels of interaction with and potential barriers to accessing care providers, perhaps especially for transgender individuals (Duffy et al., 2016). In the general population, low levels of diagnosis may be attributed to weight stigma (Hatzenbuehler et al., 2009), financial barriers and cost of care (Evans et al., 2011; National Eating Disorder Association Statistics, 2015), barriers caused by disparities and discrimination in healthcare settings due to racial, sexual and gender identity (Duffy et al., 2016; Marques et al., 2011; Strother et al., 2012). Within the sample we investigated, all individuals had received gender-affirming care. Prior studies have shown that

affirmation of gender identity can lead to a decrease in or lower disordered eating symptomology (Jones et al., 2018; Testa et al., 2017; Uniacke et al., 2021) and increased body image satisfaction (Owen-Smith et al., 2018). As such, the occurrence of eating disorders in this medically affirmed population is likely to be lower than in a general population of transgender people. Nevertheless, eating disorders may persist well beyond physical symptom remission and there is not yet consensus in the field regarding what qualifies as full recovery (Steinhausen, 2002; Vall & Wade, 2015). Those with eating disorders or those in recovery may take on new disordered eating behaviors; undergoing diagnostic crossover, especially on the path of recovery from one disorder (Eddy et al., 2008; Mortimer, 2019). Thus, the extent to which treatment of eating disorders provides attentive care that positively affirms their gender identity warrants further investigation.

Cross-sectional surveys of gender minority people tend to have a higher average age of transgender respondents than what was observed in the current study. Cross-sectional studies of transgender people are largely comprised of individuals over 25 years of age (Herman et al., 2017). Our study provides a rare look at the prevalence of clinically diagnosed eating disorders among older transgender adults as well as transgender youth. For transgender people, eating disorders may be a means to affirm their gender identity through the suppression of secondary sex characteristics (Ålgars et al., 2010), coping with stress related to gender identity (Coelho et al., 2019), body uneasiness (Bandini et al., 2013), objectification, and minority stress (Brewster et al., 2019). Eating disorders, like in their cisgender peers, may serve as a path to rapidly attaining a socially desirable figure, gain social capital with peers of the gender they identify with, or attain a sense of control over one's body and appearance when they lack a sense of control over the impact of puberty on their body (Ålgars et al., 2010; McGuire et al., 2016; Murray et al., 2013). Non-conformity to cisgender norms as a by-product of seeking to affirm one's gender presentation, can render transgender individuals vulnerable to scrutiny from family, peers, and strangers (Bradford et al., 2013; Fuller & Riggs, 2018). With societal pressures on young people to look a certain way and the added pressures that they may face from adults and peers if they are not cisgender, feeling comfortable about one's body or appearance may

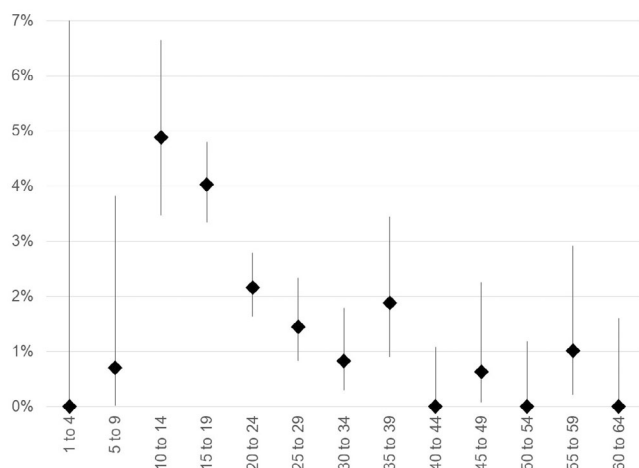


FIGURE 1 Prevalence and 95% confidence interval (CI) for any diagnosed eating disorder among patients identifiable as transgender in the IBM® MarketScan® 2018 database, by 5-year age groups. Point estimates for any diagnosed eating disorder shown as black diamonds. 95% CIs shown as vertical lines. The upper confidence limit for the 11 patients aged 1–4 is truncated from 28.5%.

be challenging, particularly for those experiencing gender dysphoria (Duffy et al., 2016; Gordon et al., 2016; Nagata, Ganson, & Austin, 2020). Considering this, it is not surprising that most of our sample diagnosed with an eating disorder are in their teens (Ristori et al., 2019); when young people are coming into who they are as an individual.

Despite the use of a national claims data resource, our data were limited to those identifiable as transgender in claims data, likely reflective of receipt of gender-affirming care. Considering barriers to receiving gender-affirming care, it is not appropriate to generalize these findings to transgender people who are not receiving gender-affirming care. We have used a validated approach to identifying transgender individuals in claims data. Yet, the possibility of misclassification of individuals who prefer another gender identity than “transgender,” such as non-binary, gender queer, or two spirit among various other identities remains.

There are several explanations for why our estimates are lower than expected. First, in this claims dataset, diagnoses of eating disorders are likely driven by the receipt of health care for eating disorders, and thus under-reported relative to the actual prevalence in this population (Deloitte Access Economics, 2020; Tkacz & Brady, 2021). Providers may lack awareness of eating disorders among transgender individuals and fail to recognize these disorders, may prioritize treatment for gender dysphoria above disordered eating behaviors or may blame gender dysphoria as the cause of an eating disorder when it is being caused by trauma, issues with food texture, or bullying among a number of reasons. Patients receiving gender affirming care may be reluctant to disclose disordered eating behaviors either due to lack of time with providers or because of required mental health assessments before insurers authorize gender-affirming surgery.

4.1 | Limitations

While we have produced findings that provide us insight regarding the scope of individuals with eating disorders who receive affirming medical care, overall and stratified by age, our cross-sectional analysis is limited to a single recent year of data, and may not reflect the age or diagnosis with eating disorders, merely their prevalence. Further, despite identifying a sample based on receipt of gender affirming care, we did not consider procedure codes for mastopexy, orchiectomy, puberty blockers, and hormone replacement therapy, as these are all commonly used in the treatment of cisgender individuals. We recognize that in doing so, these findings must be interpreted within the context of those who have received particular types of gender affirming care. Additionally, we restricted our eligibility criteria to include only those with continuous health insurance coverage in 2018. Future research may lengthen the study period. This database does not collect information on race/ethnicity or socioeconomic status and thus individuals in this database are representative only of those insured by their employers, and these findings do not pertain to individuals who are covered under Medicare (i.e., older adults 65 years and older) and Medicaid (i.e., individuals with notably low income and disabled individuals). Finally, females historically have been reported as the most affected by eating disorders and have been the focus of eating disorder treatment generally (Coelho et al., 2019). Sex reported on claims in this study may be the sex of the individual at birth or the individual's gender identity, and there is likely to be variation in coding practices between care sites. Thus, we caution against interpreting findings by sex.

5 | CONCLUSION

In this population of individuals identifiable as transgender from claims indicating receipt of gender-affirming care, 2.43% were diagnosed with one or more eating disorders. This proportion is low compared to the self-reported prevalence of eating disorders from other sources. While we suspect diagnostic biases to be at play, our data do not allow us to explore this issue further. The health of transgender individuals is understudied, and these claims data provide insights for those receiving affirming care.

Nevertheless, we believe that the occurrence of eating disorders in transgender populations is likely undercounted, particularly in adolescent and young adult populations, who may be hindered in their ability to access care (Duffy et al., 2016) or avoid disclosing gender identity to providers due to fear of exile from family members and/or community, as well as fear of discrimination and microaggressions from providers. Despite that this population of transgender individuals already received care, more research is needed to understand potential issues around identifying eating disorders and ensuring that those providing care for eating disorders are aware of issues specific to mental wellness for transgender individuals. As with all clinicians, those treating eating disorders should (1) be educated around providing gender affirming care, (2) allow gender minority patients in their practice to identify themselves (i.e., gender identity, pronouns, and

preferred name) and use those identity markers, (3) affirm the gender identity of their gender minority patients, (4) develop treatment plans cognizant of their patients' developing gender identities, and (5) seek resources to help them develop these skills, such as attending gender minority focused grand rounds at local universities and medical centers, educational trainings for providing treatment and affirming care to gender minority patients through local, state, and national transgender and gender diverse run mental health and advocacy organizations, (6) educate themselves on state level healthcare policies pertaining to gender minority individuals, and (7) network with peers who openly advocate for and provide gender inclusive mental health care.

AUTHOR CONTRIBUTIONS

Katarina Ann Ferrucci: Conceptualization; data curation; investigation; methodology; project administration; supervision; validation; writing – original draft; writing – review and editing. **Kate L Lapane:** Conceptualization; data curation; formal analysis; methodology; supervision; validation; writing – review and editing. **Bill M Jesdale:** Conceptualization; data curation; formal analysis; investigation; methodology; supervision; validation; visualization; writing – review and editing.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

We are unable to share data per the terms of the licensing agreement with the IBM® MarketScan® Commercial Database. The IBM® MarketScan® Commercial Database may be licensed and used for research with a Data Use Agreement. The SAS code used to generate the analyses will be made available on request.

ORCID

Katarina A. Ferrucci  <https://orcid.org/0000-0003-3946-4972>

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