Transgender/Nonbinary College and University Students' Perceptions and Use of Mental Health Services: Comparisons to Peers in a Large U.S. Sample

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Abstract

Objective: This study was intended to characterize transgender and/or nonbinary (TNB) college and university students' perceptions (e.g., perceived need, perceived barriers) and use of mental health care, including any differences relative to cisgender peers.

Participants and Methods: Using cross-sectional, population-based survey data from U.S. undergraduate and graduate students (2015–2021), we compared TNB (*n*=10,297) and cisgender (*n*=426,827) students' perceptions and use of mental health services via demographic-adjusted generalized linear models.

Results: Over 77% of TNB students had moderate-to-severe depression/anxiety symptoms. TNB students were significantly more likely than cisgender students to have used psychotherapy (risk ratio [RR]=2.12) and psychiatric medication (RR=2.05) in the past year—and significantly more likely to perceive barriers to care, including appointment availability problems (RR=2.67) and feeling misunderstood by providers (RR=1.96).

Conclusion: Colleges and universities should take steps to facilitate equitable care for TNB students, including access to TNB-affirming clinicians on and off campus.

Keywords: transgender, nonbinary, college, mental health services, health care access

Transgender/Nonbinary College and University Students' Perceptions and Use of Mental Health Services: Comparisons to Peers in a Large U.S. Sample

In the United States, college and university students who are transgender (i.e., whose gender identity does not match sociocultural expectations for the sex they were assigned at birth) and/or nonbinary (i.e., whose gender identity is not exclusively boy/man or girl/woman, such as nonbinary, genderqueer, gender fluid, agender, etc.) experience pervasive interpersonal prejudice and structural marginalization.[1,2] Consequently, transgender and/or nonbinary (TNB) students are at markedly elevated risk of mental health problems relative to cisgender (non-TNB) peers:[1,3,4] In a national survey, TNB students had more than 3 times the odds of screening positive for major depression, generalized anxiety, and past-year suicidal ideation relative to cisgender students.[3] These difficulties lead many TNB students to use mental health services, with one study reporting that 34% of TNB students had received a diagnosis of or treatment for depression in the past year, compared to 10% of students overall.[4] Nonetheless, little is known about how TNB students perceive mental health services—including how they perceive their need for services, the value of services, relevant social norms, barriers to using services, or their likelihood of using services if needed. Likewise, there has been little research describing TNB students' mental health service use, including where they use services (e.g., on campus, in the community) and which services they use (e.g., psychotherapy, medication). Beyond higher education contexts, TNB people report widespread difficulty accessing TNB-affirming mental health care,[5,6] resulting in delay or avoidance of care, heightened financial and time burdens, and even iatrogenic effects.[5,6] It is not clear whether these barriers, or other TNB-specific help-seeking challenges, also impact TNB college and university students; if so, they may reflect serious inequities in campus mental health systems, resulting in inadequate care for a high-need

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population. Thus, there is an urgent need to better characterize TNB students' use of mental health services—and, in particular, to identify any differences between TNB and cisgender students' perceptions and use of mental health services. By highlighting specific problem areas (e.g., barriers to care disproportionately impacting TNB students), this information can inform institutional efforts to ensure that TNB students receive adequate, equitable mental health care.

Colleges' and Universities' Roles in Mental Health Help-Seeking

Past research has identified a range of factors that may influence decisions to seek mental health services, notably perceptions of (1) one's own need for services; (2) the value of services, i.e., whether services are helpful; (3) social norms regarding mental health; (4) barriers to care; and (5) anticipated help-seeking behavior.[7] For college and university students, campus contexts may be key in shaping these perceptions.[8] Many colleges and universities work to improve perceptions and use of mental health services via primary prevention efforts, such as stigma reduction campaigns and screening programs.[9,10] Further, colleges and universities are often directly involved in students' mental health care by providing student health insurance and/or on-campus mental health services.[9,11] For students with school-provided insurance, plan terms (e.g., cost-sharing, provider networks) may impose or alleviate barriers to care, such as cost and appointment availability.[12,13] On-campus services may also address barriers (e.g., transportation)[12,13] and may be a lower-cost option, particularly when funded through universal student fees rather than fee-for-service billing.[12]

TNB-Specific Factors in Mental Health Help-Seeking

While few studies have addressed TNB college and university students' use of mental health services, research with broader TNB adult populations indicates that gender modality (i.e., being TNB or cisgender)[14] shapes mental health help-seeking in multiple ways. Many of these

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effects relate to *cissexism*: the system of power relations that privileges cisgender people over TNB people through a combination of interpersonal prejudice (e.g., rejection, discrimination) and structural marginalization (e.g., inequitable laws, policies, and practices).[15]

Minority Stress and Diminished Social Safety

For TNB people, interpersonal and structural cissexism are associated with negative mental health outcomes, including depression, anxiety, and suicidality;[16] for instance, in the higher education context, being denied access to gender-congruent restrooms, denied gender-congruent housing, and/or victimized for being TNB are associated with greater risk of suicide attempts.[1] Such associations are often conceptualized in terms of *minority stress*, the concept that social marginalization produces chronic and acute psychological stress, contributing to depression, anxiety, and other mental health symptoms and conditions.[17-19] Recent work posits that cissexism also harms mental health by depriving TNB people of *social safety*, i.e., reliable social connection, inclusion, and protection.[20] Mental health treatment cannot address many harms of cissexism, which include educational disruption, economic marginalization, and interpersonal violence.[21] Nonetheless, a growing body of research indicates that psychotherapy can mitigate the mental health impacts of social marginalization for clients who are sexual-minority-identified (e.g., lesbian, gay, bisexual, queer; hereafter, LGBQ+), TNB, or both.[22-24]

Cissexism-Related Barriers to Mental Health Services

Cissexism also makes it difficult for TNB people to obtain adequate mental health care. In the U.S. Transgender Survey (USTS), a national survey of almost 28,000 TNB adults, 1 in 3 participants who saw a health care provider in the past year had a negative experience related to being TNB.[21] Further, as a result of cissexism, TNB people are substantially more likely than cisgender people to experience poverty and financial barriers to care:[21,25] In a U.S. population-

based sample of 271 TNB adults, 33% reported avoiding health care due to cost in the past year, compared to 15% of cisgender adults.[25] These barriers extend to mental health care, with some TNB people refused services because they are TNB,[5] and others encountering therapists who pathologize their gender identities—or attempt to make them cisgender, a discredited practice linked to suicidality and other negative outcomes.[26,27] Harmful clinician behaviors also include misgendering (referring to clients as an incorrect gender), overemphasizing TNB identity as an explanation for clients' difficulties, and sexual harassment.[5,6] Some clients respond by leaving therapy and avoiding future care.[5] Others switch providers, yet many report difficulty finding providers who are simultaneously affordable, TNB-affirming, and appropriate for their needs.[5,6]

Use of Mental Health Services for Gender Affirmation

Besides helping TNB people cope with cissexism, psychotherapy can be valuable for navigating social and/or medical steps to affirm one's gender identity.[21,28] Among TNB adults in the USTS, 58% of participants had used psychotherapy for gender exploration or affirmation.[21] In this context, TNB clients describe supportive psychotherapists as valuable in providing emotional support, advocating for them, and linking them to resources.[28] Distinct from voluntary psychotherapy, some health insurers and medical providers require TNB people to obtain referral letters from mental health clinicians, or even undergo psychotherapy, as a prerequisite for gender-affirming medical care (e.g., hormone therapy, surgeries). Professional standards for gender-affirming medical care generally do not require assessment by mental health clinicians and state that psychotherapy should not be a prerequisite.[29] However, mental health referral requirements persist in many settings, causing some TNB people to seek mental health services for this reason alone.[28,30]

TNB and LGBQ+ Community Norms Regarding Mental Health Services

Social norms related to mental health, including stigma surrounding mental health services, appear to influence mental health help-seeking.[7] However, among college and university students, perceived public stigma—that is, believing that others hold negative attitudes towards those using mental health services—does not consistently predict help-seeking.[31,32] Instead, personal stigmatizing attitudes regarding mental health services are a strong predictor of help-seeking, and these attitudes vary considerably across social identities such as gender, race, ethnicity, and sexual orientation.[32] One interpretation of these findings is that students may not feel beholden to how people "in general" view mental health services; rather, they may adopt and adhere to norms within narrower groups, such as those who share salient social identities.[32] Notably, LGBQ+ people have a higher prevalence of mental health service use than heterosexuals,[33] even when adjusting for symptoms,[34] and some report that mental health care is discussed openly in LGBQ+ communities.[35] Accordingly, LGBQ+ college students report less personal stigma towards mental health services than heterosexual students.[32] Population-based data indicate that over 80% of U.S. TNB adults are LGBQ+,[25] suggesting that favorable LGBQ+ norms may extend to TNB communities, though this issue remains to be studied.

TNB College and University Students' Perceptions and Use of Mental Health Services

Limited prior research suggests that TNB college and university students are more likely to use mental health services than cisgender peers. In one study of students seeking care at college and university counseling centers, TNB students (*n*=545) were more likely than cisgender students (*n*=161,760) to have sought psychotherapy before college (74.8% TNB; 49.5% cisgender).[36] A second study found that TNB students (*n*=47) were more likely than cisgender students (*n*=26,245) to have sought mental health services from campus counseling centers (43% TNB; 20% cisgender), counselors in general (79.0% TNB; 41.4% cisgender), and

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psychiatrists (45.0% TNB; 12.9% cisgender).[37] However, these studies included relatively few TNB students, did not compare TNB and cisgender students' perceptions of mental health services, and did not account for gender modality differences in mental health symptoms. Thus, it remains unclear whether TNB college and university students have distinctive mental health help-seeking experiences relative to cisgender peers.

Present Investigation

To address the gaps discussed above, we analyzed data from a large national survey of U.S. college and university students, comparing perceptions and use of mental health services across gender modality (i.e., TNB or cisgender). To assess the extent to which differences in perceptions and use of mental health services result from differences in mental health symptoms, we estimated gender modality differences before and after adjustment for symptoms of depression and generalized anxiety, the most prevalent mental health conditions in college and university students.[4]

Regarding perceptions of mental health services, we focused on 5 categories identified in a previous systematic review:[7] (1) perceived need for services, (2) perceived value of services, (3) perceived social norms regarding mental health, (4) perceived barriers to using services, and (5) anticipated help-seeking behavior. In light of prior research (discussed above), we predicted that, relative to cisgender students, TNB students would report greater perceived need, differences in social norms (lower personal stigma; greater awareness of family and friends' use of services), and greater perceived logistical barriers. We anticipated that gender modality differences in perceived need would be attenuated by adjustment for depression and anxiety symptoms, while differences in social norms and perceived barriers—thought to be driven by community norms and cissexism-related barriers to care, respectively—would persist when

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adjusting for symptoms. Given a dearth of prior research, there were no *a priori* hypotheses for perceived value of services, public stigma, or anticipated help-seeking behavior.

Regarding use of mental health services, we analyzed use of psychotherapy and psychiatric medication among all participants. For students who used psychotherapy in the past year, we analyzed the number of visits and the settings where students received mental health services (on campus, community, and stabilization). Consistent with prior studies,[36,37] we hypothesized that each service use outcome would be more prevalent for TNB students than cisgender students. Given that gender modality differences in service use may be driven by multiple factors, including mental health symptoms, we anticipated that adjustment for mental health symptoms would partially attenuate the expected differences.

Methods

Survey Procedures

We analyzed data from the Healthy Minds Study (HMS), an annual cross-sectional survey addressing mental health and related topics among undergraduate and graduate students. Participating schools are selected based on administrative interest and include universities, 2- and 4-year colleges, and technical schools. At each school, a random sample of 4,000 students (or all students, at schools with fewer than 4,000 students) are sent an email invitation, followed by reminder messages, with a link to an anonymous survey administered online via Qualtrics. Invited students are entered into drawings for a $100 or $500 prize. Among sampled students, participation ranged from 13% to 27% across survey waves. All participants provide informed consent. Procedures are approved by the Advarra institutional review board (HUM00100169). The design of HMS has been described in detail in numerous prior publications.[38,39]

Between 2015 and 2021, 324 schools participated in HMS. The analytic sample

comprised 437,050 students who participated in HMS between Fall 2015 and Spring 2021, excluding 3,909 students (0.9%) whose gender modality could not be determined due to missing items (see below). Students in the analytic sample were predominantly undergraduates (72.6%), U.S. residents (92.0%), and enrolled full time (89.1%).

Measures

Perceptions of Mental Health Services

Perceptions of mental health services were assessed with a series of single-item measures, which were developed for HMS or, where noted below, adapted from other measures.

Perceived Need. Students were asked, "How much do you agree with the following statement?: In the past 12 months, I needed help for emotional or mental health problems such as feeling sad, blue, anxious or nervous." Responses were dichotomized (*Strongly agree*/*Agree*/*Somewhat agree=1; Strongly disagree*/*Disagree*/*Somewhat disagree=0)*.

Perceived Value of Services. Students were asked, "How helpful on average do you think therapy or counseling is, when provided competently, for people your age who are clinically depressed?" Responses were dichotomized (*Very helpful*/*Quite helpful* =1; *A little helpful*/*Not at all helpful=0)*. Students were also presented with a list of reasons they might have received fewer or no mental health services (see *Perceived Barriers* for details); those endorsing *Prefer to deal with issues on my own or with support from family/friends* were coded as preferring informal support rather than clinical mental health services.

Social Norms. Perceived public and personal stigma were assessed using items adapted from the Discrimination Devaluation Scale.[40] Participants rated their agreement with the statements "Most people would think less of a person who has received mental health treatment" (public stigma) and "I would think less of a person who has received mental health treatment"

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(personal stigma). Responses were dichotomized (*Strongly agree*/*Agree*/*Somewhat agree*=1; *Somewhat disagree*/*Disagree*/*Strongly disagree*=0). Regarding awareness of others' use of mental health services, participants were asked, "As far as you know, how many of your close friends or family have ever sought professional help for an emotional or mental health problem?" Responses were dichotomized (*3 or more/At least 1 or 2*=1; *None*/*Don't know*=0).

Perceived Barriers. Depending on reported use of mental health services, students were asked either "In the past 12 months, which of the following explain why you have not received medication or therapy for your mental or emotional health? (Select all that apply)" or "In the past 12 months, which of the following factors have caused you to receive fewer services (counseling, therapy, or medications) for your mental or emotional health than you would have otherwise received? (Select all that apply)." Options included *Financial reasons (too expensive, not covered by insurance)*, *Not enough time*, *Not sure where to go*, and *Difficulty finding an available appointment*. In 2020-21, options also included *Privacy concerns* and *People providing services don't understand me*. There were several additional options that we did not conceptualize as barriers: preferring informal support (see above), planning to seek services, no need for services, no barriers, and a write-in option.

Anticipated Behavior. Participants were asked, "If you were experiencing serious emotional distress, whom would you talk to about this? (Select all that apply)" with options including *Professional clinician (e.g., psychologist, counselor, or psychiatrist)* and various non-clinical supports (e.g., *family member*, *no one*). Participants selecting *Professional clinician* were coded as "Would seek help from clinician for serious emotional distress."

Use of Mental Health Services

Psychotherapy. Students were asked, "Have you ever received counseling or therapy for

mental health concerns?" Those responding *Yes* were asked, "How many total visits or sessions for counseling or therapy have you had in the past 12 months?" (*0*, *1-3*, *4-6*, *7-9*, or *10 or more*) and "Are you currently receiving counseling or therapy?" (*Yes* or *No*).

Psychiatric Medication. Students were asked, "In the past 12 months have you taken any of the following types of prescription medications? (Please count only those you took, or are taking, several times per week)," with a list of psychiatric medication types including *Psychostimulants*, *Antidepressants*, *Anti-psychotics*, *Anti-anxiety medications*, *Mood stabilizers*, *Sleep medications*, and *Other medication for mental or emotional health*, with examples. Those reporting any listed medication type were coded as having used psychiatric medication.

Settings. Students were asked to report the setting(s) where they received mental health services from a pre-specified list, including the participating school's campus counseling and/or health services and other possible settings. We recoded providers as on campus (campus counseling/health services), community (*Provider in the local community (not on campus)*; *provider in another location, such as your hometown*), or stabilization services (*Psychiatric emergency services/Psych emergency room*; *Inpatient psychiatric hospital*; *Partial hospitalization program*). This section of the survey was presented only to students who used psychotherapy in the past year, representing 77.2% of all students who used psychotherapy, psychiatric medication, or both in the past year.

Gender Modality

Gender was assessed using the question "What is your current gender identity?" with options *male*, *female*, *trans male/trans man*, *trans female/trans woman*, *genderqueer/gender-nonconforming*, and *other (please specify)*. Write-in responses were recoded as appropriate, e.g., recoding "cisgender female" to *female*. Write-in responses reflecting nonbinary identities (e.g.,

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agender, nonbinary, gender fluid) were combined with *genderqueer/gender-nonconforming* into a "nonbinary gender identities" category.

To assess sex assigned at birth, participants were asked "What sex were you assigned at birth? (Meaning on your original birth certificate)" with the options *male* and *female* (2015-16) or "What was your sex at birth?" with the options *male, female*, and *intersex* (2016-21).

To construct the gender modality variable, students were classified as cisgender if they reported (1) male gender and male sex assigned at birth or (2) female gender and female sex assigned at birth. Students were classified as TNB if they reported (1) a nonbinary gender, regardless of sex assigned at birth; (2) female or trans female/trans woman gender and male sex assigned at birth; or (3) male or trans male/trans man gender and female sex assigned at birth. Gender modality could not be determined for participants with female or male gender who reported being assigned intersex at birth (*n*=79) or did not report sex assigned at birth (*n*=495), participants with trans male/trans man gender and male sex assigned at birth (*n*=39), participants with trans female/trans woman gender and female sex assigned at birth (*n*=24), participants who provided a write-in gender response in the 2016-20 waves, for which write-in data were not available (*n*=1,631), participants who wrote in that they were unsure of or questioning their gender (*n*=88), and participants who did not report gender or wrote in a non-informative response (e.g., "I don't want to answer," *n*=1,553). These students were excluded from analyses.

Depression and Anxiety Symptoms

We measured depression symptoms using the Patient Health Questionnaire–9,[41] which asks respondents how frequently they were bothered by 9 depression symptoms over the past 2 weeks (sample: "Feeling down, depressed, or hopeless"; 0=*Not at all*, 3=*Nearly every day*; alpha=.90). We measured anxiety symptoms using the Generalized Anxiety Disorder–7,[42] which

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asks respondents how frequently they were bothered by 7 generalized anxiety symptoms in the past 2 weeks (sample: "Trouble relaxing"; 0=*Not at all*, 3=*Nearly every day*; alpha=.92). Both measures have been previously validated among U.S. college students.[43,44]

Academic and Demographic Covariates

Participants self-reported their degree program (e.g., Bachelor's, JD) and degree year (e.g., first-year), which we used to construct 5 degree year categories: first-year [undergraduate], sophomore, junior, senior, and graduate/professional student. Participants also reported their enrollment status (full-time, part-time, another status).

Participants reported age in years and race/ethnicity, sexual orientation, and health insurance status from the options in Table 1. Participants with multiple races/ethnicities were recoded as multiracial. Native Hawaiian and Pacific Islander students were combined with Asian American/Asian students due to the small size of the former group.

Given gender modality differences in age, degree year, and race/ethnicity (see Table 1), we included these variables in all models as potential confounders. Enrollment status, sexual orientation, and health insurance were reported for descriptive purposes but not modeled as potential confounders: Enrollment status was similar across gender modality, while sexual orientation and health insurance were considered causally "downstream" of gender modality.[45]

Analysis

Non-response Weighting

Non-response weights, calculated using administrative data, were used to create a weighted sample that reflected the demographic and academic characteristics (gender, race/ethnicity, degree year, and grade point average) of all eligible students.

Missing Data

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Missingness was 0.2% to 15.0% for covariates and 10.8% to 19.2% for outcomes. Little's test[46] indicated that data were not missing completely at random (MCAR), but missingness resulted primarily from survey abandonment rather than skipped questions, supporting the missing at random (MAR) assumption. Missing data were multiply imputed (m=50) by fully conditional specification using the *mice* package for R[47]; sensitivity analyses using listwise deletion showed no appreciable differences in point estimates or confidence intervals.

Models

Risk ratios comparing the adjusted prevalence of each outcome in TNB and cisgender students were calculated using Poisson models with robust standard errors,[48] accounting for clustering within schools and incorporating nonresponse weights (see above). All models were adjusted for age, race/ethnicity, degree year, and survey year. For each outcome, we fit a second model adjusted for depression symptoms and anxiety symptoms (continuous).

Results

Participant Characteristics

Participant characteristics are presented in Table 1. Within the analytic sample, 10,297 (2.4%) of participants were TNB and 426,827 (97.6%) were cisgender. Across years, the proportion of TNB students ranged from 1.1% (2015-16) to 3.5% (2020-21). Most TNB students (72.6%) identified as genderqueer or gender nonconforming, while 6.8% identified as male, 12.0% identified as trans male/trans men, 4.0% identified as female, and 4.6% identified as trans female/trans women. Cisgender students predominantly identified as female (68.8%), with 31.2% identifying as male. The mean age was 22.1 years (standard deviation [SD]=5.3 years) for TNB students and 23.3 years (SD=6.8 years) for cisgender students. The TNB group had a lower proportion of graduate and professional students (20.3% TNB; 27.4% cisgender). The most

frequent race/ethnicity was White (65.5% TNB; 62.0% cisgender), followed by Asian or Pacific Islander (7.9% TNB; 12.4% cisgender) and multiracial (14.2% TNB; 9.4% cisgender). TNB students were considerably more likely than cisgender students to identify as queer (34.3% TNB; 1.6% cisgender), bisexual (31.8% TNB; 9.4% cisgender), gay (10.1% TNB; 2.3% cisgender), and lesbian (10.1% TNB; 1.3% cisgender), and considerably less likely to identify as heterosexual (11.5% TNB; 82.7% cisgender). Similar proportions of TNB and cisgender students reported private insurance (73.7% TNB; 74.9% cisgender), student insurance (13.0% TNB; 13.5% cisgender), Medicaid (10.4% TNB; 7.6% cisgender), being uninsured (4.6% TNB; 4.1% cisgender), and uncertainty about their health insurance (3.7% TNB; 3.8% cisgender). TNB students were much more likely than cisgender students to have moderate-to-severe depression and/or anxiety symptoms, i.e., scores ≥10 on the Patient Health Questionnaire–9 and/or Generalized Anxiety Disorder–7 (77.2% TNB; 46.8% cisgender; $p<.001$).

Perceptions of Mental Health Services

Table 2 presents the results of analyses comparing TNB and cisgender students' perceptions of mental health services. As discussed below, there was evidence of marked gender modality differences in perceived need, perceived bariers, and anticipated behavior, with mixed results for perceived value of services and social norms.

Perceived Need

TNB students were significantly more likely than cisgender students to report a perceived need for mental health support in the past year (88.1% TNB; 59.6% cisgender), with an adjusted risk ratio (aRR) of 1.46 (95% CI: 1.44, 1.49), partially attenuated when adjusting for depression and anxiety symptoms, aRR=1.12 (95% CI: 1.10, 1.14).

Perceived Value of Services

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Gender modality differences in perceived value of services were minimal. Most participants believed psychotherapy was helpful for people their age with depression (85.9% TNB; 84.1% cisgender), with a slight difference in favor of TNB students (aRR=1.03 (95% CI: 1.02, 1.04). A minority of students (23.7% TNB; 24.9% cisgender) indicated preferring informal support rather than clinical mental health services; this difference was significant only after adjusting for depression and anxiety symptoms, with TNB students less likely to prefer informal support than cisgender students (aRR=0.80; 95% CI: 0.76, 0.84).

Social Norms

Regarding perceived public stigma, around half of participants believed most people would think less of someone who received mental health treatment (50.8% TNB; 46.7% cisgender). This belief was somewhat more common in TNB than cisgender students (aRR=1.10; 95% CI: 1.06, 1.14), but not after adjustment for depression and anxiety symptoms. Few students reported personal stigma towards people receiving mental health treatment (2.6% TNB; 5.7% cisgender); personal stigma was substantially less common in TNB than cisgender students (aRR=0.51; 95% CI: 0.43, 0.60), with a similar risk ratio when adjusting for depression and anxiety symptoms. Most students (93.9% TNB; 83.5% cisgender) knew of at least 1 close friend or family member who had received mental health treatment; this was modestly more common in TNB students (aRR=1.10; 95% CI: 1.08, 1.11), slightly attenuated when adjusting for depression and anxiety symptoms (aRR=1.07; 95% CI: 1.06, 1.08).

Perceived Barriers

Most perceived barriers to mental health services were significantly more common for TNB students than cisgender students. The most common barrier was time constraints (36.9% TNB; 23.6% cisgender), which was significantly elevated for TNB students (aRR= 1.65; 95%

CI: 1.58, 1.71), with a smaller but significant difference after adjustment for depression and anxiety symptoms (aRR=1.18; 95% CI: 1.13, 1.23). The second most common barrier, financial challenges (35.3% TNB; 16.6% cisgender), was over twice as common for TNB (vs. cisgender) students (aRR=2.19; 95% CI: 2.09, 2.30); this difference remained significant after adjustment for depression and anxiety symptoms (aRR=1.45; 95% CI: 1.38, 1.52). Appointment availability problems (23.4% TNB; 9.4% cisgender) were likewise more than twice as common for TNB students (aRR=2.67; 95% CI: 2.51, 2.84), with a marked difference remaining after adjustment for depression and anxiety symptoms (aRR=1.73; 95% CI: 1.63, 1.84). Similarly, TNB students were significantly more likely to report being unsure where to go (22.5% TNB; 12.5% cisgender; aRR=1.84; 95% CI: 1.72, 1.96); this association was partially attenuated when adjusting for depression and anxiety symptoms (aRR=1.25; 95% CI: 1.15, 1.34).

Two perceived barriers were assessed only among 2020-21 participants who had used psychotherapy and/or psychiatric medication in the past year. The first was feeling misunderstood by providers, which TNB students were nearly twice as likely to endorse (18.9% TNB; 9.7% cisgender; aRR=1.96; 95% CI: 1.72, 2.23), partially attenuated by adjustment for depression and anxiety symptoms (aRR=1.59; 95% CI: 1.41, 1.81). The second, privacy concerns, were uncommon overall (6.1% TNB; 4.3% cisgender) and elevated for TNB students (aRR=1.30; 95% CI: 1.02, 1.65), but not after adjusting for depression and anxiety symptoms.

Anticipated Behavior

TNB students were significantly more likely than cisgender students to anticipate seeking help from a clinician if they experienced serious emotional distress (58.1% TNB; 39.5% cisgender; aRR=1.53, 95% CI: 1.49, 1.58). This association was slightly attenuated after adjusting for depression and anxiety symptoms (aRR=1.44; 95% CI: 1.40, 1.48).

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Use of Mental Health Services

Table 3 presents comparisons of TNB and cisgender students' use of mental health services, showing significant gender modality differences in most indicators.

Recent and Current Use of Mental Health Services

TNB students (59.3%) were over twice as likely as cisgender students (28.4%) to report any psychotherapy in the past year (aRR=2.12; 95% CI: 2.06, 2.17), partially attenuated when adjusting for depression and anxiety symptoms (aRR=1.62; 95% CI: 1.58, 1.67). Similarly, TNB students (36.4%) were over twice as likely as cisgender students (13.6%) to be currently receiving psychotherapy (aRR=2.69; 95% CI: 2.58, 2.82), partially attenuated when adjusting for depression and anxiety symptoms (aRR=1.95; 95% CI: 1.87, 2.03). Finally, TNB students (47.7%) were over twice as likely as cisgender students (22.7%) to have used psychiatric medication in the past year (aRR=2.05; 95% CI: 1.97, 2.13), partially attenuated when adjusting for depression and anxiety symptoms (aRR=1.47; 95% CI: 1.42, 1.52).

Characteristics of Mental Health Service Use

Among students with any psychotherapy in the past year, nearly half of TNB students (49.1%) reported 10 or more visits, compared to only 33.3% of cisgender students, with a demographic-adjusted aRR of 1.49 (95% CI: 1.42, 1.55), which remained significant after adjusting for depression and anxiety symptoms (aRR=1.39; 95% CI: 1.33, 1.45).

Among students who received psychotherapy in the past year, there was no significant gender modality difference in receiving mental health services on campus (51.4% TNB; 49.8% cisgender), but TNB students were modestly more likely to have received services in the community (69.2% TNB; 60.8% cisgender; demographic-adjusted aRR=1.12; 95% CI: 1.09, 1.16), with similar results after adjusting for depression and anxiety symptoms. Receiving

services in a stabilization setting (emergency room, inpatient, or partial hospitalization) was uncommon in both groups (8.7% TNB; 4.2% cisgender) but substantially more common for TNB students (demographic-adjusted aRR=1.77; 95% CI: 1.55, 2.02); this difference remained significant after adjusting for depression and anxiety symptoms (aRR=1.40; 95% CI: 1.22, 1.61).

Discussion

The high prevalence of moderate-to-severe depression and anxiety symptoms among TNB college and university students—over 77% in this large national sample—underscores the urgency of understanding TNB students' perceptions and use of mental health services. Prior mental health services research with TNB college and university students has focused primarily on the prevalence of service use and reasons for using services.[36,37] In contrast, this study considered *perceptions* of mental health services alongside service use, deepening our understanding of population-specific barriers and facilitators to mental health treatment. We found that TNB students were more likely than cisgender students to anticipate seeking clinical support if they experienced serious emotional distress, yet also more likely—sometimes markedly so—to perceive the barriers to care we assessed. Further, this study considered the extent to which depression and anxiety symptoms could account for gender modality differences in students' perceptions and use of mental health services, suggesting that many of these differences were partially (but not fully) explained by group differences in depression and anxiety. Overall, the present study suggests that many TNB college and university students need and want mental health services yet face heightened challenges in navigating campus mental health systems.

Though TNB people often avoid healthcare for fear of cissexism-related mistreatment, which many have experienced in the past,[21] TNB students in this sample had relatively favorable

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perceptions of mental health services: They were slightly more likely than cisgender students to believe psychotherapy was helpful for people their age with depression and much more likely to anticipate seeking clinical support if they experienced serious emotional distress. These favorable perceptions could stem from positive norms regarding mental health treatment in TNB communities, as previously described in LGBQ+ communities.[49,50] A social norms explanation is supported by our findings that TNB students were more likely than cisgender students to know of a close friend or family member who had received mental health treatment—potentially reflecting more open discussion of this topic—and reported less personal stigma towards people who use mental health services.

Troublingly, TNB students were substantially more likely than cisgender students to perceive a range of barriers to using mental health services, and these differences were only partially attenuated when adjusting for depression and anxiety symptoms. Informed by prior studies on TNB adults' experiences seeking mental health services, we propose that these differences reflect the challenge of identifying clinicians who are both TNB-affirming and logistically accessible (e.g., affordable, with available appointments).[5,6] Many TNB people report that a clinician's competence with TNB clients is critical to a successful psychotherapeutic relationship—and, accordingly, is a major priority when choosing a therapist.[24,51,52] Because many clinicians lack training and experience with TNB-affirmative care, finding a TNB-affirming therapist often demands logistical tradeoffs, such as paying out of pocket, traveling a considerable distance, and/or undertaking a time-consuming search for a financially and geographically accessible TNB-affirming therapist.[53] Our results suggest that TNB college and university students may face similar tradeoffs; for instance, when TNB students lack confidence that their campus counseling center will provide TNB-affirming care, they may seek care from

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sources that are less financially or geographically accessible. Prior research suggests that these challenges are heightened for TNB people of color, for whom clinicians' understanding of racism and ethnic-racial identity may also be a priority.[51,52]

TNB students' elevated use of mental health services relative to cisgender students was only partially explained by higher levels of depression and anxiety symptoms, suggesting that additional factors may contribute to TNB students' greater use. For instance, TNB students may use psychotherapy to cope with stress or trauma from cissexism, or for support in affirming their gender identity.[54,55] Some health insurers may also require TNB students to obtain mental health referrals or psychotherapy as a prerequisite for gender-affirming medical care.[28] These requirements are inconsistent with contemporary standards of care[29] and tend to stigmatize TNB people, impose financial burdens, and further delay access to medical care.[28]

Practice Implications

Given TNB students' disproportionate reports of logistical barriers to care, it is crucial to ensure that campus mental health services—typically students' most convenient and affordable sources of care—are well equipped to support these students. Colleges and universities should hire experienced TNB-affirming providers, train clinicians to provide TNB-affirming care, advertise the availability of TNB-affirming clinicians on campus, and allow students to request TNB-affirming clinicians. For rural and smaller campuses, telehealth may offer expanded opportunities to hire clinicians with expertise in minoritized social identities, including TNB identities.[56] Colleges and universities should consider offering clinician-facilitated groups for TNB students, which can promote TNB community connectedness, a key resilience factor for TNB people.[37,55] Campus mental health systems should also be prepared to provide students with referrals needed to access gender-affirming medical care, which is associated with

considerable—even life-saving—mental health benefits.[57]

Time constraints and financial challenges were the most prevalent barriers for both TNB and cisgender students, suggesting that these barriers should also be addressed in more general ways. Time constraints could be mitigated by offering flexible appointment times or walk-in services on campus[58] as well as telehealth options.[56,58] The prevalence of financial concerns reinforces the importance of offering free or low-cost mental health services for students. Colleges and universities should also make efforts to advertise the flexibility and affordability of these campus-based services.[58]

Limitations

These findings should be interpreted in light of several limitations. First, nonresponse was substantial (73-87% across waves); while weights were used to adjust for demographic and academic differences between participants and non-responders, the data are not nationally representative, and weights cannot correct for unknown differences between those who did and did not complete the survey (e.g., mental health status of non-responders). Similarly, the institutional sample, while large and diverse, reflects colleges and universities that opted to participate, which may limit generalizability. Regarding symptom-adjusted models, we captured only recent depression and generalized anxiety symptoms (past 2 weeks) and did not address lower-prevalence conditions (e.g., post-traumatic stress disorder) that may contribute to gender modality differences. Thus, symptom-adjusted estimates are only rough approximations of the direct effects of gender modality after accounting for symptoms; future studies should use longitudinal designs and additional symptom measures to better estimate these effects. Another limitation is that models for receiving mental health services in specific settings (e.g., on campus) did not include students who received only non-psychotherapy services (e.g.,

psychiatric medication). Finally, while we speculate that TNB students encountered heightened logistical barriers due to difficulty finding TNB-affirming clinicians, our data did not directly address whether clinicians were TNB-affirming or whether students prioritized clinicians' TNB competence. Thus, future work should focus on identifying reasons for differences in TNB and cisgender students' perceptions and use of mental health services.

Conclusion

The present study paints a picture of complexity in TNB college and university students' perceptions and use of mental health services. TNB students appear more likely to use mental health services than cisgender peers, yet more often report perceived barriers to care, particularly logistical barriers such as financial challenges and appointment availability problems. On one hand, these findings suggest that TNB students draw on a range of individual and community strengths—such as positive community norms, persistence, and prioritization of mental health—to access mental health care. On the other hand, barriers to care may be one more stressor atop numerous challenges—including financial strain, family rejection, and unwelcoming campus environments—that hinder TNB students socially and academically, sometimes forcing them to leave school without completing their degrees.[59] We have recommended steps by which colleges and universities can reduce these inequities, including offering therapy groups for TNB students and facilitating access to TNB-affirming clinicians. As campus mental health systems confront student populations' rising need for mental health services, these steps can help them care for TNB students effectively, efficiently, and equitably.

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Conflicts of Interest

None to declare.

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Table 1. Characteristics of TNB and cisgender college and university students who participated in the 2015-21 Healthy Minds Study surveys, n=437,124

	TNB students (*n*=10,297), n (percent)	**Cisgender students (*n*=426,827), n (percent)**
Gender identity		
Male	704 (6.8%)	133,336 (31.2%)
Trans male/trans man	1,233 (12.0%)	–
Female	417 (4.0%)	293,491 (68.8%)
Trans female/trans woman	470 (4.6%)	–
Nonbinary gender identities (e.g., nonbinary, genderqueer)	7,473 (72.6%)	–
Degree year		
First-year	2,235 (22.0%)	81,535 (19.4%)
Sophomore	2,097 (20.6%)	77,771 (18.5%)
Junior	1,903 (18.7%)	73,271 (17.4%)
Senior	1,869 (18.4%)	72,296 (17.2%)
Graduate or professional student	2,065 (20.3%)	115,263 (27.4%)
Enrollment status		
Full-time student	8,992 (89.4%)	367,590 (89.1%)
Part-time student	965 (9.6%)	41,833 (10.1%)
Another status	99 (1.0%)	3,236 (0.8%)
Age		
18 years and younger	1,474 (14.3%)	52,834 (12.4%)
19 years	1,772 (17.2%)	65,088 (15.2%)
20 years	1,753 (17.0%)	64,471 (15.1%)
21 years	1,606 (15.6%)	61,162 (14.3%)
22-23 years	1,440 (14.0%)	60,668 (14.2%)
24-27 years	1,187 (11.5%)	56,257 (13.2%)
28 years and older	1,064 (10.3%)	66,335 (15.5%)
Race/ethnicity		
American Indian or Alaska Native	25 (0.2%)	1,161 (0.3%)
Asian or Pacific Islander	814 (7.9%)	52,753 (12.4%)
Black	500 (4.9%)	28,930 (6.8%)
Latine	526 (5.1%)	27,391 (6.4%)
Middle Eastern or North African	66 (0.6%)	6,161 (1.5%)
Multiracial	1,458 (14.2%)	40,130 (9.4%)
White	6,714 (65.5%)	263,595 (62.0%)
Another race/ethnicity	144 (1.4%)	4,735 (1.1%)
Sexual orientation identity*		
Bisexual	3,278 (31.8%)	40,077 (9.4%)
Gay	1,045 (10.1%)	9,632 (2.3%)
Heterosexual	1,187 (11.5%)	353,130 (82.7%)
Lesbian	1,041 (10.1%)	5,656 (1.3%)
Queer	3,529 (34.3%)	6,968 (1.6%)
Questioning	602 (5.8%)	11,895 (2.8%)
Another sexual orientation identity	1,866 (18.1%)	9,204 (2.2%)
Health insurance*		
Uninsured	431 (4.6%)	15,171 (4.1%)
Private insurance	6,888 (73.7%)	279,038 (74.9%)
Student insurance	1,217 (13.0%)	50,450 (13.5%)
Medicaid	976 (10.4%)	28,420 (7.6%)
Not sure	349 (3.7%)	14,153 (3.8%)
Moderate-to-severe depression and/or anxiety symptoms		
Yes	7,189 (77.2%)	170,431 (46.8%)
No	2,124 (22.8%)	193,667 (53.2%)

Note. TNB = transgender, nonbinary, genderqueer, and/or gender nonconforming. Participants were classified as having moderate-to-severe depression and/or anxiety symptoms if they had scores ≥10 on the Patient Health Questionnaire – 9 and/or Generalized Anxiety Disorder – 7 measures.

* Participants could select multiple options.

Table 2. Perceptions of mental health services among TNB and cisgender college and university students who participated in the 2015-21 Healthy Minds Study surveys, *n*=437,124

	TNB students (*n*=10,297), percent	Cisgender students (*n*=426,827), percent	Risk ratio, TNB vs. cisgender (95% CI)	
			Adjusted for demographics	Adjusted for demographics and symptoms
Perceived need				
Believes they needed mental health support in past year	88.1	59.6	**1.46 (1.44, 1.49)**	**1.12 (1.10, 1.14)**
Perceived value of services				
Believes psychotherapy is helpful for people one's age with depression	85.9	84.1	**1.03 (1.02, 1.04)**	**1.07 (1.06, 1.08)**
Prefers informal support rather than clinical mental health services	23.7	24.9	0.96 (0.91, 1.01)	**0.80 (0.76, 0.84)**
Social norms				
Believes most people would think less of someone who received mental health treatment (perceived public stigma)	50.8	46.7	**1.10 (1.06, 1.14)**	0.97 (0.93, 1.00)
Would think less of someone who received mental health treatment (personal stigma)	2.6	5.7	**0.51 (0.43, 0.60)**	**0.47 (0.40, 0.55)**
Know of at least 1 close friend or family member who received mental health treatment[a]	93.9	83.5	**1.10 (1.08, 1.11)**	**1.07 (1.06, 1.08)**
Perceived barriers				
Time constraints	36.9	23.6	**1.65 (1.58, 1.71)**	**1.18 (1.13, 1.23)**
Financial challenges	35.3	16.6	**2.19 (2.09, 2.30)**	**1.45 (1.38, 1.52)**
Availability of appointments	23.4	9.4	**2.67 (2.51, 2.84)**	**1.73 (1.63, 1.84)**
Being unsure where to go	22.5	12.4	**1.84 (1.72, 1.96)**	**1.25 (1.16, 1.34)**
Feeling misunderstood by providers[b]	18.9	9.7	**1.96 (1.72, 2.23)**	**1.59 (1.41, 1.81)**
Privacy concerns[b]	6.1	4.3	**1.30 (1.02, 1.65)**	1.10 (0.86, 1.41)
Anticipated behavior				
Would seek help from clinician for serious emotional distress	58.1	39.5	**1.53 (1.49, 1.58)**	**1.44 (1.40, 1.48)**

Note. TNB = transgender, nonbinary, genderqueer, and/or gender nonconforming. SD = standard deviation. CI = confidence interval. Adjusted risk ratios are based on Poisson models weighted to account for non-response by demographic group, with design-based standard errors accounting for clustering by college/university. All risk ratios are adjusted for age, race/ethnicity, degree year, and survey year. Symptom-adjusted risk ratios are also adjusted for scores on the Patient Health Questionnaire – 9 [depression] and/or Generalized Anxiety Disorder – 7 [generalized anxiety] measures. **Bold** denotes confidence intervals that do not include the null.

[a] Asked only of students whose schools used the "Knowledge and attitudes about mental health and mental health services" survey module (*n*=180,147).

[b] Asked only of students who participated in 2020-21 and who reported at least 1 therapy visit, and/or use of psychiatric medication, in the past year (*n*=48,239).

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Table 3. Use of mental health services among TNB and cisgender college and university students who participated in the 2015-21 Healthy Minds Study surveys, *N*=437,124

	TNB students (*n*=10,297), percent	Cisgender students (*n*=426,827), percent	Risk ratio, TNB vs. cisgender (95% CI)	
			Adjusted for demographics	Adjusted for demographics and symptoms
Had ≥ 1 psychotherapy visit(s) in past year	59.3	28.4	**2.12 (2.06, 2.17)**	**1.62 (1.58, 1.67)**
Currently receiving psychotherapy	36.4	13.6	**2.69 (2.58, 2.82)**	**1.95 (1.87, 2.03)**
Used psychiatric medication in past year	47.7	22.7	**2.05 (1.97, 2.13)**	**1.47 (1.42, 1.52)**
	TNB students with ≥ 1 psychotherapy visit(s) in the past year (*n*=5,616), percent	**Cisgender students with ≥ 1 psychotherapy visit(s) in the past year (*n*=107,757), percent**	**Risk ratio, TNB vs. cisgender (95% CI)**	
			Adjusted for demographics	**Adjusted for demographics and symptoms**
Had ≥ 10 psychotherapy visits in past year	49.1	33.3	**1.49 (1.42, 1.55)**	**1.39 (1.33, 1.45)**
Received mental health services on campus	51.4	49.8	1.04 (0.99, 1.09)	1.03 (0.98, 1.08)
Received mental health services in the community	69.2	60.8	**1.12 (1.09, 1.16)**	**1.11 (1.07, 1.14)**
Received mental health services in a stabilization setting (ER, inpatient, and/or partial hospitalization program)	8.7	4.2	**1.77 (1.55, 2.02)**	**1.40 (1.22, 1.61)**

Note. TNB = transgender, nonbinary, genderqueer, and/or gender nonconforming. SD = standard deviation. CI = confidence interval. ER = emergency room. Adjusted risk ratios are based on Poisson models adjusted for age, race/ethnicity, degree year, and survey year, weighted to account for non-response by demographic group, with design-based standard errors accounting for clustering by college/university. **Bold** denotes confidence intervals that do not include the null.

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