EXHIBIT 141

The New York Times | https://www.nytimes.com/2022/09/26/health/top-surgery-transgender-teenagers.html

More Trans Teens Are Choosing 'Top Surgery'

Small studies suggest that breast removal surgery improves transgender teenagers' well-being, but data is sparse. Some state leaders oppose such procedures for minors.

By Azeen Ghorayshi

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Michael, 17, arrived in the sleek white waiting room of his plastic surgeon's office in Miami for a moment he had long anticipated: removing the bandages to see his newly flat chest.

After years of squeezing into compression undershirts to conceal his breasts, the teenager was overcome with relief that morning last December. Wearing an unbuttoned shirt, he posed for photos with his mother and the surgeon, Dr. Sidhbh Gallagher, happy to share his bare chest with the doctor's large following on social media.

"It just felt right — like I'd never had breasts in the first place," Michael said. "It was a 'Yes, finally' kind of moment."

Michael is part of a very small but growing group of transgender adolescents who have had top surgery, or breast removal, to better align their bodies with their experience of gender. Most of these teenagers have also taken testosterone and changed their name, pronouns or clothing style.

Few groups of young people have received as much attention. Republican elected officials across the United States are seeking to ban all so-called gender-affirming care for minors, turning an intensely personal medical decision into a political maelstrom with significant consequences for transgender adolescents and their families.

Gender-related surgeries, in particular, have been thrust into the spotlight. Arizona and Alabama passed laws this year making it illegal for doctors to perform gender-related surgeries on transgender patients under 18. Conservative commentators with large followings on social media have recently targeted children's hospitals that offer gender surgeries, leading to online harassment and bomb threats.

Genital surgeries in adolescents are exceedingly rare, surgeons said, but top surgeries are becoming more common. And while major medical groups have condemned the bans on gender-related care for adolescents, the surgeries have presented challenges for them.

Michael is part of a very small but growing group of transgender adolescents who have had top surgery to better align their bodies with their experience of gender. Eva Marie Uzcategui for The New York Times

Much research has shown that as adults, transgender men generally benefit from top surgery: It relieves body-related distress, increases sexual satisfaction and improves overall quality of life. A few small studies of transgender adolescents suggest similar benefits in the short term.

But some clinicians have pointed to the rising demand and the turmoil of adolescent development as reasons for doctors to slow down before offering irreversible procedures. Although medical experts believe the likelihood to be small, some patients come to regret their surgeries.

The World Professional Association for Transgender Health, an international group of gender experts who write best practices for the field, had been planning for months to set new age minimums for most gender-related surgeries, including endorsing top surgery for adolescents age 15 and up. Although the guidelines are not binding, they provide a standard for doctors across the world. But this month, the group abruptly withdrew the proposals, a shift reflecting both political pressures and a lack of consensus in the medical community.

There are no official statistics on how many minors receive top surgeries each year in the United States. The New York Times surveyed leading pediatric gender clinics across the country: Eleven clinics said they carried out a total of 203 procedures on minors in 2021, and many reported long waiting lists. Another nine clinics declined to respond, and six said that they referred patients to surgeons in private practice.

Dr. Gallagher, whose unusual embrace of platforms like TikTok has made her one of the most visible gender-affirming surgeons in the country, said she performed 13 top surgeries on minors last year, up from a handful a few years ago. One hospital, Kaiser Permanente Oakland, carried out 70 top surgeries in 2019 on teenagers age 13 to 18, up from five in 2013, according to researchers who led a recent study.

“I can’t honestly think of another field where the volume has exploded like that,” said Dr. Karen Yokoo, a retired plastic surgeon at the hospital.

Experts said that adolescent top surgeries were less frequent than cosmetic breast procedures performed on teenagers who were not transgender. Around 3,200 girls age 18 to 19 received cosmetic breast implants in 2020, according to surveys of members of the American Society of Plastic Surgeons, and another 4,700 teenagers age 13 to 19 had breast reductions. (Surveys from other groups have shown that girls under 18 also receive implants, though the ASPS does not recommend breast augmentation for minors.)

An evolving field

Dr. Gallagher’s office in Miami. Eva Marie Uzcategui for The New York Times

In the past decade, the number of people who identify as transgender has grown significantly, especially among young Americans. Around 700,000 people under 25 identified as transgender in 2020, according to the Williams Institute, a research center at the University of California, Los Angeles, nearly double the estimate in 2017.

Gender clinics in Western Europe, Canada and the United States have reported that a majority of their adolescent patients were seeking to transition from female to male.

Because breasts are highly visible, they can make transitioning difficult and cause intense distress for these teenagers, fueling the demand for top surgeries. Small studies have shown that many transgender adolescents report significant discomfort related to their breasts, including difficulty showering, sleeping and dating. As the population of these adolescents has grown, top surgery has been offered at younger ages.

Another notable change: More nonbinary teenagers are seeking top surgeries, said Dr. Angela Goepferd, the medical director of the Gender Health Program at the Children’s Minnesota hospital, who is nonbinary. (The program does not perform operations but refers patients to independent surgeons.) These adolescents may want flatter chests but not other masculine features brought on by testosterone, like a deeper voice or facial hair.

After many months of deliberations over its new guidelines, the World Professional Association for Transgender Health initially decided to endorse top surgeries for adolescents 15 and up, part of a suite of changes that would have made gender treatments available to children at younger ages. But the organization backtracked this month, after some major medical groups it had hoped would support the new guidelines bristled at the new age minimums, according to Dr. Marci Bowers, a gynecologic and reconstructive surgeon and the president of WPATH, who is transgender.

“We needed consensus,” Dr. Bowers said. “I just think we need more strength for our argument and a better political climate, frankly, in order to propose this at a younger age.”

Instead, the guidelines kept the previous recommendations, published a decade ago, allowing surgeries for minors on a case-by-case basis.

Because teenagers in most states must be 18 before they can provide medical consent, surgeons require parental consent and approval letters from mental health care providers. The two- to four-hour procedure costs anywhere from $9,000 to $17,000, depending on facility and anesthesia fees. The procedure is often not covered by insurance until patients turn 18.

As demand has grown, Dr. Gallagher, the surgeon in Miami, has built a thriving top surgery specialty. The doctor frequently posts photos, FAQs and memes on Facebook, Instagram and TikTok, proudly flouting professional mores in favor of connecting with hundreds of thousands of followers.

Her feeds often fill with photos tagged #NipRevealFriday, highlighting patients like Michael whose bandages were just removed. On her office windowsill sits a framed nameplate with one of her best-known catchphrases on TikTok: “Yeet the Teet,” slang for removing breasts.

Dr. Gallagher said she performed top surgeries on about 40 patients a month, and roughly one or two of them are under 18. Younger patients are usually at least 15, though she has operated on one 13-year-old and one 14-year-old, she said, both of whom had extreme distress about their chests.

The surgeon said that most of her patients, teenagers and adults alike, found her on TikTok. Her online presence has drawn sharp criticism from right-wing media, as well as from some parents and doctors who say she uses the platform to market to children.

“She goes to the beat of her own drum,” Dr. Bowers said. “For a lot of us, that’s troubling.”

Dr. Gallagher said she doubted she had the influence her critics ascribe to her. “Most of the time I’m just trying to deliver educational content,” she said.

‘Comfortable in my own skin’

Michael and his mother, Annie. He learned more about top surgery through Dr. Gallagher’s TikTok page. Eva Marie Uzcategui for The New York Times

When Michael first saw Dr. Gallagher’s TikTok page last summer, he was immediately intrigued. (Michael and others in this article asked to be identified by first or middle names because they were concerned about their privacy.) He liked the photos of her patients, observing that their scars had healed well, and liked that she seemed to be an ally of the transgender community.

Michael’s mother, Annie, had gradually come around to the idea of surgery after years of watching him suffer, she said.

Since hitting puberty at age 10, Michael said he felt a gnawing discomfort about his breasts. By the time he was 12, he wore hooded sweatshirts every day in their Miami suburb.

In eighth grade, after he had several severe panic attacks at school, Michael said he started seeing a therapist, who encouraged him to talk about his body issues. He experimented with small ways to appear more masculine, such as tucking his long curly hair into a beanie and wearing boys' clothes.

"It was the first thing I ever did to try and make myself more comfortable in my own skin," Michael said.

He came out to his parents as a transgender boy when he was 14. A year later, at the start of the pandemic, he started weekly testosterone injections while doing remote school. He got into strength-training and his voice dropped, a second puberty he relished but was grateful to undergo privately.

Michael started in-person school feeling "10 times happier," he said, but his chest still tormented him. Testosterone and exercise had shrunk his breast tissue, making it easier to conceal with a binder. But the garment could restrict his breathing and give him panic attacks. He began seeing a psychiatrist, who prescribed antidepressants.

When Michael was 17, Annie said, she decided that waiting another year for surgery would put him in too much pain. Because her insurance covered the procedure only for adults, she took out a loan to help pay for it.

Michael's psychiatrist initially wrote a letter signing off on the surgery. But he later revoked it, putting the surgery in limbo, Annie said. After Michael started a higher dose of antidepressants, the psychiatrist endorsed the surgery as planned.

Now, nine months after the operation, Michael is in his senior year of high school. He said he is focused on the parts of his life that have little to do with his gender: doing theater tech at school, seeing friends, painting and applying to college.

He also feels less pressure to prove his masculinity than before, he said. He's growing out his hair and uses he, she and they pronouns. In June, he took his girlfriend to the prom, wearing a brown suit and a pearl necklace.

Weighing the risks

Jamie, a college student in Maryland, began identifying as a transgender boy in the eighth grade, but has since returned to identifying as a woman. Cheriss May for The New York Times

In 2018, doctors at the pediatric gender clinic at Children's Hospital Los Angeles published a study of 136 transgender patients ages 13 to 25, half of whom had undergone top surgery. Adolescents who had not undergone the procedure reported significantly more distress because of their chests.

Roughly one-third of those who underwent surgery reported ongoing loss of nipple sensation. Only one patient expressed occasional feelings of regret, when imagining wanting to breastfeed a future child.

"There's very few things in the world that have a zero percent regret rate. And chest surgery, clinically, I've experienced that," said Dr. Johanna Olson-Kennedy, the lead author of the study and medical director of the clinic in Los Angeles, which began offering surgeries in 2019.

But the study had caveats: Most patients were surveyed less than two years after their surgeries, and nearly 30 percent could not be contacted or declined to participate.

Few researchers have looked at so-called detransitioners, people who have discontinued or reversed gender treatments. In July, a study of 28 such adults described a wide array of experiences, with some feeling intense regret and others having a more fluid gender identity.

Because so few studies have looked at detransitioning, many doctors are asking young patients and their parents to provide consent without acknowledging the unknowns, said Kinnon MacKinnon of York University in Toronto, the researcher who led the study, who is transgender.

“I know personally many, many, many trans men that have benefited and are happy with their medical transition and their top surgery. I would put myself in that category,” Dr. MacKinnon said. “But just as a researcher, I do feel like there are questions that are deserving of answers and have implications for clinical care.”

Jamie, a 24-year-old college student in Maryland, was raised as a girl and began identifying as a transgender boy in the eighth grade. After being sexually assaulted in her junior year of high school and then dropping out, she said, she started taking testosterone. Three months later, just after she turned 18, she underwent top surgery at a private practice in Massachusetts.

For the next few years, Jamie said, she thrived. Testosterone made her feel energetic, and her anxiety dissipated. She went back to school and got certified as an emergency medical technician.

But when she was 21, her father, who was dying of Alzheimer’s, no longer recognized her. She fixated on her wide hips, which she worried stood out next to her facial hair and deep voice. After a date where she had sex with a straight man, she said, she realized she had made a mistake.

“I realized I lost something about myself that I could have loved, I could have enjoyed, I could have used to feed children,” Jamie said. She said she grieved for months and contemplated suicide.

This spring, after a year of fighting her insurance company to cover the procedure, she had surgery to reconstruct her breasts. She never told her original surgeon that she had changed her mind, partly because she also blamed herself. Sometimes, she said, “I still don’t like being a woman.”

Many surgeons say that they rarely hear about patients with regret. But it’s unclear how many, like Jamie, never inform them.

Dr. Gallagher of Miami said that she follows up with patients for up to a year. “I can say this honestly: I don’t know of a single case of regret,” Dr. Gallagher said in May, adding that regret was much more common with cosmetic procedures.

But one of her former top surgery patients, Grace Lidinsky-Smith, has been vocal about her detransition on social media and in news reports.

“I slowly came to terms with the fact that it had been a mistake born out of a mental health crisis,” Ms. Lidinsky-Smith, 28, said in an interview.

She had top surgery when she was 23. About 16 months later, Ms. Lidinsky-Smith said she called and emailed her medical providers, including Dr. Gallagher’s office, to tell them she had detransitioned.

When asked about Ms. Lidinsky-Smith’s case, Dr. Gallagher amended her stance, recalling that years ago a former patient left a voice mail message expressing regret over a surgery.

“At the time, we wondered, Is it a hoax?” Dr. Gallagher said.

Chilling effect

A clinic for transgender children in Dallas, Texas, stopped accepting new patients for hormone therapy and gender affirming care under pressure from the Gov. Greg Abbott's office. Shelby Tauber for The New York Times

Republican politicians in states across the country are pushing to ban all gender-affirming care for adolescents, focusing much of their rhetoric on surgeries.

In Florida, where the medical board is considering such a ban for minors, Gov. Ron DeSantis has argued that surgeons should be sued for "disfiguring" children. In Texas, where parents of transgender children have been investigated for child abuse, Gov. Greg Abbott has called genital surgeries in adolescents "genital mutilation."

Dr. Bowers, the president of WPATH, said that politicians should not be involved in personal medical decisions. "They just don't understand this care, so they just want to shut it down," Dr. Bowers said. "That is a very dangerous precedent."

Although most of the new state actions against gender care for minors are tied up in litigation, they have had a chilling effect.

Earlier this year, a Dallas children's hospital shut down the only pediatric gender clinic in Texas, citing political pressure from the governor's office. This month, a woman was arrested on charges of making a false bomb threat to Boston Children's Hospital after it was targeted online for its pediatric gender program. Dr. Gallagher has also received threats online and said she might hire security guards for her office.

Other clinics have dropped scheduled procedures. William, 14, who has identified as a boy since he was a young child, was supposed to see a plastic surgeon in Plano, Texas, for top surgery in May. But the surgeon canceled the appointment in March because the medical center's malpractice insurer stopped covering top surgeries for minors.

In August, William and his family flew to California, paying $10,000 more to get the procedure out of state.

Two weeks later, William started ninth grade as just another boy in school. He looks forward to swimming with his shirt off and going to class without wearing a binder.

"It's like something was unburied," William said. "My chest was just covering what was always there."

Audio produced by Parin Behrooz.

EXHIBIT 142

School of Law Williams Institute
UCLA

RESEARCH THAT MATTERS

HOW MANY ADULTS AND YOUTH IDENTIFY AS TRANSGENDER IN THE UNITED STATES?

June 2022

Jody L. Herman
Andrew R. Flores
Kathryn K. O'Neill

EXECUTIVE SUMMARY

Recent data from the CDC's Behavior Risk Factor Surveillance System (BRFSS) and Youth Risk Behavior Survey (YRBS) provide an opportunity to update prior population estimates of the number of adults and youth who identify as transgender in the U.S. In 2016 and 2017, the Williams Institute used data from the 2014-15 BRFSS to estimate the number of adults (ages 18 and older) and youth (ages 13 to 17) who identify as transgender. Since then, a total of 43 states have used the BRFSS optional gender identity module for at least one year, providing more years of data from more states since these initial estimates. Additionally, in 2017, the YRBS, a national survey of high school students, began asking respondents if they are transgender. Since 2017, fifteen states have included this question in their YRBS statewide questionnaire. In this study, we use data from the 2017 and 2019 YRBS and the 2017-2020 BRFSS to find that:

- Over 1.6 million adults (ages 18 and older) and youth (ages 13 to 17) identify as transgender in the United States, or 0.6% of those ages 13 and older.
- Among U.S. adults, 0.5% (about 1.3 million adults) identify as transgender. Among youth ages 13 to 17 in the U.S., 1.4% (about 300,000 youth) identify as transgender.
- Of the 1.3 million adults who identify as transgender, 38.5% (515,200) are transgender women, 35.9% (480,000) are transgender men, and 25.6% (341,800) reported they are gender nonconforming.
- Research shows transgender individuals are younger on average than the U.S. population. We find that youth ages 13 to 17 are significantly more likely to identify as transgender (1.4%) than adults ages 65 or older (0.3%).
- The racial/ethnic distribution of youth and adults who identify as transgender appears generally similar to the U.S. population, though our estimates mirror prior research that found transgender youth and adults are more likely to report being Latinx and less likely to report being White compared to the U.S. population.
- Our estimates of the percent of residents in U.S. regions who identify as transgender range from 1.8% in the Northeast to 1.2% in the Midwest for youth ages 13 to 17, and range from 0.6% in the Northeast to 0.4% in the Midwest for adults.
- At the state level, our estimates range from 3.0% of youth ages 13 to 17 identifying as transgender in New York to 0.6% in Wyoming. Our estimates for the percentage of adults who identify as transgender range from 0.9% in North Carolina to 0.2% in Missouri.

Overall, based on our estimates from 2016-2017 and the current report, we find that the percentage and number of adults who identify as transgender has remained steady over time. The availability of the YRBS data has given us a more direct look into youth gender identity and provides better data than was previously available to us for estimating the size and characteristics of the youth population. Youth ages 13 to 17 comprise a larger share of the transgender-identified population than we previously estimated, currently comprising about 18% of the transgender-identified population in the U.S., up from 10% previously.

INTRODUCTION

A growing number of population-based surveys in the United States, and internationally, ask questions to identify transgender people, including surveys conducted by the U.S. federal government.[1] In 2014, the Centers for Disease Control and Prevention (CDC) began offering an optional module on the Behavior Risk Factor Surveillance System (BRFSS) for states to use to ask respondents if they consider themselves to be transgender.[2] In 2016, the National Crime Victimization Survey (NCVS) included a two-step approach to identify those whose gender identity differs from their sex assigned at birth.[3] In 2017, the CDC's Youth Risk Behavior Survey (YRBS), a national survey of high school students, began asking respondents if they are transgender.[4] In July 2021, the U.S. Census Bureau's Household Pulse Survey adopted the two-step approach.[5] Internationally, Canada added the two-step approach to their national census in 2021, while Belgium and New Zealand have also included measures to identify transgender people in population-based surveys.[6]

With new and emerging data sources, like the NCVS and Household Pulse Survey, researchers will have new opportunities to expand our knowledge about the characteristics and experiences of the transgender population. In the U.S., we have found from the NCVS that transgender people are more likely to experience violent victimization compared to cisgender people.[7] Household Pulse data allowed us to assess disparities in food insecurity among transgender people during the COVID-19 pandemic.[8] Yet, limitations exist among these data sources that affect the ability to create estimates of the size and demographic characteristics of the transgender population in the U.S. In 2019, NCVS began asking questions to identify transgender people only among victims of violence, which

[1] Population-based surveys allow findings to be generalized to the population from which the sample is drawn.

[2] Centers for Disease Control and Prevention (CDC). *BRFSS Questionnaires*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. https://www.cdc.gov/brfss/questionnaires/index.htm

[3] National Crime Victimization Survey. (2016). *NCVS-1 Basic Screen Questionnaire.* (pp. 7-8). Bureau of Justice Statistics. https://www.bjs.gov/content/pub/pdf/ncvs16_bsq.pdf.

[4] Johns, M.M., Lowry, R., Andrzejewski, J., et al. (2019). Transgender Identity and Experiences of Violence Victimization, Substance Use, Suicide Risk, and Sexual Risk Behaviors Among High School Students–19 States and Large Urban School Districts, 2017. *MMWR Morb Mortal Wkly Rep*, *68*, 67–71. http://dx.doi.org/10.15585/mmwr.mm6803a3.

[5] United States Census Bureau. (2021). *Household Pulse Survey: Measuring Social and Economic Impacts during the Coronavirus Pandemic.* https://www.census.gov/programs-surveys/household-pulse-survey.html.

[6] Statistics Canada. (2022). Canada is the first country to provide census data on transgender and non-binary people. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/220427/dq220427b-eng.htm?HPA=1. In their 2021 Census, Statistics Canada found that 0.33% of those age 15 and older were transgender or nonbinary.

[7] A. R. Flores, L. Langton, I. H. Meyer, A. P. Romero. (2020). Victimization rates and traits of sexual and gender minorities in the United States: Results from the National Crime Victimization Survey, 2017. *Sci. Adv. 6*(40). https://www.science.org/doi/10.1126/sciadv.aba6910.

[8] Conron, K.J. & O'Neill, K. (2021). *Food Insufficiency Among Transgender Adults During the COVID-19 Pandemic.* The Williams Institute, UCLA, Los Angeles, CA.

undermines the ability to make population-level estimates.[9] The U.S. Census Bureau is fielding the Household Pulse Survey as a part of their Experimental Data Series.[10] We continue to learn about the Household Pulse Survey methods and its promise and limitations as a data source to study the population size and characteristics of transgender people in the U.S.[11] Although they do not yet collect data about gender identity in all U.S. states, the CDC's BRFSS and YRBS currently provide the best available data to generate estimates of the number of adults and youth who identify as transgender.

In 2016 and 2017, the Williams Institute used data from the CDC's 2014-15 BRFSS to estimate the number of adults (ages 18 and older) and youth (ages 13 to 17) who identify as transgender.[12] Since then, a total of 43 states have used the BRFSS optional gender identity module for at least one year, providing more years of data from more states since these initial estimates. Additionally, since 2017, 15 states have included a question to identify transgender youth in their YRBS statewide questionnaire.[13] These more recent data from the BRFSS and the YRBS provide an opportunity to update our prior population estimates of the number of adults and youth who identify as transgender in the U.S. In this report, we describe our updated estimates, including estimates regarding gender, age, and race/ethnicity at the national level and age and race/ethnicity at the regional and state levels. A detailed description of our methods and accompanying appendix can be found at the end of this report.

[9] From 2016 through the second quarter of 2019, questions pertaining to sexual orientation and gender identity were included in the NCVS. In 2019, the Bureau of Justice Statistics determined that the sexual orientation and gender identity questions would be administered only to those age 16 or older who reported violent victimization (not to all respondents). More recently, BJS has determined that the sexual orientation and gender identity items will be reinstated and administered to the original universe of all persons age 16 or older beginning in January 2022. *See* Bureau of Justice Statistics. (2021*). NCVS OMB Supporting Statement Part A*. Office of Management and Budget, Office of Information and Regulatory Affairs. https://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=202109-1121-002; Office of Information and Regulatory Affairs. (2021). *OIRA Conclusion, OMB Control No: 1121-0111*. Office of Management and Budget. https://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=202109-1121-002#.

[10] United States Census Bureau. (2021). *Measuring Household Experiences during the Coronavirus Pandemic.* https://www.census.gov/data/experimental-data-products/household-pulse-survey.html.

[11] United States Census Bureau. (2021). *Source of the Data and Accuracy of the Estimates for the Household Pulse Survey – Phase 3.2*. https://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/Phase3-2_Source_and_Accuracy_Week39.pdf; Jesdale, B.M. (2021). *Counting Gender Minority Populations in the Household Pulse Survey (The AGENID=2 Memo).* National LGBT Cancer Network. https://cancer-network.org/wp-content/uploads/2021/10/Counting-GM-People-in-Pulse-Data.pdf.

[12] Flores, A.R., Herman, J.L., Gates, G.J., & Brown, T.N.T. (2016). *How Many Adults Identify as Transgender in the United States?* Los Angeles, CA: The Williams Institute; Herman, J.L., Flores, A.R., Brown, T.N.T., Wilson, B.D.M., & Conron, K.J. (2017). *Age of Individuals who Identify as Transgender in the United States.* Los Angeles, CA: The Williams Institute. Those who report that they consider themselves to be transgender in the BRFSS may identify with and use different gender identity terms outside the survey context, such as man, woman, and nonbinary.

[13] The count of 15 states is based on authors' original analysis of YRBS data.

FINDINGS

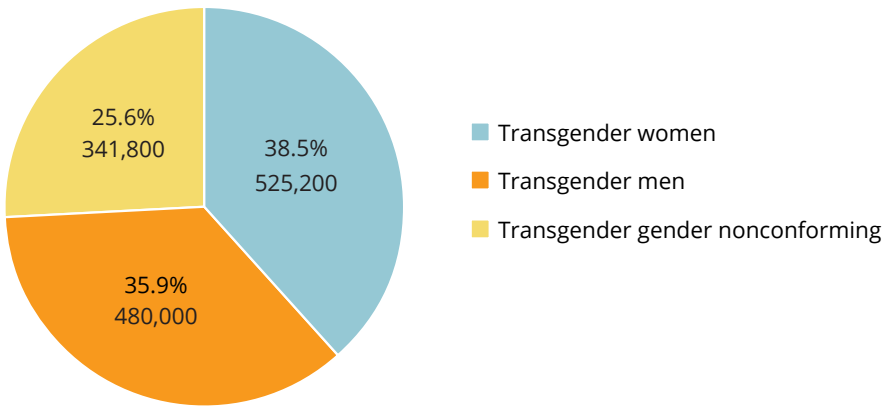
NATIONAL POPULATION ESTIMATES BY GENDER IDENTITY, AGE, AND RACE/ETHNICITY

Nationally, we estimate that 0.6% of those ages 13 and older identify as transgender in the United States, which is about 1.6 million individuals based on current U.S. population size. Among adults, 0.5% (over 1.3 million adults) identify as transgender. Among youth ages 13 to 17, 1.4% (about 300,000 youth) identify as transgender. The BRFSS and YRBS data allow us to further describe gender identity for adults, age categories for individuals ages 13 and older, and race/ethnicity separately for youth and adults.

Gender Identity

The BRFSS optional gender identity module includes a follow-up question of adults who identify as transgender to further describe their gender identity.[14] Based on that follow-up question, we find that of adults who identify as transgender, 38.5% (515,200) are transgender women, 35.9% (480,000) are transgender men, and 25.6% (341,800) reported they are gender nonconforming. It is possible that transgender adults who identify as nonbinary may have reported their gender in the BRFSS as gender nonconforming. A recent study estimated that nearly one-third of transgender adults identify as nonbinary, which is similar to our finding of 25.6%.[15] The YRBS does not include a follow-up question to allow respondents to further describe their gender identity. Therefore, we are unable to provide a more detailed description of gender identities among youth.

Figure 1. Gender identity of adults who identify as transgender in the U.S.



[14] The BRFSS questionnaire asks, "Do you consider yourself to be transgender?" If the answer is yes, the respondent is then asked, "Do you consider yourself to be 1. male-to-female, 2. female-to-male, or 3. gender nonconforming?" We categorize those who answered "male-to-female" as transgender women, those who answered "female-to-male" as transgender men, and those who answered "gender noncomforming" as gender noncomforming.

[15] Wilson, B.D.M & Meyer, I.H. (2021). *Nonbinary LGBTQ Adults in the United States*. Los Angeles, CA: The Williams Institute.

Age

We describe the age of individuals who identify as transgender in two ways: the percentage of each age group that identifies as transgender and the age distribution of the transgender-identified population compared to the age distribution of the U.S. population. When looking at the percentage in each age group that identifies as transgender, those in the youngest age groups appear to have a higher percentage of those who identity as transgender. For instance, 1.4% of those ages 13 to 17 identify as transgender whereas 0.3% of those ages 65 and older identify as transgender. While these age group differences appear to be only statistically significant between the oldest and youngest age groups, this age trend among transgender individuals is consistently found in studies using population-based samples.[16]

Table 1. Percent of each age group that identifies as transgender in the U.S.

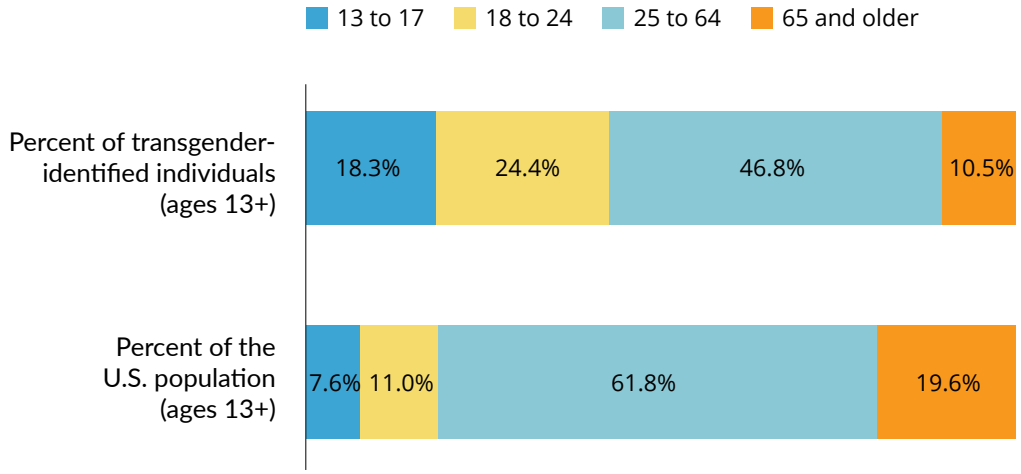
	PERCENT	NUMBER
13 to 17	1.4%	300,100
18 to 24	1.3%	398,900
25 to 64	0.5%	766,500
65 and older	0.3%	171,700
13 and older	0.6%	1,637,200

When looking at the age distribution of those who identify as transgender, it appears that the age distribution of transgender-identified individuals (ages 13 and older) is younger compared to the U.S. population. For instance, those ages 13 to 17 comprise 18.3% of transgender-identified individuals (ages 13 and older), whereas that age group comprises 7.6% of the U.S. population (ages 13 and older). This age trend is consistent with prior research that has found transgender individuals have a lower mean age than cisgender individuals.[17]

[16] Jones, J. M. (2022). *LGBT Identification in U.S. Ticks up to 7.1%.* Gallup. https://news.gallup.com/poll/389792/lgbt-identification-ticks-up.aspx; Herman, J.L., Flores, A.R., Brown, T.N.T., Wilson, B.D.M., & Conron, K.J. (2017). *Age of Individuals who Identify as Transgender in the United States.* Los Angeles, CA: The Williams Institute.; Feldman, J.L., Luhur, W.E., Herman, J.L., Poteat, T., Meyer, I.H. (2021). Health and health care access in the US transgender population health (TransPop) survey. *Andrology, 9*, 1707– 1718. https://doi.org/10.1111/andr.13052.

[17] Feldman, J.L., Luhur, W.E., Herman, J.L., Poteat, T., Meyer, I.H. (2021). Health and health care access in the US transgender population health (TransPop) survey. *Andrology, 9*, 1707– 1718. https://doi.org/10.1111/andr.13052; Andrew R. Flores, Ilan H. Meyer, Lynn Langton, Jody L. Herman. (2021). Gender Identity Disparities in Criminal Victimization: National Crime Victimization Survey, 2017–2018. *American Journal of Public Health 111*(4), 726-729; Statistics Canada. (2022). Canada is the first country to provide census data on transgender and non-binary people. *The Daily*. https://www150.statcan.gc.ca/n1/daily-quotidien/220427/dq220427b-eng.htm?HPA=1.

Figure 2. Age distribution among those who identify as transgender and among the U.S. population (ages 13 and older)



Race/Ethnicity

Similar to age, we look at race and ethnicity of individuals who identify as transgender in two different ways: the percentage of each race/ethnicity group that identifies as transgender and the racial and ethnic distribution of the transgender-identified population compared to the racial and ethnic distribution of the U.S. population. We stratify this analysis by age, separately describing the race/ethnicity of youth and adults. Tables 2 and 3 describe the percentage of each racial/ethnic group that identifies as transgender, along with the population estimate. Differences between racial/ethnic groups are not statistically significant, but our findings do reflect prior research with population-based samples that have found that Latinx people, American Indian or Alaska Native, and biracial/multiracial groups appear more likely than White people to identify as transgender.[18]

Table 2. Percent of each racial/ethnic group that identifies as transgender in the U.S., among adults (ages 18 and older)

	PERCENT	NUMBER
White	0.5%	731,200
Black	0.6%	173,500
Asian	0.5%	77,300
AIAN	0.9%	14,500
Latinx	0.7%	289,700
Biracial, Multiracial, or Other Race/Ethnicity	1.0%	50,900

Note: White, Black, Asian, and American Indian or Alaska Native (AIAN) are non-Hispanic. The Latinx category includes Hispanic and Latinx people of any race. Biracial, multiracial, and other race/ethnicity are non-Hispanic.

[18] Feldman, J.L., Luhur, W.E., Herman, J.L., Poteat, T., Meyer, I.H. (2021). Health and health care access in the US transgender population health (TransPop) survey. *Andrology*, *9*, 1707– 1718. https://doi.org/10.1111/andr.13052; Meyer, I. H., Brown, T. N., Herman, J. L., Reisner, S. L., & Bockting, W. O. (2017). Demographic Characteristics and Health Status of Transgender Adults in Select US Regions: Behavioral Risk Factor Surveillance System, 2014. *American Journal of Public Health*, *107*(4), 582–589. https://doi.org/10.2105/AJPH.2016.303648.

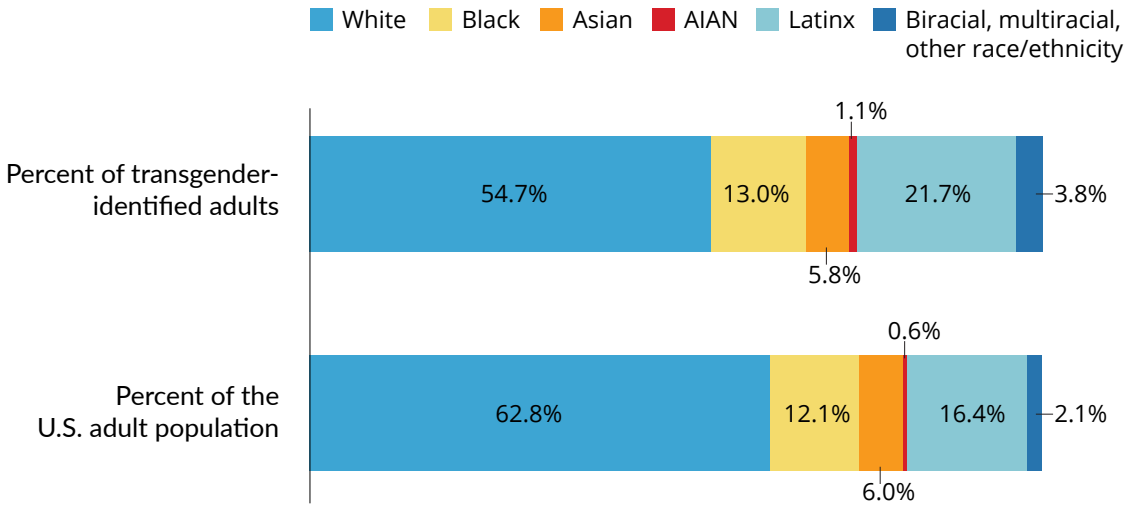
Table 3. Percent of each racial/ethnic group that identifies as transgender in the U.S., among youth (ages 13 to 17)

	PERCENT	NUMBER
White	1.3%	138,800
Black	1.4%	39,600
Asian	1.0%	10,800
AIAN	1.8%	3,000
Latinx	1.8%	92,900
Biracial, Multiracial, or Other Race/Ethnicity	1.5%	15,000

Note: White, Black, Asian, and American Indian or Alaska Native (AIAN) are non-Hispanic. The Latinx category includes Hispanic and Latinx people of any race. Biracial, multiracial, and other race/ethnicity are non-Hispanic.

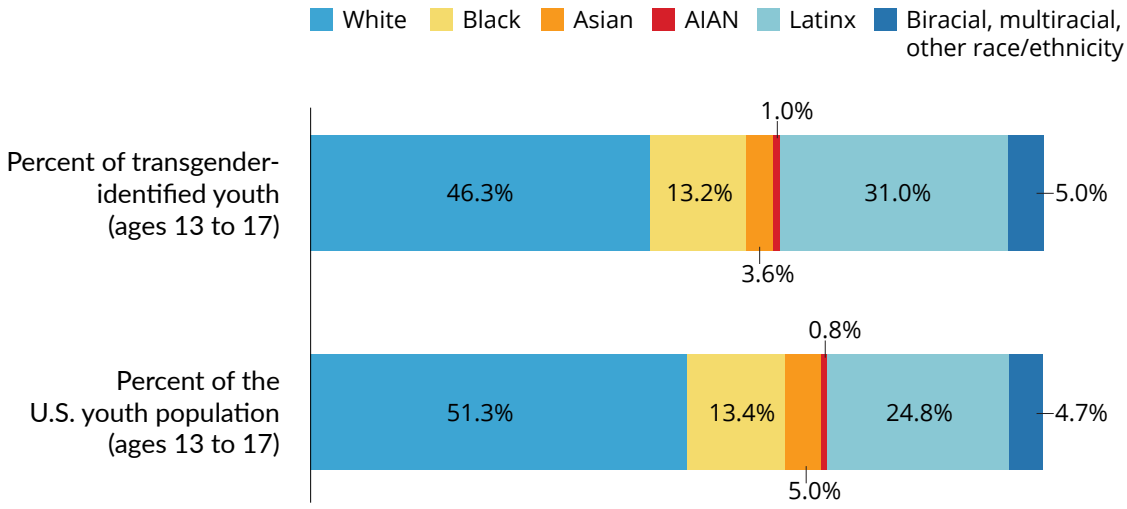
The racial and ethnic distribution of adults and youth appear generally similar to the racial/ethnic distribution of the U.S. population. However, transgender-identified youth and adults appear more likely to report being Latinx and less likely to report being White, as compared to the U.S. population (see Figures 3 and 4). As described above, this trend is in keeping with prior research.[19]

Figure 3. Race/ethnicity of adults who identify as transgender and of the U.S. population (ages 18 and older)



[19] Ibid.

Figure 4. Race/ethnicity of youth who identify as transgender and of the U.S. population (ages 13-17)



REGIONAL AND STATE POPULATION ESTIMATES, BY AGE AND RACE

Adults and youth who identify as transgender in the U.S. reside in all 50 states and the District of Columbia. Table 4 describes the percentage of each age group that identifies as transgender, and the population estimate for each, in the four U.S. regions, and in each state within each region. Overall, for youth ages 13 to 17, we find that 1.4% identify as transgender, which is about 300,000 youth. Our estimates of youth ages 13 to 17 who identify as transgender are similar across U.S. regions, ranging from 1.8% in the Northeast to 1.2% in the Midwest. At the state level, our estimates range from 3.0% of youth ages 13 to 17 identifying as transgender in New York to 0.6% in Wyoming.[20] Among all adults, we find that 0.5%, or over 1.3 million, identifies as transgender. Our estimates of adults in U.S. regions who identify as transgender range from 0.6% in the Northeast to 0.4% in the Midwest. At the state level, our estimates range from 0.9% of adults identifying as transgender in North Carolina to 0.2% in Missouri.[21]

[20] Appendix Table A4 describes 95% credible intervals for our national, regional, and state level estimates for youth and adults by age group. This table can serve as a reference to help determine if estimates across regions and states appear to be significantly different from each other. For instance, the percent of youth in New York who identify as transgender (3.0%) is significantly higher than 10 other states, meaning the upper bound estimate in these 10 states is lower than the lower bound estimate for New York. For adults, the percent that identifies as transgender in North Carolina (0.9%) is significantly higher than 19 other states.

[21] The District of Columbia is not included in this range for states. DC had a notably high percentage of transgender-identified adults (0.92%), but is considered an outlier compared to the rest of the U.S. states due to its unique geographic (urban) and demographic profile.

Table 4. Regional and state-level estimates of those who identify as transgender in the U.S. population by age group (ages 13 and older)

	13-17		18-24		25-64		65+		ALL ADULTS 18+	
STATE	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER
United States	1.43%	300,100	1.31%	398,900	0.45%	766,500	0.32%	171,700	0.52%	1,337,100
WEST	1.62%	81,700	1.14%	82,600	0.51%	209,400	0.30%	36,400	0.54%	328,500
Alaska	1.23%	500	1.51%	1,000	0.65%	2,500	0.34%	300	0.70%	3,900
Arizona	1.54%	7,300	1.92%	13,000	0.71%	25,200	0.23%	3,000	0.73%	41,200
California	1.93%	49,100	0.70%	25,500	0.50%	105,100	0.34%	19,500	0.49%	150,100
Colorado	1.14%	4,200	2.09%	10,800	0.51%	15,800	0.06%	500	0.60%	27,000
Hawaii	2.15%	1,700	1.50%	1,800	0.66%	4,800	0.44%	1,200	0.70%	7,800
Idaho	0.76%	1,000	0.92%	1,500	0.51%	4,500	0.36%	1,000	0.52%	7,000
Montana	0.78%	500	0.70%	700	0.47%	2,500	0.13%	300	0.41%	3,400
Nevada	1.67%	3,300	0.87%	2,200	0.35%	5,700	0.04%	200	0.34%	8,100
New Mexico	2.62%	3,700	0.81%	1,600	0.62%	6,500	0.73%	2,800	0.67%	10,900
Oregon	1.18%	2,900	1.57%	5,700	0.52%	11,500	0.35%	2,700	0.59%	19,900
Utah	0.83%	2,100	1.34%	4,800	0.47%	7,300	0.43%	1,600	0.60%	13,700
Washington	1.09%	5,000	2.01%	13,300	0.41%	16,900	0.26%	3,200	0.56%	33,300
Wyoming	0.56%	200	1.21%	700	0.41%	1,200	0.29%	300	0.48%	2,100
MIDWEST	1.24%	54,500	1.27%	81,200	0.34%	119,900	0.26%	30,100	0.44%	231,200
Illinois	1.66%	13,700	1.94%	22,300	0.24%	16,300	0.24%	4,800	0.44%	43,400
Indiana	0.91%	4,100	1.18%	7,800	0.45%	15,100	0.27%	2,900	0.50%	25,800
Iowa	1.07%	2,100	0.45%	1,400	0.28%	4,400	0.23%	1,200	0.29%	7,100
Kansas	1.05%	2,100	1.92%	5,700	0.35%	5,000	0.34%	1,600	0.56%	12,400
Michigan	1.41%	8,900	1.13%	10,800	0.38%	19,600	0.14%	2,600	0.42%	33,000
Minnesota	0.94%	3,500	1.62%	7,900	0.52%	15,200	0.32%	2,900	0.60%	26,000
Missouri	0.75%	2,900	0.71%	3,900	0.07%	2,100	0.33%	3,500	0.20%	9,500
Nebraska	0.94%	1,200	1.12%	2,100	0.37%	3,600	0.28%	900	0.45%	6,600
North Dakota	1.16%	500	1.02%	800	0.36%	1,400	0.26%	300	0.43%	2,500
Ohio	1.15%	8,500	1.14%	12,200	0.45%	27,100	0.35%	7,200	0.51%	46,500
South Dakota	0.90%	500	1.12%	900	0.37%	1,600	0.27%	400	0.44%	2,900
Wisconsin	1.75%	6,400	0.99%	5,300	0.29%	8,500	0.17%	1,700	0.34%	15,500
SOUTH	1.25%	102,200	1.33%	154,500	0.45%	295,500	0.36%	73,600	0.54%	523,600
Alabama	1.08%	3,400	1.18%	5,400	0.42%	10,400	0.30%	2,500	0.48%	18,400
Arkansas	0.88%	1,800	3.59%	9,800	0.24%	3,500	0.58%	2,900	0.70%	16,200
Delaware	0.96%	600	2.36%	2,000	0.69%	3,400	0.49%	900	0.82%	6,300
District of Columbia	2.11%	600	2.21%	1,600	0.77%	3,200	0.56%	500	0.92%	5,300
Florida	1.32%	16,200	1.28%	22,400	0.49%	53,900	0.41%	18,600	0.55%	94,900
Georgia	1.18%	8,500	1.24%	12,700	0.48%	26,800	0.61%	9,200	0.60%	48,700
Kentucky	0.68%	2,000	1.27%	5,300	0.43%	9,900	0.32%	2,400	0.51%	17,700
Louisiana	1.30%	4,000	0.79%	3,300	0.45%	10,700	0.23%	1,700	0.44%	15,700
Maryland	2.08%	8,000	1.90%	10,100	0.38%	12,200	0.18%	1,700	0.51%	24,000
Mississippi	1.20%	2,400	0.81%	2,400	0.37%	5,500	0.33%	1,600	0.42%	9,600

	13-17		18-24		25-64		65+		ALL ADULTS 18+	
STATE	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER
North Carolina	1.27%	8,500	2.46%	24,000	0.73%	38,400	0.53%	8,900	0.87%	71,300
Oklahoma	1.00%	2,600	2.52%	9,300	0.44%	8,500	0.19%	1,100	0.63%	18,900
South Carolina	1.14%	3,700	0.87%	4,100	0.43%	11,300	0.38%	3,500	0.47%	19,000
Tennessee	0.74%	3,100	1.95%	11,700	0.44%	15,000	0.09%	1,000	0.52%	27,700
Texas	1.42%	29,800	0.71%	19,800	0.42%	61,500	0.31%	11,600	0.43%	92,900
Virginia	1.18%	6,200	1.11%	8,800	0.40%	18,000	0.34%	4,600	0.47%	31,400
West Virginia	0.68%	700	1.18%	1,800	0.36%	3,200	0.22%	800	0.40%	5,700
NORTHEAST	1.82%	61,700	1.58%	80,600	0.48%	141,600	0.32%	31,600	0.57%	253,800
Connecticut	1.64%	3,700	1.35%	4,600	0.45%	8,300	0.38%	2,400	0.54%	15,300
Maine	1.59%	1,200	1.44%	1,600	0.47%	3,300	0.34%	1,000	0.53%	5,900
Massachusetts	1.44%	5,900	2.30%	15,700	0.44%	16,100	0.46%	5,400	0.67%	37,100
New Hampshire	0.84%	700	1.53%	1,900	0.48%	3,500	0.34%	900	0.57%	6,300
New Jersey	0.67%	3,800	1.67%	12,700	0.52%	24,800	0.38%	5,600	0.62%	43,100
New York	3.00%	34,800	1.37%	24,100	0.46%	47,600	0.31%	10,100	0.53%	81,800
Pennsylvania	1.30%	10,000	1.50%	16,900	0.51%	33,400	0.24%	5,600	0.55%	56,000
Rhode Island	1.93%	1,200	2.11%	2,300	0.54%	3,000	0.21%	400	0.66%	5,700
Vermont	1.33%	500	1.26%	800	0.48%	1,500	0.29%	400	0.53%	2,700

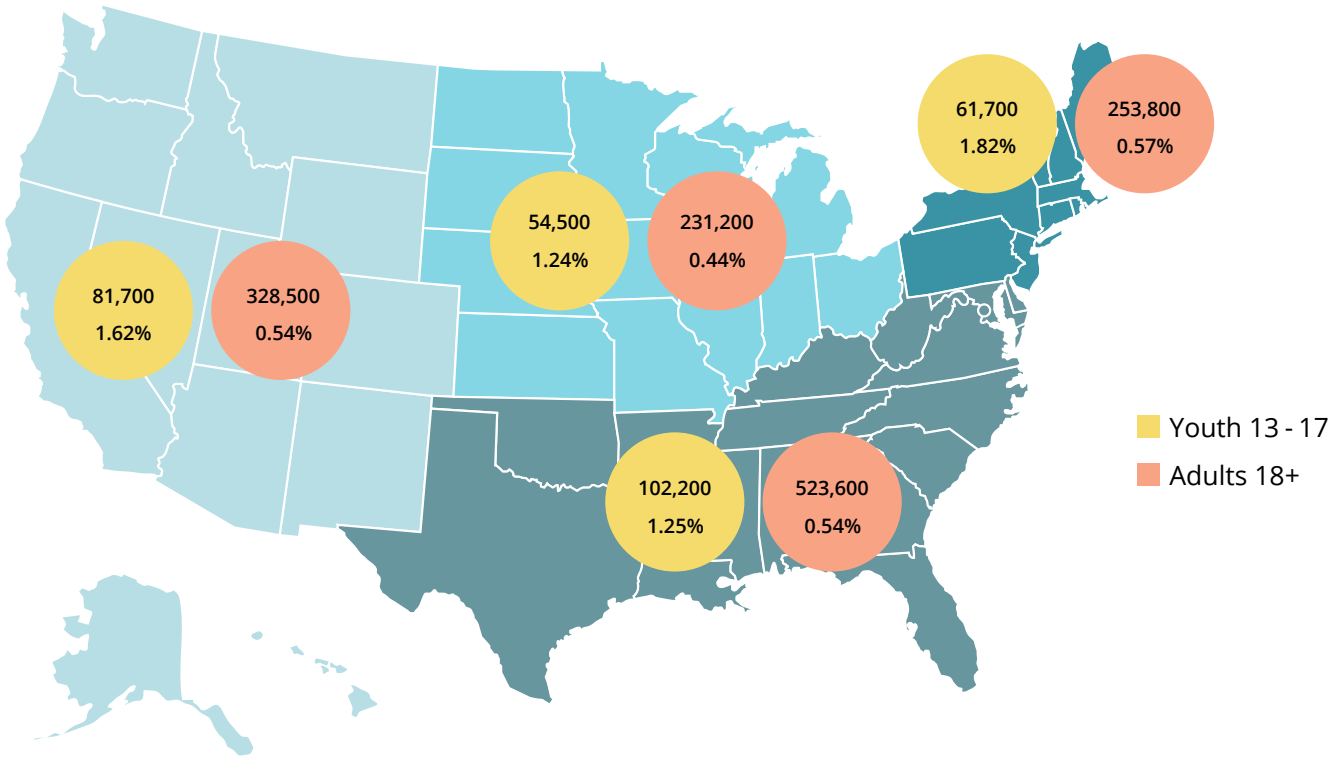


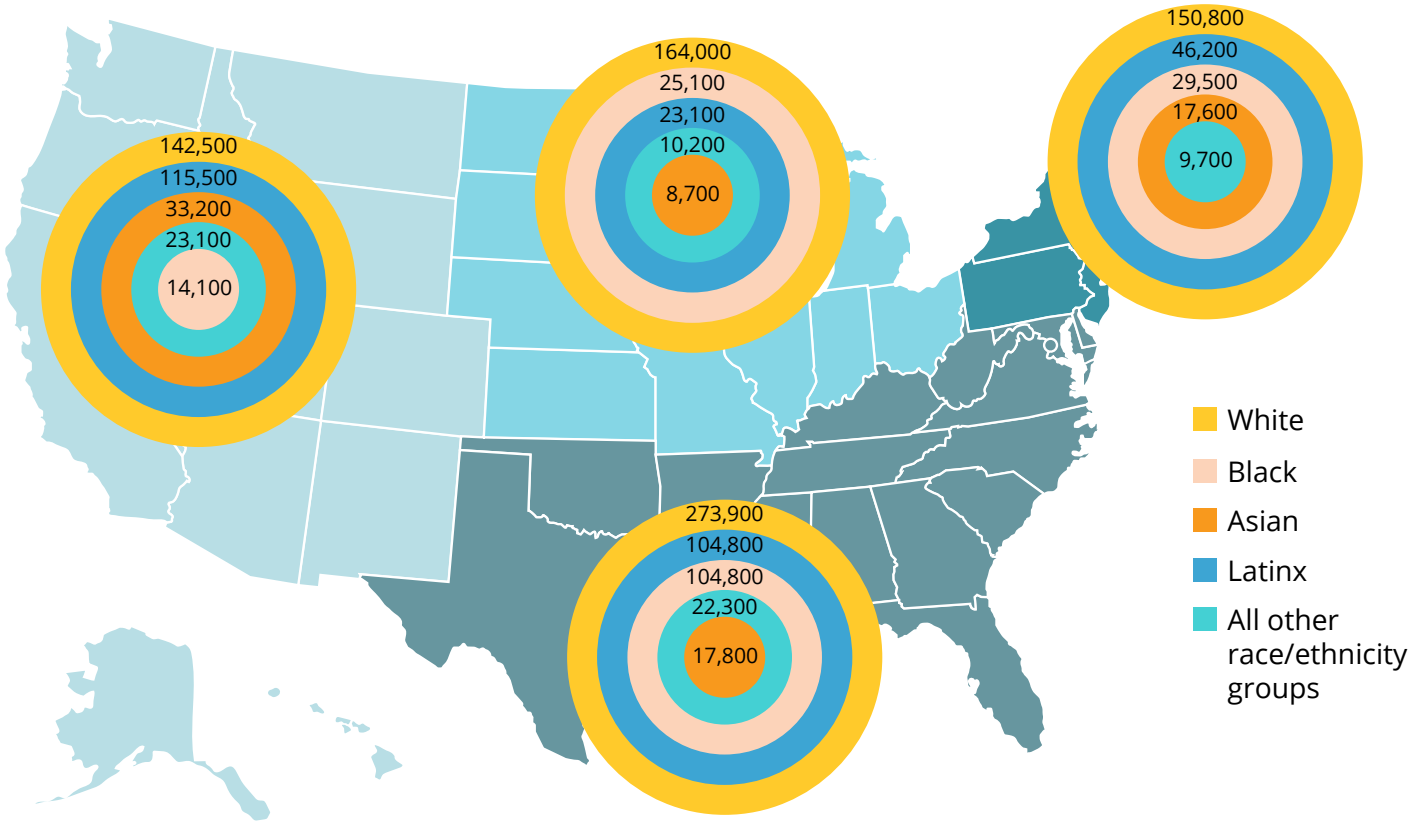
Table 5 describes the percentage and the population estimate of each racial/ethnic group that identifies as transgender nationally, in the four U.S. regions, and in each state within each region. Due to sample size limitations, our estimates are limited only to adults. Furthermore, we must combine into one heterogenous category all those reporting a race or ethnicity other than White, Black, Asian, and Latinx, which includes Native American, Alaska Native, Native Hawaiian, Pacific Islander, biracial, multiracial, and individuals with other racial/ethnic identities.

Table 5. Regional and state-level estimates of those who identify as transgender in the U.S. population by race/ethnicity (adults ages 18+ only)

	WHITE		BLACK		ASIAN		LATINX		ALL OTHER RACE/ ETHNICITY GROUPS	
STATE	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER
United States	0.46%	731,200	0.56%	173,500	0.50%	77,300	0.69%	289,700	0.94%	65,400
WEST	0.45%	142,500	0.51%	14,100	0.48%	33,200	0.70%	115,500	0.91%	23,100
Alaska	0.49%	1,900	0.70%	100	0.67%	300	0.78%	300	1.12%	1,200
Arizona	0.52%	18,700	0.66%	1,800	0.63%	1,400	0.91%	15,600	1.17%	3,700
California	0.40%	44,200	0.50%	8,000	0.47%	20,900	0.70%	69,900	0.74%	7,100
Colorado	0.50%	16,200	0.64%	1,100	0.61%	1,000	0.86%	7,500	1.04%	1,300
Hawaii	0.50%	1,400	0.59%	100	0.58%	3,500	0.80%	800	1.08%	1,900
Idaho	0.46%	5,300	0.63%	<100	0.49%	100	0.76%	1,200	0.82%	300
Montana	0.38%	2,800	0.57%	<100	0.38%	<100	0.62%	200	0.68%	400
Nevada	0.39%	3,300	0.50%	700	0.45%	700	0.69%	2,900	0.54%	500
New Mexico	0.47%	3,200	0.63%	200	0.56%	200	0.76%	5,800	0.95%	1,500
Oregon	0.53%	13,700	0.65%	400	0.64%	1,100	0.89%	3,300	1.02%	1,400
Utah	0.54%	9,800	0.66%	100	0.67%	500	0.82%	2,400	1.06%	800
Washington	0.49%	20,300	0.61%	1,400	0.58%	3,400	0.86%	5,400	0.98%	2,900
Wyoming	0.44%	1,700	0.58%	<100	0.59%	<100	0.75%	300	0.85%	100
MIDWEST	0.40%	164,000	0.48%	25,100	0.48%	8,700	0.64%	23,100	0.87%	10,200
Illinois	0.40%	23,900	0.49%	6,300	0.43%	2,400	0.65%	9,400	0.85%	1,400
Indiana	0.46%	19,500	0.53%	2,500	0.56%	700	0.70%	2,200	1.03%	1,000
Iowa	0.31%	5,700	0.41%	300	0.41%	200	0.53%	600	0.56%	200
Kansas	0.49%	8,600	0.60%	800	0.61%	400	0.82%	1,900	1.04%	700
Michigan	0.40%	23,400	0.48%	4,700	0.46%	1,100	0.66%	2,200	0.79%	1,500
Minnesota	0.53%	19,300	0.71%	1,700	0.72%	1,500	0.88%	1,800	1.27%	1,600
Missouri	0.34%	7,300	0.41%	1,200	0.41%	200	0.52%	500	0.37%	400
Nebraska	0.40%	4,800	0.54%	400	0.53%	200	0.71%	1,000	0.89%	300
North Dakota	0.39%	2,000	0.49%	100	0.59%	100	0.74%	200	0.70%	200
Ohio	0.48%	35,400	0.56%	6,000	0.53%	1,200	0.70%	2,100	1.03%	1,900
South Dakota	0.39%	2,200	0.52%	100	0.61%	100	0.63%	100	0.82%	500
Wisconsin	0.35%	11,900	0.48%	1,100	0.47%	600	0.56%	1,300	0.65%	600
SOUTH	0.48%	273,900	0.58%	104,800	0.51%	17,800	0.66%	104,800	0.99%	22,300
Alabama	0.44%	11,200	0.54%	5,400	0.46%	200	0.72%	900	0.80%	600
Arkansas	0.55%	11,200	0.62%	2,600	0.72%	300	0.89%	1,500	1.16%	600
Delaware	0.65%	3,600	0.81%	1,400	0.70%	200	1.15%	800	1.77%	300
District of Columbia	0.77%	1,800	0.99%	2,400	0.98%	300	1.11%	600	1.42%	200
Florida	0.46%	44,300	0.62%	15,100	0.55%	2,700	0.69%	29,500	0.97%	3,300
Georgia	0.53%	23,700	0.61%	15,700	0.57%	2,000	0.84%	5,800	1.04%	1,600
Kentucky	0.49%	14,500	0.55%	1,500	0.53%	300	0.76%	800	1.09%	600
Louisiana	0.43%	8,700	0.51%	5,200	0.50%	300	0.60%	1,000	0.71%	500
Maryland	0.46%	11,200	0.52%	7,200	0.49%	1,500	0.75%	3,200	0.88%	1,100
Mississippi	0.40%	5,100	0.47%	3,800	0.43%	100	0.65%	400	0.77%	200

	WHITE		BLACK		ASIAN		LATINX		ALL OTHER RACE/ ETHNICITY GROUPS	
STATE	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER
North Carolina	0.71%	41,400	0.84%	15,700	0.80%	2,100	1.17%	8,200	1.59%	3,800
Oklahoma	0.53%	10,900	0.60%	1,300	0.66%	500	0.88%	2,400	1.00%	3,900
South Carolina	0.43%	11,300	0.53%	5,400	0.49%	300	0.69%	1,300	0.90%	600
Tennessee	0.48%	19,400	0.56%	4,900	0.55%	600	0.81%	1,900	0.96%	900
Texas	0.36%	32,500	0.44%	10,600	0.40%	4,300	0.58%	42,800	0.69%	2,700
Virginia	0.43%	17,900	0.51%	6,300	0.47%	2,100	0.66%	3,700	0.92%	1,500
West Virginia	0.42%	5,200	0.44%	200	0.40%	<100	0.55%	100	0.75%	100
NORTHEAST	0.51%	150,800	0.61%	29,500	0.58%	17,600	0.78%	46,200	1.04%	9,700
Connecticut	0.46%	9,100	0.62%	1,700	0.55%	700	0.76%	3,200	0.96%	600
Maine	0.52%	5,300	0.63%	100	0.74%	100	0.80%	100	0.99%	200
Massachusetts	0.58%	23,900	0.74%	2,800	0.73%	2,800	0.96%	5,800	1.21%	1,800
New Hampshire	0.54%	5,500	0.63%	100	0.60%	200	0.86%	300	1.18%	200
New Jersey	0.49%	20,800	0.61%	5,800	0.52%	3,800	0.79%	11,200	1.11%	1,400
New York	0.46%	39,800	0.56%	12,100	0.55%	7,500	0.70%	19,100	0.92%	3,300
Pennsylvania	0.50%	40,200	0.61%	6,500	0.58%	2,100	0.78%	5,300	1.09%	1,800
Rhode Island	0.57%	3,700	0.71%	300	0.72%	200	0.89%	1,100	1.14%	300
Vermont	0.51%	2,400	0.67%	<100	0.55%	<100	0.91%	100	1.04%	100

Note: White, Black, and Asian are non-Hispanic. The Latinx category includes Hispanic and Latinx people of any race. All other race/ethnicity groups are non-Hispanic.



CONCLUSION

Based on our estimates from 2016-2017 and the current report, the percentage and number of adults who identify as transgender has remained steady over time in the United States. The availability of the YRBS data has given us a more direct look into youth gender identity and provides better data than was previously available to us for estimating the size and characteristics of the youth population. Youth ages 13 to 17 comprise a larger share of the transgender-identified population than we previously estimated, currently comprising about 18% of the transgender-identified population in the U.S., up from 10% previously. Our findings regarding gender, age, and race/ethnicity are in keeping with existing research, which has found that nonbinary adults comprise nearly a third of transgender adults, transgender people are on average younger than the general population, and transgender people are more likely to report being Latinx and less likely to report being White.

Our estimates described in this report were made possible by advances in gender identity data collection over the past five years. More states have included the BRFSS optional gender identity module over the years and the availability of YRBS data has given us a direct look into youth gender identity. In this study, we were also able, for the first time, to produce national and state-level population estimates for Asian adults and national population estimates for American Indian and Alaska Native adults who identify as transgender. Despite these advances, our study required the use of advance statistical modeling in order to produce our estimates. This is because several states do not include the optional gender identity module in their BRFSS surveys. Other surveys that identify transgender respondents are still emerging as potential data sources for similar population estimates, like Household Pulse Survey, or do not yet exist. To improve the availability of data about the U.S. transgender population, and negate the need for advanced statistical modeling to overcome limitations in the current data, the CDC should make the BRFSS gender identity module part of the core survey rather than an optional module. Furthermore, the federal government should include questions to identify transgender people in all federal surveys. Visibility for the transgender people in our federal surveys would further bring to light the characteristics, experiences, well-being, and needs of the transgender population in the United States.

METHODS

The BRFSS collects demographic and health information from representative samples at the state level. In addition to a core questionnaire provided by the CDC that coordinates the BRFSS, states can add optional modules that ask unique sets of questions. One module asks about sexual orientation and gender identity (SOGI). Similarly, the YRBS allows states to include a module that asks about SOGI. The BRFSS module asks, “Do you consider yourself to be transgender?” with response options, “Yes; No; Don’t know/not sure” or respondents could refuse to answer. If a respondent expresses confusion, then interviewers provide definitions of transgender and/or gender nonconforming. If respondents affirmatively answer the question, they are then asked if they consider themselves to be male-to-female; female-to-male; or gender nonconforming. The YRBS module asks, “Some people describe themselves as transgender when their sex at birth does not match the way they think or feel about their gender. Are you transgender?” with response options, “No; Yes, I am transgender; Not sure if I am transgender, Don’t know what the question is asking.”

We pool the 2017-2020 BRFSS surveys; 41 states used the SOGI module one or more times in this timeframe (*n* = 1,707,678). We pool the 2017 and 2019 YRBS where 15 states used the module at least one during this time period (*n* = 372,214). We analyze adults and youth separately considering they come from different sources. All respondents who were asked whether they identify as transgender are coded as 1 if they did or 0 if they did not, which includes don't know responses, not sure responses, and refusals to answer.

We directly analyze the results from any state that implemented the sexual orientation and gender identity module. For example, the estimates for the 41 states in the BRFSS will be the same as the weighted results one would obtain from direct analyses of available 2017-2020 BRFSS data for that state.[22] The pooled estimates do not account for various years.

The strategy we employ for states where transgender identification is not observed, because the SOGI module was not used, combines small area estimation strategies common in demographic research with poststratification techniques common in survey research.[23] This strategy is called multilevel regression and poststratification (MRP). We fit a multilevel model relying on demographics and state of residence. The general model can be summarized in two stages. The first stage performs a multilevel regression to data. The following is the specification for the BRFSS:

$$y_i = g\left(b_0 + b_1 * \text{cell\_int} + \alpha^j_{\text{race}_i} + \alpha^k_{\text{age}_i} + \alpha^l_{\text{educ}_i} + \alpha^m_{\text{age.educ}_i} + \alpha^s_{\text{state}_i}\right).$$

where $g(.)$ is a link function, and α's represent random coefficients for demographic and geographic predictors. All demographic random effects are distributed normally, $\alpha \sim N\ (0,\sigma^2)$.

In building our estimation models, we included covariates that are correlated with the percentage of transgender or LGBT people within a state and where there are population estimates from the United States Census Bureau. Individual-level and contextual covariates are related to identification, disclosure, and may be associated with migration to a state. Evaluations of models employing this estimation strategy for statewide estimates show that even using a single demographic predictor, such as race, in addition to geographic predictors produce estimates that out-perform disaggregated analysis.[24] Studies document that LGBT and transgender populations tend to be younger,[25] more

[22] This is true for all overall estimates. However, for subgroups we rely on the model described in this note and then generalize those model results to the estimated population total of people who identify as transgender. We do this because of small cell sizes and unstable direct estimates.

[23] Park, D.K., Gelman, A., & Bafumi, J. (2004). Bayesian multilevel estimation with poststratification: State-level estimates from national polls. *Political Analysis*, *12*, 375-385.

[24] Lax, J. R., and Phillips, J. H. (2009). How should we estimate public opinion in the states? *American Journal of Political Science*, *53*(1), 107-121.

[25] James, S. E., Herman, J. L., Rankin, S., Keisling, M., Mottet, L. A., & Anafi, M. (2016). *The Report of the 2015 U.S. Transgender Survey*. Washington, DC: National Center for Transgender Equality; Meyer, I.H., Wilson, B.D.M., & O'Neill, K. (2021). LGBTQ People in the US: Select Findings from the Generations and TransPop Studies. Los Angeles, CA: The Williams Institute.

racially and ethnically diverse,[26] and have levels of educational attainment that differ from non-LGBT[27] or cisgender populations.[28] Further, varying social contexts may create environments that are either more welcoming to LGBT people encouraging greater identity uptake or migration.[29] Thus, the models rely on basic demographics and state-level contextual characteristics that may covary with transgender status.

We use six race and ethnicity categories. We also use 10 age categories ranging from 18 to over 65 years old. Educational attainment is comprised of four categories (i.e., less than a high school diploma or equivalent, a high school diploma or equivalent, some college education, and those with a college degree or more education). We also use the interaction of age and education categories, which is a standard procedure in survey weighting as age and educational attainment are interrelated. At times, the BRFSS module may or may not be used in a cell phone interview depending on a person's residency,[30] so it is used as a covariate to account for a systematic missing data pattern. The geographic-level coefficients are given group-level covariates:

$$\alpha_s \sim \mathrm{N}\left(\alpha^r_{\mathrm{region}_s} + G^s U, \sigma^2_{\mathrm{state}}\right),$$

where G^s is a matrix of $(s \times j)$ matrix of j group-level variables and U is a vector of length j regression coefficients. We include statewide contextual variables such as race/ethnic composition of the state, the percentage of same-sex couple households in the state, statewide measures of public opinion on LGBT rights, and median income in a state. In total, the percentage of same-sex couple households in the state was among the strongest predictors in the current model. We further add a third level to the model for regional groupings of the states, which is also distributed normally.[31]

The YRBS was analyzed with the same approach, except there were only two age groups (13-14; 15-17), and we do not use educational attainment or cell phone interviews. Our analyses use the sampling weights from both the BRFSS and YRBS. We rescale these weights to account for multilevel modeling using Carle's method A.[32] All models are fit in R relying on maximum likelihood estimation.[33] The second step of MRP is to use the fitted regression and generalize it over known population distributions. For example, if $g(.)$ were a logistic regression, then the probabilities an individual identifies with a group can be predicted for each demographic and geographic characteristic (θ_C),

[26] Flores, A. R., Langton, L., Meyer, I. H., and Romero, A. P. (2020). Victimization rates and traits of sexual and gender minorities in the United States: Results from the National Crime Victimization Survey, 2017. *Science Advances*, *6*: eaba6910.

[27] Ibid.

[28] Badgett, M. V. L., Choi, S. K., & Wilson, B. D. M., (2019, October). *LGBT poverty in the United States: A study of differences between sexual orientation and gender identity groups*. Los Angeles, CA: The Williams Institute.

[29] Esposito, E., Calanchini, J. (2022). Examining selective migration as attitudinal fit versus gay migration. *Journal of Experimental Social Psychology*, *101*, 104307.

[30] Jesdale, B.M. (2021). Sources of missing sexual orientation and gender identity data in the Behavioral Risk Factor Surveillance System. *American Journal of Preventative Medicine*, *61*(2), 281-290.

[31] Given the uniqueness of the District of Columbia, it is treated as its own state and region in this process.

[32] Carle, A.C. (2009). Fitting multilevel models in complex survey data with design weights: Recommendations. *BMV Medical Research Methodology*, *9*, https://doi.org/10.1186/1471-2288-9-49

[33] Bates, D., Máchler, M., Bolker, B., and Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*, 1-48.

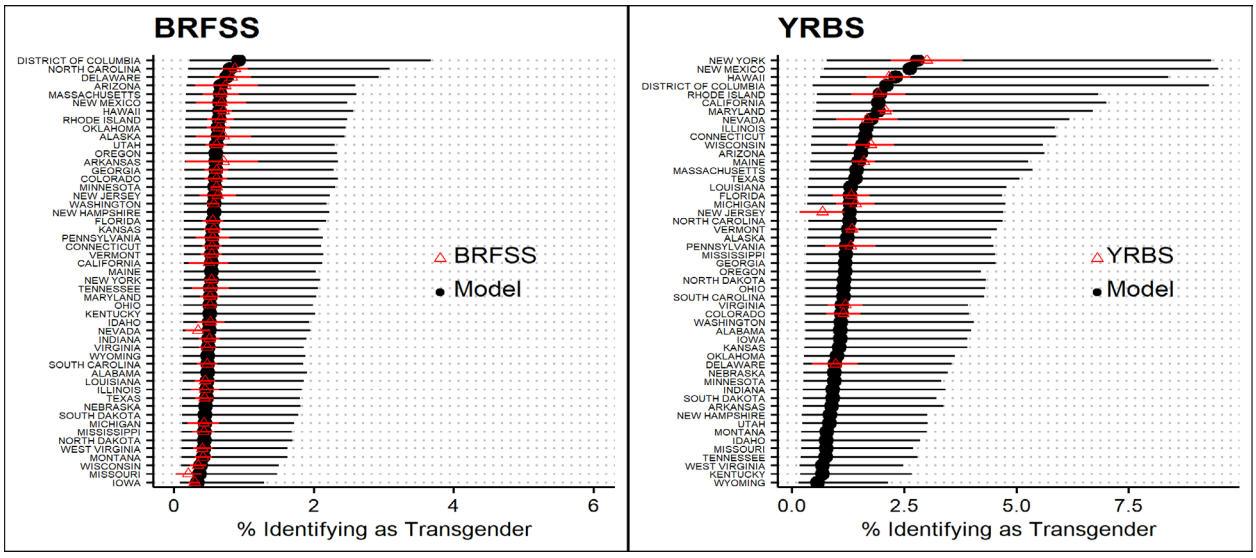
where max $(c) = j * k * l * s$. Every fitted value can then be weighted by the size of the population, N_C, and these weighted values summed by state for population size and further divided by the state's population for a population proportion:

$$\text{Population size}_s = \sum_{c \in s} \theta_c * N_c \; ; \; \text{Population Proportion}_s = \frac{\sum_{c \in s} \theta_c * N_c}{\sum_{c \in s} N_c}.$$

We use the 2019 three-year estimates from the American Community Survey for our poststratification dataset, which we retrieved through IPUMS. For the states where data are observed, we multiply the 2019 3-year estimates to the proportion of people identifying as transgender, providing us with a population estimate. For the states where data are not observed, model-based estimates are used, and we incorporate model uncertainty in predictions when providing confidence intervals of our estimates.[34]

Since our estimation strategy produces two sets of estimates for states where data are observed (i.e., direct estimates and model-based estimates). We compared these two sets of estimates. Overall, they tended to strongly correlate with one another (e.g., correlation above 0.80), suggesting that the model-based estimates perform similar to direct estimation. Figure 5 compares model-based estimates to direct estimates at the state level. We see very few deviations that all fall beyond the margin of error. The three exceptions are Missouri and Nevada in the BRFSS and New Jersey in the YRBS, where the direct estimates are smaller than the model-based estimates. These deviations all fall well within confidence intervals. While we report direct estimates whenever possible, these discrepancies suggest that model-based estimates may better adjust weighted estimates to population targets without producing bias. We still opt to be conservative in our reporting and rely on direct estimates whenever the data are available.

Figure 5. Model-based estimates and direct estimates from BRFSS and YRBS



[34] There is no consensus about the best method for uncertainty estimation for multilevel models. We use the predictInterval function from the merTools package in R for uncertainty estimation. Ideally, a fully Bayesian model would be preferred, but we were limited by computing power.

To ensure subgroup estimates summed to national estimates, the subgroup counts of people who identify as transgender were divided by total counts of people who identify as transgender and the resulting percentage was then multiplied by the total population estimate to create an adjusted subgroup population estimate. For example, the population estimates of adults who identify as transgender by age group in California were added together to create a population estimate of the total number of adults who identify as transgender in California. The estimated number of 18- to 24-year-old transgender people in California is then divided by this total, to create an estimate of what percentage of transgender adults in California are 18 to 24. This percentage is then multiplied by the total estimated number of adults who identify as transgender in California. The resulting population estimate for that subgroup is only slightly different than the original subgroup estimate but it now correctly adds to the total estimated number of adults who identify as transgender in California.

To create national estimates, count estimates for each state were summed and then divided by the total population estimate. For example, the estimated number of Black adults who identify as transgender in the United States was summed across all states and then divided by the total estimated number of Black adults in the U.S. This created a national estimate of the percentage of Black adults who identify as transgender. A similar approach was used to create regional estimates.

All numbers were rounded to the nearest 100th. Some lower-bound credible intervals reported below were negative; these were truncated to zero.

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APPENDIX

Table A1. Percent of each age group that identifies as transgender in the U.S.

	PERCENT [LB, UB]	NUMBER [LB, UB]
13 to 17	[0.61%, 4.02%]	[128,834, 843,773]
18 to 24	[0.43%, 2.43%]	[130,902, 736,873]
25 to 64	[0.23%, 0.74%]	[399,265, 1,260,344]
65 and older	[0.12%, 0.57%]	[64,824, 310,718]
Total (ages 13+)	[0.26%, 1.14%]	[723,825, 3,151,708]

Table A2. Percent of each racial/ethnic group that identifies as transgender in the U.S., among adults (ages 18 and older)

	PERCENT [LB, UB]	NUMBER [LB, UB]
White	[0.28%, 0.72%]	[450,300, 1,151,079]
Black	[0.36%, 0.84%]	[110,698, 258,977]
Asian	[0.31%, 0.74%]	[47,451, 113,294]
AIAN	[0.50%, 1.39%]	[8,327, 23,097]
Latinx	[0.41%, 1.00%]	[172,709, 420,079]
Biracial, multiracial, or other race/ethnicity	[0.58%, 1.42%]	[40,459, 98,207]
Total	[0.32%, 0.77%]	[816,644, 1,964,330]

Note: White, Black, Asian, and American Indian or Alaska Native (AIAN) are non-Hispanic. The Latinx category includes Hispanic and Latinx people of any race. Biracial, multiracial, and other race/ethnicity are non-Hispanic.

Table A3. Percent of each racial/ethnic group that identifies as transgender in the U.S., among youth (ages 13 to 17)

	PERCENT [LB, UB]	NUMBER [LB, UB]
White	[0.34%, 4.63%]	[36,900, 498,000]
Black	[0.38%, 5.05%]	[10,700, 142,250]
Asian	[0.28%, 3.80%]	[2,900, 39,800]
AIAN	[0.48%, 6.46%]	[800, 10,900]
Latinx	[0.49%, 6.34%]	[25,600, 330,650]
Biracial, multiracial, or other race/ethnicity	[0.41%, 5.47%]	[4,000, 53,850]
Total	[0.58%, 3.92%]	[122,000, 823,200]

Note: White, Black, Asian, and American Indian or Alaska Native (AIAN) are non-Hispanic. The Latinx category includes Hispanic and Latinx people of any race. Biracial, multiracial, and other race/ethnicity are non-Hispanic.

Table A4. 95% Credible Intervals for regional and state-level estimates of those who identify as transgender in the U.S. population by age group

	13-17		18-24		25-64		65+		ALL ADULTS	
STATE	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]
United States	[0.61%, 4.02%]	[128,834, 843,773]	[0.43%, 2.43%]	[130,902, 736,873]	[0.23%, 0.74%]	[399,265, 1,260,344]	[0.12%, 0.57%]	[64,824, 310,718]	[0.32%, 0.77%]	[816,644, 1,964,330]
WEST	[0.51%, 5.48%]	[25,784, 277,035]	[0.35%, 2.16%]	[25,647, 156,784]	[0.18%, 0.92%]	[73,888, 377,554]	[0.04%, 0.63%]	[4,962, 76,784]	[0.27%, 0.76%]	[162,515, 461,338]
Alaska	[0.33%, 4.44%]	[143, 1,930]	[0.00%, 3.50%]	[0, 2,345]	[0.21%, 1.09%]	[837, 4,272]	[0.03%, 0.66%]	[26, 616]	[0.31%, 1.10%]	[1,715, 6,085]
Arizona	[0.43%, 5.63%]	[2,040, 26,881]	[0.00%, 4.14%]	[0, 28,838]	[0.14%, 1.28%]	[5,047, 46,633]	[0.03%, 0.44%]	[398, 5,734]	[0.30%, 1.20%]	[16,921, 67,683]
California	[0.54%, 7.01%]	[13,828, 178,759]	[0.14%, 1.25%]	[5,169, 46,288]	[0.12%, 0.89%]	[24,372, 187,926]	[0.00%, 0.70%]	[0, 40,614]	[0.21%, 0.77%]	[64,328, 235,869]
Colorado	[0.68%, 1.60%]	[2,484, 5,849]	[1.08%, 3.09%]	[5,686, 16,305]	[0.35%, 0.68%]	[10,898, 21,338]	[0.00%, 0.11%]	[0, 950]	[0.43%, 0.76%]	[19,372, 34,239]
Hawaii	[1.66%, 2.63%]	[1,330, 2,104]	[0.77%, 2.22%]	[905, 2,604]	[0.51%, 0.81%]	[3,698, 5,928]	[0.26%, 0.62%]	[707, 1,668]	[0.56%, 0.83%]	[6,249, 9,262]
Idaho	[0.20%, 2.85%]	[261, 3,737]	[0.22%, 1.62%]	[362, 2,632]	[0.25%, 0.77%]	[2,249, 6,823]	[0.09%, 0.62%]	[262, 1,797]	[0.33%, 0.72%]	[4,414, 9,631]
Montana	[0.21%, 3.00%]	[137, 1,997]	[0.08%, 1.32%]	[76, 1,334]	[0.31%, 0.64%]	[1,652, 3,378]	[0.04%, 0.22%]	[87, 464]	[0.29%, 0.54%]	[2,440, 4,543]
Nevada	[0.93%, 2.40%]	[1,844, 4,746]	[0.00%, 1.96%]	[0, 4,932]	[0.16%, 0.53%]	[2,642, 8,772]	[0.00%, 0.09%]	[0, 466]	[0.16%, 0.52%]	[3,823, 12,425]
New Mexico	[0.71%, 9.49%]	[989, 13,308]	[0.00%, 1.74%]	[0, 3,460]	[0.16%, 1.08%]	[1,628, 11,274]	[0.00%, 1.46%]	[0, 5,537]	[0.31%, 1.03%]	[5,032, 16,718]
Oregon	[0.31%, 4.21%]	[778, 10,451]	[0.40%, 5.77%]	[1,457, 21,059]	[0.13%, 2.07%]	[2,897, 45,955]	[0.09%, 1.44%]	[671, 11,073]	[0.15%, 2.33%]	[50, 781]
Utah	[0.22%, 3.02%]	[568, 7,700]	[0.71%, 1.98%]	[2,563, 7,142]	[0.31%, 0.63%]	[4,848, 9,763]	[0.25%, 0.62%]	[899, 2,270]	[0.45%, 0.75%]	[10,244, 17,073]
Washington	[0.29%, 4.06%]	[1,325, 18,761]	[1.41%, 2.62%]	[9,262, 17,293]	[0.31%, 0.51%]	[12,818, 20,840]	[0.15%, 0.37%]	[1,841, 4,471]	[0.46%, 0.65%]	[27,386, 38,698]
Wyoming	[0.15%, 2.13%]	[56, 814]	[0.30%, 4.58%]	[167, 2,553]	[0.10%, 1.61%]	[302, 4,652]	[0.07%, 1.13%]	[71, 1,124]	[0.12%, 1.88%]	[540, 8,330]
MIDWEST	[0.49%, 3.67%]	[21,739, 161,975]	[0.42%, 2.32%]	[26,559, 148,216]	[0.19%, 0.54%]	[67,789, 188,624]	[0.11%, 0.45%]	[12,382, 52,130]	[0.27%, 0.65%]	[144,115, 344,082]
Illinois	[0.46%, 5.85%]	[3,836, 48,306]	[0.42%, 3.46%]	[4,811, 39,925]	[0.11%, 0.38%]	[7,446, 25,144]	[0.07%, 0.40%]	[1,407, 8,217]	[0.24%, 0.64%]	[23,656, 63,082]
Indiana	[0.24%, 3.42%]	[1,097, 15,534]	[0.44%, 1.92%]	[2,946, 12,738]	[0.28%, 0.61%]	[9,528, 20,945]	[0.12%, 0.43%]	[1,270, 4,662]	[0.35%, 0.65%]	[18,068, 33,554]
Iowa	[0.29%, 3.91%]	[586, 7,805]	[0.15%, 0.75%]	[468, 2,364]	[0.19%, 0.38%]	[2,947, 5,947]	[0.11%, 0.35%]	[584, 1,913]	[0.21%, 0.37%]	[5,112, 9,006]
Kansas	[0.28%, 3.90%]	[559, 7,841]	[1.15%, 2.70%]	[3,395, 8,011]	[0.24%, 0.46%]	[3,453, 6,577]	[0.21%, 0.47%]	[993, 2,234]	[0.42%, 0.68%]	[9,294, 15,048]
Michigan	[1.02%, 1.79%]	[6,432, 11,316]	[0.00%, 2.27%]	[33, 21,458]	[0.11%, 0.65%]	[5,797, 33,300]	[0.00%, 0.32%]	[0, 5,577]	[0.19%, 0.64%]	[14,909, 50,221]

	13-17		18-24		25-64		65+		ALL ADULTS	
STATE	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]
Minnesota	[0.25%, 3.32%]	[934, 12,413]	[1.16%, 2.08%]	[5,675, 10,182]	[0.42%, 0.62%]	[12,268, 18,075]	[0.22%, 0.42%]	[2,028, 3,831]	[0.52%, 0.69%]	[22,541, 29,910]
Missouri	[0.20%, 2.70%]	[778, 10,548]	[0.00%, 2.08%]	[0, 11,667]	[0.00%, 0.16%]	[0, 5,189]	[0.05%, 0.62%]	[480, 6,555]	[0.02%, 0.39%]	[954, 18,595]
Nebraska	[0.25%, 3.47%]	[324, 4,561]	[0.30%, 4.35%]	[561, 8,234]	[0.09%, 1.52%]	[909, 14,575]	[0.07%, 1.13%]	[224, 3,537]	[0.12%, 1.80%]	[1,694, 26,346]
North Dakota	[0.30%, 4.32%]	[127, 1,842]	[0.25%, 3.93%]	[204, 3,144]	[0.09%, 1.43%]	[347, 5,489]	[0.06%, 1.02%]	[76, 1,229]	[0.11%, 1.69%]	[627, 9,862]
Ohio	[0.30%, 4.31%]	[2,242, 31,883]	[0.62%, 1.66%]	[6,661, 17,749]	[0.33%, 0.57%]	[19,847, 34,509]	[0.22%, 0.48%]	[4,536, 9,844]	[0.40%, 0.61%]	[36,471, 55,618]
South Dakota	[0.24%, 3.21%]	[141, 1,875]	[0.29%, 4.35%]	[238, 3,590]	[0.09%, 1.51%]	[409, 6,536]	[0.07%, 1.12%]	[110, 1,734]	[0.11%, 1.77%]	[757, 11,860]
Wisconsin	[1.29%, 2.21%]	[4,683, 8,050]	[0.29%, 1.68%]	[1,568, 9,155]	[0.16%, 0.41%]	[4,838, 12,337]	[0.07%, 0.27%]	[675, 2,797]	[0.22%, 0.46%]	[10,033, 20,979]
SOUTH	[0.53%, 3.68%]	[42,806, 299,986]	[0.45%, 2.50%]	[51,865, 290,313]	[0.27%, 0.73%]	[176,871, 475,755]	[0.16%, 0.62%]	[33,661, 128,183]	[0.35%, 0.82%]	[343,999, 793,395]
Alabama	[0.30%, 3.99%]	[956, 12,593]	[0.31%, 4.55%]	[1,391, 20,700]	[0.10%, 1.66%]	[2,619, 41,531]	[0.08%, 1.20%]	[657, 10,233]	[0.12%, 1.90%]	[4,667, 72,464]
Arkansas	[0.24%, 3.37%]	[471, 6,712]	[0.00%, 7.89%]	[0, 22,365]	[0.03%, 0.45%]	[392, 6,878]	[0.12%, 1.04%]	[618, 5,458]	[0.17%, 1.20%]	[3,943, 27,831]
Delaware	[0.51%, 1.40%]	[305, 843]	[0.95%, 3.76%]	[796, 3,155]	[0.42%, 0.97%]	[2,077, 4,827]	[0.18%, 0.79%]	[335, 1,501]	[0.58%, 1.10%]	[4,465, 8,468]
District of Columbia	[0.46%, 9.29%]	[130, 2,603]	[0.54%, 8.51%]	[392, 6,156]	[0.18%, 3.14%]	[773, 13,125]	[0.14%, 2.20%]	[121, 1,927]	[0.22%, 3.67%]	[1,286, 21,207]
Florida	[0.97%, 1.67%]	[11,898, 20,515]	[0.33%, 2.23%]	[5,791, 39,269]	[0.32%, 0.67%]	[34,691, 73,562]	[0.25%, 0.58%]	[11,041, 26,257]	[0.40%, 0.70%]	[68,989, 120,730]
Georgia	[0.32%, 4.54%]	[2,307, 32,790]	[0.38%, 2.10%]	[3,869, 21,625]	[0.30%, 0.67%]	[16,445, 37,242]	[0.32%, 0.89%]	[4,878, 13,621]	[0.43%, 0.77%]	[34,896, 62,489]
Kentucky	[0.18%, 2.68%]	[517, 7,813]	[0.31%, 4.83%]	[1,300, 20,252]	[0.11%, 1.72%]	[2,505, 39,533]	[0.09%, 1.32%]	[653, 9,997]	[0.13%, 2.01%]	[4,457, 69,781]
Louisiana	[0.35%, 4.77%]	[1,062, 14,546]	[0.13%, 1.44%]	[550, 6,102]	[0.27%, 0.64%]	[6,464, 15,288]	[0.08%, 0.37%]	[569, 2,776]	[0.29%, 0.59%]	[10,334, 21,025]
Maryland	[1.95%, 2.22%]	[7,507, 8,542]	[0.91%, 2.89%]	[4,803, 15,160]	[0.26%, 0.50%]	[8,264, 16,046]	[0.10%, 0.26%]	[948, 2,506]	[0.37%, 0.65%]	[17,444, 30,644]
Mississippi	[0.31%, 4.52%]	[627, 9,213]	[0.16%, 1.47%]	[463, 4,385]	[0.16%, 0.57%]	[2,411, 8,575]	[0.10%, 0.56%]	[474, 2,746]	[0.25%, 0.58%]	[5,695, 13,211]
North Carolina	[0.36%, 4.69%]	[2,413, 31,369]	[1.42%, 3.50%]	[14,413, 35,472]	[0.52%, 0.95%]	[28,416, 51,386]	[0.31%, 0.75%]	[5,355, 13,123]	[0.68%, 1.05%]	[55,724, 86,044]
Oklahoma	[0.27%, 3.63%]	[691, 9,438]	[1.36%, 3.68%]	[5,236, 14,186]	[0.30%, 0.58%]	[6,038, 11,532]	[0.06%, 0.32%]	[381, 1,999]	[0.46%, 0.80%]	[13,830, 24,053]
South Carolina	[0.30%, 4.28%]	[975, 13,788]	[0.25%, 1.50%]	[1,186, 7,093]	[0.23%, 0.63%]	[6,084, 16,683]	[0.23%, 0.53%]	[2,186, 4,932]	[0.32%, 0.62%]	[12,923, 25,038]
Tennessee	[0.19%, 2.79%]	[822, 11,816]	[0.07%, 3.84%]	[410, 24,084]	[0.18%, 0.70%]	[6,535, 25,020]	[0.00%, 0.18%]	[0, 2,086]	[0.25%, 0.78%]	[13,296, 41,484]

	13-17		18-24		25-64		65+		ALL ADULTS	
STATE	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]
Texas	[0.37%, 5.07%]	[7,732, 106,687]	[0.27%, 1.15%]	[7,577, 32,579]	[0.26%, 0.57%]	[38,793, 85,989]	[0.08%, 0.55%]	[3,139, 20,418]	[0.30%, 0.56%]	[64,803, 120,966]
Virginia	[0.80%, 1.55%]	[4,225, 8,149]	[0.40%, 1.82%]	[3,198, 14,624]	[0.28%, 0.53%]	[12,515, 23,842]	[0.15%, 0.54%]	[2,009, 7,290]	[0.35%, 0.60%]	[23,377, 40,074]
West Virginia	[0.16%, 2.47%]	[168, 2,569]	[0.32%, 2.05%]	[489, 3,107]	[0.20%, 0.51%]	[1,851, 4,696]	[0.08%, 0.36%]	[299, 1,316]	[0.27%, 0.55%]	[3,870, 7,884]
NORTHEAST	[1.14%, 3.10%]	[38,504, 104,777]	[0.53%, 2.78%]	[26,831, 141,561]	[0.27%, 0.74%]	[80,717, 218,410]	[0.14%, 0.55%]	[13,818, 53,622]	[0.37%, 0.82%]	[166,015, 365,516]
Connecticut	[0.44%, 5.87%]	[980, 13,222]	[0.54%, 2.15%]	[1,882, 7,435]	[0.31%, 0.59%]	[5,789, 10,968]	[0.20%, 0.55%]	[1,267, 3,475]	[0.40%, 0.68%]	[11,351, 19,297]
Maine	[1.39%, 1.80%]	[1,021, 1,322]	[0.36%, 5.00%]	[386, 5,407]	[0.12%, 1.87%]	[849, 13,159]	[0.09%, 1.28%]	[254, 3,679]	[0.14%, 2.03%]	[1,489, 22,246]
Massachusetts	[0.38%, 5.36%]	[1,571, 21,958]	[0.69%, 3.90%]	[4,792, 26,922]	[0.20%, 0.68%]	[7,444, 24,975]	[0.12%, 0.81%]	[1,411, 9,457]	[0.41%, 0.93%]	[22,723, 51,543]
New Hampshire	[0.22%, 3.01%]	[177, 2,414]	[0.36%, 5.78%]	[443, 7,157]	[0.12%, 1.90%]	[877, 13,793]	[0.09%, 1.38%]	[225, 3,478]	[0.14%, 2.21%]	[1,545, 24,427]
New Jersey	[0.19%, 1.15%]	[1,056, 6,521]	[0.31%, 3.03%]	[2,356, 22,910]	[0.22%, 0.83%]	[10,185, 39,143]	[0.16%, 0.59%]	[2,433, 8,681]	[0.36%, 0.88%]	[25,018, 61,156]
New York	[2.28%, 3.72%]	[26,448, 43,209]	[0.79%, 1.96%]	[13,832, 34,452]	[0.37%, 0.55%]	[37,926, 57,554]	[0.19%, 0.43%]	[6,302, 14,018]	[0.43%, 0.62%]	[66,374, 95,703]
Pennsylvania	[0.78%, 1.82%]	[5,987, 14,014]	[0.16%, 2.84%]	[1,818, 32,295]	[0.22%, 0.79%]	[14,634, 52,649]	[0.07%, 0.40%]	[1,617, 9,626]	[0.31%, 0.79%]	[31,543, 80,383]
Rhode Island	[1.32%, 2.54%]	[828, 1,593]	[0.95%, 3.28%]	[1,043, 3,613]	[0.35%, 0.73%]	[1,977, 4,096]	[0.07%, 0.35%]	[139, 647]	[0.47%, 0.85%]	[4,029, 7,286]
Vermont	[1.21%, 1.45%]	[435, 524]	[0.43%, 2.10%]	[279, 1,371]	[0.32%, 0.65%]	[1,036, 2,073]	[0.14%, 0.45%]	[169, 560]	[0.38%, 0.68%]	[1,942, 3,475]

Table A5. 95% Credible Intervals for regional and state-level estimates of adults who identify as transgender in the U.S. by race/ethnicity

	WHITE		BLACK		ASIAN		LATINX		ALL OTHER RACE/ ETHNICITY GROUPS	
STATE	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]
United States	[0.28%, 0.72%]	[450,300, 1,151,079]	[0.36%, 0.84%]	[110,698, 258,977]	[0.31%, 0.74%]	[47,451, 113,294]	[0.41%, 1.00%]	[172,709, 420,079]	[0.58%, 1.42%]	[40,459, 98,207]
WEST	[0.24%, 0.76%]	[77,004, 243,246]	[0.25%, 0.81%]	[6,967, 22,361]	[0.25%, 0.74%]	[17,511, 51,508]	[0.33%, 1.12%]	[53,629, 184,482]	[0.49%, 1.45%]	[12,378, 37,047]
Alaska	[0.12%, 1.92%]	[855, 3,045]	[0.17%, 2.68%]	[57, 202]	[0.17%, 2.59%]	[144, 501]	[0.19%, 2.90%]	[133, 459]	[0.49%, 1.76%]	[526, 1,878]
Arizona	[0.13%, 2.03%]	[7,583, 31,021]	[0.17%, 2.54%]	[708, 2,866]	[0.16%, 2.40%]	[555, 2,252]	[0.24%, 3.49%]	[6,590, 25,602]	[0.47%, 1.89%]	[1,485, 5,942]
California	[0.10%, 1.58%]	[19,339, 69,353]	[0.13%, 2.03%]	[3,503, 12,883]	[0.12%, 1.85%]	[9,258, 32,861]	[0.17%, 2.76%]	[29,094, 109,835]	[0.33%, 1.15%]	[3,135, 10,936]
Colorado	[0.13%, 2.02%]	[11,741, 20,909]	[0.15%, 2.45%]	[744, 1,376]	[0.16%, 2.36%]	[691, 1,201]	[0.22%, 3.28%]	[5,262, 9,172]	[0.76%, 1.28%]	[934, 1,581]
Hawaii	[0.13%, 1.97%]	[1,152, 1,675]	[0.15%, 2.34%]	[104, 155]	[0.15%, 2.34%]	[2,815, 4,269]	[0.20%, 3.09%]	[654, 946]	[0.86%, 1.25%]	[1,524, 2,216]
Idaho	[0.11%, 1.76%]	[3,357, 7,392]	[0.16%, 2.47%]	[29, 63]	[0.12%, 1.94%]	[60, 137]	[0.19%, 2.82%]	[746, 1,555]	[0.53%, 1.16%]	[223, 484]
Montana	[0.09%, 1.50%]	[1,968, 3,707]	[0.15%, 2.12%]	[16, 28]	[0.10%, 1.50%]	[19, 35]	[0.17%, 2.43%]	[131, 225]	[0.49%, 0.88%]	[305, 548]
Nevada	[0.10%, 1.52%]	[1,547, 5,032]	[0.13%, 1.93%]	[352, 1,111]	[0.11%, 1.74%]	[329, 1,052]	[0.17%, 2.71%]	[1,352, 4,451]	[0.26%, 0.82%]	[243, 778]
New Mexico	[0.12%, 1.83%]	[1,483, 5,024]	[0.15%, 2.45%]	[97, 338]	[0.14%, 2.18%]	[80, 271]	[0.19%, 2.83%]	[2,671, 8,773]	[0.45%, 1.48%]	[701, 2,313]
Oregon	[0.13%, 2.06%]	[3,463, 53,887]	[0.16%, 2.53%]	[93, 1,454]	[0.16%, 2.51%]	[276, 4,275]	[0.22%, 3.47%]	[836, 12,993]	[0.25%, 3.91%]	[357, 5,477]
Utah	[0.13%, 2.07%]	[7,306, 12,214]	[0.17%, 2.47%]	[114, 181]	[0.17%, 2.58%]	[412, 677]	[0.21%, 3.15%]	[1,855, 3,035]	[0.78%, 1.36%]	[556, 966]
Washington	[0.12%, 1.87%]	[16,788, 23,459]	[0.15%, 2.36%]	[1,144, 1,604]	[0.15%, 2.18%]	[2,868, 3,884]	[0.20%, 3.33%]	[4,228, 6,304]	[0.81%, 1.18%]	[2,358, 3,447]
Wyoming	[0.11%, 1.71%]	[422, 6,526]	[0.15%, 2.32%]	[6, 100]	[0.15%, 2.36%]	[6, 92]	[0.19%, 2.87%]	[76, 1,132]	[0.22%, 3.36%]	[31, 480]
MIDWEST	[0.25%, 0.60%]	[103,416, 245,223]	[0.29%, 0.68%]	[15,082, 35,880]	[0.30%, 0.70%]	[5,418, 12,613]	[0.38%, 0.95%]	[13,844, 34,444]	[0.54%, 1.35%]	[6,356, 15,921]
Illinois	[0.10%, 1.60%]	[13,094, 35,165]	[0.12%, 1.95%]	[3,432, 9,223]	[0.11%, 1.70%]	[1,283, 3,432]	[0.16%, 2.51%]	[5,044, 13,364]	[0.49%, 1.16%]	[802, 1,898]
Indiana	[0.12%, 1.75%]	[13,594, 25,148]	[0.13%, 2.11%]	[1,727, 3,333]	[0.15%, 2.27%]	[541, 1,007]	[0.18%, 2.65%]	[1,547, 2,778]	[0.70%, 1.37%]	[658, 1,288]
Iowa	[0.08%, 1.20%]	[4,140, 7,333]	[0.11%, 1.59%]	[235, 398]	[0.10%, 1.56%]	[154, 271]	[0.14%, 2.10%]	[430, 742]	[0.42%, 0.71%]	[152, 261]
Kansas	[0.12%, 1.83%]	[6,458, 10,452]	[0.15%, 2.33%]	[559, 944]	[0.15%, 2.40%]	[300, 510]	[0.21%, 3.07%]	[1,447, 2,269]	[0.77%, 1.26%]	[530, 873]

	WHITE		BLACK		ASIAN		LATINX		ALL OTHER RACE/ ETHNICITY GROUPS	
STATE	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]
Michigan	[0.10%, 1.58%]	[10,596, 35,680]	[0.12%, 1.89%]	[2,129, 7,240]	[0.12%, 1.82%]	[528, 1,765]	[0.16%, 2.50%]	[960, 3,234]	[0.36%, 1.19%]	[697, 2,302]
Minnesota	[0.14%, 2.10%]	[16,873, 22,434]	[0.18%, 2.73%]	[1,510, 1,961]	[0.18%, 2.76%]	[1,281, 1,734]	[0.23%, 3.46%]	[1,510, 2,009]	[1.08%, 1.40%]	[1,368, 1,772]
Missouri	[0.08%, 1.40%]	[723, 14,324]	[0.10%, 1.59%]	[121, 2,219]	[0.10%, 1.57%]	[24, 449]	[0.13%, 2.06%]	[49, 930]	[0.04%, 0.70%]	[36, 674]
Nebraska	[0.10%, 1.63%]	[1,238, 19,344]	[0.13%, 2.14%]	[88, 1,393]	[0.13%, 2.12%]	[49, 784]	[0.18%, 2.74%]	[246, 3,692]	[0.22%, 3.41%]	[74, 1,134]
North Dakota	[0.10%, 1.54%]	[492, 7,765]	[0.12%, 1.92%]	[18, 291]	[0.15%, 2.27%]	[17, 257]	[0.19%, 2.87%]	[39, 596]	[0.17%, 2.73%]	[61, 952]
Ohio	[0.12%, 1.87%]	[27,892, 42,266]	[0.14%, 2.15%]	[4,542, 7,125]	[0.13%, 2.11%]	[859, 1,414]	[0.18%, 2.78%]	[1,689, 2,593]	[0.82%, 1.22%]	[1,488, 2,220]
South Dakota	[0.10%, 1.59%]	[575, 9,025]	[0.13%, 2.00%]	[18, 276]	[0.15%, 2.36%]	[14, 225]	[0.16%, 2.47%]	[34, 522]	[0.20%, 3.14%]	[115, 1,812]
Wisconsin	[0.09%, 1.39%]	[7,739, 16,287]	[0.12%, 1.83%]	[704, 1,475]	[0.12%, 1.90%]	[367, 764]	[0.14%, 2.15%]	[850, 1,717]	[0.42%, 0.83%]	[374, 736]
SOUTH	[0.30%, 0.76%]	[174,367, 433,893]	[0.38%, 0.90%]	[68,709, 161,966]	[0.35%, 0.72%]	[12,221, 25,405]	[0.46%, 0.88%]	[73,399, 140,419]	[0.67%, 1.40%]	[15,303, 31,712]
Alabama	[0.11%, 1.75%]	[2,918, 44,892]	[0.13%, 2.08%]	[1,307, 20,777]	[0.11%, 1.85%]	[60, 970]	[0.18%, 2.77%]	[236, 3,612]	[0.21%, 3.14%]	[145, 2,213]
Arkansas	[0.14%, 2.17%]	[2,728, 19,259]	[0.16%, 2.49%]	[625, 4,448]	[0.18%, 2.73%]	[83, 580]	[0.22%, 3.39%]	[362, 2,534]	[0.28%, 1.95%]	[146, 1,009]
Delaware	[0.17%, 2.54%]	[2,553, 4,789]	[0.20%, 3.16%]	[999, 1,931]	[0.17%, 2.79%]	[162, 318]	[0.29%, 4.64%]	[545, 1,051]	[1.26%, 2.33%]	[205, 379]
District of Columbia	[0.18%, 3.08%]	[426, 7,167]	[0.24%, 3.89%]	[586, 9,573]	[0.23%, 4.23%]	[61, 1,102]	[0.27%, 4.35%]	[157, 2,516]	[0.35%, 5.32%]	[55, 850]
Florida	[0.12%, 1.87%]	[32,116, 58,022]	[0.15%, 2.39%]	[10,771, 19,025]	[0.14%, 2.18%]	[1,978, 3,461]	[0.18%, 2.60%]	[21,699, 36,102]	[0.73%, 1.24%]	[2,424, 4,121]
Georgia	[0.13%, 2.05%]	[16,907, 30,596]	[0.15%, 2.33%]	[11,308, 19,835]	[0.15%, 2.23%]	[1,474, 2,590]	[0.21%, 3.27%]	[4,031, 7,398]	[0.78%, 1.37%]	[1,175, 2,069]
Kentucky	[0.12%, 1.92%]	[3,654, 57,354]	[0.14%, 2.19%]	[387, 6,048]	[0.13%, 2.05%]	[72, 1,124]	[0.19%, 2.92%]	[199, 3,055]	[0.28%, 4.24%]	[146, 2,200]
Louisiana	[0.11%, 1.67%]	[5,647, 11,468]	[0.13%, 2.06%]	[3,538, 7,257]	[0.13%, 1.93%]	[189, 375]	[0.15%, 2.36%]	[635, 1,280]	[0.48%, 0.95%]	[325, 646]
Maryland	[0.11%, 1.78%]	[8,104, 14,063]	[0.13%, 2.11%]	[5,198, 9,412]	[0.12%, 1.91%]	[1,079, 1,893]	[0.19%, 2.91%]	[2,298, 3,977]	[0.64%, 1.08%]	[764, 1,298]
Mississippi	[0.10%, 1.53%]	[3,002, 7,046]	[0.12%, 1.81%]	[2,273, 5,204]	[0.11%, 1.74%]	[54, 131]	[0.16%, 2.53%]	[222, 511]	[0.47%, 1.04%]	[144, 319]
North Carolina	[0.18%, 2.71%]	[32,262, 49,657]	[0.22%, 3.41%]	[12,387, 19,794]	[0.20%, 3.08%]	[1,645, 2,554]	[0.30%, 4.41%]	[6,406, 9,643]	[1.27%, 1.84%]	[3,024, 4,397]
Oklahoma	[0.13%, 2.09%]	[7,960, 14,042]	[0.16%, 2.36%]	[961, 1,623]	[0.17%, 2.55%]	[343, 584]	[0.22%, 3.48%]	[1,749, 3,065]	[0.72%, 1.21%]	[2,818, 4,739]
South Carolina	[0.11%, 1.64%]	[7,647, 14,681]	[0.13%, 2.10%]	[3,701, 7,334]	[0.12%, 1.86%]	[229, 442]	[0.18%, 2.70%]	[916, 1,759]	[0.63%, 1.21%]	[430, 823]

	WHITE		BLACK		ASIAN		LATINX		ALL OTHER RACE/ ETHNICITY GROUPS	
STATE	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]	PERCENT [LB, UB]	NUMBER [LB, UB]
Tennessee	[0.12%, 1.90%]	[9,335, 29,154]	[0.14%, 2.29%]	[2,312, 7,483]	[0.13%, 2.15%]	[257, 817]	[0.21%, 3.07%]	[952, 2,757]	[0.48%, 1.39%]	[440, 1,274]
Texas	[0.09%, 1.40%]	[22,375, 41,846]	[0.11%, 1.73%]	[7,461, 13,921]	[0.10%, 1.61%]	[2,997, 5,679]	[0.15%, 2.30%]	[30,120, 56,217]	[0.48%, 0.85%]	[1,850, 3,304]
Virginia	[0.11%, 1.66%]	[13,200, 22,700]	[0.13%, 1.95%]	[4,747, 7,973]	[0.11%, 1.85%]	[1,506, 2,721]	[0.17%, 2.62%]	[2,811, 4,811]	[0.69%, 1.15%]	[1,113, 1,869]
West Virginia	[0.10%, 1.58%]	[3,532, 7,157]	[0.10%, 1.75%]	[148, 328]	[0.10%, 1.60%]	[30, 66]	[0.14%, 2.25%]	[62, 132]	[0.52%, 1.07%]	[99, 202]
NORTHEAST	[0.32%, 0.77%]	[95,512, 228,717]	[0.41%, 0.80%]	[19,939, 38,770]	[0.41%, 0.79%]	[12,302, 23,768]	[0.54%, 1.03%]	[31,838, 60,733]	[0.69%, 1.44%]	[6,423, 13,528]
Connecticut	[0.12%, 1.84%]	[6,772, 11,623]	[0.15%, 2.35%]	[1,234, 2,130]	[0.14%, 2.14%]	[546, 909]	[0.19%, 2.93%]	[2,380, 3,936]	[0.72%, 1.21%]	[419, 700]
Maine	[0.13%, 1.95%]	[1,350, 20,093]	[0.16%, 2.39%]	[19, 295]	[0.18%, 2.88%]	[25, 399]	[0.20%, 3.13%]	[34, 526]	[0.25%, 3.89%]	[60, 933]
Massachusetts	[0.15%, 2.32%]	[14,764, 33,486]	[0.18%, 2.86%]	[1,697, 3,818]	[0.18%, 2.80%]	[1,696, 3,831]	[0.24%, 3.79%]	[3,514, 8,027]	[0.72%, 1.64%]	[1,052, 2,382]
New Hampshire	[0.13%, 2.13%]	[1,344, 21,355]	[0.16%, 2.52%]	[22, 342]	[0.15%, 2.28%]	[45, 683]	[0.22%, 3.36%]	[83, 1,251]	[0.30%, 4.48%]	[53, 796]
New Jersey	[0.12%, 1.90%]	[12,037, 29,622]	[0.15%, 2.41%]	[3,455, 8,423]	[0.13%, 2.11%]	[2,255, 5,651]	[0.19%, 2.98%]	[6,451, 15,533]	[0.65%, 1.53%]	[819, 1,927]
New York	[0.11%, 1.79%]	[32,028, 46,924]	[0.14%, 2.16%]	[9,675, 13,955]	[0.14%, 2.17%]	[6,346, 8,788]	[0.18%, 2.73%]	[15,592, 22,256]	[0.75%, 1.04%]	[2,733, 3,780]
Pennsylvania	[0.13%, 1.95%]	[22,840, 57,720]	[0.15%, 2.41%]	[3,566, 9,310]	[0.14%, 2.31%]	[1,191, 3,135]	[0.20%, 3.13%]	[2,948, 7,707]	[0.59%, 1.50%]	[998, 2,511]
Rhode Island	[0.14%, 2.19%]	[2,641, 4,781]	[0.18%, 2.76%]	[245, 449]	[0.18%, 2.90%]	[163, 311]	[0.22%, 3.36%]	[773, 1,385]	[0.83%, 1.45%]	[206, 359]
Vermont	[0.13%, 2.05%]	[1,735, 3,114]	[0.16%, 2.69%]	[26, 48]	[0.14%, 2.20%]	[34, 60]	[0.22%, 3.58%]	[63, 113]	[0.77%, 1.29%]	[84, 141]

Note: White, Black, and Asian are non-Hispanic. The Latinx category includes Hispanic and Latinx people of any race. All other race/ethnicity groups are non-Hispanic.

EXHIBIT 143

DEFINITIVE HEALTHCARE
Discover opportunity

Transgender patients are increasingly seeking care—even as bans spread

An examination of the data behind gender-affirming care

A 2024 Definitive Healthcare report

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Transgender patients are suffering. The U.S. healthcare system is part of the problem.

About 1.6 million Americans aged 13 and older identify as transgender. Transgender people are less likely than non-transgender people to have a college degree, be employed, insured, or married. They also report having more days of poor mental and physical health than their non-trans peers.

Transgender patients' access to care has received heightened national attention in recent years as the LGBTQ community's work to promote visibility and equality has been met with legislative efforts to limit or ban trans-specific care services in nearly half of U.S. states.

But even without these bans, trans patients' access to healthcare has been historically limited by a variety of factors, including disproportionate personal economic barriers, inconsistent payor coverage for mental health and other services, social stigma and discrimination, shortages of hormones and other drugs, and a lack of specialists with expertise in transgender care.

This disparity in access has been devastating for the trans population. As a result, trans people are at a higher risk of developing mental and behavioral health issues, sexually transmitted infections, substance use and abuse, and chronic health issues. More broadly, trans people are more likely to experience domestic violence, sexual abuse, and homelessness than their cisgender peers.

Despite these risks, our data shows that more people than ever are seeking gender-affirming care, even while access to that care is being intentionally and systemically limited.

Nearly every mainstream medical organization asserts that gender-affirming healthcare, including mental health services and hormone therapy, improves transgender folks' quality of life and constitutes medically necessary care.

So how do we improve access for trans people? As medical history has shown again and again, there's no such thing as a singular cure-all. Ensuring access to care will require improving awareness around transgender issues, normalizing trans identities, and allocating additional resources for trans people. This comes in part through increased representation of trans people, especially in clinical trials and other healthcare studies.

In this report, we use healthcare commercial intelligence from the Atlas Dataset and research from a variety of external sources to understand how trans people are utilizing the healthcare system to receive gender-affirming care and other services. We'll also see how the data reflects recent changes to state and federal policy.

Finally, this report will examine some ways that access to care might be improved. We'll highlight the importance of accurate representation in data collection, and consider some opportunities for members of the healthcare industry to create a more accessible, welcoming space for transgender people.

This report is divided into three parts:

- **Part I:** Useful definitions
- **Part II:** The state of gender-affirming care in America
- **Part III:** How can we improve access to care?

Healthcare organizations can leverage this report to better understand key trends in gender-affirming care related to providers, patients, and payors—who's delivering care, where it's being received, how patients are paying for it, and which related procedure and diagnosis claims are being filed. Providers may find value in using this intelligence to inform messaging and strategic planning around services geared toward transgender patients.

Part I: Some useful definitions

Gender is a complex subject made even more complicated by the multitude of ways to describe it. The language used to discuss gender is always evolving, and specific words and concepts can vary across cultures. Individuals' preferred terms for describing their gender experience and identity can vary, too.

In this report, we'll use the following terms—as recommended by transgender advocacy organizations like the Gay & Lesbian Alliance Against Defamation (GLAAD)—that trans patients and their providers would likely use in a healthcare setting.

Gender identity and expression

Gender identity is a person's innate sense of gender that may or may not correlate with the sex they were assigned at birth. Gender expression includes the outward behaviors, attitudes, and appearances that a person performs in relation to a particular gender role. A person's gender expression usually reflects their gender identity, but not always.

Transgender and cisgender

"Transgender" is a broad term for people whose gender identity or expression differs from the sex they were assigned at birth. A transgender person may identify as a woman, man, nonbinary or gender nonconforming (falling outside the categories of male and female), some combination of the above, or as having no gender at all. Note that people who identify as nonbinary or agender may not necessarily identify as transgender.

Earlier versions of the Diagnostic and Statistical Manual of Mental Disorders (DSM) referred to transgender people as "transsexual" or "transvestite."

The term "transsexual" has fallen out of use as it unnecessarily ties a person's sex characteristics (genitals, hormones, chromosomes, etc.) with their gender, but is still used by some transgender people, especially those who have physically changed their bodies through hormones or surgery. "Transvestite" refers to a person who dresses in accordance with another gender. When trans people dress how they want, they are not cross-dressing (as the term implies), regardless of the sex assigned at their birth.

The term "cisgender" describes people whose gender identity matches the sex they were assigned at birth. Many cultures have specific terms for people who are not cisgender, and some cultures recognize other genders in addition to man and woman.

Throughout this report, we'll occasionally use "trans" as shorthand for transgender (i.e., trans man and trans woman) and "cis" as shorthand for cisgender.

Gender dysphoria

Prior to transitioning, many trans people experience gender dysphoria, a type of psychological distress arising from the perceived disconnect between their assigned sex and gender identity.

In order for a patient to be diagnosed with gender dysphoria, the DSM-5 requires the patient to display "a marked incongruence between one's experienced/expressed gender and their assigned gender, lasting at least six months" with additional markers including a strong desire to be rid of one's primary or secondary sex characteristics, or to possess the sex characteristics associated with another gender.

Additionally, the diagnosis requires the patient to experience "clinically significant distress or impairment" in social situations, at work, or in other important areas.

Not all trans people have gender dysphoria, and not all people with gender dysphoria are transgender.

Transitioning

GLAAD defines transition as "the process a person undertakes to bring their gender expression and/or their body into alignment with their gender identity."

Transitioning looks different for different people, but may include a social component (coming out, using a different name or different pronouns, dressing differently), a legal component (changing one's name and/or sex on official records), and/or a medical component (gender-affirming care).

Part II: The state of gender-affirming care in America

Gender-affirming care can range from counseling to speech therapy to medications like hormone therapy. Some people choose to undergo surgical interventions that bring their physical form in line with their gender identity, such as removal/augmentation of the breasts (top surgery) or modification of the genitals (bottom surgery).

> Gender-affirming care is a range of social, psychological, behavioral, and medical interventions "designed to support and affirm an individual's gender identity" when it doesn't match the gender they were assigned at birth.
>
> World Health Organization (WHO)

When trans people receive gender-affirming care from a medical provider, they are typically diagnosed with gender dysphoria or gender incongruence, terms used in the DSM-5 to refer to the discomfort experienced when one's gender identity does not align with their assigned sex.

Some people argue that medicalizing gender identities creates unnecessary stigma, while others point out that the inclusion of these diagnoses in the DSM enables health insurance coverage for gender-affirming care.

It's important to note that neither the American Psychiatric Association nor the American Psychological Association considers transgender identities to be mental disorders. However, both organizations—along with nearly every other professional medical association—recognize gender-affirming care as medically necessary for the well-being of trans people and others with gender dysphoria.

Using medical procedure and diagnosis claims data, we can make accurate estimations about the kinds of care that trans people receive, as well as where and from whom they receive it. This information helps us understand how trans people are utilizing a medical system that often fails to meet their needs, and how that system might be improved to better support everyone seeking care.

Since medical claims don't indicate whether a patient is transgender or not, we must cross-reference procedure data with the diagnosis codes commonly associated with gender-affirming care.

Not every person who receives these diagnoses is necessarily transgender, but nearly all transgender people who seek gender-affirming care in America will receive such a diagnosis to qualify for care:

> F64.0 – Transsexualism, a term for the desire to modify one's body in alignment with another sex that here refers to gender dysphoria in adolescents and adults
>
> F64.1 – Dual-role transvestism, an outdated term for cross-dressing that also refers to gender dysphoria in adolescents and adults
>
> F64.2 – Gender identity disorder of childhood, a diagnosis for gender dysphoria or gender incongruence in children
>
> F64.8 – Other gender identity disorders
>
> F64.9 – Gender identity disorder, unspecified

The U.S. currently uses the 10th revision of the International Classification of Diseases (ICD-10), a coding system published by the WHO in 1994. Due to the age of the code set, a number of outdated terms are still used in medical billing offices, including transsexualism, transvestism, and gender identity disorder. In this report, we'll refer to these diagnoses collectively as gender dysphoria per the DSM standard.

The WHO published the ICD-11 in 2022, and the U.S. plans to switch over in 2025.

More transgender patients are seeking mental health services

For many trans people, gender-affirming care begins with mental health care.

In the past, mental health services for gender dysphoria treated the patient's stated gender identity as "wrong," and aimed to bring it in line with the sex assigned at birth based on their genitals or other biological markers.

Today, the American Psychiatric Association recommends the use of gender-affirming psychotherapy to affirm a patient's gender identity rather than aiming to "repair" it. This type of therapy addresses themes of trauma, shame, depression, self-harm, and stigma to help trans and gender-non-conforming patients process, understand, and find a sense of safety in their gender identities.

Medical claims data reveals that, from 2018 to 2022, more than a quarter of patients with a gender dysphoria diagnosis received mental health services. As shown in Figure 1, the percentage of patients receiving these services rose a couple of points over that period.

PERCENT OF PATIENTS RECEIVING GENDER-AFFIRMING CARE WHO SOUGHT MENTAL HEALTH THERAPY

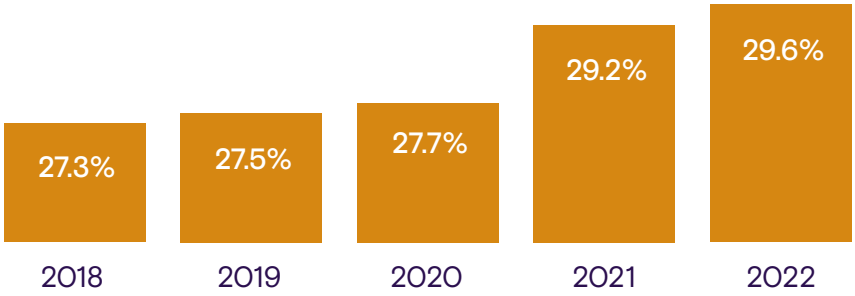


Fig. 1 Analysis of data from Definitive Healthcare's Atlas All-Payor Claims product.

While the share of patients seeking mental health services grew modestly in this period, patients began seeking more of these services overall. The mental health services most commonly received by these patients are psychotherapy sessions ranging from 30 to 60 minutes.

MENTAL HEALTH SERVICES RECEIVED BY PEOPLE WITH GENDER DYSPHORIA DIAGNOSES

Rank	CPT code	Description	2019	2020	2021	2022	2018-2022
1	90832, 90834, 90837	Psychotherapy w/ patient, 30 min. or more	135.2%	39.8%	34.8%	6.6%	372.3%
2	90853	Group psychotherapy	27.8%	-2.3%	35.4%	-0.4%	68.5%
3	90791	Psychiatric diagnostic evaluation	17.7%	8.8%	41.4%	0.0%	81.1%
4	90833	Psychotherapy w/ patient evaluation and management, 30 min.	22.3%	31.4%	53.1%	9.1%	168.6%
5	90847	Family psychotherapy w/ patient, 50 min.	4.9%	11.0%	40.6%	-8.2%	50.2%
6	90836	Psychotherapy w/ patient evaluation and management, 45 min.	-6.3%	17.3%	33.8%	16.6%	71.4%
7	90846	Family psychotherapy w/o patient, 50 min.	31.5%	50.0%	64.6%	-6.7%	202.7%
8	G0410	Group psychotherapy, partial hospitalization, 45-50 min.	74.4%	-9.7%	49.6%	-7.9%	117.2%
9	90839	Crisis psychotherapy, 1st hour	37.0%	17.2%	45.9%	-4.2%	124.4%
10	99354	Prolonged services in outpatient setting, 1st hour	64.4%	-18.1%	11.1%	-10.6%	33.8%

Fig. 2 Analysis of data from Definitive Healthcare's Atlas All-Payor Claims product showing percentage change in procedure claims volumes for patients with gender dysphoria diagnoses over the previous year. Final column shows cumulative change in claims volumes over all five years.

Claims for these services exploded in the period studied, with 60-minute sessions increasing 127% from 2019 to 2022 (data for 2018 was not available). Claims for 45-minute sessions jumped more than 77% from 2018 to 2022, while claims for 30-minute sessions grew a whopping 177%.

Other common mental health services for patients with gender dysphoria include group and family psychotherapy.

Mental health care is especially valuable for trans people not only for its ability to address complications related to gender dysphoria but also for the treatment of related or co-occurring mental health concerns.

Many trans people experience distressing psychiatric conditions like anxiety and depression in addition to or because of their dysphoric gender experience. A cross-sectional study of more than 53 million patients (including 10,270 transgender or gender non-conforming patients) found that 58% of trans patients had at least one DSM-5 diagnosis, while only 13% of cis patients had such a diagnosis.

Unfortunately, the fields of behavioral and mental health have been disproportionately impacted by the ongoing healthcare staffing shortage. Our data shows that licensed clinical social workers were among the top specialties to leave the workforce, with more than 10,000 professionals departing from 2021 through 2022.

Nurse practitioners, pediatricians, and OB/GYNs are increasingly providing care

When transgender people seek gender-affirming care, they're most likely to start with their primary care provider. These are usually family practice doctors and nurse practitioners. However, recent trends suggest that family practice doctors are taking on fewer patients with gender dysphoria in recent years. Our data shows that family practice doctors' overall share of patients with gender dysphoria has gone down slightly since 2018, while nurse practitioners, pediatricians, and obstetrics/gynecology specialists are increasingly involved in these patients' care.

The growing rates of gender dysphoria care by pediatricians and OB/GYNs—who often begin seeing patients at the start of puberty—is likely due to shifting age demographics among transgender people.

As trans identities (and conversations around gender identity and expression more broadly) become more accepted by society, we can expect that more people will begin exploring their gender identities earlier. In the U.S., the trans population already skews younger: The Williams Institute reports that about 0.5% of U.S.

adults identify as transgender as compared to 1.4% of the population aged 13-17. Additionally, their research shows that the percentage of adults identifying as transgender has remained steady since 2016, while young people now make up about 18% of the trans population, up from 10% in 2016.

MEDICAL SPECIALTIES DIAGNOSING AND PROVIDING CARE FOR GENDER DYSPHORIA

Rank	Description	2018	2019	2020	2021	2022	2018-2022
1	Family Practice	16.90%	16.10%	15.60%	15.20%	14.90%	-2.00%
2	Nurse Practitioner	11.40%	12.20%	12.60%	12.70%	13.80%	2.40%
3	Pediatric Medicine	7.30%	7.40%	8.10%	9.40%	9.70%	2.40%
4	Psychiatry	7.30%	7.20%	7.70%	8.30%	7.90%	0.60%
5	Obstetrics/Gynecology	4.40%	4.90%	5.70%	6.00%	6.40%	2.00%
6	Internal Medicine	8.70%	7.60%	6.70%	6.20%	5.60%	-3.10%
7	Plastic and Reconstructive Surgery	5.30%	5.50%	5.30%	5.40%	5.30%	0.10%
8	Social Work	5.50%	5.50%	5.60%	5.40%	5.30%	-0.20%
9	Endocrinology	6.80%	6.00%	5.90%	4.80%	4.50%	-2.30%
10	Physician Assistant	2.80%	3.00%	3.40%	3.50%	3.60%	0.70%
11	Pathology	2.40%	2.40%	2.30%	2.40%	2.60%	0.20%
12	Anesthesiology	1.70%	2.00%	1.80%	2.10%	2.30%	0.60%
13	Pediatric Endocrinology	2.20%	2.20%	2.20%	2.20%	2.10%	-0.10%
14	Emergency Medicine	2.30%	2.40%	2.10%	2.00%	1.60%	-0.60%
15	Urology	1.40%	1.40%	1.40%	1.40%	1.60%	0.20%
16	Clinical Psychology	1.50%	1.50%	1.50%	1.50%	1.50%	0.00%
17	Adolescent Medicine	1.20%	1.20%	1.10%	1.20%	1.40%	0.20%
18	Infectious Disease	1.60%	1.70%	1.50%	1.30%	1.30%	-0.30%
19	Certified Registered Nurse Anesthetist	0.60%	0.70%	0.90%	0.90%	0.90%	0.30%
20	Hospital Medicine	1.20%	1.50%	1.50%	1.20%	0.90%	-0.40%

Fig. 3 Analysis of data from Definitive Healthcare's Atlas All-Payor Claims product showing medical specialties' percentage share of patients with gender dysphoria diagnoses. Final column shows the change in patient share over the five-year period.

Our data reflects a similar trend in gender dysphoria diagnoses. As seen in Figure 4, the share of gender dysphoria diagnoses among patients under 18 rose from 17.5% in 2018 to 20.4% in 2022.

However, as with licensed clinical social workers, data from our 2023 staffing report shows that family practice physicians and nurse practitioners are also leaving the workforce in disproportionately high numbers compared to their peers.

PERCENTAGE OF GENDER DYSPHORIA DIAGNOSES BY AGE

Patient age	2018	2019	2020	2021	2022
0-5	0.2%	0.2%	0.1%	0.1%	0.1%
6-12	2.6%	2.5%	2.6%	3.2%	2.5%
13-17	14.8%	14.9%	15.5%	18.0%	17.9%
18-64	78.8%	79.1%	78.9%	76.3%	77.4%
65+	3.2%	3.0%	2.6%	2.2%	2.0%
Unknown	0.5%	0.4%	0.4%	0.3%	0.2%

Fig. 4 Analysis of data from Definitive Healthcare's Atlas All-Payor Claims product.

The impact of the staffing shortage on trans patients' access to medically necessary care is likely even greater than its impact on cis patients, as medical professionals are generally less equipped to provide care for trans patients. With gender-affirming care and other transgender topics largely absent from mainstream medical curricula, the incoming cohort of medical doctors may not be any better prepared to care for trans patients than the outgoing cohort.

Nearly half of transgender adults reported having **negative or discriminatory experiences with a healthcare provider** in 2020. To address this, providers can and should aim to not only ensure access to care by offering gender-affirming services, but should also seek to hire physicians and other healthcare professionals who have experience with or training around transgender health issues.

In the longer term, providers could improve the quality of (and access to) gender-affirming care by leading or incentivizing continuing medical education and/or sensitivity training for member physicians.

Gender dysphoria diagnoses are up around the country, despite care bans

From 2018 to 2022, gender dysphoria diagnosis volumes rose in every state except for South Dakota, which saw a 23% decline in diagnoses during that period.

In February 2023, South Dakota became the sixth state to restrict gender-affirming care for minors. The South Dakota House passed an earlier version of the bill in 2020, but it did not pass through a Senate committee. Gender dysphoria diagnoses subsequently dropped in the state from 2020 to 2021, likely due to the dual chilling effects of reduced access to sympathetic providers and the self-directed seeking of care in states where long-term access was protected (or, at least, not under immediate threat).

GENDER DYSPHORIA DIAGNOSIS TRENDS, 2018–2022, BY STATE

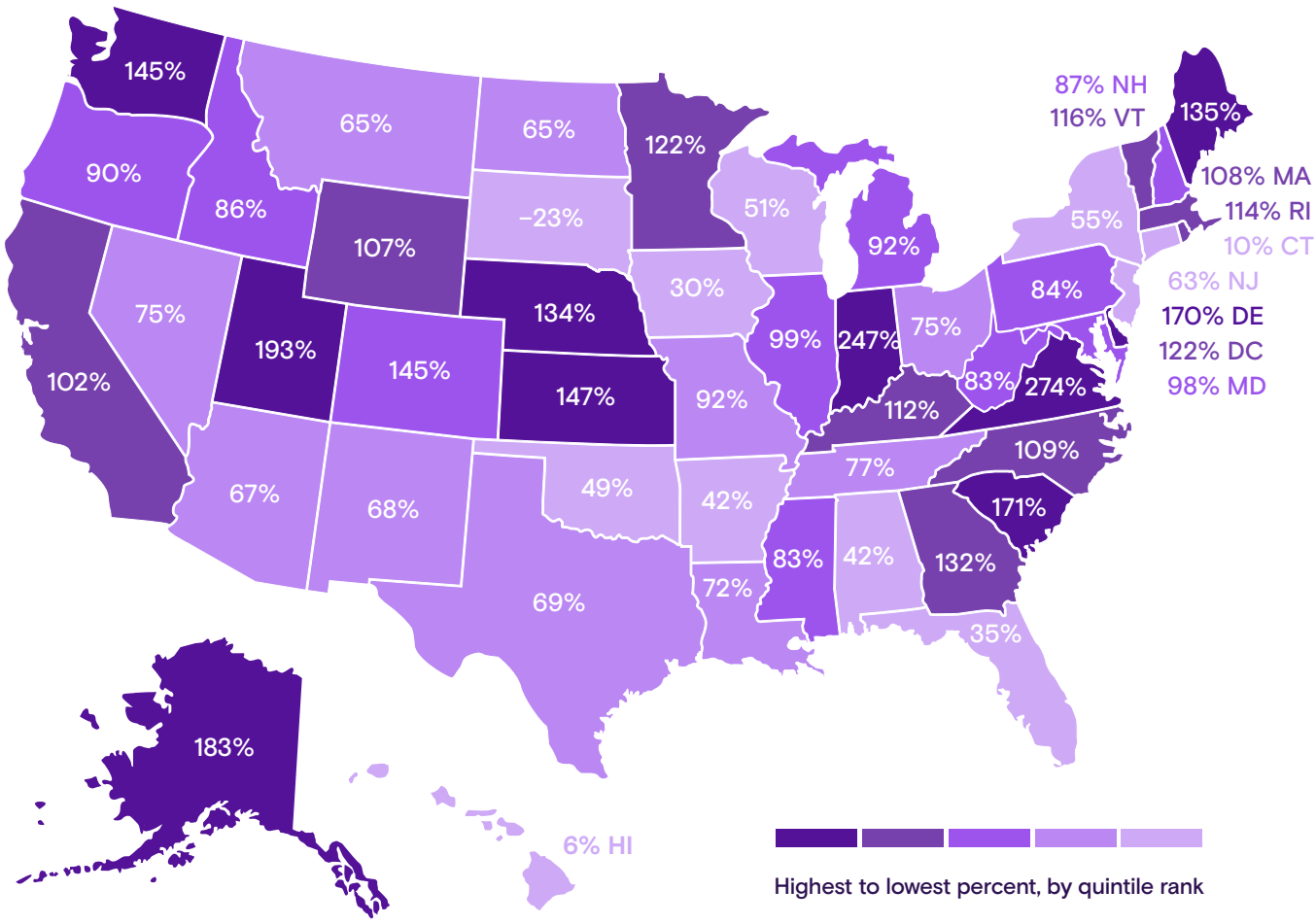


Fig. 5 Analysis of data from Definitive Healthcare's Atlas All-Payor Claims product showing changes in gender dysphoria diagnosis volumes for each U.S. state from 2018 through 2022.

In 2016, South Dakota was also the first state to pass a "bathroom bill" requiring school students to use bathroom facilities that correspond to the sex they were assigned at birth.

As of the time of writing, 22 states have implemented gender-affirming care bans impacting youth, with over 35% of trans youth living in these states. In four states that have passed bans, court injunctions are ensuring continued—if temporary—access to care. Advocates of these bans often echo Rep. Fred Deutsch, primary sponsor of South Dakota's bill, in saying they protect children from "being chemically castrated, sterilized, and surgically mutilated."

GENDER-AFFIRMING CARE BANS IMPACTING YOUTH

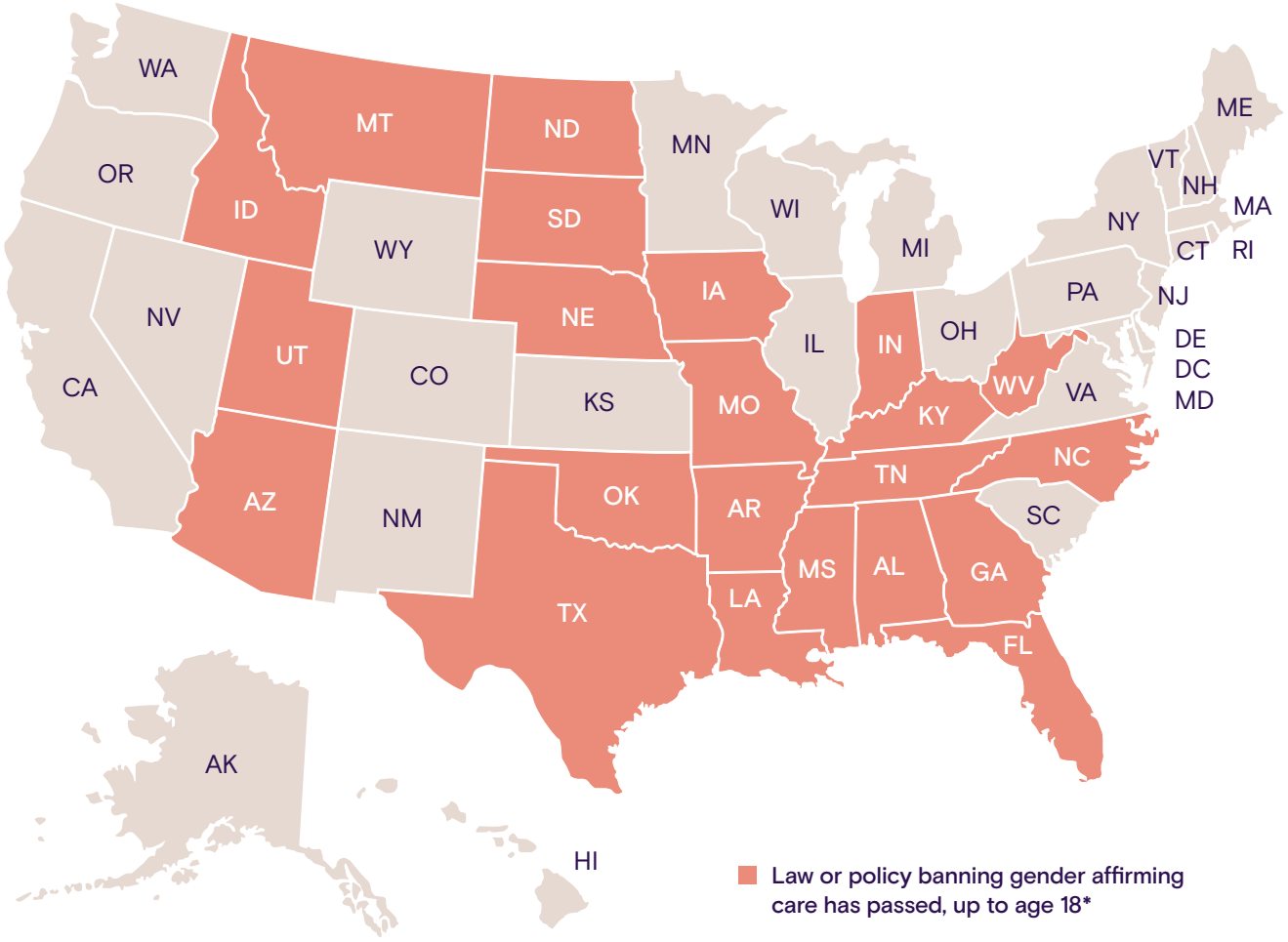


Fig. 6 Data from the Human Rights Campaign Foundation. (*In Arkansas, Florida, and Indiana court injunctions are ensuring continued access to care. As of 12/4/23.)

Of course, gender-affirming care for children doesn't involve chemical castration or permanent changes to the body. As discussed earlier in this report, gender-affirming care almost always begins with psychotherapy. Most providers require trans patients to receive six months to a year of mental health care—and parental consent—before prescribing puberty blockers and other hormone treatments, which are reversible. Gender-affirming surgeries are rarely performed on people under the age of 18.

Among healthcare organizations, gender-affirming care for minors is far from controversial. As NBC News pointed out in its coverage of South Dakota's ban:

> "More than a dozen major medical organizations—including the American Medical Association, the American Academy of Pediatrics, and the American Psychological Association—support gender-affirming care for minors."

Other states with bans on gender-affirming care for youth have seen year-to-year dips in gender dysphoria diagnoses, too, possibly indicating that shifting social and political climates have pushed young patients and their parents to seek diagnoses in states that are friendlier to trans people:

- Florida diagnoses rose steadily from 2018 until 2021, then they dropped 16% through the end of 2022 ahead of the passing of a trans care ban in March 2023.
- North Dakota diagnoses likewise grew from 2018 to 2021, before dropping 11% from 2021 to 2022 ahead of its youth trans care ban in April 2023.
- Iowa diagnoses grew less steadily during that period but dropped 14% from 2021 to 2022 ahead of its youth care ban in March 2023.
- Nebraska diagnoses grew during the same period before dropping 5% between 2021 and 2022 ahead of the passing of a youth surgery ban and restrictions on hormone therapy in 2023.
- Montana saw a similar pattern of growth followed by a 3% dip in diagnoses from 2021 to 2022 ahead of its care ban passed in August 2023.

As previously noted, the medical community deems this care as necessary for minors and adults alike, and high courts in several states have sided with providers. But in the meantime, these bans present providers in neighboring states with an opportunity—if not a moral responsibility—to engage and take in patients who can no longer get necessary care in the places they live.

For trans patients living in the rural parts of anti-care states, the stakes are even higher.

Trans people in rural regions face even greater barriers to access

Our data points to a gap in access to gender-affirming care for rural Americans in particular. Around one in six (16%) of transgender people live in rural areas, according to 2019 research from the Movement Advancement Project (MAP). But trans people are more likely to receive mental health care in urban locations than in rural locations, regardless of where they obtained a referral.

Only about 23% of patients who obtained a referral for mental health care from a rural provider chose to receive follow-up care in a rural setting, while 31% received care in an urban setting. Likewise, a mere 5% of patients diagnosed in an urban setting moved on to receive mental health services in a rural environment, as opposed to 35% who continued care in an urban setting. One explanation for this trend is that transgender patients are less likely to be able to access necessary care in rural settings compared with urban ones—and they may also be more likely to experience discrimination or rejection when seeking care in rural communities.

WHERE PATIENTS WITH GENDER DYSPHORIA ARE RECEIVING CARE

	Rural patients		Urban patients	
Percentage of mental health care patients by follow-up care location	Rural 23%	Urban 31%	Rural 5%	Urban 35%

Fig. 7 Analysis of data from Definitive Healthcare's All-Payor Claims product. Urban areas are defined by the U.S. Census Bureau as territories encompassing >2,500 people, where >1,500 of which reside outside institutional group quarters. All non-urban areas are defined as rural.

Rural Americans have difficulty accessing all kinds of care, as limited infrastructure and low population density make rural regions less attractive for businesses, including healthcare. As access to primary care narrows, specialists tend to follow, leaving rural trans patients with fewer and fewer options for gender-affirming care. It's no surprise, then, that around 80% of rural patients live in counties labeled as "medically underserved" by the federal government.

Americans in these regions are more likely to live in poverty and less likely to be insured than their urban peers. CDC data shows that deaths from chronic disease and unintentional injury are also considerably higher in rural America than in urban areas. These disparities impact trans residents even more: Transgender people in rural areas are nearly three times more likely than their cisgender neighbors to have a disability, are twice as likely to be uninsured, and are also more likely to live in poverty or be unemployed, according to the 2019 MAP report.

That report also found that one in three trans people living in rural areas had experienced discrimination by a healthcare provider. Likewise, a third of trans people in those regions reported having to teach their doctor about their healthcare needs.

More trans patients are paying for surgery with Medicaid and other government payor plans

Many trans people effectively transition through a combination of coming out, using new names and pronouns, and dressing according to their gender identity. Hormone therapy is increasingly popular among trans people, but growing demand has made it harder to access.

A survey of 28,000 transgender Americans from the National Center for Transgender Equality found that about 84% of respondents liked the idea of using gender-affirming hormone therapy, but only about 55% were actively taking hormones. Nearly 10% of those taking hormones were doing so without a prescription.

Gender-affirming surgery is slightly less popular but is growing along with other forms of gender-affirming care. A study published in Translational Andrology and Urology found that between 42% and 54% of transgender men seek surgery as opposed to 28% of transgender women. Patients underwent top surgery twice as often as bottom surgery.

GROWTH OF GENDER-AFFIRMING SURGERY VOLUME, YEAR OVER YEAR

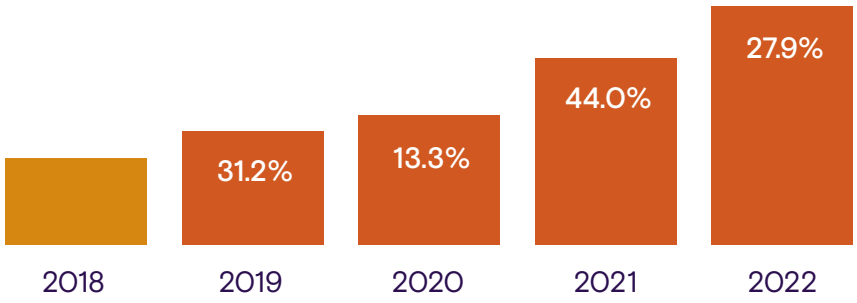


Fig. 8 Analysis of gender-affirming surgery data from Definitive Healthcare's All-Payor Claims product.

Compared with hormone therapy, gender-affirming surgery presents a more permanent, riskier, and considerably more expensive option for treatment. But those who choose to receive it are overwhelmingly pleased with the results: A study published in Plastic and Reconstructive Surgery found that **99.7% of patients were satisfied with their surgery**. Another study published in JAMA Pediatrics found that gender-affirming top surgery specifically "**improves feelings of chest dysphoria, gender congruence, and body image** in young trans adults three months after the surgery."

SHARE OF GENDER-AFFIRMING SURGERY CLAIMS BY PAYOR, 2018–2022

Payor type	2018	2019	2020	2021	2022
Medicaid	5%	5%	10%	12%	10%
Unknown	1%	1%	1%	1%	1%
Commercial	92%	93%	93%	92%	82%
Medicare	4%	3%	1%	1%	1%
Other Government	4%	4%	5%	6%	7%

Fig. 9 Analysis of data from Definitive Healthcare's All-Payor Claims product.

Unfortunately, many health plans list specific exclusions for "services related to sex change" or "sex reassignment surgery" to refuse coverage to transgender patients for certain services. The Centers for Medicare & Medicaid Services (CMS) allows local Medicare Administrative Contractors (MACs) to decide coverage of gender reassignment surgery case by case.

This presents a barrier to care for transgender patients, who are more likely than cisgender patients to face economic hardships. **Nearly 30% of transgender adults live below the poverty line**. Perhaps unsurprisingly, over the last two years, the share of patients paying for gender-affirming surgeries with Medicaid and other government plans has gone up.

As shown in the chart above, in 2022, around 18% of patients submitted a claim for the gender-affirming surgery with Medicaid, Medicare, or another government healthcare payment program. That's up from 13% in 2018.

Part III: What can be done to improve access to care?

As the demand for gender-affirming care grows, as research continues to underscore the benefits of treatment for transgender people, and as more states try to restrict or ban treatment, the question of trans patients' access to care is more pressing than ever.

Ensuring access to gender-affirming care will ultimately need to occur on a legislative level, with the federal and state governments aligning to enshrine Medicare and Medicaid coverage for medically necessary treatments like counseling, hormones, surgery, voice and communication therapy, and fertility assistance.

Most transgender patients on Medicare are already guaranteed access to these services under federal law. But as Medicaid programs are organized jointly between the federal and state governments, access to care for trans patients relying on Medicaid varies considerably state by state.

One Kaiser Family Foundation **survey of state Medicaid programs** found that only two of the survey's 41 respondents, Maine and Illinois, covered all five gender-affirming services mentioned above. Alabama and Texas reported that their Medicaid programs don't cover any of those services.

Under America's system of representational democracy, these state-by-state differences ostensibly reflect the differing needs and perspectives of each state's

constituents. The glaring problem, of course, is that trans people have real, relatively uniform healthcare needs, whether they live in Texas or Maine, in New York City or in an unincorporated community in Arkansas.

The response to this problem must involve raising awareness around those healthcare needs and positioning trans individuals' rights to access necessary care as integral as those of any other minority group, whether racial, ethnic, religious, or sexual in nature.

A 2022 Pew Research Center survey found that 64% of Americans favor laws or policies that would protect transgender people from discrimination in jobs, housing, and public spaces. Only 10% said they would oppose such measures.

This ratio looks like a sign of progress, but verbally expressing support for fellow Americans' basic rights isn't exactly a high bar to clear. And when 60% of respondents to the same survey said a person's gender is determined by the sex they were assigned from birth—up from 54% in 2017—it's clear there's much work to do to win Americans' hearts and minds.

Those of us working in the healthcare space can improve the public's awareness around transgender patients' needs, rights, and access to care in a variety of ways:

Be inclusive in data collection. This can be as simple as featuring more inclusive gender options in your surveys of patients and clients (when appropriate). Accurately reporting on respondents' diverse gender identities helps to normalize and bring awareness to those identities. Some electronic health record systems like

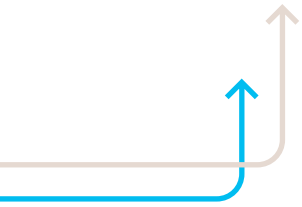
Epic already incorporate a sexual orientation and gender identity (SOGI) inventory. If yours doesn't, consider developing one in-house or working with a vendor to incorporate one.

Include trans and nonbinary people in studies/trials. If you work in the life sciences, consider including trans and/or nonbinary people in your studies or clinical trials to ensure representation and visibility. Make sure any marketing materials related to the study are sensitive to the diverse array of participants' gender identities and consider using gender-neutral language where possible.

As trans activist and physician Dr. Ben Haseen said on a recent episode of the Definitively Speaking podcast, providers' education on caring for members of the trans community is "very, very rudimentary right now. Usually, it's just a crash course on pronouns."

Your trial sites should be friendly and inclusive, with access to gender-neutral facilities, and facilitators should ask for and respect participants' pronouns.

Design educational offerings with trans identities in mind. If you provide continuing medical education to providers, consider incorporating lessons around supplying respectful care to trans patients. Ideally, these lessons should be designed with the support of a trans person or someone with intimate knowledge of the community.



As trans activist and physician Dr. Ben Haseen said on a recent episode of the Definitively Speaking podcast, providers' education on caring for members of the trans community is "very, very rudimentary right now. Usually, it's just a crash course on pronouns." Several medical associations have issued guidance on caring for transgender patients—it simply needs to be translated into meaningful medical education.

Partner with—and platform—trans experts and opinion leaders. Trans people understand their own needs better than anyone. If you work in medical affairs, partnering with transgender doctors, experts, and opinion leaders can not only increase awareness of your product or therapy within an underserved community, but also extend the reach and impact of that expert.

Create more inclusive marketing materials. Like anyone else, trans people want to feel welcome where they do business, whether that's a doctor's office, retail clinic, or telehealth appointment. Unless you're specifically providing gender-affirming care, you shouldn't single trans people out in your marketing, but you can create a sense of security and welcomeness by using gender-neutral pronouns, inclusive language, or imagery featuring gender-diverse people, for example.

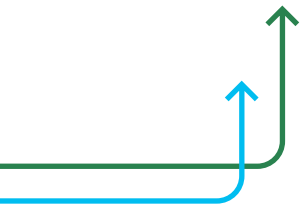
Everyone deserves access to medically necessary care

Despite spending more on healthcare than any other high-income country—in terms of both per-person spend and as a share of GDP—the U.S. has the lowest life expectancy at birth, the highest death rates for treatable conditions, the highest maternal and infant mortality rates, and the highest suicide rates of similarly wealthy nations.

For all the money poured into healthcare, a disproportionate number of Americans simply can't access it. Out-of-pocket costs are exorbitantly high, insurance coverage is limited and inconsistent from payor to payor, and there are just too few providers to go around.

A Pew Research survey found that 42% of Americans reported knowing someone who is transgender in 2021, up from 37% in 2017.

The consequence of inaccessibility falls hardest on people at the margins: racial and ethnic minorities, those living in rural areas, impoverished and unhoused people, and those within the LGBTQ community all face greater barriers to access than their peers. As a result, their healthcare outcomes tend to be worse, too, especially among transgender people.



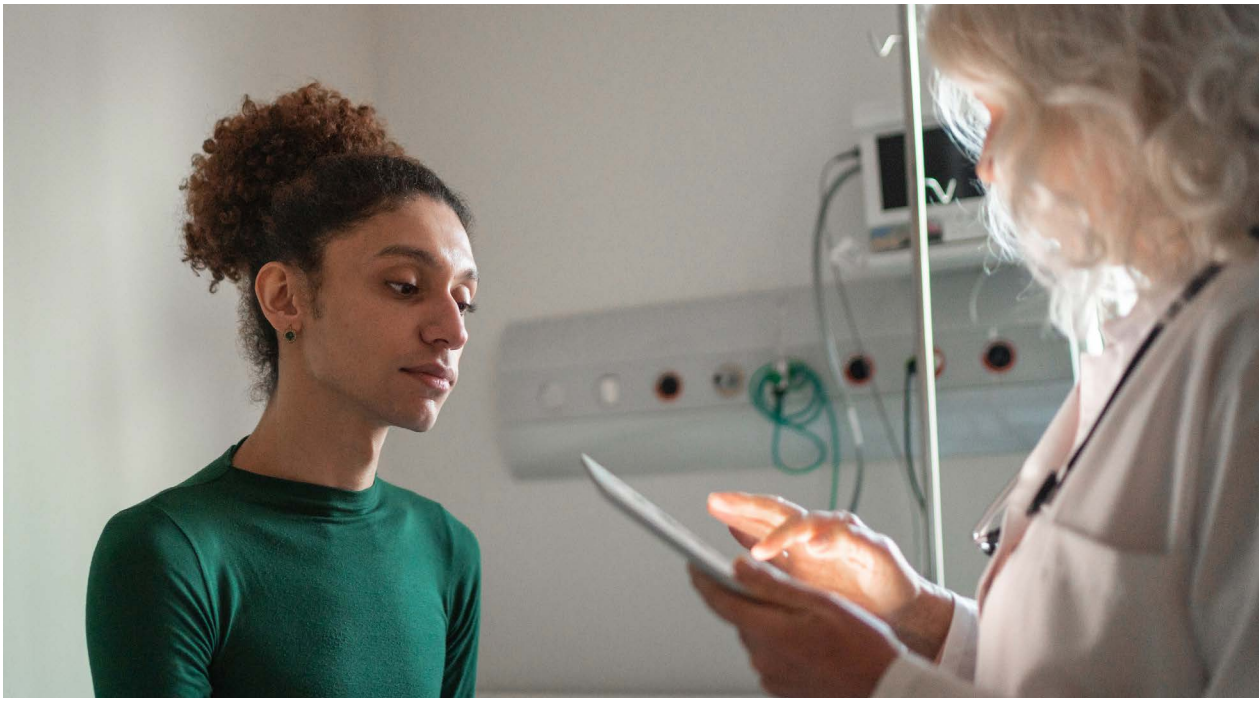
While the transgender community continues to fight for access, they've made vital progress in gaining visibility. A Pew Research survey found that 42% of Americans reported knowing someone who is transgender in 2021, up from 37% in 2017. Today, trans people can be seen starring in major films and television series, competing in sports from swimming to mixed martial arts, serving in elected and appointed governmental roles—including as the U.S. Assistant Secretary for Health—representing worldwide apparel and cosmetics brands, and openly working in every professional field imaginable.

The Williams Institute estimates that around 0.6% of American adults and youth aged 13 and older are transgender (including those who identify as nonbinary). While the percentage of adults who identify as trans has remained steady, the institute's estimate of the number of trans youth has doubled since 2017 to 1.4%.

When state and federal legislators push bans on gender-affirming care, they often cite perceived threats to the well-being of children (although states like Oklahoma, Texas, and South Carolina have considered bans for people up to 26 years old). But research shows that gender-affirming care reduces rates of depression and suicidality among trans and nonbinary youth, and it's likely these bans will cause measurable harm to the people they are purported to protect.

Take it from the doctors: Every major medical organization—a collective representing over 1.3 million physicians—**recognizes gender-affirming care as medically necessary**.

Unfortunately, our ability to understand the impact of these bans and other barriers to care for transgender people are limited by a lack of reliable data. Gender identity is reduced to binary options in the national census, as well as those in most states, and while trans patients' interactions with the healthcare system provide some useful insights, demographic data is reported inconsistently. Reducing access to care will cause trans people to be even further underrepresented in the data that drives both government policy and industry decision-making.



Our medical claims data shows that gender dysphoria diagnoses are on the rise, and patients with these diagnoses are seeking mental health services in greater numbers than ever. While trans people in every setting face a variety of barriers to care, our data suggests that those living in rural areas experience even greater hardships in their efforts to access care, in addition to being more likely to have pre-existing health concerns and economic adversity. Predominantly rural states are also more likely to have banned or to be considering banning gender-affirming care.

Legislators may make the laws that enshrine access to medical care, but anyone can take steps to make their corner of the world more welcoming and improve awareness around the challenges trans people face within it. Citizens can lobby their representatives and demand change through activism. Doctors in anti-access states can direct trans patients to resources or find ways to deliver necessary care anyway. And those in less restrictive neighboring states can open their doors to patients seeking care away from home.

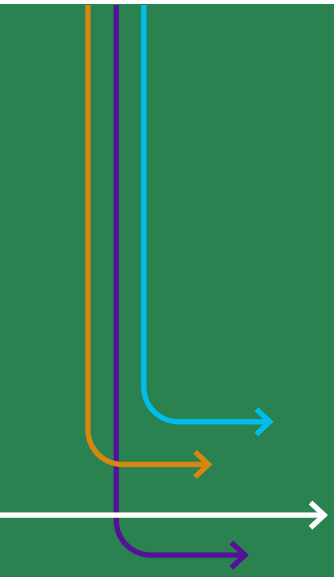
Everyone in the healthcare industry can play a part, too. From the way we collect data to how we use it, from the voices we platform to the way we communicate with clients and partners, we all have an opportunity to make healthcare more accessible for everyone who needs it.

Methodology

Information in this report was gathered and analyzed between October and December 2023. Data is from a variety of sources, including Definitive Healthcare products. All data points referenced are cited and linked throughout.

Healthcare provider information in the PhysicianView product is sourced from the NPI registry, Physician Compare, all-payor claims, and proprietary research. Our team incorporates updates monthly and currently tracks more than 2.5 million healthcare providers.

Data from the Atlas All-Payor Claims product is sourced from multiple medical claims clearinghouses in the U.S. and updated monthly. When possible, the full calendar year 2022 is used.



About Definitive Healthcare

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For more information, visit definitivehc.com.

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DEFINITIVE HEALTHCARE

EXHIBIT 144

Doctors have failed them, say those with transgender regret

BY ALICIA AULT

In a unique Zoom conference, a number of detransitioners enumerated the ways they said the medical establishment initially failed them when they transitioned to the opposite gender, and again, when they decided to go back to their natal gender.

The forum was convened on what was dubbed #DetransitionAwarenessDay by Genspect, a parent-based organization that seeks to put the brakes on medical transitions for children and adolescents. The group has doubts about the gender-affirming care model supported by the World Professional Association for Transgender Health, the American Medical Association, the American Academy of Pediatrics, and other medical groups.

"Affirmative" medical care is defined as treatment with puberty blockers and cross-sex hormones for those with gender dysphoria to transition to the opposite sex and is often followed by gender-reassignment surgery. However, there is growing concern among many doctors and other health care professionals as to whether this is, in fact, the best way to proceed for those under aged 18, in particular, with several countries pulling back on medical treatment and instead emphasizing psychotherapy first.

The purpose of the second annual Genspect meeting was to shed light on the experiences of individuals who have detransitioned – those that identified as transgender and transitioned, but then decided to end their medical transition. People logged on from all over the United States, Canada, New Zealand, Australia, the United Kingdom, Germany, Spain, Chile, and Brazil, among other countries.

"This is a minority within a minority," said Genspect adviser Stella O'Malley, adding that the first meeting in 2021 was held because "too many people were dismissing the stories of the detransitioners." Ms. O'Malley is a psychotherapist, a clinical adviser to the Society for Evidence-Based Gender Medicine, and a founding member of the International Association of Therapists for Desisters and Detransitioners.

"It's become blindingly obvious over the last year that ... 'detrans' is a huge part of the trans phenomenon," said Ms. O'Malley, adding that detransitioners have been "undermined and dismissed."

Laura Edwards-Leeper, PhD (@DrLauraEL), a prominent gender therapist who has recently expressed concern regarding adequate gatekeeping when treating youth with gender dysphoria, agreed.

She tweeted: "You simply can't call yourself a legit gender provider if you don't believe that detransitioners exist. As part of the informed consent process for transitioning, it is unethical to not discuss this possibility with young people." Dr. Edwards-Leeper is professor emeritus at Pacific University in Hillsboro, Ore.

Speakers in the forum largely offered experiences, not data. They pointed out that there has been little to no study of detransition, but all testified that it was less rare than it has been portrayed by the transgender community.

Struggles with going back

"There are so many reasons why people detransition," said Sinead Watson, aged 30, a Genspect adviser who transitioned from female to male, starting in 2015, and who decided to detransition in 2019. Citing a study by Lisa Littman, MD, MPH, published in 2021 (Arch Sex Behav. 2021 Nov;50[8]:3353-69), Ms. Watson said the most common reasons for detransitioning were realizing that gender dysphoria was caused by other issues; internal homophobia; and the unbearable nature of transphobia.

Ms. Watson said the hardest part of detransitioning was admitting to herself that her transition had been a mistake. "It's embarrassing and you feel ashamed and guilty," she said, adding that it may mean losing friends who now regard you as a "bigot, while you're also dealing with transition regret."

"It's a living hell, especially when none of your therapists or counselors will listen to you," she said. "Detransitioning isn't fun."

Carol (@sourpatches2077) said she knew for a year that her transition had been a mistake.

"The biggest part was I couldn't tell my family," said Carol, who identifies as a lesbian. "I put them through so much. It seems ridiculous to go: 'Oops, I made this huge [expletive] mistake,'" she said, describing the moment she did tell them as "devastating."

Grace (@hormonehangover) said she remembers finally hitting a moment of "undeniability" some years after transitioning. "I accept it, I've ruined my life, this is wrong," she remembers thinking. "It was devastating, but I couldn't deny it anymore."

Don't trust therapists

People experiencing feelings of unease "need a therapist who will listen to them," said Ms. Watson. When she first detransitioned, her therapists treated her badly. "They just didn't want to speak about detransition," she said, adding that "it was like a kick in the stomach."

Ms. Watson said she'd like to see more training about detransition, but also on "preventative techniques," adding that many people transition who should not. "I don't want more detransitioners – I want less.

"In order for that to happen, we need to treat people with gender dysphoria properly," said Ms. Watson, adding that the affirmative model is "disgusting, and that's what needs to change."

> "A pervasive theme during the webinar was that many people are being misdiagnosed with gender dysphoria, **which may not be resolved by medical transition.**"

"I would tell somebody to not go to a therapist," said Carol. Identifying as a butch lesbian, she felt like her therapists had pushed her into transitioning to male. "The No. 1 thing not understood by the mental health professionals is that the vast majority of homosexuals were gender-nonconforming children." She added that this is especially true of butch lesbians.

Therapists – and doctors – also need to acknowledge both the trauma of transition and detransition, she said.

Kaiser, where she had transitioned, offered her breast reconstruction. Carol said it felt demeaning. "Like you're Mr. Potatohead: 'Here, we can just ... put on some new parts and you're good to go.'"

"Doctors are concretizing transient obsessions," said Helena Kerschner (@lacroicsz), quoting a chatroom user.

Ms. Kerschner gave a presentation on "fandom": becoming obsessed with a movie, book, TV show, musician, or celebrity, spending every waking hour chatting online or writing fan fiction, or attempting to interact with the celebrity online. It's a fantasy-dominated world and "the vast majority" of participants are teenage girls who are "identifying as trans," in part, because they are fed a community-reinforced message that it's better to be a boy.

Therapists and physicians who help them transition "are harming them for life based on something they would have grown out of or overcome without the permanent damage," Ms. Kerschner added.

Doctors 'gaslight' people into believing that transition is the answer

A pervasive theme during the webinar was that many people are being misdiagnosed with gender dysphoria, which may not be resolved by medical transition.

Allie, a 22-year-old who stopped taking testosterone after 1½ years, said she initially started the transition to male when she gave up trying to figure out why she could not identify with, or befriend, women, and after a childhood and adolescence spent mostly in the company of boys and being more interested in traditionally male activities.

She endured sexual abuse as a teenager and her parents divorced while she was in high school. Allie also had multiple suicide attempts and many incidents of self-harm. When she decided to transition, at age 18, she went to a private clinic and received cross-sex hormones within a few months of her first and only 30-minute consultation. "There was no explorative therapy," she said, adding that she was never given a formal diagnosis of gender dysphoria.

For the first year, she said she was "over the freaking moon" because she felt like it was the answer. But things started to unravel while she attended university, and she attempted suicide again at age 20. A social worker at the school identified her symptoms – which had been the same since childhood – as autism. She then decided to cease her transition.

Another detransitioner, Laura Becker, said it took 5 years after her transition to recognize that she had undiagnosed PTSD from emotional and psychiatric abuse. Despite a history of substance abuse, self-harm, suicidal ideation, and other mental health issues, she was given testosterone and had a double mastectomy at age 20. She became fixated on gay men, which devolved into a methamphetamine- and crack-fueled relationship with a man she met on the gay dating platform Grindr.

"No one around me knew any better or knew how to help, including the medical professionals who performed the mastectomy and who casually signed off and administered my medical transition," she said.

Once she was aware of her PTSD she started to detransition, which itself was traumatic, said Laura.

Limpida, aged 24, said he felt pushed into transitioning after seeking help at a Planned Parenthood clinic. He identified as trans at age 15 and spent years attempting to be a woman socially, but every step made him feel more miserable, he said. When he went to the clinic at age 21 to get estrogen, he said he felt like the staff was dismissive of his mental health concerns – including that he was suicidal, had substance abuse, and was severely depressed. He was told he was the "perfect candidate" for transitioning.

A year later, he said he felt worse. The nurse suggested he seek out surgery. After Limpida researched what was involved, he decided to detransition. He has since received an autism diagnosis.

Robin, also aged 24, said the idea of surgery had helped push him into detransitioning, which began in 2020 after 4 years of estrogen. He said he had always been gender nonconforming and knew he was gay at an early age. He believes that gender-nonconforming people are "gaslighted" into thinking that transitioning is the answer.

Lack of evidence-based, informed consent

Michelle Alleva, who stopped identifying as transgender in 2020 but had ceased testosterone 4 years earlier because of side effects, cited what she called a lack of evidence base for the effectiveness and safety of medical transitions.

"You need to have a really, really good evidence base in place if you're going straight to an invasive treatment that is going to cause permanent changes to your body," she said.

Access to medical transition used to involve more "gatekeeping" through mental health evaluations and other interventions, she said, but there has been a shift from treating what was considered a psychiatric issue to essentially affirming an identity.

"This shift was activist driven, not evidence based," she emphasized.

Most studies showing satisfaction with transition involve only a few years of follow-up, she said. She added that the longest follow-up study of transition, published in 2011 and spanning 30 years (PLoS One. 2011 Feb 22;6[2]:e16885), showed that the suicide rate 10-15 years post surgery was 20 times higher than the general population.

Studies of regret were primarily conducted before the rapid increase in the number of trans-identifying individuals, she said, which makes it hard to draw conclusions about pediatric transition. Getting estimates on this population is difficult because so many who detransition do not tell their clinicians, and many studies have short follow-up times or a high loss to follow-up.

Ms. Alleva also took issue with the notion that physicians were offering true informed consent, noting that it's not possible to know if someone is psychologically sound if they haven't had a thorough mental health evaluation and that there are so many unknowns with medical transition, including that many of the therapies are not approved for the uses being employed.

With regret on the rise, "we need professionals that are prepared for detransitioners," said Ms. Alleva. ■

EXHIBIT 145

Briefing | Trans substantiation

The evidence to support medicalised gender transitions in adolescents is worryingly weak

The effectiveness and side-effects of the most common treatments are not well understood

Apr 5th 2023

Save Share Give

PRISHA MOSLEY was 17 when she was first given testosterone in a clinic in North Carolina, after she had declared to her parents that she was a boy. She had struggled through her teen years with anorexia and depression after a sexual assault. Luka Hein had both breasts removed as a 16-year-old in Nebraska. Chloe Cole, in California, was a year younger when she had her double mastectomy. She had been on testosterone and puberty-blocking drugs since 13, also after a sexual assault.

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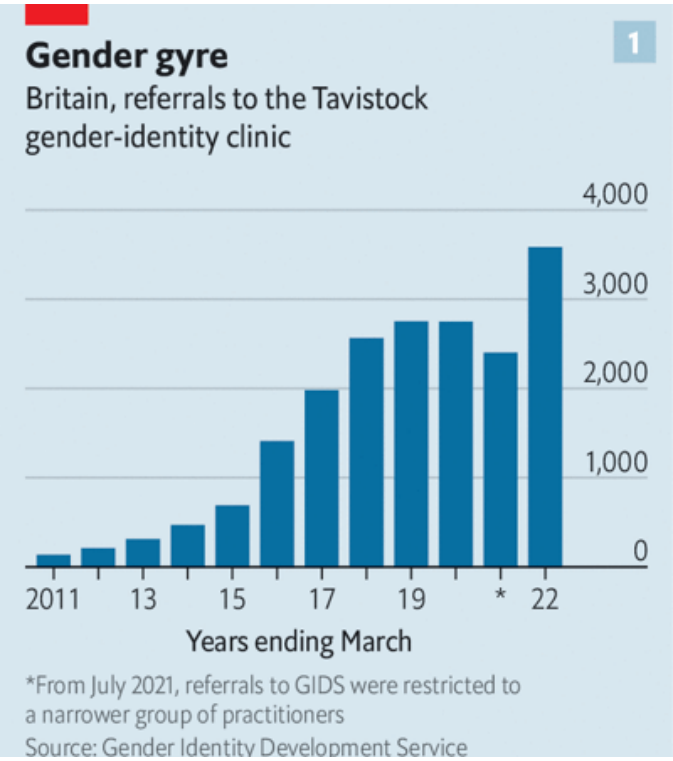


The Economist

All three girls were experiencing "gender dysphoria", a feeling of intense discomfort with their own sexed bodies. Once a rare diagnosis, it has exploded over the past decade. In England and Wales the number of teenagers seeking treatment at the Gender Identity Development Service (GIDS), the main clinic treating dysphoria, has risen 17-fold since 2011-12 (see chart 1). An analysis by Reuters, a news agency, based on data from Komodo, a health-technology firm, estimated that more than 42,000 American children and teenagers were diagnosed in 2021—three times the count in 2017. Other rich countries, from Australia to Sweden, have also experienced rapid increases.

As the caseload has grown, so has a method of treatment, pioneered in the Netherlands, now known as "gender-affirming care". It involves acknowledging patients' feelings about a mismatch between their body and their sense of self and, after a psychological assessment, offering some of them a combination of puberty-blocking drugs, opposite-sex hormones and sometimes surgery to try to ease their discomfort. Komodo's data suggest around 5,000 teenagers were prescribed puberty-blockers or cross-sex hormones in America in 2021, double the number in 2017.

Dysphoria furoria

The treatment is controversial. In many countries, but in America most of all, it has become yet another front in the culture wars. Many on the left caricature critics of gender-affirming care as callously disregarding extreme distress and even suicides among adolescents with gender dysphoria in their determination to "erase" trans people. Zealots on the right, meanwhile, accuse doctors of being so hell-bent on promoting gender transitions that they "groom" vulnerable teenagers —a term usually applied to paedophiles. In October supporters and critics of gender-affirming care held rival, rowdy protests outside a meeting of the American Academy of Paediatrics. Several American states, such as Florida and Utah, have passed laws banning gender-affirming care in children. Joe Biden, America's president, has described such laws as "close to sinful".

Almost all America's medical authorities support gender-affirming care. But those in Britain, Finland, France, Norway and Sweden, while supporting talking therapy as a first step, have misgivings about the pharmacological and surgical elements of the treatment. A Finnish review, published in 2020, concluded that gender reassignment in children is "experimental" and that treatment should seldom proceed beyond talking therapy. Swedish authorities found that the risks of physical interventions "currently outweigh the possible benefits" and should only be offered in "exceptional cases". In Britain a review led by Hilary Cass, a paediatrician, found that gender-affirming care had developed without "some of the normal quality controls that are typically applied when new or innovative treatments are introduced". In 2022 France's National Academy of Medicine advised doctors to proceed with drugs and surgery only with "great medical caution" and "the greatest reserve".

There is no question that many children and parents are desperate to get help with gender dysphoria. Some consider the physical elements of gender-affirming care to have been life-saving treatments. But the fact that some patients are harmed is not in doubt either. Ms Mosley, Ms Hein and Ms Cole are all "detransitioners": they have changed their minds and no longer wish to be seen as male. All three bitterly regret the irreversible effects of their treatment and are angry at doctors who, they say, rushed them into it. Ms Cole considers herself to have been "butchered by institutions we all thought we could trust".

The transitioning of teenagers has its roots in a treatment protocol developed in the Netherlands in the 1980s and 1990s. It is built on three pillars: puberty-blockers (formally known as GnRH antagonists), cross-sex hormones and surgery. The goal was to alter the patient's body to more closely match their sense of cross-sex identity, and thereby relieve their mental anguish. A pair of papers published in 2011 and 2014 by Annelou de Vries, one of the Dutch protocol's pioneers, reported on the experiences of some of the first patients. They concluded that symptoms of depression decreased among patients taking puberty-blockers, and that gender dysphoria "resolved" and psychological functioning "steadily improved" after cross-sex hormones and surgery.

Transition ignition

Puberty-blockers do what their name suggests. The idea is that suspending

unwanted sexual development can give patients time to think about their dysphoria, and whether or not they wish to pursue more drastic interventions. The same family of drugs is used to treat "central precocious puberty", in which puberty begins very early. Some countries also use them to chemically castrate sex offenders. As with many other medicines used in children, the use of puberty-blockers in gender medicine is "off-label", meaning that they do not have regulatory approval for that purpose.

Patients who decide to proceed with their transition are then prescribed cross-sex hormones. Males will see the development of breasts and alterations to how fat is stored on the body. Giving testosterone to females boosts muscle growth and causes irreversible changes such as deepening the voice, altering the bone structure of the face and the growth of facial hair.

Under the original Dutch protocol, surgery was permitted only after a patient turned 18, although as the cases of Ms Cole and Ms Hein show, in some places mastectomies occur at a younger age. Male patients can have artificial breasts implanted. More elaborate procedures, in which females have a simulated penis built from a tube of skin harvested from the forearm or the thigh, or males have an artificial vagina made in a "penile inversion", are performed extremely rarely on minors.

In 2020 the National Institute for Health and Care Excellence (NICE), a British body which reviews the scientific underpinnings of medical treatments, looked at the case for puberty-blockers and cross-sex hormones. The academic evidence it found was weak, discouraging and in some cases contradictory. The studies suggest puberty-blockers had little impact on patients. Cross-sex hormones may improve mental health, but the certainty of that finding was low, and NICE warned of the unknown risks of lasting side-effects.

For both classes of drug, NICE assessed the quality of the papers it analysed as "very low", its poorest rating. Some studies reported results but made no effort to analyse them for statistical significance. Cross-sex hormones are a lifelong treatment, yet follow-up was short, ranging from one to six years. Most studies followed only a single set of patients, who were given the drugs, instead of comparing them with another set who were not. Without such a "control group", researchers cannot tell whether anything that happened to the patients in the

researchers cannot tell whether anything that happened to the patients in the studies was down to the drugs, to other treatments the patients might be receiving (such as counselling or antidepressants), or to some other, unrelated third factor.

The upshot is that it is hard to know whether any of the supposed effects reported in the studies, whether positive or negative, are actually real. Reviews in Finland and Sweden came to similar conclusions. As the Swedish one put it, "The scientific base is not sufficient to assess…puberty-inhibiting or gender-opposite hormone treatment" in children.

Two American professional bodies, the Endocrine Society (ES) and the World Professional Association for Transgender Health (WPATH) have also reviewed the science underpinning adolescent transitions. But ES's review did not set out to look at whether gender-affirming care helped resolve gender dysphoria or improve mental health by any measure. It focused instead on side-effects, for which it found only weak evidence. This omission, says Gordon Guyatt of McMaster University, makes the review "fundamentally flawed". WPATH, for its part, did look at the psychological effects of blockers and hormones. It found scant, low-quality evidence. Despite these findings, both groups continue to recommend physical treatments for gender dysphoria, and insist that their reviews and the resulting guidelines are sound.

One justification for puberty-blockers is that they "buy time" for children to decide whether to proceed with cross-sex hormones or not. But the data available so far from clinics suggest that almost all decide to go ahead. A Dutch paper published in October concluded that 98% of adolescents prescribed blockers decide to proceed to cross-sex hormones. Similarly high numbers have been reported elsewhere.

The reassuring interpretation is that blockers are being prescribed very precisely, given only to those whose dysphoria is deep-rooted and unlikely to ease. The troubling one is that puberty-blockers lock at least some children in to further treatment. "Time to Think", a new book about GIDS by a British journalist, Hannah Barnes, cites British medical workers concerned by the latter possibility. They say patients received blockers after cursory and shallow examinations.

The Dutch researchers weigh both explanations. "It is likely that most people starting [puberty blockers] experience sustained gender dysphoria," they write

starting [puberty-blockers] experience sustained gender dysphoria," they write. But, "One cannot exclude the possibility that starting [puberty-blockers] in itself makes adolescents more likely to continue medical transition."

Perhaps the biggest question is how many of those given drugs and surgery eventually change their minds and "detransition", having reconciled themselves with their biological sex. Those who do often face fresh anguish as they come to terms with permanent and visible alterations to their bodies.

Once again, good data are scarce. One problem is that those who abandon a transition are likely to stop talking to their doctors, and so disappear from the figures. The estimates that do exist vary by an order of magnitude or more. Some studies have reported detransition rates as low as 1%. But three papers published in 2021 and 2022, which looked at patients in Britain and in America's armed forces, found that between 7% and 30% of them stopped treatment within a few years.

The original Dutch studies published in 2011 and 2014 were longitudinal—that is, they followed the same group of patients throughout their treatment. Yet three recent critiques published in the *Journal of Sex & Marital Therapy* nonetheless find fault with the studies' data.

One of the new studies' concerns is the small size of the original samples. The 2011 paper looked at 70 patients. But the outcome of treatment was only known for between 32 and 55 of them (the exact number depends on the specific measure). And even then, the final assessment of outcomes occurred around 18 months after surgery—a very short timeframe for a treatment whose effects will last a lifetime. (The first patient, "FG", was followed for longer. In 2011, when in his mid-30s, researchers reported his feelings of "shame about his genital appearance" and of "inadequacy in sexual matters". A decade later though, things had improved, and FG had a steady girlfriend.)

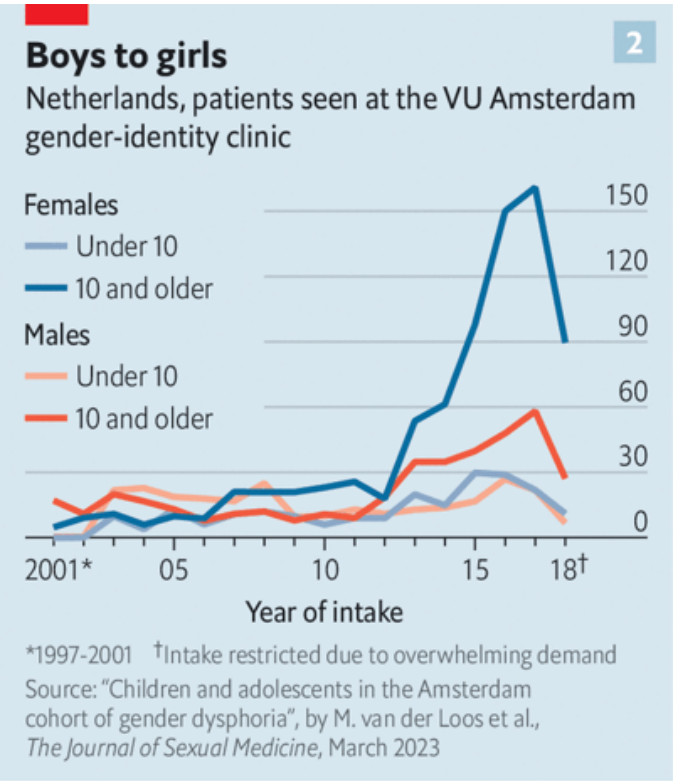
The critiques also suggest that the finding that gender dysphoria improved with treatment may have been an artefact of how the participants were assessed. Before treatment, female patients were asked to agree or disagree with such statements as, "Every time someone treats me like a girl I feel hurt." This established their desire to be seen as male. After blockers, hormones and surgery the same

desire to be seen as male. After blockers, hormones and surgery the same individuals were asked questions on a scale originally developed for those born male. It offered statements such as, "Every time someone treats me like a boy I feel hurt." Naturally, patients who preferred to be seen as male disagreed. In effect, the yardstick was changed in a way that might be seen as making positive outcomes more likely.

Finally, the original studies seem to have inadvertently cherry-picked patients for whom the treatment was most effective. The researchers started with 111 adolescents, but excluded those whose treatment with puberty-blockers did not progress well. Of the remaining 70, others were omitted from the final findings because they did not return questionnaires, or explicitly refused to do so, or dropped out of care or, in one case, died of complications from genital surgery. The data may therefore exclude precisely those patients who were harmed by or dissatisfied with their treatment.

In a rebuttal published in the same journal, Dr de Vries insists that the original papers found a significant improvement in gender dysphoria, the condition the protocol was designed to treat. She concedes that the switching of assessment scales is "not ideal" but says this does not imply the studies' results were "'falsely' measured". In response to worries about the relatively short follow-up, she noted that a study reporting longer-term outcomes is due "in the upcoming years".

Newer longitudinal studies have been published since, but they have drawbacks, too. One published in January in the *New England Journal of Medicine* by Diane Chen of Northwestern University and colleagues looked at teenagers after two years of cross-sex hormone treatment. Although participants did typically report improvements in their mental health, they were small—generally single-digit increases on a scale that runs from 0 to 100. The study lacked a control group. Two of the 315 patients committed suicide.



What is more, whatever the merits of the Dutch team's original research, the patients passing through modern clinics are strikingly different from those assessed in their papers. Twenty years ago the majority of patients were pre-pubescent boys; in recent years teenage girls have come to dominate (see chart 2). The findings of older research may not apply to today's patients.

The Dutch team's approach was deliberately conservative. Patients had to have suffered from gender dysphoria since before puberty. Many of today's patients say they began to suffer from dysphoria as teenagers. The Dutch protocol excludes those with mental-health problems from receiving treatment. But 70% or more of the young people seeking treatment suffer from mental-health problems, according to three recent papers looking at patients in America, Australia and Finland.

Despite the protocol's caution, says Will Malone of the Society for Evidence-Based Gender Medicine, an international group of concerned clinicians, the reality is

often the reverse, especially in America, with mental-health issues becoming a reason to proceed with transitions, rather than to stop them. "We are now told that if we don't address young people's mental-health problems caused by dysphoria with transition, they will kill themselves."

Gender agenda

The original Dutch protocol emphasises the need for careful screening and assessments, as do official guidelines in most countries. But whatever the guidance, there are persistent allegations that it is not being followed in practice. "I had one 15-minute appointment before I was given testosterone," says Ms Mosley. Many American patients contacted by *The Economist* reported similarly brief examinations.

The possibility that many teenagers presenting as trans could instead be gay has long been discussed. The Dutch study of 2011 found that 97% of the participants were attracted either to their own sex or to both sexes. In 2019 a group of doctors who resigned from GIDS told the *Times*, a British newspaper, of their worries about

homophobia in some patients and parents. They worried that, by turning children into simulacra of the opposite sex, the clinic was, in effect, providing a new type of "conversion therapy" for gay children.

Both within America and without, whatever the loudmouths may claim, the vast majority of practitioners are simply trying to ease the genuine suffering of adolescents afflicted by gender dysphoria. But in America in particular the charged atmosphere has made it very difficult to separate the science from the politics.

European medical systems have not concluded that it is always wrong for an adolescent to transition. They are not trying to erase distressed patients. They have simply determined that more research and data are needed before physical treatments for gender dysphoria can become routine. Further research could, conceivably, lead to guidelines similar to those already in use by American medical bodies. But that is another way of saying that it is impossible to justify the current recommendations about gender-affirming care based on the existing data. ■

This article appeared in the Briefing section of the print edition under the headline "Trans substantiation"

EXHIBIT 146

DEFENDANT'S EXHIBIT 26

UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF ALABAMA
NORTHERN DIVISION

REV. PAUL A. EKNES-TUCKER, *et al.*,	)	
Plaintiffs,	)	
v.	)	No. 2:22-cv-00184-LCB-SRW
KAY IVEY, in her official capacity as Governor of the State of Alabama, *et al.*,	)	
Defendants.	)	

DECLARATION OF CORINNA COHN

My name is Corinna Cohn. I am over the age of 19, I am qualified to give this declaration, and, I have personal knowledge of the matters set forth herein.

In or about 2nd grade, I saw a psychologist for problems related to being bullied and emotional regulation. After less than a year, my parents chose to discontinue therapy. I continued to be bullied and had problems forming friendships. Other boys excluded me from social activities. Later in elementary school I began to pray to be made into a girl, which I thought would allow me to fit in better. This became a fixation for me.

In high school, I confessed to my parents that I wanted to become a woman. They brought me to see the same psychologist I'd had as a child, and she diagnosed me with having gender identity disorder. Upon receiving this diagnosis, my parents again chose to discontinue my therapy. I continued to have problems socializing at school and experienced depression and anxiety on a daily basis.

At the age of 17, I gained access to the Internet. This was prior to the popularization of the World Wide Web, but I was able to use message boards and chat in order to find other members of what today would be called the "trans community". Adult transgender women befriended me, supplied me with validation and support, and provided information on how I could transition to also become a transgender woman.

At the age of 18, I resumed my sessions with my psychologist with the goal of receiving a prescription for cross-sex hormones and eventual sex reassignment surgery. Due to my prior relationship with my psychologist, I was able to gain a letter of recommendation to an endocrinologist and was prescribed estrogen. The endocrinologist was referred to me by transgender friends on the Internet. I began living as a woman and had my legal identification updated to reflect my chosen name.

I had sex reassignment surgery in Neenah, Wisconsin in 1994. I was only 19 years old. Securing the appointment required letters from two therapists along with a letter from my endocrinologist. My surgeon told me I was the second-youngest patient he had operated on. The surgery involved removal of my testicles, penectomy, and vaginoplasty. It was successful and without complication.

After healing from my sex change surgery I thought that my transition journey was over. I discontinued therapy, and I began focusing on my career. I found it was easier to socialize and make new friends with my new confidence and feelings of being my authentic self. As I reached my late twenties, my friends began pairing off and starting families. I discovered that it was very difficult to find a partner who wanted to do the same with me.

Although I was in denial for several years, I eventually realized that my depression and anxiety related to my gender identity had not resolved. It was not unusual for me to spend entire weekends in my room crying and entertaining thoughts of suicide.

In my mid-thirties I became interested in radical feminism. I am not a feminist, nor have I ever been, but I wanted to reconcile how feminist concepts applied to people like myself: males who try to turn ourselves into women. One of the concepts I found pivotal was the feminist criticism of biological essentialism, which challenges the idea that men and women are destined to fulfill rigid sex roles. Once I understood this criticism I realized that my more stereotypically feminine attitudes and behaviors did not therefore make me a woman, but rather a feminine man. In retrospect, my self-perception of being a woman also required that I overlook or discount traits that are more stereotypically masculine. Although it took time for this realization to fully sink in, a side effect was that I stopped having bouts of depression and anxiety related to my gender identity. I have not had any depressive episodes related to gender identity in ten years. As a teenager I was unprepared to understand the consequences of my decision to medicalize my transition despite the rigorous controls that were then in place to ensure that patients would not be harmed from gender affirming care.

In 2019, I co-founded a non-profit dedicated to advocating for patients of gender care services. Through the Gender Care Consumer Advocacy Network (GCCAN), I have spoken with other patients and gender clinicians to identify opportunities that can benefit patients and improve the quality of care delivered. The gender clinicians I have spoken with have admitted that they do not follow the World Professional Association of Transgender Health standards of care because they are viewed to be needlessly restrictive. It is GCCAN's position to oppose

criminalization of gender affirmative care, but it is evident that gender clinicians treating adolescents are not abiding by the existing standards of care and that they are not self-regulating. Individuals are in a difficult position to be made whole when injured as it is common for transgender patients to rationalize or forgive poor treatment lest they lose access to their providers altogether. The reticence of gender clinicians to avoid harming their patients has created a vacuum for legislators to address.

I wish I could persuade other boys who wish to become women that the changes they seek are only superficial. Hormones and surgery are unable to reveal an authentic self, and anyone who promises otherwise is, in my opinion, deliberately misleading young people to follow a one-way track to a lifetime of medicalization. Although some people may choose to transition, and may even enjoy a higher quality of life, there is no reason why this irreversible decision needs to be made in adolescence. Adults who advocate for adolescent transition do so without understanding what tradeoffs early transition entails, which includes the loss of fertility, the likelihood of sexual dysfunction, and the likelihood of surgical complication inflicted at an early age from elective procedures. Unfortunately, I do understand some of these tradeoffs. While I would not want to see well-meaning family doctors prosecuted for trying to help a dysphoric child, until such a time as there is clear evidence that adolescent transition is likely to help, adolescent gender affirming care should be heavily scrutinized.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed on April 26, 2022.

Corinna Cohn

EXHIBIT 147

What I wish I'd known when I was 19 and had sex reassignment surgery

Corinna Cohn

Corinna Cohn, a software developer in Indianapolis, is an officer in the Gender Care Consumer Advocacy Network.

When I was 19, I had surgery for sex reassignment, or what is now called gender affirmation surgery. The callow young man who was obsessed with transitioning to womanhood could not have imagined reaching middle age. But now I'm closer to 50, keeping a watchful eye on my 401(k), and dieting and exercising in the hope that I'll have a healthy retirement.

In terms of my priorities and interests today, that younger incarnation of myself might as well have been a different person — yet that was the person who committed me to a lifetime set apart from my peers.

There is much debate today about transgender treatment, especially for young people. Others might feel differently about their choices, but I know now that I wasn't old enough to make that decision. Given the strong cultural forces today casting a benign light on these matters, I thought it might be helpful for young people, and their parents, to hear what I wish I had known.

I once believed that I would be more successful finding love as a woman than as a man, but in truth, few straight men are interested in having a physical relationship with a person who was born the same sex as them. In high school, when I experienced crushes on my male classmates, I believed that the only way those feelings could be requited was if I altered my body.

It turned out that several of those crushes were also gay. If I had confessed my interest, what might have developed? Alas, the rampant homophobia in my school during the AIDS crisis smothered any such notions. Today, I have resigned myself to never finding a partner. That's tough to admit, but it's the healthiest thing I can do.

As a teenager, I was repelled by the thought of having biological children, but in my vision of the adult future, I imagined marrying a man and adopting a child. It was easy to sacrifice my ability to reproduce in pursuit of fulfilling my dream. Years later, I was surprised by the pangs I felt as my friends and younger sister started families of their own.

The sacrifices I made seemed irrelevant to the teenager I was: someone with gender dysphoria, yes, but also anxiety and depression. The most severe cause of dread came from my own body. I was not prepared for puberty, nor for the strong sexual drive typical for my age and sex.

Surgery unshackled me from my body's urges, but the destruction of my gonads introduced a different type of bondage. From the day of my surgery, I became a

medical patient and will remain one for the rest of my life. I must choose between the risks of taking exogenous estrogen, which include venous thromboembolism and stroke, or the risks of taking nothing, which includes degeneration of bone health. In either case, my risk of dementia is higher, a side effect of eschewing testosterone.

What was I seeking for my sacrifice? A feeling of wholeness and perfection. I was still a virgin when I went in for surgery. I mistakenly believed that this made my choice more serious and authentic. I chose an irreversible change before I'd even begun to understand my sexuality. The surgeon deemed my operation a good outcome, but intercourse never became pleasurable. When I tell friends, they're saddened by the loss, but it's abstract to me — I cannot grieve the absence of a thing I've never had.

Where were my parents in all this? They were aware of what I was doing, but by that point, I had pushed them out of my life. I didn't need parents questioning me or establishing realistic expectations — especially when I found all I needed online. In the early 1990s, something called Internet Relay Chat, a rudimentary online forum, allowed me to meet like-minded strangers who offered an inexhaustible source of validation and acceptance.

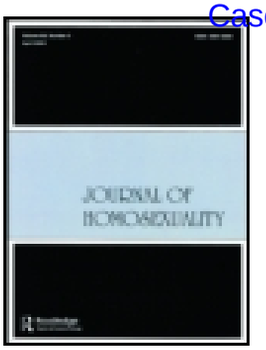
I shudder to think of how distorting today's social media is for confused teenagers. I'm also alarmed by how readily authority figures facilitate transition. I had to persuade two therapists, an endocrinologist and a surgeon to give me what I wanted. None of them were under crushing professional pressure, as they now would be, to "affirm" my choice.

I may well have transitioned even after waiting a few years. If I hadn't transitioned, I likely would have suffered from the world in other ways. In other words, I'm still working out how much regret to feel, but I'm comfortable with the ambiguity.

What advice would I pass on to young people seeking transition? Learning to fit in your body is a common struggle. Fad diets, body-shaping clothing and cosmetic surgery are all signs that countless millions of people at some point have a hard time accepting their own reflection. The prospect of sex can be intimidating. But sex is essential in healthy relationships. Give it a chance before permanently altering your body.

Most of all, slow down. You may yet decide to make the change. But if you explore the world by inhabiting your body as it is, perhaps you'll find that you love it more than you thought possible.

EXHIBIT 148



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Detransition-Related Needs and Support: A Cross-Sectional Online Survey

Elie Vandenbussche

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Detransition-Related Needs and Support: A Cross-Sectional Online Survey

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ABSTRACT

The aim of this study is to analyze the specific needs of detransitioners from online detrans communities and discover to what extent they are being met. For this purpose, a cross-sectional online survey was conducted and gathered a sample of 237 male and female detransitioners. The results showed important psychological needs in relation to gender dysphoria, comorbid conditions, feelings of regret and internalized homophobic and sexist prejudices. It was also found that many detransitioners need medical support notably in relation to stopping/changing hormone therapy, surgery/treatment complications and reversal interventions. Additionally, the results indicated the need for hearing about other detransitioners' experiences and meeting each other. A major lack of support was reported by the respondents overall, with a lot of negative experiences coming from medical and mental health systems and from the LGBT+ community. The study highlights the importance of increasing awareness and support given to detransitioners.

KEYWORDS

Detransition; gender dysphoria; gender identity; cross-sex hormones; detransitioners; transgender; transition; support

Introduction

In recent years, there has been an increasing interest in the phenomenon of detransition. Many testimonies have been shared by self-identified detransitioners online and detrans communities have formed on social media. This phenomenon started to attract the attention of scholars, who have emphasized the need for research into the specific needs of this group (e.g., Butler & Hutchinson, 2020; Entwistle, 2020; Hildebrand-Chupp, 2020). A few case studies have been conducted in order to explore individual experiences of detransition (Pazos-Guerra et al., 2020; Turban & Keuroghlian, 2018). The latter studies highlighted the complexity of detransition experiences but did not provide sufficient data to assess the general needs and characteristics of detransitioners. The current study aims to explore this issue in more depth and to serve as a basis for future research on the phenomenon of detransition.

To date there has been little agreement on a definition of the word "detransition." As explained by Expósito-Campos (2021), this term has been used interchangeably to refer to what he perceives to be two distinctive situations: in

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the first, the detransitioning individual stops identifying as transgender; in the second, they do not. It is therefore necessary here to clarify exactly what is meant when writing about detransition.

In this paper, I will be using the following concepts: "medical detransition," "social detransition" and (male or female) "detransitioner." Medical detransition refers to the process of ceasing/reversing the medical aspects of one's medical transition. This might include stopping or changing hormone therapy and undergoing reversal surgeries, among others. Likewise, social detransition refers to the process of changing/undoing the social aspects of one's social transition. For example, it might include presenting oneself as one's birth sex again, changing one's post-transition name or going back to using the pronouns associated with one's birth sex.

The term "detransitioner" will be used here to refer to someone who possibly underwent some of these medical and/or social detransition steps and, more importantly, who identifies as a detransitioner. It is important to add this dimension, because the act of medical/social detransition can be performed by individuals who did not cease to identify as transgender and who do not identify as detransitioners or as members of the detrans community. Furthermore, some individuals might identify as detransitioners after having ceased to identify as trans, while not being in a position to medically or socially detransition due to medical or social concerns. As Hildebrand-Chupp (2020) puts it: "[B]ecoming a detransitioner involves a fundamental shift in one's subjective understanding of oneself, an understanding that is constructed within these communities." (p.802). More qualitative research should be conducted in order to better understand how members of the detrans community define themselves and make sense of their own detransition process. However, this goes beyond the scope of this study.

The creation of support and advocacy groups for detransitioners in recent years (e.g., DetransCanada, n.d., Detrans Voices, n.d., The Detransition Advocacy Network, n.d., Post Trans, n.d.) testifies to the formation of a detrans community whose members have specific needs. Scholars and clinicians have recently started raising concerns around the topic (e.g., Butler & Hutchinson, 2020; Entwistle, 2020; Hildebrand-Chupp, 2020; Marchiano, 2020). However, little research has been done specifically into the characteristics of this seemingly growing community.

Two informal surveys conducted by detransitioners (Hailey, 2017; Stella, 2016) have explored the demographics and (de)transition experiences of members of online female detrans communities. These will constitute interesting points of comparison in the discussion section of the current research.

The purpose of this exploratory study is to offer an overview of the current needs of detransitioners from online detrans communities, which will hopefully serve as a useful basis for further experimental studies around the topic of detransition. The current research primarily seeks to address the following

questions: What are the current needs of detransitioners? What support is given to detransitioners in order to fulfil these needs?

Methods

Procedure

A cross-sectional survey was conducted, using online social media to recruit detransitioners. Access to the questionnaire was open from the 16th of November until the 22nd of December 2019. Any detransitioner of any age or nationality was invited to take part in the study. The survey was shared by Post Trans (www.post-trans.com)—a platform for female detransitioners—via public posts on Facebook, Instagram and Twitter. Participants were also recruited through private Facebook groups and a Reddit forum for detransitioners (r/detrans). Some of the latter platforms were addressed exclusively to female detransitioners. The purpose of the study was presented as gaining a better understanding of detransitioners' current needs. Potential participants were asked to fill out the form and share it to fellow detransitioners. All participants have been fully anonymized.

Everyone who answered "yes" to the question "Did you transition medically and/or socially and then stopped?" was selected in the study. The individual questionnaires of the 9 respondents who answered "no" to this question were looked at closely, in order to assess whether they should be included in the study. Eight of them were added to the final sample, as their other answers indicated that their experiences lead them to identify as detransitioners.

This research was approved by the Ethics Committee for Noninvasive Research on Humans in the Faculty of Society and Economics of the Rhine-Waal University of Applied Sciences

Questionnaire design

The questionnaire consisted of 24 questions (see Appendix). The first series of questions was aimed at defining the profile of the respondent (age, sex, country, etc.), the second was asking about relevant aspects of transition and detransition experiences (transition type, gender dysphoria, therapy, medical interventions, reasons for detransitioning etc.), and the third focused on the needs encountered as well as the support (or lack of) received during the process of detransition (medical, psychological, legal and social needs and support).

Most of the items were multiple-choice questions. The conception of the multiple choices was based on observations drawn from several detransition online resources and forums. An open "other" category was available when relevant for the respondents to write in possibly lacking options. The survey

was designed to leave a lot of free space to add answers, since the detransition population is still very much under-researched and there is a lot to learn from each of its members. This is why a more qualitative approach was taken for the last question notably, leaving an open field for adding comments about the support—or lack of—received while detransitioning. This qualitative data was analyzed through the identification of recurrent themes, which will be presented in the results section.

Participants

A total of 237 participants were included in the final sample. The large majority was female; 217 female (92%) for 20 male respondents (8%). This was determined based on the answers to the question: "What sex were you assigned at birth?" The average age was 25.02 years (SD = 7.72), ranging from 13 to 64. The mean age of female detransitioners (M = 24.38; SD = 6.86) was lower than that of male detransitioners (M = 31.95; SD = 12.26).

Around half of the sample (51%) reported coming from the United States and close to a third from Europe (32%). Fifteen respondents are from Canada (6%), twelve from Australia (5%), and one from each of the following countries: Brazil, Kazakhstan, Mexico, Russia and South Africa.

Close to two thirds (65%) transitioned both socially and medically; 31% only socially. A few respondents rightly criticized the fact that the option of medically transitioning only was not available in the questionnaire. The absence of this option needs to be kept in mind when looking at the results.

Around half (51%) of the respondents started socially transitioning before the age of 18, and a quarter (25%) started medically transitioning before that age as well. The average age of social transition was 17.96 years (17.42 for females; 23,63 for males) (SD = 5.03) and that of medical transition was 20.70 years (20.09 for females; 26.19 for males) (SD = 5.36). Fourteen percent of the participants detransitioned before turning 18. The average age of detransition was 22.88 years (22.22 for females; 30.00 for males) (SD = 6.46). The average duration of transition of the respondents (including both social and medical transition) was 4.71 years (4.55 for females; 6.37 for males) (SD = 3.55).

Eighty percent of the male detransitioners underwent hormone therapy, compared to 62% for female detransitioners. Out of the respondents who medically transitioned, 46% underwent gender affirming surgeries.

Results

For sake of clarity, the results will be presented based on the three categories mentioned above in the methods section: profile of the respondents, relevant aspects of transition and detransition and, finally, detransition-related needs and support. The qualitative results will be displayed at the end of this section.

Profile of the respondents

Most of the information related to the profile of the respondents can be found in the methods section. The sample showed a high prevalence of comorbidities, considering that over half of the participants (54%) reported having had at least 3 diagnosed comorbid conditions (out of the 11 conditions listed in the survey—see Table 1). The most prevalent diagnosed comorbid conditions are depressive disorders (69%) and anxiety disorders (63%), including PTSD (33%) (see Table 1).

Relevant aspects of transition and detransition

A great majority of the sample (84%) reported having experienced both social and body dysphoria. (Social dysphoria being defined as a strong desire to be seen and treated as being of a different gender, and body dysphoria as a strong desire to have sex characteristics of the opposite sex/rejection of your own sex). Eight percent reported having experienced only body dysphoria, 6% only social dysphoria and 2% neither of them.

Forty-five percent of the whole sample reported not feeling properly informed about the health implications of the accessed treatments and interventions before undergoing them. A third (33%) answered that they felt partly informed, 18% reported feeling properly informed and 5% were not sure.

The most common reported reason for detransitioning was realized that my gender dysphoria was related to other issues (70%). The second one was health concerns (62%), followed by transition did not help my dysphoria (50%), found alternatives to deal with my dysphoria (45%), unhappy with the social changes (44%), and change in political views (43%). At the very bottom of the list are: lack of support from social surroundings (13%), financial concerns (12%) and discrimination (10%) (see Figure 1).

34 participants (14%) added a variety of other reasons such as absence or desistance of gender dysphoria, fear of surgery, mental health concerns related

Table 1. Number of participants with comorbid conditions.

Comorbid condition	Diagnosed	Suspected
Depressive disorder	163 (70%)	32 (14%)
Anxiety disorder	149 (63%)	43 (18%)
Post-traumatic stress disorder	79 (33%)	63 (27%)
Attention deficit disorder	57 (24%)	50 (21%)
Autism spectrum condition	47 (20%)	61 (26%)
Eating disorder	46 (19%)	58 (25%)
Personality disorder	40 (17%)	26 (11%)
Obsessive compulsive disorder	35 (15%)	44 (19%)
Polycystic ovary syndrome (only females)	22 (10%)	13 (6%)
Dissociative identity disorder	14 (6%)	23 (10%)
Schizo-spectrum disorder	5 (2%)	9 (4%)

"Diagnosed" and "Suspected" were mutually exclusive categories.

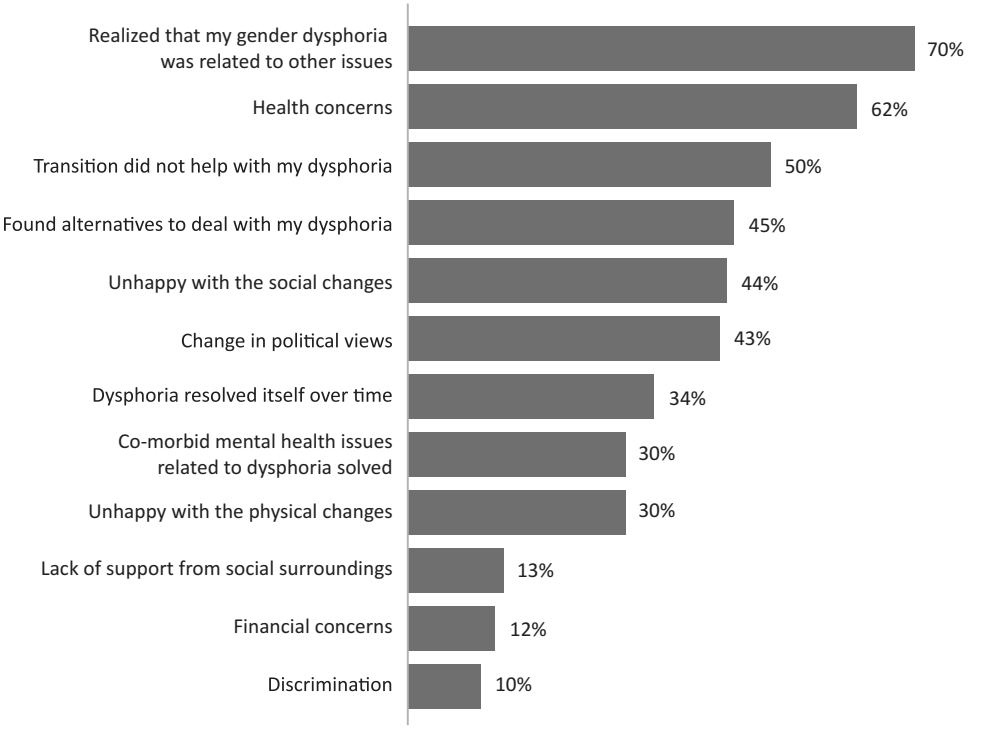

Figure 1. Reasons for detransitioning.

to treatment, shift in gender identity, lack of medical support, dangerosity of being trans, acceptance of homosexuality and gender non-conformity, realization of being pressured to transition by social surroundings, fear of surgery complications, worsening of gender dysphoria, discovery of radical feminism, changes in religious beliefs, need to reassess one's decision to transition, and realization of the impossibility of changing sex.

Detransition-related needs and support

The different types of needs were divided into four categories in the questionnaire: medical, psychological, legal and social needs.

Medical needs

The most commonly chosen answer was the need for receiving accurate information on stopping/changing hormonal treatment (49%), followed by receiving help for complications related to surgeries or hormonal treatment (24%) and receiving information and access to reversal surgeries/procedures (15%). Forty-six percent of the participants reported not having any detransition-related medical need. Sixteen respondents (7%) added another non-listed answer, such as tests to determine current reproductive health, information

about long-term effects of hormone therapy, about the health consequences of having had a full hysterectomy and about pain related to chest binding.

Psychological needs

Psychological needs appeared to be the most prevalent of all, with only 4% of the respondents reporting not having any. The answers working on comorbid mental issues related to gender dysphoria and learning to cope with gender dysphoria; finding alternatives to medical transition are at the top of the list, both with 65%. Below that, learning to cope with feelings of regret (60%), followed by learning to cope with the new physical and/or social changes related to detransitioning (53%) and learning to cope with internalized homophobia (52%). Thirty-four respondents (14%) added another non-listed answer, such as trauma therapy, learning how to deal with shame and internalized misogyny, how to cope with rejection from the LGBT and trans communities and how to deal with the aftermath of leaving a manipulative group. Other answers disclosed the need for help recovering from addictive sexual behavior related to gender dysphoria, psychosexual counseling and peer support.

Legal needs

More than half of the sample (55%) reported not having any detransition-related legal need. The main legal need expressed was changing back legal gender/sex marker and/or name (40%), followed by legal advice and support to take legal action over medical malpractice (13%). Five respondents (2%) added another non-listed answer, such as employment legal aid and support to take legal action for having been forced to go through a sterilization.

Social needs

The big majority of the respondents reported a need for hearing about other detransition stories (87%). The second most common answer was getting in contact with other detransitioners (76%), followed by receiving support to come out and deal with negative reactions (57%). Thirty-three respondents (14%) added another non-listed answer such as being accepted as female while looking male, help navigating social changes at the workplace, building a new social network, more representation of butch lesbians, real life support and finding a community.

When looking at from whom the respondents received support while transitioning and detransitioning, it appears that the biggest source of help comes from online groups/forums/social media for both transition and detransition (65%). The support received from friends, partner(s) and family is a little higher for detransition (64%) than for transition (56%).

Only 8% of the respondents reported having received help from an LGBT+ organization while detransitioning, compared to 35% while transitioning.

Similarly, 5% reported having received help from a trans-specific organization while detransitioning, compared to 17% while transitioning.

A total of 29% reported having received support for their detransition from the medical professionals that helped them during their transition. In contrast, 38% sought support from a new therapist/doctor. A part of the sample reported not receiving help from anybody for transitioning (8%) and for detransitioning (11%) (see Figure 2).

Around half of the respondents (51%) reported having the feeling of not having been supported enough throughout their detransition, 31% said they did not know and 18% answered that they had received enough support.

Qualitative results

Two open-ended questions allowed participants to write more extensively about their needs and support in the questionnaire. The first one enabled the respondents to write about any additional need that they encountered while detransitioning, while the second asked about the support—or lack of—that they had received.

Additional comments about needs

Thirty-seven participants (16%) left various comments about specific needs that they experienced during their transition and detransition.

Several respondents expressed the need for different types of therapy and counseling for dealing with issues of dissociation, childhood sexual trauma, anorexia, relationship issues and body issues caused by irreversible gender affirming surgeries. A participant also mentioned the importance of help revolving around suicide prevention for those who need it.

Additionally, someone emphasized the need for therapists to validate the feelings of being harmed by transition that some detransitioners experience, rather than dismissing or opposing them. Similarly, another respondent expressed the need for non-judgmental medical practitioners. Someone else described the need for as much medical autonomy as possible and a total freedom from psychology and psychiatry. A participant also explained that she would have needed to know the health risks of chest binding before experiencing them.

Furthermore, two respondents highlighted the need to look into individual experiences and needs without forcing them into a rigid model of transition. Others wrote about the need for more information about detransition and a better general understanding of this phenomenon.

Lastly, a few female detransitioners expressed the need for being valued as a woman, for learning about feminist theories and for more gender-nonconforming role models.

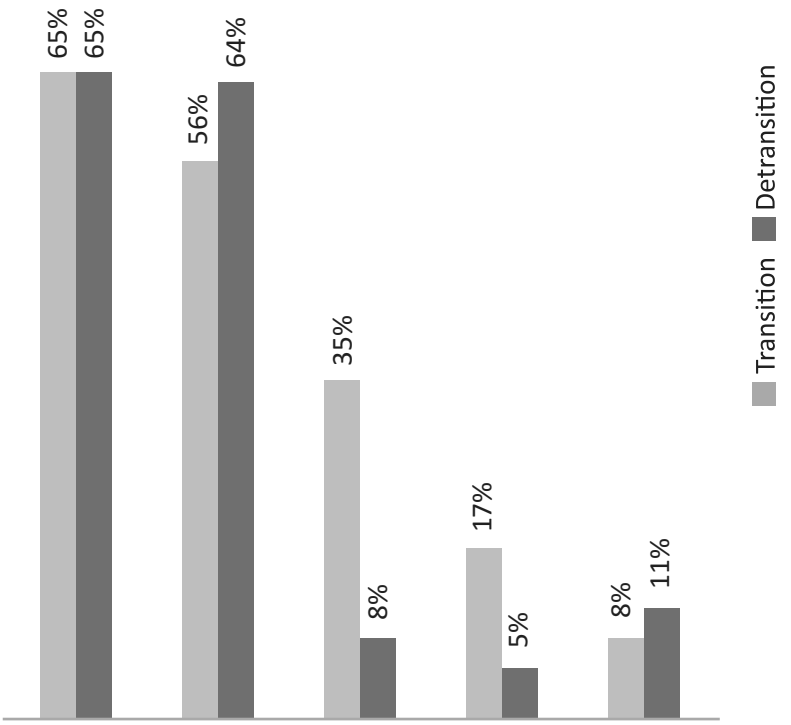

Figure 2. Comparison between transition and detransition support.

Additional comments about support

At the end of the questionnaire, a second open-ended question invited the participants to give further comments about the support—or lack of—that they had received during their detransition process.

A third of the participants (34%) answered this question, often with long and detailed accounts of their personal experiences with regard to this aspect. The most common themes identified were: loss of support from the LGBT community and friends (see Table 2), negative experiences with medical professionals (see Table 3), difficulty to find a detrans-friendly therapist and lack of offered alternatives to transitioning (see Table 4), as well as isolation and lack of overall support. Some gave more positive accounts of the support that they had received from their family, partners and friends and emphasized their important role.

A recurrent theme in the answers was a sense amongst respondents that it was very difficult to talk about detransition within LGBT+ spaces and with trans friends. Many expressed a feeling of rejection and loss of support in relation to their decision to detransition, which lead them to step away from LGBT+ groups and communities (see Table 2).

Whilst a minority reported positive experiences with medical professionals during their detransition, most participants expressed strong difficulties finding the help that they needed during their detransition process. Participants' own descriptions of the nature of these difficulties can be found in Table 3.

Another reported issue was the difficulty of finding a therapist willing and able to look at the factors behind gender dysphoria and to offer alternatives to transitioning. Some respondents highlighted the fact that they were

Table 2. Extracts about experiences of exclusion from LGBT+ communities.

"The LGBT+ community doesn't support detransitioners and I lost all LGBT+ friends I had because they deemed me transphobic/terfy, only non-LGBT+ friends supported me."
"Where I live detransitioners are seen bad for most of the LGBT community, so it's hard to talk about it with freedom."
"It is unacceptable that, at least in my experience, detransition is not something allowed to be talked about in LGBT spaces."
"Only lesbians and feminists helped me. The trans and queer community demonized me and ostracized me for my reidentification."
"I lost a lot of support and attracted a lot of hostility from trans people when I detransitioned socially. I also deal with a lot of people assuming that my dysphoria is gone entirely/cured because I have detransitioned socially, and decided not to go through with medical transition."
"Lgbt organizations don't want to talk about detransition. I did not feel welcome at lgbt events after I detransitioned."
"Telling my trans friends that I'm desisting is nearly impossible. The community is too toxic to allow any kind of discussion about alternatives to transition, sources of dysphoria beyond 'that's just who you are', or stories about detransitioners."
"I've been shunned by most of my trans identifying friends. I had to leave my old doctor, therapist and LGBT group out of shame and embarrassment."
"I have several de-trans friends whom had permanent body alterations they regretted that led to more dysphoria and eventually their suicides. Biggest factors were a lack of medical support and outright rejection from LGBT organisations/communities."
"I still have transgender friends who don't want me to talk about detransition. They're okay with me being detransitioned, but they don't want me to criticize transition or discuss the negative side effects of HRT."

Table 3. Extracts about negative medical experiences during detransition.

"I needed gender and transition experienced providers to assist with my medical detransition, but none of them seemed to understand or provide the type of care I needed, despite my self-advocacy. I got better care from providers outside of the LGBT and transgender specialty clinics."
"I still struggle to find a doctor who has knowledge of detransition and the effects HRT had on me/my best course of action since stopping."
"When I first brought up wanting to stop T to my doctor, they were very dismissive and condescending about it."
"My experience with transition left me with greatly diminished faith in medicine and zero faith in the mental health profession. I now avoid all doctors most of the time (unless I am convinced they are the only way to access a strongly evidence-based treatment or diagnostic tool for a condition which causes more suffering than doctors themselves- many do not) and totally avoid any contact with mental health professionals, and am much better off for it."
"As soon as I 'detransed' I was discharged from all gender services, despite asking for help in dealing with sex dysphoria should it arise again."
"I had no medical help from the doctor who prescribed me T, she wanted nothing to do with me."
"The team that transitioned you is not willing to help you detransition. You need new doctors."
"The medical team that helped me transition is helpful, but they are also causing a lot of hassle, which is very frustrating for me. Like for example they keep me stuck with my male sex marker for I don't know how long, and they don't believe I'm sure enough that I want to detransition, because they think I should have consistent 'reverse dysphoria' and mine kinda isn't so consistent."
"My hormone blocker implant is several years old and is only barely still functioning but they will not remove it. It's in my arm and I have no contact with the doctor because he shut down his business apparently."

Table 4. Extracts about the difficulty of finding a detrans-friendly therapist.

"It is very hard to find a therapist who won't tell you it's 'internalized transphobia' or that dealing with dysphoria in other ways is 'conversion therapy'."
"The only thing that comes to mind is one of the therapists I had, who pushed me not to detransition."
"Therapists are unprepared to handle the detrans narrative and some that I have seen since detransitioning have pushed the trans narrative. Some therapists couldn't tell the difference between being transgender and having internalized misogyny and homophobia."
"I could have benefitted from counseling but don't trust psychologists ideological bias."
"I struggled to find a therapist who supported questioning my trans identity and considering alternatives to transitioning; most only knew how to encourage transitioning and reinforced the harmful ideas that led to my wrongly identifying as FtM in the first place."
"I was doubtful that transition would help my dysphoria before beginning and was assured by multiple professionals that transition was The Solution and proven to work for everyone with dysphoria. A 'gender specialist' therapist flat-out told me that transitioning was the only method of reducing dysphoria that worked when I expressed my desperation for an alternate solution."
"The gender clinic I went to basically told me that the only way to deal with gender dysphoria was transitioning even when I told them I wanted to detransition."
"I struggled to find a therapist who supported questioning my trans identity and considering alternatives to transitioning; most only knew how to encourage transitioning and reinforced the harmful ideas that led to my wrongly identifying as FtM in the first place."
"The biggest issue for me was that when I did try to get support from a therapist or psychologist on entangling the actual reasons behind my dysphoria and how to deal with it, and deal with detransitioning, nobody had any clue or any experience, so they couldn't help me. Which made me even feel more lonely, and made detransitioning so much harder mentally than transitioning was."

cautious regarding the possible ideological bias or lack of knowledge of therapists.

Overall, most respondents explained that their detransition was a very isolating experience, during which they did not receive enough support. However, some participants emphasized the fact that the support that they received from their family, partners and friends, as well as online detrans groups and lesbian and feminist communities was extremely important and valuable to them.

Discussion

The present study was designed to better understand the needs of detransitioners, as well as the support—or lack of—that they are currently receiving. In order to do so, members of online detrans communities were recruited to answer a survey, in which questions were asked about their demographics, their transition and detransition experiences and the needs that they faced as well as the support that they received while detransitioning. In this section, I will discuss the results in relation to the main research question of the current study: What are the needs of detransitioners?

The sample surveyed appeared to be mostly female, young, from Western countries, with an experience of both social and medical transition and a high prevalence of certain comorbid conditions. The current study found that most detransitioners stopped transitioning before their mid-twenties, after an average of 4 years of transition. This observation is consistent with that made by Stella (2016) in her informal study on female detransitioners. The average transition age of the 203 respondents of her survey was 17.09 years, compared to 17.42 years in female detransitioners of the current study. The average detransition age of her sample was 21.09 years, compared to 22.22 years here.

Another finding of the current study was that a majority of the sample underwent hormone therapy (62% for females; 80% for males) and 45% of those who medically transitioned underwent gender affirming surgeries. This is likely to have implications in terms of the medical needs faced by this population. Close to half of the sample (49%) reported a need for receiving accurate information on stopping or changing hormone therapy, and almost a quarter (24%) reported the need for receiving help for complications related to surgeries or hormone therapy. The latter finding is concerning when looking at the negative medical experiences described by respondents in Table 3. Participants recounted situations in which their doctors either did not believe them, did not listen to them, refused them services, or simply did not have the required knowledge to help them during their detransition process. These experiences had a negative impact on some of the participants' trust in healthcare providers.

Similarly, the current study suggested that detransitioners have important psychological needs. This was made visible on the one hand through the fact that a majority of respondents (65%) reported the need for help in working on comorbid mental conditions related to gender dysphoria and in finding alternatives to medical transition. Other needs were reported by a majority of participants, such as learning to cope with feelings of regret (60%), learning to cope with the new physical and/or social changes related to detransitioning (53%) and learning to cope with internalized homophobia (52%). On the other hand, the high prevalence of comorbid conditions described in Table 1 might also be an indicator of important psychological needs. These results are similar

to that found by Hailey (2017) in her informal survey of comorbid mental health in detransitioned females. In her study, 77% reported a diagnosis of a depressive disorder (compared to 70% here), 74% of the sample reported a diagnosis of an anxiety disorder (compared to 63% here), 32% reported a diagnosis of PTSD (compared to 33% here) and 22% reported a diagnosis of an eating disorder (compared to 19% here). This is also very concerning information considering the descriptions made by detransitioners about the difficulty of finding a therapist willing or able to help them, and of finding alternative ways to deal with gender dysphoria after detransitioning (see Table 4).

The majority (84%) of the respondents reported having experienced both body and social gender dysphoria. Half of the sample (50%) later reported having decided to detransition due to the fact that their transition did not alleviate their gender dysphoria. Others (45%) reported having found alternative ways to deal with their gender dysphoria (see Figure 1). These results highlight the necessity to start looking into alternative solutions for treating gender dysphoria, in order to help those who did not find medical and/or social transition fulfilling.

In addition to that, 70% of the sample reported having realized that their gender dysphoria was related to other issues. Further research should be conducted in order to identify the ways in which other issues such as comorbid mental health conditions, trauma or internalized misogyny and homophobia possibly interact with gender dysphoria, and what can be done to alleviate them.

Furthermore, the high prevalence of autism spectrum condition (ASC) (20%) found in detransitioners in the current study, which is supported by Hailey (2017) findings (15%), also constitutes an interesting avenue for future research. Previous studies have provided evidence suggesting a co-occurrence of gender dysphoria and ASC (e.g., De Vries, Noens, Cohen-Kettenis, Van Berckelaer- Onnes, & Doreleijers, 2010; Glidden, Bouman, Jones, & Arcelus, 2016; VanderLaan et al., 2014; Van Der Miesen, Hurley, & De Vries, 2016; Zucker et al., 2017), which might explain the high number of detransitioners with an ASC diagnosis found in the current study.

In general, support given to detransitioners seems to be very poor at the moment, considering the fact that only 18% of the participants in the current study reported having received enough support during their detransition.

Based on the results of the current study, it appears that detransitioning is often accompanied by a break with LGBT+ communities. Only 13% of the participants reported having received support from an LGBT+ or trans-specific organization while detransitioning, compared to 51% while transitioning (see Figure 2). In addition to that, many respondents described experiences of outright rejection from LGBT+ spaces due to their decision to detransition (see Table 2). Looking at studies showing the positive role

of peer support and trans community connectedness on the mental health of its members (Johnson & Rogers, 2019; Pflum, Testa, Balsam, Goldblum, & Bongar, 2015; Sherman, Clark, Robinson, Noorani, & Poteat, 2020), it seems reasonable to suspect that this loss of support experienced by detransitioners must have serious implications on their psychological well-being.

Fortunately, the current study shows that detransitioners have access to other sources of support, online (groups, forums, social media) and in their social surroundings (family, partners and friends) (see Figure 2). Online groups and websites for detransitioners seem to be particularly important in light of the social needs expressed by the respondents of the current study. An overwhelming majority of respondents reported the need for hearing about other detransition stories (87%) and for getting in contact with other detransitioners (76%). Detransitioners need platforms and spaces where they can connect with each other and build a community. This point is best illustrated by the following account of one participant: "I found the peer support I received through other detransitioned women to be totally adequate and feel I benefited substantially from learning how to exist without institutional validation."

Conclusion

The aim of the present research was to examine detransitioners' needs and support. The four categories of needs (psychological, medical, legal and social) that were created for sake of clarity in the survey were a simplification of the real complexity of the experiences made by detransitioners and they have their limitations. Nonetheless, these categories enabled the current study to uncover the fact that most detransitioners could benefit from some form of counseling and in particular when it comes to psychological support on matters such as gender dysphoria, comorbid conditions, feelings of regret, social/physical changes and internalized homophobic or sexist prejudices. Medical support was also found to be needed by many, in order to address concerns related to stopping/changing hormone therapy, surgery/treatment complications and access to reversal interventions. Furthermore, the current study has shown that detransitioners need spaces to hear about other detransition stories and to exchange with each other.

Unfortunately, the support that detransitioners are receiving in order to fulfill these needs appears to be very poor at the moment. Participants described strong difficulties with medical and mental health systems, as well as experiences of outright rejection from the LGBT+ community. Many respondents have expressed the wish to find alternative treatments to deal with their gender dysphoria but reported that it was impossible to talk about it within LGBT+ spaces and in the medical sphere.

These accounts are concerning and they show the urgency to increase awareness and reduce hostility around the topic of detransition among healthcare providers and members of the LGBT+ community in order to address the specific needs of detransitioners.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendix.

Full Questionnaire

(1) How old are you?
(2) What country are you living in?
(3) What sex were you assigned at birth?
- Female
- Male
- Other:

(4) How do you see yourself now? (Tick all that apply)
- Woman
- Man
- Trans man
- Trans woman
- Female detransitioner
- Male detransitioner
- Non binary
- Other:

(5) Did you transition socially and/or medically and then stopped?
- Yes, both
- Only socially
- No

(6) Did you experience body dysphoria and/or social dysphoria? (Body dysphoria = strong desire to have sex characteristics of the opposite sex/rejection of your own sex; Social dysphoria = strong desire to be seen and treated as being of a different gender)
- Yes, both
- Only body dysphoria
- Only social dysphoria
- No

(7) Who helped you starting your social/medical transition? (Tick all that apply)
- A medical team specialized in transition
- An LGBT+ organization
- A trans-specific organization
- A therapist/doctor
- Online groups/forums/social media
- Friends, partner(s) and family
- Nobody
- Other:

(8) If you transitioned medically, how long were you in therapy before getting any hormones or surgeries? (in months; write 0 if none)

(9) During your transition, did you undergo some of the following interventions/treatments? (Tick all that apply)
- Hormone blockers
- Feminizing hormone treatment
- Masculinizing hormone treatment
- Gender affirming surgery(ies)
- No

(10) Do you feel like you were properly informed about the health implications of these treatments/interventions before undergoing them?
- Yes
- Partly
- No
- I am not sure

(11) What were the reasons that made you stop transitioning/detransition? (Tick all that apply)
- Health concerns
- Change in political views
- Transition did not help with my dysphoria
- Lack of support from social surroundings
- Discrimination
- Financial concerns
- Dysphoria resolved itself over time
- Unhappy with the physical changes
- Unhappy with the social changes
- Comorbid mental health issues related to dysphoria solved
- Realized that my gender dysphoria was related to other issues
- Found alternatives to deal with dysphoria
- Other:

(12) Were you diagnosed with or do you suspect having any of the following conditions?

	Diagnosed	Suspected	No
Attention Deficit (Hyperactive) Disorder			
Autism Spectrum Condition			
Anxiety Disorders			
Depressive Disorders			
Dissociative Identity Disorder			
Eating Disorders			
Obsessive Compulsive Disorder			
Polycystic Ovary Syndrome			
Post Traumatic Stress Disorder			
Personality Disorders			
Schyzo-spectrum Disorder			

(13) If you transitioned socially, at what age did you start?
(14) If you transitioned medically, at what age did you start?
(15) At what age did you start detransitioning/stop transitioning?
(16) What are the medical needs that you had while detransitioning/stopping your transition? (Tick all that apply)
- Receiving accurate information on stopping/changing hormonal treatment
- Receiving information and access to reversal surgeries/procedures
- Receiving help for complications related to surgeries or hormonal treatment
- None
- Other:

(17) What are the psychological needs that you had while detransitioning/stopping your transition? (Tick all that apply)
- Learning to cope with gender dysphoria; finding alternatives to medical transition
- Learning to cope with the new physical and/or social changes related to detransitioning
- Learning to cope with feelings of regret
- Learning to cope with internalized homophobia
- Working on comorbid mental issues related to gender dysphoria
- None
- Other:

(18) What are the legal needs that you had while detransitioning/stopping your transition? (Tick all that apply)
- Changing back legal gender/sex marker and/or name
- Legal advice and support to take legal action over medical malpractice
- None
- Other:

(19) What are the social needs that you had while detransitioning/stopping your transition? (Tick all that apply)
- Getting in contact with other detransitioners
- Receiving support to come out and deal with negative reactions
- Hearing about other detransition stories
- None
- Other:

(20) Is there any other need that you would like to mention?

(21) Which of these needs did you get support for?

	Full support	Partly	Not at all	Not needed
Medical needs				
Psychological needs				
Legal needs				
Social needs				

(22) From whom? (Tick all that apply)
- The medical team that helped me transition
- An LGBT+ organization
- A trans specific organization
- The therapist/doctor who supported me through my transition
- A new therapist/doctor
- Online groups/forums/social media
- Friends, partner(s) and family
- Nobody
- Other:

(23) Do you feel like you have received enough support throughout your detransition process overall?
- Yes
- No
- I don't know

(24) If you have any comment concerning the support/lack of support you received during your detransition, you can write it here.

EXHIBIT 149

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ORIGINAL PAPER

Detransition and Desistance Among Previously Trans-Identified Young Adults

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Abstract
Persons who have renounced a prior transgender identification, often after some degree of social and medical transition, are increasingly visible. We recruited 78 US individuals ages 18–33 years who previously identified as transgender and had stopped identifying as transgender at least six months prior. On average, participants first identified as transgender at 17.1 years of age and had done so for 5.4 years at the time of their participation. Most (83%) participants had taken several steps toward social transition and 68% had taken at least one medical step. By retrospective reports, fewer than 17% of participants met DSM-5 diagnostic criteria for Gender Dysphoria in Childhood. In contrast, 53% of participants believed that "rapid-onset gender dysphoria" applied to them. Participants reported a high rate of psychiatric diagnoses, with many of these prior to trans-identification. Most participants ($N = 71$, 91%) were natal females. Females (43%) were more likely than males (0%) to be exclusively homosexual. Participants reported that their psychological health had improved dramatically since detransition/desistance, with marked decreases in self-harm and gender dysphoria and marked increases in flourishing. The most common reason given for initial trans-identification was confusing mental health issues or reactions to trauma for gender dysphoria. Reasons for detransition were more likely to reflect internal changes (e.g., the participants' own thought processes) than external pressures (e.g., pressure from family). Results suggest that, for some transgender individuals, detransition is both possible and beneficial.

Keywords Detransition · Desistance · Gender dysphoria · Transgender · Rapid-onset gender dysphoria · DSM-5

Introduction

Persons who have renounced a prior transgender identification have become increasingly visible during the past decade (Littman, 2021). Often these individuals have changed their minds after taking steps toward social and medical gender transition and may be referred to as "detransitioners." Detransitioner communities have emerged online (e.g., r/detrans, 2019, 2020); hundreds of detransitioner testimonies can be found on YouTube and other social media platforms, in online blogs, book chapters, and in published articles (Callahan, 2018; Entwistle, 2021; twitter.com/ftm-detransed and twitter.com/radfemjourney, 2019; YouTube, 2022); and detransitioners have organized to bring awareness to their experiences and advocate for their needs (e.g., Detrans Voices, 2022; Gender Care Consumer Advocacy Network, 2022; Pique Resilience Project, 2019; Post Trans, 2022). Detransition has received attention from prominent bloggers and journalists (4thwavenow, 2016; Anonymous, 2017; Boyce, 2021; Herzog, 2017; Tracey, 2020; upperhandMARS, 2020) and even from mainstream media (McCann, 2017; Smith, 2021). This publicity has been heightened by cases in which detransitioners appear to have received inadequate oversight before they were provided serious medical interventions, such as the lawsuit filed by Kiera Bell (Topping, 2020). Clinicians and researchers have documented a growing number of detransitioners seeking psychological and medical support (D'Angelo et al., 2021; Marchiano, 2020; Vandenbussche, 2022). Because of both controversy and recency regarding detransitioners, little is known about them (Valdes & MacKinnon, 2023).

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It is important to distinguish several terms common in both scientific literature and lay parlance, and to clarify how we use them. Gender dysphoria is discomfort with one's current gender (most often the same as one's sex at birth), regardless of the causes or manifestation of the discomfort. Transgender identification represents the commitment that one's "true gender" is not aligned with one's birth sex. Felt "true gender" may be opposite one's birth sex or some other gender (e.g., nonbinary). Gender transition includes both social and medical steps taken to align one's overall presentation with one's felt "true gender," typically after some period of transgender identification. Social steps can include changes in dress and appearance, name, and posture/movement. Medical steps can include cross-sex hormones and surgery. Detransition is the reversal of gender transition for any reason, although for many it includes abandonment of transgender identification. Detransition may be preceded or accompanied by the feeling that one regrets gender transition ("regrets"). Desistance refers to the waning of gender dysphoria prior to medical gender transition.

This article reports on a sample of young adults who had identified as transgender but changed their minds, most of whom had taken steps toward social and medical transition. We hoped to illuminate aspects of their gender dysphoria and gender transition, as well as their detransition and (for most) the resolution of their gender dysphoria. Before reporting our study, we provide some context in the scientific literature and the broader culture.

Controversies About Detransition and Desistance

At least three main issues have been especially controversial regarding detransition and desistance: their frequencies, the motivations of detransitioners and desisters, and the possibility that a recent phenomenon called rapid-onset gender dysphoria (ROGD; Littman, 2018) may disproportionately contribute to both phenomena. We review these controversies below, focusing on the limited empirical evidence.

Prevalence of Detransition and Regret

Advocates for gender transition have tended to assert that detransition is rare (e.g., Knox, 2019; Stonewall, 2019). Much of the published data used to estimate detransition prevalence come from studies of sex-reassignment-surgery outcomes. In general, these studies have found post-surgery regret to be low (Dhejne et al., 2011; Lawrence, 2003, 2006; Pfäfflin, 1993; van de Grift et al., 2017; Wiepjes et al., 2018). Similarly, one prospective study examined regret of hormonal treatment among 55 young transgender adults who had undertaken puberty suppression and then cross-sex hormones and found no evidence of regret (de Vries et al., 2014). However, a recent study found that approximately 30% of transgender adolescents and adults discontinued cross-sex hormone treatment within four years after commencing treatment (Roberts et al., 2022).

Research reviewed so far has focused on patients who were treated prior to the recent dramatic surge of gender dysphoria in the West that has occurred during the past 15–20 years (Aitken et al, 2015). This surge has been associated with changing demographics—especially an increase among adolescent females (Zucker, 2019). It is plausible that the recent and older cohorts differ in their detransition rates. To our knowledge, only two studies have explored the prevalence of detransition in recent clinical samples. The first study, a retrospective case-note review, identified a detransition rate of 6.9% from the 175 adult patients consecutively discharged from a national Gender Identity Clinic in the UK (Hall et al., 2021). The second study audited the data from 68 patients with a diagnosis of gender dysphoria from a primary care population in the UK. Of the 41 patients who began hormonal treatments, 20% stopped taking them, and 9.8% were categorized as detransitioning (Boyd et al., 2022).

Empirical problems preclude accurately estimating the prevalence of detransitioners outside of a few settings. Studies of transition regret have been small and have not used consistent outcome indices. Importantly, detransitioned patients are especially likely to be lost to follow-up.

Motivations for Detransition and Desistance

An important distinction is between "core" and "non-core" detransition (Exposito-Campos, 2021). In core detransition, an individual stops identifying as transgender due to an internal shift in how they conceive of themselves. In contrast, non-core detransition is not motivated by internal doubts, but by external stressors such as transgender-related discrimination, family pressure, and financial or health barriers to gender related medical treatments (e.g., hormone replacement therapy). Although all varieties of desistance and detransition warrant further attention, core detransition has been especially controversial. Individuals who mistakenly view themselves as transgender, or who decide they are no longer transgender, may be unnecessarily burdened with harmful consequences of irreversible hormonal and surgical interventions. This is especially concerning because the fastest growing subgroup of gender dysphoric individuals seeking medical treatment comprises adolescents and young adults (Aitken et al., 2015; Zucker & Aitken, 2019).

Three recent studies using convenience samples explored reasons for detransition. Littman (2021) recruited 100 individuals (69% natal females) who had medically or surgically detransitioned, regardless of current gender identification. The most common reason participants gave for detransition

(60% of participants) was that they had become more comfortable with their natal sex. Other reasons included: medical concerns (49%); the belief that gender dysphoria was an expression of other problems (e.g., trauma or mental illness; 39%); the belief that gender dysphoria was caused by participants' inability to accept their own homosexual feelings (23%); and the experience of discrimination as trans persons (23%). The majority (55%) believed they had been inadequately evaluated, medically or psychologically, before they transitioned.

A second study recruited male and female detransitioners using the question, "Did you transition medically and/or socially and then stopped?" (Vandenbussche, 2022). Of the 237 participants, 92% were natal females. Reasons endorsed for detransition overlapped considerably with those in Littman's (2021) study. For example, the most frequently endorsed reason for detransition was that gender dysphoria "was related to other issues" (70%), followed by "health concerns" (62%). Other common reasons included feeling that transition did not help (50%), finding other ways to deal with gender dysphoria (45%), disliking the social changes accompanying transition (44%), and experiencing a change in "political views" (43%). "Resolution of gender dysphoria" was endorsed by 15% of Littman's subjects and by 34% of Vandenbussche's. Only 10% of this sample endorsed "discrimination" as a reason for detransition.

The third study differed substantially in both method and results from the other two reviewed in this section. Turban et al. (2021) analyzed data from a survey of 27,715 "transgender and gender diverse" adults that included several questions about detransition. Participants were recruited "through community outreach organizations" for a survey advertised as being "for all trans people age 16 and up" (https://www.ustranssurvey.org). Thus, persons no longer identifying as transgender would be excluded. Instead, currently transgender persons were asked the following questions: "Have you ever de-transitioned? In other words, have you ever gone back to living as your sex assigned at birth, at least for a while?" This study also differed from the other two in finding among detransitioners a slight majority of natal males (55%) rather than a large majority of natal females. Finally, and in contrast to the other studies, participants categorized as having detransitioned overwhelmingly endorsed "external" (82.5%) rather than "internal" reasons (15.9%) for detransition. External factors included social pressure such as "pressure from family and societal stigma." Internal factors included "fluctuations in or uncertainty regarding gender identity."

Gender Dysphoria Typology and Detransition/Desistance

At least three types of gender dysphoria have been proposed in the clinical and research literature, although no taxonomy of gender dysphoria is universally accepted at present (Bailey & Blanchard, 2017; Zucker, 2019). Childhood-onset gender dysphoria occurs in both natal males and natal females. It typically begins early in childhood and is associated with both extreme childhood gender nonconformity and adult homosexuality. Autogynephilic gender dysphoria affects only males and is associated with autogynephilia, a natal male's sexual arousal by imitating females (especially by cross-dressing) or imagining himself as a female. Both childhood-onset gender dysphoria and autogynephilic gender dysphoria have been studied for several decades (Blanchard, 1989; Zucker, 2005; Zucker & Bradley, 1995).

In contrast, the third kind of gender dysphoria, ROGD, was unknown until recently (approximately the past decade) (Littman, 2018). Because ROGD is a new and controversial idea, there has been little empirical research on it. The limited research conducted so far (e.g., Diaz & Bailey, 2023a, b; Littman, 2018) is consistent with the following conceptualization: Adolescents and young adults without a childhood history of gender dysphoria and often with preexisting emotional problems come to believe that they have gender dysphoria. This belief typically progresses rapidly to adoption of transgender identity and the conviction that gender transition is urgent. ROGD is facilitated by social contagion, evidenced by the common occurrence of multiple affected youths in the same peer group. The syndrome appears to be especially common among natal females, who comprise approximately 75–80% of potential cases studied so far. ROGD may in some cases represent the confusion of underlying emotional and developmental difficulties as gender dysphoria. Finally, the surge of gender dysphoria cases during the past decade is plausibly due to ROGD, although this possibility is highly contentious (Ashley, 2020; French National Academy of Medicine, 2022; Shrier, 2020; WPATH, 2018).

The literature on treatment regret has focused on persons who likely experienced either childhood-onset or autogynephilic gender dysphoria. This is because these persons were treated before ROGD was noticed, and perhaps before ROGD existed at detectable levels. Thus, the generally positive results of these studies (i.e., low rates of regret) may not apply to those fitting the ROGD profile. Indeed, if ROGD is due to the misattribution of emotional and developmental difficulties to an underlying transgender status, these cases may have especially high rates of regret.

To study detransition/desistance across the different types of gender dysphoria, it is necessary to distinguish the different types accurately. Childhood-onset gender dysphoria is relatively easy to diagnose during childhood. After then, however, assessment relies on retrospective reports, which can be inaccurate for various reasons, including memory limitations and motivated distortion, especially exaggeration of childhood signs of gender dysphoria

(Lawrence, 2012; Littman, 2018). An additional complication is distinguishing between natal males with autogynephilic gender dysphoria and natal males whose gender dysphoria results from ROGD, as we have described it. To family members and friends, autogynephilic gender dysphoria may appear sudden, because the autogynephilic person has probably neither appeared gender nonconforming nor discussed sexual fantasies with them.

With these caveats in mind, childhood-onset gender dysphoria is supported to the extent that a gender dysphoric person provides consistent and persuasive evidence of extreme gender nonconformity during childhood. In these cases, childhood gender dysphoria is often but not always recalled. Autogynephilic gender dysphoria is indicated if a natal male admits being sexually aroused by cross-dressing or by the idea of having the body of a woman. ROGD is indicated for a natal female if childhood-onset gender dysphoria is absent, a rapid adolescent or young adult onset is evident. (The application of ROGD to natal males is more problematic, due to the possibility that males with apparently rapid onset have autogynephilia.) Additionally, evidence of social influences (e.g., experience with peers or social media advocating transgender identification) is more consistent with ROGD than either of the other two types.

The Present Study

The present research explores the retrospective experiences of an Internet-recruited sample of formerly trans-identifying young adults. The following domains were assessed: motivations for the decision to adopt transgender identity; the course of mental health, psychological well-being, and gender dysphoria before, during, and after transgender identification; experiences with medical and social transition; and motivations for relinquishing a transgender identity. We also included measures intended to illuminate the extent to which our detransitioners and desisters can be understood as having had childhood-onset, autogynephilic, or rapid-onset gender dysphoria.

Method

Participants

Using social media, Internet sites, and word of mouth, we recruited persons ages 18–33 who had previously identified as transgender for a duration of least six months, stopped identifying as transgender, and had not identified as transgender for at least six months. Participants were surveyed about their experiences before, during, and after transgender identification.

During the recruitment period, 78 individuals who met inclusion criteria completed online surveys. The following inclusion criteria were used: 18–33 years of age; residing in the USA; previous identification as transgender for at least 6 months; lack of current identification as transgender, with cessation of transgender identification at least six months prior to participation. "Transgender" was defined as including all gender identification that is not consistent with one's natal sex (including nonbinary, agender, enby, transgender, etc.). Ninety individuals were screened for eligibility with videoconference interviews, and five were ineligible. Three exclusions were due to transgender disidentification being too recent, one individual was not within the eligible age range, and another individual still identified as transgender. Eighty-five eligible individuals were provided with personalized one-time-use links to the online survey with assigned study identification numbers embedded into the surveys. The large majority (91.2%) of eligible individuals who received these links submitted responses.

Procedure

Recruitment information was shared by email and social media with requests that individuals share the information with any person or community where there may be eligible individuals. Efforts were made to reach communities with differing perspectives about gender dysphoria, desistance, transition, and detransition. We contacted various organizations, individuals, and forums including: Pique Resilience Project, subreddits r/detrans and r/actual detrans, multiple individuals who have detransitioned, several individuals who are transgender, psychologists, psychiatrists, and therapists who work with gender dysphoric individuals and/or detransitioned individuals (including professionals who have worked at gender identity-affirming clinics), professional listservs for researchers and clinicians, the LGBT centers of two large universities, journalists, and more. Recruitment was open from 3/5/20 to 8/19/20 for a total of 5.5 months. The purpose of the study was described in the recruitment information, and participation was voluntary. Electronic consent was obtained before participants could view the survey questions. Data were collected through the Qualtrics Survey Platform without IP addresses.

The study was initially launched as an anonymous online survey that included screening questions that ended the survey if participants provided answers that were inconsistent with eligibility. Shortly after recruitment began, individuals began posting tweets to invite other people to take the survey with the goal of creating invalid results. This was followed by multiple tweets of individuals boasting that they submitted fake responses to the survey. In response to

the sabotage attempts, the study was modified to increase the security by adding a videoconference screening interview and the use of personalized one-time-use links to the survey. The current study includes only participants who completed videoconference screening interviews.

Measures

A survey instrument including 114 questions was created with the input of 11 professionals (including both researchers and clinicians) and 3 detransitioners. In our description of the survey instrument below, we have prioritized general information about the content domains. More specific information about some measures is provided in the Results.

Demographics

Participants answered demographic questions about their age, natal sex, race/ethnicity, educational attainment, political beliefs, and religiosity.

Development and Onset

Participants recalled the ages when they began to identify as transgender and when this identification stopped. Duration of trans-identification was computed using these ages.

Eight items adapted from DSM-5 criteria (American Psychiatric Association, 2013) asked participants to recall symptoms of gender dysphoria experienced from age 3 through 11 years. Coefficient alpha for the composite scale was 0.81.

Participants were provided with a definition of rapid-onset gender dysphoria (Littman, 2018) and were asked whether the term fit their own experience. This item appeared as, "The term 'rapid-onset gender dysphoria' has been used to describe a situation where someone who did not have gender dysphoria during their childhood, appears to suddenly develop gender dysphoria during or after puberty. Does this description fit your experience?" Participants responded either "Yes," "Don't know," or "No." For some analyses reported herein, this response was made numeric (with "Don't know" considered intermediate between "Yes" and "No").

Several items inquired about experiences, thoughts, or feelings that happened over the course of three months prior to becoming gender dysphoric or trans-identified.

Several items asked about participants' sociopolitical attitudes. These included questions about the attitudes of participants' families, participants' current attitudes in general, and participants' attitudes about gay, lesbian, and transgender rights.

Sexuality

Sexual Orientation Sexual attraction to males versus females was assessed using the 7-point Kinsey scale with responses ranging from "exclusively sexually attracted to males" to "exclusively sexually attracted to females" (Kinsey et al., 1948). Numerically for the Kinsey scale, 0 represents exclusive other-sex attraction, 3 represents identical attraction to both sexes, 6 represents exclusive same-sex attraction, and 1, 2, 4, and 5 represent intermediate degrees of relative attraction to males and females. An additional option assessed absence of attraction to either cisgender males versus cisgender females. Participants were asked to rate their sexual attraction at three time points; before they identified as transgender, while they were identifying as transgender, and after they stopped identifying as transgender. In this paper, we restrict analyses to their most recent self-reported sexual orientation.

Autogynephilia/Autoandrophilia Three items intended to measure autogynephilia for natal males (Blanchard, 1989) or autoandrophilia for natal females were included. (Currently, autoandrophilia is neither well researched nor well supported.) Two items were the same for both natal sexes: "Did you ever experience sexual arousal by dressing as the other sex in private?" and "Did you ever experience sexual arousal when fantasizing that you had the body of the other sex?" The third item differed appropriately for natal males and females: "Did you ever feel sexually aroused by the idea of being a woman? [for natal males]" and "Did you ever feel sexually aroused by the idea of being a man? [for natal females]." Items were scored dichotomously and summed so that scores ranged from 0 to 3. Cronbach's alpha for the autogynephilia and autoandrophilia scales was 0.58 and 0.76, respectively.

Mental Health

Psychiatric Diagnoses Participants were asked to indicate which of 13 psychiatric diagnoses they were given over the course of their lifetime and which of these psychiatric diagnoses they received before they started to identify as transgender. Psychiatric diagnoses listed included anxiety, attention deficit hyperactivity disorder (ADHD), autism spectrum disorder, bipolar disorder, borderline personality disorder, depression, eating disorders, history of pulling out hair, obsessive compulsive disorder (OCD), post-traumatic stress disorder (PTSD), schizophrenia or psychosis, selective mutism, Tourette's, and "other." The diagnoses were chosen because we expected that some (e.g., "anxiety" and "depression") were especially likely to be elevated among gender dysphoric persons, and others (e.g., "schizophrenia or psychosis") were otherwise important to assess. Some of these

diagnoses, as listed (e.g., "schizophrenia or psychosis" and "anxiety"), did not strictly correspond with DSM-5 diagnoses (American Psychiatric Association, 2013).

Gender Dysphoria Participants answered six items reflecting DSM-5 criteria for gender dysphoria (American Psychiatric Association, 2013), both for the period they identified as transgender and for the period after they stopped identifying as transgender. Cronbach's alphas for these scales were 0.69 and 0.77, respectively. Additionally, a single item assessed recalled severity of gender dysphoria symptoms on an eight-point scale from, "0" (participants didn't notice or barely noticed any distress) to "7" (participants' stress was so severe that it strongly interfered with their ability to function in their daily life). Participants rated this item for three time periods: before identifying as transgender, during the period of transgender identification, and after transgender identification ceased. The gender dysphoria-related items were not intended to provide a formal diagnosis, and two requirements were not assessed: whether symptom duration had lasted for at least six months and whether individuals were distressed or impaired by their symptoms. Because of these omissions, our estimates for gender dysphoria diagnostic status represent upper bounds (i.e., the maximum number of participants who could have met the criteria).

Self-Harm Participants indicated whether they had engaged in self-harm (e.g., cutting, burning, or picking) for three periods: before, while, and after identifying as transgender.

Flourishing The Secure Flourishing Measure (VanderWeele, 2017) was used to assess participant recalled general well-being at two points in time: while transgender identified, and after transgender identification. This measure consists of 12 questions answered on a scale of 0–10. Higher scores indicate higher levels of well-being. Cronbach's alphas for the two time periods were 0.86 and 0.84, respectively.

Possible Psychosocial Influences

Several kinds of psychosocial experiences have been identified as potential causes of gender dysphoria, including the misinterpretation of psychological distress as gender dysphoria (Littman, 2018, 2021). These include negative life experiences during childhood and adolescence, peer influence, and Internet-related preoccupation.

Recalled Childhood and Adolescent Negative Experiences Recalled childhood and adolescent trauma was assessed using ten items from the Adverse Childhood Experiences (ACE) scale (Felitti et al., 1998). These items are answered dichotomously and concern a variety of negative life events potentially experienced in the family (primarily due to parental mistreatment) before age 18 years. Items were summed to create a composite score, and Cronbach's alpha for this scale was 0.73.

Recalled negative experiences prior to transgender identification were also assessed using 9 items (e.g., "Before you started to identify as transgender, did you experience bullying?"). With one exception ("Witnessing the abuse of a family member (including sibling, parent, cousin, etc.")), these items did not focus on within-family maltreatment. Items were summed to create a composite score, and Cronbach's alpha for this scale was 0.71.

Friendship Group Dynamics Several items asked about potential friendship group dynamics potentially relevant to the onset of transgender identification. For example, one item asked: "At the time you started to identify as transgender, did you belong to an online friend group or community where one or more friends became transgender-identified around the same time?".

Internet Usage The Problematic and Risky Internet Use Screening Scale (PRIUSS) (Jelenchick et al., 2014) is a 23-item scale that assesses excessive and emotionally unhealthy Internet usage. The scale was used to retrospectively assess problematic Internet usage for two time periods: during the first six months of transgender identification and the six months prior to the survey. This scale does not focus on the content of Internet preoccupations (e.g., transgender-related), only on problematic Internet behavior per se. Composites were formed by summing all items for the relevant time. Coefficient alpha for the earlier time was 0.95, and it was 0.93 for the more recent time.

Participants' Ratings of Psychosocial Influences Participants were asked to rate the importance of 39 potential psychosocial influences on their transgender identification on a scale from 1 (not at all important) to 5 (extremely important). We consider these questions individually in the Results.

Transition Experiences

Participants indicated which steps they had taken toward social and medical transition. Furthermore, participants who had used cross-sex hormones provided information about where they obtained them and their experiences of the informed consent process.

Detransition and Desistance

Participants indicated whether they felt most "authentic" before, during, or after transgender identification (or in more

than one of those periods). They also rated their likelihood of future transgender identification on a 5-point scale from "Extremely likely" to "Not at all likely."

Results

After exclusions, participants included 78 individuals: 71 natal females and 7 natal males. Although we were keenly interested in possible differences between natal females and males, the small number of males meant that statistical power to test for such differences was very low. Thus, below we indicate only when such tests were statistically significant.

Regarding where they learned of the study, 45% ($N=35$) of participants indicated the r/Detrans subreddit, 32% ($N=25$) some other social media source, 10% ($N=8$) the Pique Resilience Project, 8% ($N=6$) from an acquaintance, and 5% ($N=4$) indicated some other, unnamed, source.

Participants' current age ranged from 18 to 33 years, ($M=24.89$, SD = 4.33). The large majority of those who indicated their ethnicity identified as "white" ($N=63$, 81%); 10% ($N=8$) identified as multi-ethnic, 6% ($N=5$) as "Asian," and 3% ($N=2$) as "Hispanic." Regarding education, 36% ($N=28$) had acquired a college or graduate degree, 5% ($N=4$) an associate degree, 45% ($N=35$) had attended college without earning a degree, and 13% ($N=10$) had obtained a high school degree or equivalent. Only one individual had not graduated from high school.

We examined participants' past and present general sociopolitical attitudes. In general, these tended to be liberal. For example, 70% ($N=40$) of those who responded indicated that their childhood family environment was moderately or very liberal, compared with 23% ($N=16$) who described their family as moderately or very conservative. A similar pattern emerged in their descriptions of their own, adult politics, with 68% ($N=52$) describing themselves as moderately or very liberal, compared with 13% ($N=10$) as moderately or very conservative (and these were all moderate). Consistent with social liberalism, most participants indicated that religion was not very important, with 82% ($N=64$) agreeing that it was not at all or slightly important, compared with only 18% ($N=14$) who agreed that it was at least moderately important.

Attitudes toward gay and transgender rights are especially pertinent, and participants' attitudes about these were especially liberal: 86% ($N=67$) strongly supported gay marriage rights, and 91% ($N=71$) supported transgender rights. Only one person expressed opposition to either of these, opposing transgender rights.

Detransition and Desistance Status

The survey defined "detransition" as stopping the usage of cross-sex hormones and/or having surgery to reverse previous gender transition. (This is a narrow and stringent sense of "detransition" because it does not include cessation of social transition.) Most participants (68%, $N=53$) had taken at least one medical step toward transition and thus may be considered "detransitioners." Of this group, 23% ($N=18$) had undergone both some hormonal treatment and surgical intervention, 40% ($N=31$) had only undergone hormonal treatment, and 5% ($N=4$) had only had surgery. (We provide more detail about specific treatments below.) The minority of participants (32%, $N=25$) who had not received either hormonal or surgical interventions may be considered "desisters." All participants had taken at least one social transition step, and 83% had taken three or more.

Development and Onset

Gender Nonconformity

Participants completed a questionnaire regarding childhood gender nonconformity and dysphoria (with items corresponding to diagnostic criteria for DSM-5 Gender Dysphoria in Childhood), assessed for ages 3–11 years. Table 1 provides the endorsement frequencies of the eight items, in descending order**.** In general, the most frequently endorsed items assessed gender nonconformity: behaving as the other sex and rejection of sex-typical behavior. The least commonly endorsed items focused on gender dysphoria, dislike of one's body and desire to be the other sex.

Figure 1 presents the frequency distribution of summed scores across the eight items. The most common score (24.4%, $N=19$) was 0, indicating endorsement of none of the items. Only 7.7% ($N=6$) obtained the highest possible score, 8. The remainder of the sample was spread evenly across the scale, with points of rarity at 1 (only one item endorsed) and 7 (all but one item endorsed). Because we did not ask about two diagnostic requirements (duration of at

Table 1 Diagnostic criteria endorsed for DSM-5 Gender Dysphoria in Childhood

Item	*N* (%) participants endorsed
Strong preference for sex-atypical toys	44 (56.4)
Strong rejection of sex typicality (i.e., masculinity for boys, femininity for girls)	39 (50.0)
Desire to dress as other sex and/or resistance to dressing as natal sex	35 (44.9)
Strong preference for cross-sex roles in play	32 (41.0)
Strong preference for playmates of other sex	25 (32.1)
Strong desire for other sex's physical attributes	23 (29.5)
Strong dislike of sexual anatomy	21 (26.9)
Strong desire to be other sex	20 (25.6)

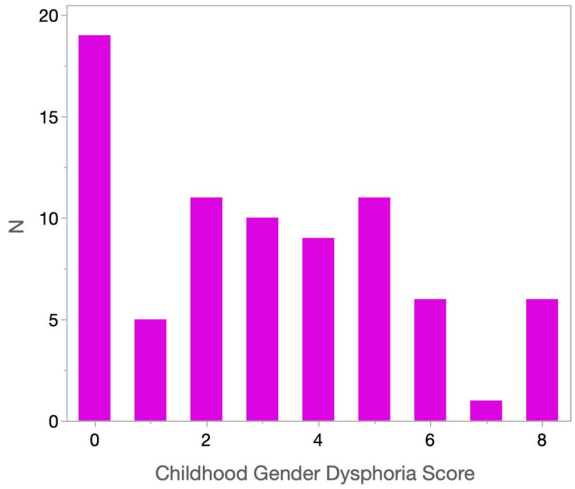

Fig. 1 Frequency distribution of summed scores of DSM-5 diagnostic criteria for gender dysphoria in childhood

least six months and distress or impairment), at most 16.7% ($N = 13$) of participants could have met diagnosis of DSM-5 Gender Dysphoria in Childhood (endorsement of at least six of eight items).

Rapid Onset

One survey item explained the term "rapid-onset gender dysphoria" (ROGD) and asked participants whether they believed it applied to them. Fifty-three percent ($N = 41$) of the sample answered "yes," 23% ($N = 18$) did not know, and 24% ($N = 19$) answered "no." After transforming this into a three-point numeric scale (from 0 = "No" to 2 = "Yes"), we examined its correlation with the self-reported childhood gender dysphoria scale. This correlation, $r(78) = -0.57$, $p < 0.0001$, indicated that those who reported greater childhood gender dysphoria were much less likely than those who reported less childhood gender dysphoria to believe that rapid-onset gender dysphoria applied to them.

Participants were asked whether, while becoming gender dysphoric or transgender-identified, any of five potential changes happened over the course of three months or less: (1) adopting the belief that "gender dysphoria" was the only explanation for preexisting feelings and emotions; (2) reinterpreting past feelings and behaviors to be consistent with gender dysphoria or transgender identity; (3) labeling of feelings and experiences as "gender dysphoria" or "transgender;" (4) considering past and current feelings and experiences as proof of being transgender; and (5) acquiring the belief that transition would be the solution to one's problems. On average, participants endorsed 4.22 (SD = 1.23) of the five items. Furthermore, the number of items endorsed was positively related to the numeric scale of whether respondents thought that rapid-onset gender dysphoria applied to them, $r(78) = 0.23$, $p = 0.044$.

Table 2 provides data on timing of when participants both started and stopped identifying as transgender. Perhaps surprisingly, age of first transgender identification was only weakly related to degree of childhood gender dysphoria, $r(78) = -0.17$, $p = 0.15$—although the direction of the association was in the intuitive direction, with greater childhood gender dysphoria predicting earlier transgender identification. Nor was participant's degree of agreement that their gender dysphoria was "rapid-onset" significantly associated with age at trans-identification, $r(78) = 0.01$, $p = 0.96$. The length of time during which participants were transgender-identified was significantly related to the degree to which they identified with "rapid-onset," $r(78) = -0.24$, $p = 0.03$, with endorsement of "rapid-onset" associated with shorter duration of transgender identification. Duration of transgender identification was also positively related to childhood gender dysphoria, $r(78) = 0.25$, $p = 0.03$.

Sexual Orientation

Attraction to Males versus Females

Figure 2 presents the frequency distributions of current Kinsey scores, separately for male and female participants. Kinsey scores of 0 represent exclusive attraction to the other sex, and scores of 6 exclusive attraction to one's own sex; scores of 1–5 represent intermediate degrees of preference. Natal females' attraction patterns were strongly female-biased, with 43 participants indicating greater attraction to women than to men, and 16 indicating greater attraction to men. The most common Kinsey score among natal females was 6, indicating exclusive attraction to women. This score was endorsed by 43% ($N = 29$) of female respondents who answered this question.

Table 2 Time course of trans-identification and desistance

	Mean (SD)	Range
Age first identified as transgender (years)	17.12 (3.82)	6–28
Length of time identified as transgender (years)	5.35 (3.31)	1–14
Age stopped identifying as transgender (years)	22.46 (4.21)	15–32
Length of time since identifying as transgender (years)	2.42 (2.24)	0.5–12

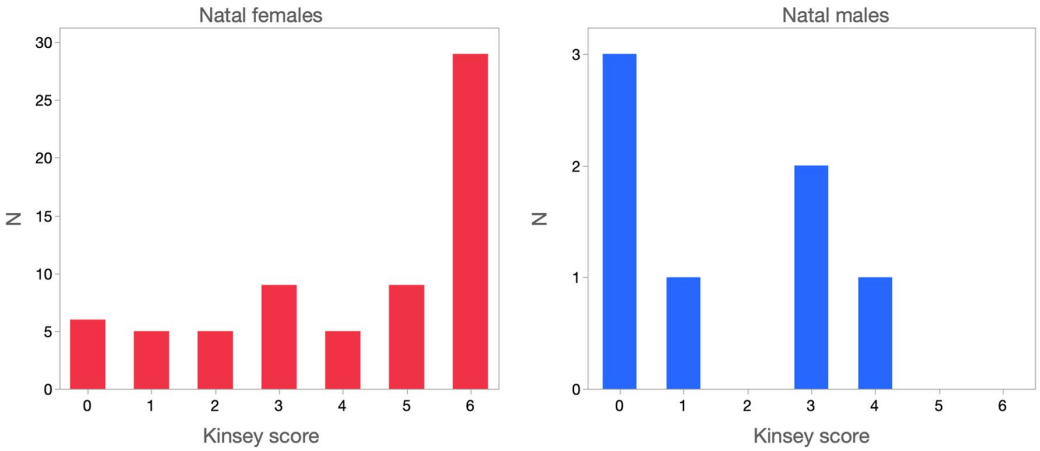

Fig. 2 Frequency distributions of Kinsey scores for natal females and natal males

Attraction patterns of natal males were also female-biased, with 3 of 7 participants indicating exclusive attraction to women. Importantly, no natal male endorsed exclusive or near-exclusive attraction to men (i.e., Kinsey scores of 6 or 5, respectively), suggesting that none of these participants would be considered homosexual by Blanchard's taxonomy.

In samples not recruited for being gender dysphoric, there is typically a correlation between recalled gender dysphoria/nonconformity and adult sexual orientation (Bailey & Zucker, 1995). In the current sample, the correlation between recalled childhood gender dysphoria and adult sexual orientation (i.e., Kinsey score) was $r(68) = -0.06$, $p = 0.60$ for females and $r(7) = 0.89$, $p = 0.007$ for males. In both cases, higher recalled gender dysphoria was associated with greater male attraction, although this correlation was statistically significant only for males.

Autogynephilia and Autoandrophilia

On average, males agreed with at least two of the three autogynephilia items, and females one of the three autoandrophilia items, $M_M = 2.29$ (SD = 1.25), $M_F = 1.06$ (SD = 1.16), $d = 1.02$, $p = 0.009$. Only one item differed significantly: 6/7 males had experienced sexual arousal while cross-dressing, compared with 15/71 females, $\chi^2(1, N = 78) = 13.51$, $p = 0.0002$. Among natal females, there was a substantial negative correlation between autoandrophilia and Kinsey score, $r(68) = -0.39$, $p = 0.0009$, indicating that higher autoandrophilia scores were especially common among respondents more attracted to males.

Mental Health Before, During, and After Transgender Identification

Psychiatric Diagnoses

Table 3 presents the frequencies that participants said they had received the 13 psychiatric diagnoses before their transgender identification. The table also includes the lifetime frequencies of these diagnoses. (Lifetime diagnoses include all prior diagnoses.) The rate of any diagnosis was quite high, with only 5% ($N = 4$) of participants having none of the 13 diagnoses queried during their lifetime. The mean numbers of diagnoses from this list reported by participants

Table 3 Frequency of psychiatric diagnoses before trans-identification and during lifetime

Diagnosis	Before trans-identification *N* (%)	Lifetime *N* (%)
Anxiety	47 (60.26%)	62 (79.49%)
ADHD	19 (24.36%)	32 (41.03%)
Autism spectrum disorder	7 (8.97%)	17 (21.79%)
Bipolar	9 (11.54%)	17 (21.79%)
Borderline personality disorder	3 (3.85%)	8 (10.26%)
Depression	49 (62.82%)	62 (79.49%)
Eating disorder	18 (23.08%)	23 (29.49%)
Hair pulling	8 (10.26%)	8 (10.26%)
OCD	14 (17.95%)	15 (19.23%)
PTSD	12 (15.38%)	30 (38.46%)
Schizophrenia	4 (5.13%)	9 (11.54%)
Selective mutism	1 (1.28%)	2 (2.56%)
None of the above	7 (8.97%)	4 (5.13%)
Other	4 (5.13%)	11 (14.10%)

were 2.46 ($MD = 2$; $SD = 1.97$) before transgender identification, and 3.65 ($MD = 4$; $SD = 1.98$) lifetime. The most common diagnoses, both before transgender identification and during the lifetime, were anxiety (60.26% before transgender identification and 79.94% lifetime) and depression (62.82% before transgender identification and 79.49% lifetime).

Self-Harm Participants also indicated whether they had engaged in self-harm during each of the three periods (before, during, and after transgender identification), and the frequency distributions for all participants are presented in Fig. 3. The lifetime rate of self-harm was high, 79% ($N = 62$). Natal females were more likely to have any history of self-harm (83%; $N = 59$) compared with natal males (43%; $N = 3$), Fisher's exact test = 0.03. Compared with both earlier periods, the period after cessation of transgender identification was associated with markedly less self-harm, with 71%, 64%, and 23% of participants saying they had self-harmed before, during, and after transgender identification. Treating the dichotomous variable of harm as numeric (which is defensible for proportions that are not extreme; see Hellevik, 2009), the contrast between self-harm after transgender identification was significantly lower than the average of the other two periods, paired $t(77) = 8.85$, $p < 0.0001$, which did not differ, paired $t(77) = 1.09$, $p = 0.28$.

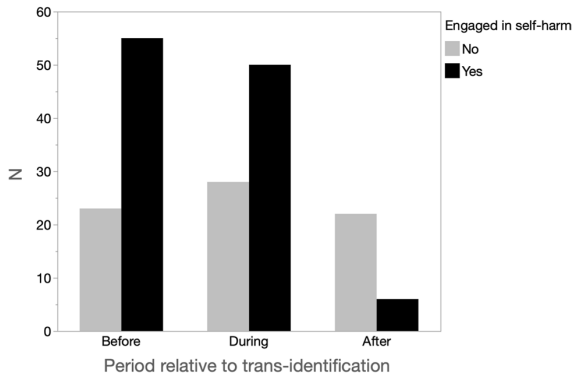

Fig. 3 Frequency distributions of self-harm for all participants for the periods before, during, and after trans-identification

Gender Dysphoria We assessed gender dysphoria across time in two ways. In the first, we asked participants whether they agreed with six statements derived from DSM-5 criteria for Gender Dysphoria in Adolescents and Adults (e.g., "Did you feel a strong desire to be the opposite natal sex?"). These questions were asked both for the period during trans-identification and for the period since trans-identification ended. The frequency distribution for this variable is presented for these two periods in Fig. 4. There was a marked decrease in gender dysphoria from trans-identification, $M = 4.51$ (SD = 1.59) to after trans-identification, $M = 0.98$ (SD = 1.52), $d = 2.27$, paired $t(77) = 16.65$, $p < 0.0001$.

Strength of gender dysphoria was also assessed using a single item with responses ranging from 0 (no distress over natal sex) to 7 (distress severe enough to interfere with ability to function in daily life). Figure 5 shows frequency distributions for responses to this item for three periods: before trans-identification, during trans-identification, and after trans-identification. Dysphoria rose considerably in the sample after participants began identifying as trans and dropped drastically after trans-identification ceased. To analyze these trends properly, we conducted the following within-subjects analyses: Two orthogonal polynomial variables were constructed

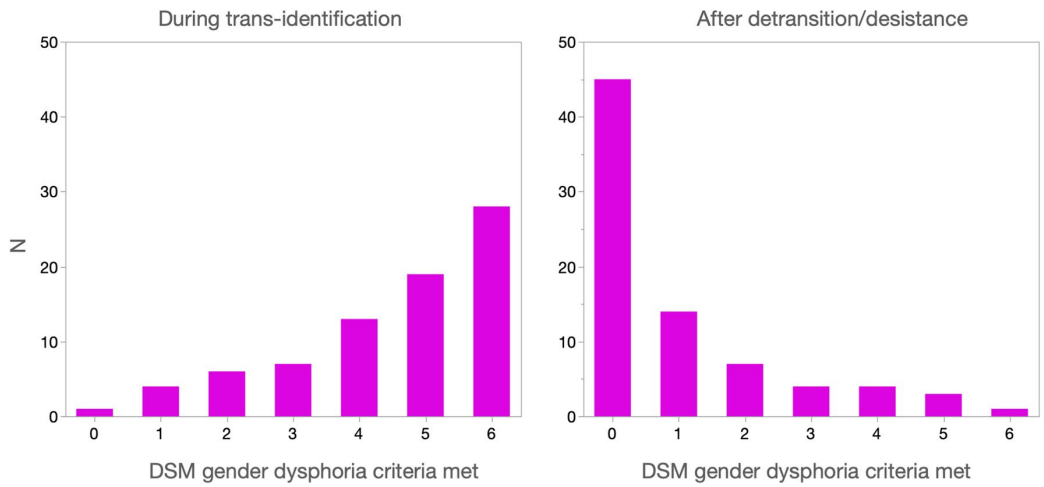

Fig. 4 Frequency distributions of the number of DSM-5 gender dysphoria participants met during trans-identification and after detransition/desistance

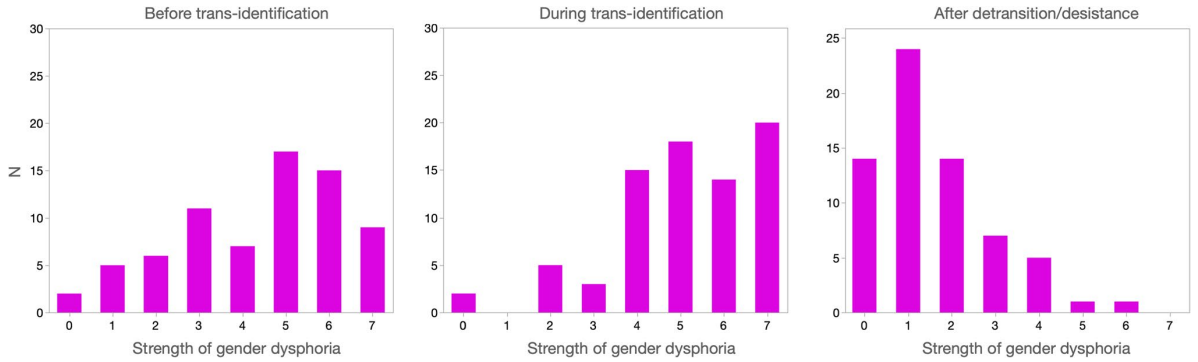

Fig. 5 Frequency distributions of participants' self-rated strength of gender dysphoria before, during, and after trans-identification

(Judd et al., 2017). The first, linear contrast, representing the decline in dysphoria from before trans-identification to after trans-identification, was 2.8 points, $t(60) = 10.7$, $p < 0.0001$. The second, quadratic contrast, comparing dysphoria during trans-identification to the average of the periods before and after trans-identification, was 2.3 points, $t(59) = 14.4$, $p < 0.0001$. Thus, participants' trans-identification phase was especially dysphoric, and their post-trans-identification phase especially non-dysphoric.

Flourishing Participants completed the Secure Flourishing Measure to assess general well-being, for two time periods: while they identified as transgender and after they stopped identifying as transgender. Figure 6 shows the frequency distributions of self-reported Flourishing during and after participants' trans-identification. On average, participants reported that after transgender identification ended Flourishing increased by 2.55 points on a 10-point scale, $d = 1.49$, paired $t(57) = 9.26$, $p < 0.0001$.

Possible Psychosocial Influences on Transgender Identification and Gender Dysphoria

Participants were asked to rate the importance of 39 potential psychosocial influences on their becoming trans-identified on a scale from "not at all important" (which we assigned a value of 1) to "extremely important" (5). Mean ratings are presented in Table 4 in descending order of magnitude. The item most closely related to conventional understanding of gender dysphoria, "Being born in the wrong body," obtained a mean rating of 2.89 (SD = 1.44), substantially lower than the highest-rated item, "Interpreting the feelings of trauma or a mental health condition as gender dysphoria" ($M = 3.96$, SD = 1.33) and also lower than 22 other potential influences. Endorsement of "Being born in the wrong

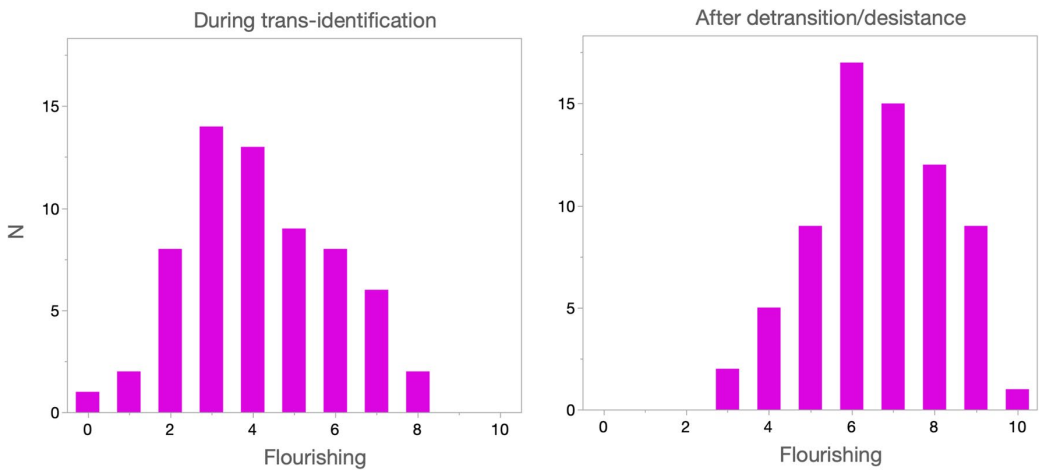

Fig. 6 Frequency distribution of Flourishing for the periods during trans-identification and after detransition/desistance

body" was negatively correlated with the self-endorsement of rapid-onset gender dysphoria, $r(74) = -0.37$, $p = 0.001$. Even participants who did not believe that ROGD applied to them rated "Interpreting the feelings of trauma or a mental health condition as gender dysphoria" as slightly more relevant than "Being in the wrong body" to their transgender identification (ratings of 3.7 versus 3.6, respectively), although that difference was not statistically significant.

Trauma A common belief among clinicians who favor ROGD theory is that traumatic events can contribute to the occurrence of gender dysphoria (Evans & Evans, 2021; Withers, 2020). Participants completed the Adverse Childhood Experiences (ACE) checklist, a 10-item scale assessing the experiences of 10 putative traumatic factors prior to age 18. These items pertained to experiences within the home family. The mean score was 3.94 (SD = 2.34), which is relatively high. For example, in a large representative study conducted by the CDC, only 15.2% of women and 9.2% of men had scores as high as 4, the median and approximate mean of the current sample.

Participants also indicated whether they had experienced any of nine negative experiences likely to have been experienced more recently—although prior to transgender identification—and not necessarily within the home. Table 5 provides the frequencies for these items. The mean number of these experiences reported by participants was 3.60 (SD = 2.20).

The correlation between the self-reported number of adverse childhood experiences and the number of more recent negative experiences was high, $r(77) = 0.59$. Table 6 presents correlations for these two negative experiences scales with several potentially relevant variables. ACE scores were significantly associated with duration of trans-identification (higher ACE scores predicting longer duration), belief that "rapid-onset gender dysphoria" applies to oneself (higher ACE scores predicting less agreement), and number of mental disorders before trans-identification (higher ACE scores predicting more disorders).

Peer Influences Previous work identified unique friendship group dynamics associated with the onset of transgender identification. These included friendship groups mocking people who were not transgender-identified or LGBTIA and friendship groups where more than 50% of the friendship group became transgender-identified (Littman, 2018). Participants in the current study were asked if, at the time of transgender identification, they belonged to a friendship group where one or more members of the group became transgender-identified around the same time. The majority (60.3%) answered in the affirmative (with 24.4% referring to offline friendship groups, 14.1% referring to online friendship groups, and 21.8% referring to both). More than a third of participants responded that the majority of their offline and online friends became transgender-identified (34.6% and 38.5%, respectively) and participants acknowledged that their offline and online friendship groups engaged in mocking people who were not transgender-identified (42.3% and 41.0%, respectively).

Hypotheses regarding social contagion of gender dysphoria have emphasized the idea that trans-identification often follows immersion in certain Internet sites with intense discussion of transgender phenomena, such as Tumblr (Littman, 2018). Participants completed the PRIUSS for two time periods. Participants' scores for the six-month period after they started to identify as transgender $M = 34.03$ (SD = 24.03) were substantially higher than those for the six-month period prior to the survey, $M = 19.34$ (SD = 14.72), $d = 0.83$, paired $t(76) = 7.86$, $p < 0.0001$. Furthermore, the average of earlier scores was substantially higher than the recommended cutoff for "problematic Internet usage," and the average of later scores was substantially lower than that cutoff. Participants' scores correlated substantially across the two time periods, $r(77) = 0.61$, despite the large drop in average scores, suggesting persistent individual differences in Internet usage. The correlation between participants' earlier PRIUSS score and the degree to which they endorsed the idea that rapid-onset gender dysphoria applied to themselves was low, $r(77) = -0.03$, $p = 0.77$, counter to predictions.

Transition Experiences

Social and Medical Transition Steps We asked participants about social and medical steps they had taken during their transition. Table 7 presents these steps, separated by natal sex where appropriate. On average, participants had taken 3.62 of the social steps (SD = 1.05), and all had taken at least one. Most participants had used a different name, different pronouns, and had modified their appearance (clothes, hair, makeup). Most natal females had used a binder to give the impression of a flat chest. Nearly half had used a prosthetic penis (i.e., packer). Among natal males, the use of prosthetic breasts or female genitals (i.e., gaffs) were comparatively rare. The mean number of social steps taken by natal females, 3.61 (SD = 1.02), was greater than this number for natal males, 2.86 (SD = 1.07), $t(76) = 2.05$, $p = 0.043$. Regarding medical transition steps, all natal males and most natal females had used cross-sex hormones (estrogen and testosterone, respectively). Almost a third of natal females had undergone breast removal, a small number had their uterus or ovaries removed, and none had received phalloplasty. No natal males had undergone gender-affirming surgeries.

More than half (66.7%, $N = 52$) of the participants sought medical care to obtain cross-sex hormones and the majority of those seeking cross-sex hormones (92.3%, $N = 48$) received them. Four participants sought but did not receive

Table 4 Ratings of importance of potential psychosocial influences on becoming transgender-identified and gender dysphoric

Potential influence	Mean Importance (SD)
Interpreting the feelings of trauma or a mental health condition as gender dysphoria	3.96 (1.33)
Internal feelings of misogyny (or misandry)	3.87 (1.31)
Wanting to avoid how women (or men) are treated in society	3.83 (1.38)
Exposure to other people's misogyny (or misandry)	3.78 (1.37)
Self-hatred and wanting to be a completely different person	3.78 (1.49)
Wanting to avoid sexual expectations or oversexualization	3.77 (1.39)
Not fitting in with members of their natal sex	3.69 (1.21)
Maladaptive coping mechanism	3.69 (1.42)
Needing to figure out one's identity	3.65 (1.16)
Trying to cope and avoid painful feelings	3.61 (1.37)
Identifying with opposite-sex characters in books, movies, video games, etc.	3.51 (1.50)
Believing that they were not good enough in the roles and behaviors expected of their natal sex	3.37 (1.48)
Tumblr	3.34 (1.42)
Believing that one was not feminine enough (if female) or masculine enough (if male)	3.25 (1.44)
Not being interested in the things that most other members of natal sex were interested in	3.23 (1.36)
Social influence	3.18 (1.43)
It was an important part of identity development at the time	3.18 (1.30)
Wanting to avoid feeling vulnerable to sexual predators	3.16 (1.70)
A person known offline (in real life)	3.16 (1.53)
Sexual trauma	3.15 (1.65)
YouTube transition videos	3.10 (1.58)
Sexual harassment	2.97 (1.53)
Being born in the wrong body	2.89 (1.44)
Love of or fascination with masculinity (if female) or femininity (if male)	2.88 (1.41)
Difficulty accepting self as lesbian (if female), gay (if male), or bisexual	2.86(1.65)
Social contagion	2.84 (1.51)
A community of people met online	2.83 (1.33)
A person met online	2.79 (1.49)
YouTube transgender celebrities	2.78 (1.58)
A group of people known offline (in real life)	2.70 (1.68)
Desire to belong to a friend group	2.66 (1.46)
A dating, romantic or sexual partner	2.66 (1.64)
Perceptions of self and society that are related to being a person with Aspergers	2.64 (1.76)
Perceptions of self and society that are related to being a person with autism	2.64 (1.85)
Wanting to avoid the homophobia that would be experienced for being lesbian (if female), gay (if male) or bisexual	2.55 (1.58)
Being bullied	2.48 (1.36)
Sexual excitement when fantasizing about being the other sex	2.42 (1.59)
Experiencing homophobic bullying	2.29 (1.25)
Negative reaction to pornography	2.28 (1.45)
Falling in love or liking (romantically) someone who is not attracted to people of one's own natal sex	2.24 (1.59)
Peer pressure	2.18 (1.48)
A school-based club or organization (like a GSA or University LGBT advocacy club)	2.15 (1.45)
Reddit	2.14 (1.47)
Wanting to be part of a social movement	2.06 (1.34)
A therapist	2.03 (1.42)
The desire to remain in an existing friend group	1.96 (1.44)
Positive reaction to pornography (liking or being influenced by pornography)	1.86 (1.30)
Cosplay community	1.83 (1.40)
Exposure to high levels of hormones prenatally	1.81 (1.15)
Not wanting to be part of the "oppressor group"	1.80 (1.22)

Table 4 (continued)

Potential influence	Mean Importance (SD)
Thinking that their parents would be homophobic toward them	1.71 (1.23)
A speaker who gave a presentation at school	1.51 (1.19)
A Group therapy setting	1.48 (1.15)
DeviantArt	1.44 (0.88)
A family member	1.29 (0.71)
A religious community	1.20 (0.76)
A gaming community	1.04 (0.21)
Community or friends at a summer camp	1.02 (0.15)

Mean importance score derived from scale 1 = "not at all important;" 2 = "somewhat important;" 3 = "moderately important;" 4 = "very important;" 5 = "extremely important." Responses of "N/A" were excluded. N/A responses were those that did not apply to a participant and so could not be rated for importance

Table 5 Additional negative experiences recalled prior to trans-identification

Traumatic experience	Number reporting experience	Percentage reporting experience
Peer exclusion	61	78.2
Bullying	50	64.1
Sexual harassment	44	56.4
Homophobic bullying	36	46.2
Sexual abuse	27	34.6
Witnessing abuse of a family member	24	30.8
Abuse by dating partner	17	21.8
Rape	15	19.2
Attempted rape	7	9.0

cross-sex hormones. Reasons included parental refusal ($N=3$); participant decision not to obtain cross-sex hormones ($N=2$) and refusal of the clinician to prescribe cross-sex hormones ($N=1$).

Only 27.1% of participants informed the clinician or clinic that facilitated their transition that they had detransitioned.

Informed Consent Asked who provided cross-sex hormones, participants had most often consulted primary care physicians (41%), followed by psychiatrists who treat adults (19%), endocrinologists (18%), psychiatrists who treat children and adolescents (10%), social workers (12%), and nurse practitioners (8%). About 40% of participants had obtained cross-sex hormones at a clinic specializing in gender issues, with the remainder going to a general health clinic (27%), a private practice (14%), planned parenthood (5%), a private gender clinic (1%), or other sources. Participants who started cross-sex hormones continued to take them for a mean duration of 2.59 years (SD = 2.03).

Most (61.5%, $N=32$) participants had obtained cross-sex hormones from clinical practices using the "informed consent" model of care. The other participants indicated either that the practice did not use informed consent (23.1%, $N=12$) or that they were uncertain whether it did so (15.4%, $N=8$). With respect to the adequacy of informed consent, most participants were informed about both risks (89.6%) and benefits (77.1%) of cross-sex hormones. However, many believed that the information provided was not adequate: 66.7% felt they were inadequately informed about risks and 31.3% felt this about benefits. Only one participant (2.1%) reported that a clinician provided information about treatment alternatives to cross-sex hormones (including the possibility of

Table 6 Correlations with recalled negative experiences

Variable	Correlation with childhood adverse experiences		Correlation with later negative experiences	
	r	*p*	*r*	*p*
Gender Dysphoria before trans-identification	0.08	0.50	0.07	0.58
Age at start of trans-identification	− 0.09	0.41	0.10	0.39
Duration of trans-identification	0.41	< 0.001	0.25	0.03
Agreement that ROGD applies to self	− 0.23	0.04	0.04	0.72
Number of mental disorders before trans-identification	0.23	0.047	0.35	0.002
Number of mental disorders, lifetime	0.14	0.21	0.39	< 0.001

Table 7 Steps taken for social and medical transition

	N (%)
Social transition	
Different name	68 (87.18%)
Pronouns	71 (91.03%)
Clothes/Hair/Makeup	73 (93.59%)
Natal female	
Binder	63 (88.73%)
Prosthetic penis	30 (42.25%)
Natal male	
Breast form	1 (16.67%)
Gaff	1 (16.67%)
Medical transition	
Puberty blockers	2 (2.56%)
Hormones	49 (62.82%)
Surgery	22 (28.21%)
Natal female	
Testosterone	42 (59.15%)
Breast removal	21 (29.58%)
Uterus removal	3 (4.23%)
Ovaries removal	2 (2.82%)
Natal male	
Estrogen	7 (100.00%)
Anti-androgen	6 (85.71%)
Breast augmentation	0 (0.00%)
Testes removal	0 (0.00%)
Penis removal	0 (0.00%)
Vaginoplasty	0 (0.00%)

not taking cross-sex hormones), and 75.0% of participants reported that they received inadequate information about these alternatives.

Participants were asked whether they were informed about scientific evidence regarding late-onset gender dysphoria. Fewer than one-tenth (8.3%) of participants indicated that they were informed by their clinician about the lack of long-term studies about natal females with late-onset gender dysphoria. Similarly, only 12.5% were informed that the risks, benefits, and outcomes for medical transition of late-onset gender dysphoric youth have not been well studied.

Desistance and Detransition

Participants were asked to rate the importance of 20 factors on the cessation of their transgender identification using a scale from "not at all important" (coded for analyses as 1) to "extremely important" (5). Mean ratings are reported in Table 8 in descending order of magnitude. The factors with the highest rating of importance were the participant's "own thought processes" ($M = 4.74$, SD = 0.65); "feeling that the causes for [their] gender dysphoria were more complicated than [they] previously understood them to be" ($M = 4.25$, SD = 1.22); and the participant's "personal definition of 'female' and 'male' changed and [they] now felt comfortable identifying as natal sex" ($M = 4.03$, SD = 1.42). Factors that might be described as external pressures to desist or detransition obtained the lowest ratings of importance scores, including "transphobia or discrimination while transgender identified" ($M = 1.46$, SD = 0.84); "pressure from family" ($M = 1.37$, SD = 0.75); "religion or religious beliefs" ($M = 1.15$, SD = 0.61); and "peer pressure" ($M = 1.11$, SD = 0.48).

Anecdotally, it is common for transgender individuals to report feeling most "authentic" following gender transition. We asked participants if they felt most authentic before identifying as transgender, while identifying as transgender, or after they no longer identified as transgender. (Participants could select more than one option). The overwhelming majority of participants (95%) reported feeling most authentic after detransition/desistance. Only 9% felt most authentic while identifying as transgender.

We asked participants to rate the likelihood that they might re-identify transgender in the future. Only three participants viewed this outcome as likely (one as "very likely" and two as "moderately likely"). The remaining participants indicated that this was somewhat unlikely (20.5%) or not at all likely (75.6%).

Discussion

Results of our exploratory and wide-ranging study of detransition and desistance among previously transgender-identified young adults are necessarily tentative. Our results suggest that the following applies to many of our participants: Adolescents and young adults struggling with mental health issues began to experience gender dysphoria—often suddenly and without prior history of gender issues. Subsequently these individuals identified as transgender. Transgender identification was not fleeting, but typically lasted for several years, and was associated with serious social and medical steps. All our informants took steps to socially transition, and most also obtained and used cross-sex hormones. An appreciable minority also had "gender-affirming" surgery. During transgender identification, gender dysphoria and general unhappiness increased considerably.

In our study, the factors most important to relinquishing a transgender identification were internal factors, such as participants own thought processes, changes in participants' personal definitions of male and female, and becoming more comfortable identifying as their natal sex. External factors such as discrimination and pressure from family were rated as least important. The greater importance of internal

Table 8 Ratings of importance of various factors to the cessation of transgender identification

	N	Mean (SD)
Participant's own thought processes	78	4.74 (0.65)
Feeling that the causes of gender dysphoria were more complicated than participant previously understood	75	4.25 (1.22)
Understanding of "female" and "male" changed so that participant now felt comfortable identifying as natal sex	75	4.03 (1.42)
Feeling that "transgender" no longer fit participant	73	3.86 (1.37)
Discovering a specific cause of gender dysphoria, such as trauma or a mental health condition	71	3.68 (1.45)
Feeling uncomfortable with the transgender community	74	3.45 (1.50)
Lack of improvement in mental health while identifying as transgender	76	3.41 (1.46)
Change in participant's political or philosophical views	71	3.25 (1.52)
Unmet expectations about life improvement	73	3.04 (1.52)
Worsened mental health while identifying as transgender	76	3.03 (1.62)
Resolution of strong emotions that led to transgender identification	65	2.72 (1.43)
Transgender identification no longer served a purpose	76	2.67 (1.33)
Dissatisfaction with physical changes from transition	59	2.59 (1.49)
Wishing to return to cisgender	69	2.46 (1.47)
Missing life from before coming out or transition	70	2.19 (1.38)
Difficulty finding someone for a dating, romantic, or sexual relationship	62	1.79 (1.38)
Transphobia or discrimination while transgender identified	72	1.46 (0.84)
Pressure from family	63	1.37 (0.75)
Religion or religious beliefs	52	1.15 (0.61)
Peer pressure	63	1.11 (0.48)

Mean importance score derived from a scale where 1 = "not at all important"; 2 = "somewhat important"; 3 = "moderately important"; 4 = "very important"; 5 = "extremely important." "Not applicable" responses were excluded from counts, and so N represents the number of responses with numeric ratings

factors than external factors is consistent with the findings from other studies of detransitioners (Littman, 2021; Vandenbussche, 2022) and differs from results of studies of currently transgender-identifying individuals (James et al., 2016; Turban et al., 2021). After detransition and desistance, informants became much happier and much less gender dysphoric. They reported little inclination to regret detransition and desistance. Before elaborating these and other findings, we consider our study's scientific limitations.

Limitations

A methodologically near-ideal study of detransition and desistance would follow a randomly selected group of transgender-identified youth over time, assessing relevant factors (e.g., gender dysphoria, transition steps, current adjustment, and sexuality) repeatedly. Furthermore, to reduce distortions due to self-report bias, additional informants (e.g., parents and therapists) would be enlisted. This design would allow the estimation of the likelihood that transgender-identified individuals would take various transition steps, that their well-being would improve, and that they would detransition or desist—among other important potential findings. Furthermore, this design would allow exploration of which factors predict important later outcomes.

Our study deviated from the near-ideal design in several respects. Our sample of detransitioners and desisters was recruited by distributing announcements through social media and relevant Internet sites. Hence, we cannot know whether our informants were representative of detransitioners and desisters. Nor can we know how they differed from transgender-identifying individuals who have not detransitioned or desisted. Our study relied exclusively on detransitioners' and desisters' self-reports. Furthermore, informants were surveyed only once, but they reported on their own feelings and behavior across a wide range of time, from childhood through early adulthood.

Although our study's limitations seriously constrain our ability to answer some questions with certainty, they constrain us less in some other important domains. Obviously, our design does not allow us to estimate how common detransition and desistance are. Nor can we know which if any variables predict detransition and desistance. Some variables that we studied, including childhood gender dysphoria, negative life events, and current sexual orientation, may sometimes be inaccurately reported. Conclusions depending on these data are especially tentative. However, participants' experiences of gender dysphoria and of flourishing before, during, and after transgender identification are more likely to be accurately remembered. Other information provided

by respondents that we see little reason to question includes psychiatric diagnoses, Internet usage, social and medical transition steps, experiences obtaining cross-sex hormones, and experiences with informed consent.

A final reason why our study makes a valuable contribution is that little is currently known about detransitioners and desisters, especially during the recent past. Indeed, little is known about any aspect of gender dysphoria that begins after childhood, especially among natal females. This is true even though the incidence of adolescent-onset gender dysphoria among natal females has been briskly growing (Zucker, 2019). When little is known, imperfect research is often better than no research. It can provide provisional answers, better-informed hypotheses, and ideas for future research. In the remaining Discussion, we attempt to provide these.

Who Are the Detransitioned?

Only a history of adopting and then relinquishing a transgender identity—the primary inclusion criteria for our study—was true of all participants. Some other, less uniform, trends were also evident. For example, participants were far more likely to be natal females than natal males. Some other kinds of gender dysphoria occur more often among natal males than among natal females (Bailey & Blanchard, 2017; Zucker et al., 2012). Despite the small number of natal male participants in our study, results suggested some important sex differences. Nearly all the natal male participants reported a history of sexual arousal while cross-dressing, a primary sign of autogynephilia. Autogynephilic gender dysphoria is one of two well-established types of gender dysphoria in natal males. The other type, homosexual gender dysphoria, occurs among natal males whose gender nonconformity (and usually gender dysphoria) is obvious during childhood and whose sexual attraction is exclusively toward other males. None of our male participants reported exclusive attraction to other males. Our results are consistent with the possibility that all the natal male participants were autogynephilic. Neither autogynephilia nor its gender-reversed version, autoandrophilia, has been established as an important cause of gender dysphoria among natal females.

Our participants reported seemingly high levels of previous mental problems. These usually predated transgender identification, with more than 90% of participants reporting a prior clinical diagnosis. Mean (and median) number of lifetime diagnoses exceeded 2. Unfortunately, we are not aware of good comparison estimates for representative samples of youth for the number of lifetime diagnoses. A large and epidemiologically representative 2005 study estimated that by age 75 about half of US adults will be diagnosed with a mental disorder (Kessler et al., 2005). The rates self-reported in our study were already much higher than this, even though our participants were much younger than 75 years.

The sample also reported a high lifetime rate of self-harm: 83%. Unfortunately, again, we are unaware of a close comparison sample. A US cohort of adults younger than 30 years produced a rate of 19%. A more recent study of British adults found a lifetime rate of self-harm of 5% (Liu, 2023). A recent study of Norwegian university students found a lifetime rate of self-harm of 19.6%, much higher than the British sample but much lower than the present one.

One variable that did not allow generalization but instead suggested considerable divergence, is self-reported childhood gender dysphoria. Scores on the relevant measure were widely dispersed. The most common score was zero (i.e., no childhood gender dysphoria), but a considerable minority (30.8%, 24/78) of scores on that variable exceeded the middle of the scale. Validity of this variable is especially problematic because it relies on childhood memory, Furthermore, exaggerated memories of childhood gender nonconformity and dysphoria may be encouraged in both clinical and peer contexts (Littman, 2018). Thus, our results concerning childhood gender nonconformity are especially tentative. Future research would benefit by including reports of childhood behavior using additional informants (e.g., parents).

Causes of Gender Dysphoria

Keeping in mind these caveats, what do our results suggest about causes of gender dysphoria in our sample? Approximately one-half of the sample endorsed the applicability of "rapid-onset gender dysphoria" (ROGD) to themselves, one-quarter was uncertain, and one-quarter disagreed with this application. This is consistent with the finding that most participants did not recall high levels of childhood gender dysphoria. Furthermore, those reporting lower degrees of childhood gender dysphoria were more likely to endorse an explanation of ROGD for themselves.

Two other aspects hypothesized to contribute to ROGD were surveyed: emotional turmoil unrelated to gender dysphoria, and social influence (Littman, 2018). Participants rated adjustment to mental health challenges and to trauma as more important causes than the feeling of "being born in the wrong body" as reasons for transgender identification (Table 4), although those who did not believe that ROGD applied to them rated them similarly. Regarding social influences, a substantial minority of participants reported previous immersion in peer groups with high levels of transgender identification. Furthermore, participants reported a high level of problematic Internet usage during the first six months of transgender identification.

We have noted that participants reported high levels of stress and trauma, and some believed these experiences were important in the development of their gender dysphoria.

However, drawing causal conclusions about the role of trauma in causing psychological problems has been difficult in general. This is because there are often multiple possible explanations for associations between trauma and psychological problems (Bailey & Shriver, 1999). This difficult scientific issue cannot be resolved in this study.

Finally, the concept of rapid-onset gender dysphoria may be more valid for natal females than for natal males. Autogynephilic natal males may appear to have a rapid onset, but they are typically aware of autogynephilic arousal since puberty, when strong sexual feelings begin. To be sure, both autogynephilic males and ROGD females may, in principle, be socially influenced toward adopting a transgender identity. However, their underlying motivations differ.

Transition Experiences

Our participants had undergone substantial gender transition. On average, participants identified as transgender for nearly five years (Md = 4 years). During this time, all participants took at least one step toward socially transition, such as name and pronoun changes, as well as changing their physical presentation; most participants took several steps. Most obtained cross-sex hormones, and a substantial minority also underwent serious surgeries: 30% of female participants had had their breasts removed. Although most participants recalled receiving information about the risks and benefits of cross-sex hormones, a majority did not feel the information they were provided about risks was adequate.

Detransition and Desistance

Detransition and desistance were associated with marked improvements in psychological functioning. On several relevant measures—gender dysphoria, flourishing, and self-harm—participants indicated great improvement after they stopped identifying as transgender. These findings depend on retrospective self-report, but this seems appropriate.

Our study cannot resolve whether detransition and desistance caused these changes in our participants. It is possible, for example, that improvement in psychological functioning preceded detransition, or that detransition and improvement were both caused by a third factor. Participants believed that their detransition reflected realizations that they had mistaken ideas about gender dysphoria, lack of improvement during trans-identification, and changes in their self-conceptualizations (Table 8). They rejected family and peer pressure, transphobia, and religious beliefs as explanations of detransition.

One issue that we cannot resolve in this study is whether our participants are unique in respects that made them poor candidates for transition. Perhaps many or most youth who have transitioned at similar ages—in our sample the mean was approximately 17 years—adjust well to their gender change. Our participants invested a great deal of their lives in their gender transitions—in terms of time, disruption, and serious social and medical steps. Thus, we do not believe that a principled case can be made that participants detransitioned because they were never gender dysphoric.

Future Directions

Follow-up studies of gender dysphoric youth are urgently needed. Ideally, gender dysphoric youth should be recruited using a variety of sources, including social media, treatment facilities, gender clinicians, and parent groups. When possible, information should be obtained from multiple sources, especially youth and their parents. Results of both the present study and prior research support the desirability of collecting data on several important variables: childhood gender nonconformity and dysphoria, sexuality, psychiatric diagnoses, parental attitudes toward transition, transgender prevalence in peer groups, current gender dysphoria, and current psychological adjustment. Organizations providing clinical services to gender dysphoric youth have a particular obligation to follow these youth and assess their outcomes. Unfortunately, in North America at least, we see little evidence that this presently occurs.

Conclusions

We surveyed a sample of young adults who previously identified as transgender but had detransitioned or desisted. Most participants were born female. Mental health issues, including prior diagnoses and a history of self-harm, were especially common. A history of gender dysphoria during childhood was reported by a nontrivial minority of participants. A slight majority believed their histories were consistent with rapid-onset gender dysphoria. Factors most associated with detransition were internal factors, reflecting psychological change, rather than external factors, such as family or social pressure. Detransitioned participants reported that they had become much less gender dysphoric, and much happier, than they were during their period of trans-identification.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10508-023-02716-1.

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Conflict of Interest The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Ethical Approval This research was approved as exempt by the Brown University Human Research Protection Program (HRPP). The HRPP determined the original research protocol to be exempt from 45 CFR 46 regarding the inclusion of human participants in research. Two modifications were accepted with limited IRB review to determine that there were adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data in accordance with 45 CFR 46.111(a)(7).

Informed Consent Electronic consent was obtained from all participants included in the study. On the first page of the online survey, participants were informed of the research purpose and potential risks and benefits of participating, that their participation was voluntary, and were presented with contact information for the researcher and for the Brown University's Human Research Protection Program. The research survey questions were displayed only if the participant clicked "agree" which indicated that the participant read and understood the information, were 18–33 years of age, and agreed to volunteer as a research participant for the study.

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EXHIBIT 150

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ORIGINAL PAPER

Individuals Treated for Gender Dysphoria with Medical and/or Surgical Transition Who Subsequently Detransitioned: A Survey of 100 Detransitioners

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Abstract
The study's purpose was to describe a population of individuals who experienced gender dysphoria, chose to undergo medical and/or surgical transition and then detransitioned by discontinuing medications, having surgery to reverse the effects of transition, or both. Recruitment information with a link to an anonymous survey was shared on social media, professional listservs, and via snowball sampling. Sixty-nine percent of the 100 participants were natal female and 31.0% were natal male. Reasons for detransitioning were varied and included: experiencing discrimination (23.0%); becoming more comfortable identifying as their natal sex (60.0%); having concerns about potential medical complications from transitioning (49.0%); and coming to the view that their gender dysphoria was caused by something specific such as trauma, abuse, or a mental health condition (38.0%). Homophobia or difficulty accepting themselves as lesbian, gay, or bisexual was expressed by 23.0% as a reason for transition and subsequent detransition. The majority (55.0%) felt that they did not receive an adequate evaluation from a doctor or mental health professional before starting transition and only 24.0% of respondents informed their clinicians that they had detransitioned. There are many different reasons and experiences leading to detransition. More research is needed to understand this population, determine the prevalence of detransition as an outcome of transition, meet the medical and psychological needs of this population, and better inform the process of evaluation and counseling prior to transition.

Keywords Gender dysphoria · Detransition · Transgender

Introduction

Detransition is the act of stopping or reversing a gender transition. The visibility of individuals who have detransitioned is new and may be rapidly growing. As recently as 2014, it was challenging for an individual who detransitioned to find another person who similarly detransitioned (Callahan, 2018). Between 2015 and 2017, a handful of blogs written by individual detransitioners started to appear online, private support groups for detransitioners formed, and interviews with detransitioners began to appear in news articles, magazines, and blogs (Anonymous, 2017; 4thwavenow, 2016; Herzog, 2017; McCann, 2017). Although few YouTube videos about detransition existed prior to 2016, multiple detransitioners started to post videos documenting their experiences in 2016 and the numbers of these videos continues to increase.[1] In late 2017, the subreddit r/detrans (r/detrans, 2020) was revitalized and in four years has grown from 100 members to more than 21,000 members. A member poll of r/detrans conducted in 2019 estimated that approximately one-third of the members responding to the survey were desisters or detransitioners (r/detrans, 2019). The Pique Resilience Project, a group of four detransitioned or desisted young women, was founded in 2018 as a way to share the experiences of detransitioners with the public (Pique Resilience Project, 2019). In late 2019, the Detransition Advocacy Network, a nonprofit organization to "improve the well-being of detransitioned people everywhere" was launched (The

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[1] A search of the word "detransition" in YouTube can be filtered by date of upload. https://www.youtube.com/results?search_query=%22detransition%22&sp=CAI%253D22.

Detransition Advocacy Network, 2020) and the first formal, in-person conference for detransitioned people was held (Bridge, 2020). In the face of this massive change, clinicians have called for more research into the experiences of detransitioners (Butler & Hutchinson, 2020; Entwistle, 2021; Marchiano, 2020).

Although there were rare published reports about detransitioners prior to 2016, most of the published literature about detransition is recent (Callahan, 2018; D'Angelo, 2018; Djordjevic et al., 2016; Kuiper & Cohen-Kettenis, 1998; Levine, 2018; Marchiano, 2017; Pazos Guerra et al., 2020; Stella, 2016; Turban & Keuroghlian, 2018; Turban et al., 2021; Vandenbussche, 2021). The prevailing cultural narratives about detransition are that most individuals who detransition will retransition and that the reasons for detransition are discrimination, pressures from others, and nonbinary identification (Turban et al., 2021). However, case reports are shedding light on a broader and more complex range of experiences that include trauma, worsened mental health with transition, re-identification with natal sex, and difficulty separating sexual orientation from gender identity (D'Angelo, 2018; Levine, 2018; Pazos Guerra et al., 2020).[2] Detransitioners and desisters, in their own words, have provided additional depth to the discussion, describing that:

(1) Trauma (including sexual trauma) and mental health conditions contributed to their transgender identification and transition (Callahan, 2018; Herzog, 2017; twitter.com/ftmdetransed & twitter.com/radfemjourney, 2019)
(2) Their dysphoria and transition were due to homophobia and difficulty accepting themselves as homosexual (Bridge, 2020; Callahan, 2018; upperhandMARS, 2020)
(3) Peers, social media, and online communities were influential in the development of transgender identification and desire to transition (Pique Resilience Project, 2019; Tracey, 2020; upperhandMARS, 2020)
(4) Their dysphoria was rooted in misogyny (Herzog, 2017)

Two recently published convenience sample reports provide additional context about the topic of detransition. First, Turban et al. (2021) analyzed data from the United States Trans Survey (USTS) (James et al., 2016). The USTS contains data from 27,715 transgender and gender diverse adults from the U.S. who were recruited through lesbian, gay, bisexual, transgender, queer (LGBTQ), and allied organization outreach. The USTS included the question, "Have you ever detransitioned? In other words, have you ever gone back to living as your sex assigned at birth, at least for a while?" with the multiple choice options of "yes," "no," and "I have never transitioned." For the 2,242 participants who answered "yes," Turban et al. analyzed the responses to the multiple choice question, "Why did you detransition? In other words, why did you go back to living as your sex assigned at birth? (Mark all that apply)." Although most of the offered answer options were about external pressures to detransition (pressure from spouse or partner, pressure from family, pressure from friends, pressure from employer, discrimination, etc.), participants could write in additional reasons that were not listed. Turban et al.'s sample included more natal males (55.1%) than natal females (44.9%). Roughly half (50.2%) had taken cross-sex hormones and 16.5% had obtained surgery. The findings revealed that most (82.5%) of the sample expressed at least one external factor for detransitioning and 15.9% expressed at least one internal factor (factors originating from self).

The second study by Vandenbussche (2021) recruited detransitioners from online communities of detransitioners and analyzed data for the participants who answered affirmatively to the question, "Did you transition medically and/or socially and then stopped?" The sample of 237 participants was predominantly natal female (92%), and from the U.S. (51%) and Europe (32%). Most (65%) had transitioned both medically and socially. Participants selected from multiple choice options to indicate why they detransitioned with options covering a range of experiences. Respondents also had the option to write in additional reasons. Frequently endorsed reasons for detransition included realizing that their gender dysphoria was related to other issues (70%); health concerns (62%); observing that transition did not help their dysphoria (50%); and that they found alternatives to deal with their dysphoria (45%). In contrast to Turban et al. (2021), external factors such as lack of support, financial concerns, and discrimination were less common (13%, 12%, and 10%, respectively). Many in the sample described that when they detransitioned they lost support or were ostracized from lesbian, gay, bisexual, and transgender (LGBT) communities, suggesting that many of the participants in Vandenbussche (2021) would not have been reached by the recruitment efforts of the USTS (James et al., 2016).

The objective of the current study was to describe a population of individuals who experienced gender dysphoria, chose to undergo medical and/or surgical transition and then detransitioned by discontinuing medications, having surgery to reverse the effects of transition, or both. In contrast to Turban et al. (2021) and Vandenbussche (2021), this study focused only on

[2] The debate about the terminologies used to describe an individual's sex (including "assigned sex at birth," "biological sex," "natal sex," "birth sex," "sex," etc.) is far from settled. Although some professionals have argued for the use of "assigned sex at birth," others argue that this terminology is misleading and not consistent with the events that occur at birth and prior to birth (Bouman et al., 2017; Byng et al., 2018; Dahlen, 2020; Griffin et al., 2020). Supporting the unsettled nature of the discussion, I received conflicting comments from the reviewers of this manuscript about my selection of natal sex terms–one reviewer asked that I justify my preference for natal sex over the other terminologies; another reviewer expressed support for my use of natal sex. I prefer to use "natal sex" and "birth sex" because they are accurate and objective. Further, I propose that "natal sex" and "birth sex" might be seen as reasonable, polite compromise terms between "biological sex" and "assigned sex at birth."

individuals who transitioned and detransitioned medically, surgically, or both. For the purpose of this study, medical transition refers to the use of puberty blockers, cross-sex hormones, or anti-androgens and surgical transition refers to any of a variety of surgical procedures (common surgical procedures include mastectomy, genital surgery, and breast augmentation). This study does not describe the population of individuals who undergo medical or surgical transition without issue nor is it designed to assess the prevalence of detransition as an outcome of transition. Instead, the goal was to identify detransition reasons and narratives in order to inform clinical care and future research.

Method

Participants and Procedure

During the recruitment period, 101 individuals who met the study criteria completed online surveys. Inclusion criteria were (1) completion of a survey via Survey Monkey; (2) answering that they had taken or had one or more of the following for the purpose of gender transition: cross-sex hormones, anti-androgens, puberty blockers, breast surgery, genital surgery, other surgery; and (3) answering that they had done any of the following for the purpose of detransitioning: stopped taking cross-sex hormones, stopped taking anti-androgens, stopped taking puberty blockers, had any surgery to reverse transition. One survey was excluded for nonsense answers leaving 100 surveys for analysis. The sample included more natal females (69.0%) than natal males (31.0%) with respondents who were predominantly White (90.0%), non-Hispanic (98.0%), resided in the U.S. (66.0%); had no religious affiliation (63.0%), and support the rights of gay and lesbian couples to marry legally (92.9%) (see Table 1). At the time of survey completion, the mean age of respondents was 29.2 years (SD = 9.1) though natal females were significantly younger ($M = 25.8$; SD = 5.0) than natal males ($M = 36.7$; SD = 11.4), $t(98) = -6.56$, $p < .001$. Prior to transitioning, natal females were more likely to report an exclusively homosexual sexual orientation and natal males were more likely to report an exclusively heterosexual sexual orientation.

A 115-question survey instrument with multiple choice, Likert-type, and open-ended questions was created by the author and two individuals who had personally detransitioned. The author had met both detransitioners by way of introductions from colleagues. The author and both individuals who had detransitioned created questions for the survey, provided feedback, and revised the survey questions collaboratively with a focus on content, clarity, and relevance to a variety of transition and detransition experiences. The survey instrument included two questions that were adapted from an online survey of female detransitioners (Stella, 2016). Once completed, the survey was uploaded onto Survey Monkey (SurveyMonkey, Palo Alto, CA) via an account that was HIPAA-enabled.

Recruitment information with a link to the survey was posted on blogs that covered detransition topics and shared in a private online detransition forum, in a closed detransition Facebook group, and on Tumblr, Twitter, and Reddit. Recruitment information was also shared on the professional listservs for the World Professional Association for Transgender Health, the American Psychological Association Section 44, and the SEXNET listserv (which is a listserv of sex researchers and clinicians) and the professionals on the listservs were asked to share recruitment information with anyone they knew who might be eligible. Efforts were made to reach out to communities with varied views about the use of medical and surgical transition and recruitment information stated that participation was sought from individuals regardless of whether their transition experiences were positive, negative or neutral. Potential participants were invited to share recruitment information with any potentially eligible person or community with potentially eligible people. The survey was active from December 15, 2016 to April 30, 2017 (4.5 months). The median time to complete a survey was 49 min; 50% of the surveys were completed between 32 and 71 min. There were no incentives offered for participating. Data were collected anonymously, without IP addresses, and stored securely with Survey Monkey.

Participation in this study was voluntary. Electronic consent was obtained from all participants in the following manner. The first page of the online survey informed respondents about the research purpose, potential risks and benefits, that participation was voluntary, and provided contact information for the researcher. Survey questions were only displayed if the participant clicked "agree" which indicated that they read the information, voluntarily agreed to participate and were at least 18 years of age.

Measures

Demographic and Baseline Characteristics

Information was collected about participant age, natal sex, race/ethnicity, country of residence, educational attainment, socioeconomic status, religion, attitudes about legal marriage for gay and lesbian couples, and where they first heard about the study. The term sexual orientation in this article is intended to refer to the natal sex of the participant and the natal sex of the individuals with whom they are sexually attracted. Participants were asked to select one or more labels for how they identified their sexual orientation prior to transition with options inclusive of participant sex (e.g., asexual female, bisexual female, heterosexual female, etc.). These responses were coded to be consistent with participant natal sex and were categorized into homosexual, heterosexual, bisexual, pansexual, asexual, and multiple. The multiple category included respondents who

Table 1 Demographic and baseline characteristics

	Natal female *N* (%) *N* = 69	Natal male *N* (%) *N* = 31
*Race/ethnicity**		
White	62 (89.9%)	28 (90.3%)
Multiracial	6 (8.7%)	3 (9.7%)
Other	4 (5.8%)	0 (0%)
Asian	1 (1.4%)	1 (3.2%)
Hispanic	1 (1.4%)	1 (3.2%)
Black	0 (0%)	0 (0%)
Country of residence		
USA	46 (66.7%)	20 (64.5%)
UK	8 (11.6%)	1 (3.2%)
Canada	5 (7.2%)	4 (12.9%)
Australia	2 (2.9%)	2 (6.5%)
Other	8 (11.6%)	4 (12.9%)
Education		
Bachelor's or graduate degree	29 (42.0%)	18 (58.1%)
Associates degree	3 (4.3%)	1 (3.2%)
Some college but no degree	28 (40.6%)	9 (29.0%)
High school graduate or GED	8 (11.6%)	2 (6.5%)
< High school	1 (1.4%)	0 (0%)
Other	0 (0%)	1 (3.2%)
Socioeconomic status compared to others in country of residence		
Above average (somewhat or very much)	19 (27.5%)	12 (38.7%)
About average	20 (29.0%)	7 (22.6%)
Below average (somewhat or very much)	27 (39.1%)	12 (38.7%)
Prefer not to say	3 (4.3%)	0 (0%)
Categorized sexual orientation (by natal sex) prior to transition[a]		
Homosexual	18 (26.1%)	2 (6.5%)
Heterosexual	6 (8.7%)	12 (38.7%)
Bisexual	15 (21.7%)	8 (25.8%)
Pansexual	4 (5.8%)	1 (3.2%)
Multiple	20 (29.0%)	5 (16.1%)
Asexual	6 (8.7%)	3 (9.7%)
Religious affiliation		
No religious affiliation	41 (59.4%)	22 (73.3%)
Liberal Christian	5 (7.2%)	3 (10.0%)
Liberal Jewish	5 (7.2%)	0 (0%)
Conservative Christian	1 (1.4%)	2 (6.7%)
Liberal Muslim	1 (1.4%)	0 (0%)
Conservative Jewish	0 (0%)	0 (0%)
Conservative Muslim	0 (0%)	0 (0%)
Other	16 (23.2%)	3 (10.0%)
Legal marriage for gay and lesbian couples		
Favor	65 (97.0%)	26 (83.9%)
Oppose	1 (1.5%)	5 (16.1%)
Don't know	1 (1.5%)	0 (0%)
Source where participant first heard about study		
Detransition blogs	26 (37.7%)	15 (48.4%)
Other social media	37 (53.6%)	11 (35.5%)
A person they know	3 (4.3%)	3 (9.7%)
Other	3 (4.3%)	2 (6.5%)

*May select more than one answer

[a]Natal females were more likely to express an exclusively homosexual sexual orientation prior to transition ($\chi^2 = 5.15$. The *p*-value is .023). Natal males were more likely to express an exclusively heterosexual sexual

Table 1 (continued)

orientation prior to transition ($\chi^2 = 13.05$. The p value is $< .001$). Natal sex differences were not significant for individuals expressing pre-transition sexual orientations of bisexual, pansexual, multiple, and asexual. For bisexual sexual orientation, $\chi^2 = 0.20$. For pansexual sexual orientation, $\chi^2 = 0.29$. For multiple sexual orientations reported, $\chi^2 = 1.88$. For asexual sexual orientation, $\chi^2 = 0.02$

selected more than one response where responses indicated more than one pattern of sexual attraction (e.g., lesbian female and heterosexual female). Other questions about baseline characteristics included questions about diagnosed psychiatric disorders and neurodevelopmental disabilities, trauma, and non-suicidal self-injury (NSSI) before the onset of gender dysphoria.

Gender Dysphoria Onset and Typologies

Participants were asked how old they were when they first experienced gender dysphoria and whether this was during childhood, at the onset of puberty, during puberty, or later. Respondents were categorized as having early-onset gender dysphoria if they indicated that their gender dysphoria began "during childhood" and late-onset gender dysphoria if their gender dysphoria began "at the onset of puberty" or later. To evaluate typologies, participants were characterized by Blanchard's (1985, 1989) typology as homosexual (if the sexual orientations listed prior to transition were exclusively homosexual) or non-homosexual which includes heterosexual, asexual, bisexual, pansexual, and multiple responses.

Transition

Participants were asked for their age and the year that they first sought care to transition, sources that encouraged them to believe that transition would be helpful to them, and whether they felt pressured to transition. The friendship group dynamics that were identified in previous work were assessed by asking respondents whether their friendship group mocked people who were not transgender, whether people in their pre-existing friend group transitioned before the participant decided to transition, and how participant popularity changed after announcing that they would transition (Littman, 2018). Questions were asked about participant experiences with clinicians, the social, medical, and surgical steps they took to transition, and the duration of time spent taking each medication.

Detransition

Participants were asked for their age and the year that they decided to detransition, how long they were transitioned before deciding to detransition, their reasons for wanting to detransition, what sources encouraged them to believe that detransition would be helpful to them, and whether they felt pressured to detransition. Participants were also asked which social, medical, and surgical steps they took to detransition and whether they contacted the doctor or clinic that they used for their transition to tell them that they detransitioned.

Transition and Detransition Narratives

In this article, "narratives" denote participant interpretations of their experiences and rationales surrounding their decisions to transition and detransition. To associate each participant survey with a set of relevant narratives, the data were reviewed with horizontal (beginning to end) passes and vertical passes for selected questions (these questions are listed in the supplemental materials). Surveys were coded as belonging to zero or more of the following narrative categories: discrimination, nonbinary, retransition, trauma and mental health, internalized homophobia, social influence, and misogyny. Each narrative and the responses that were associated with them are detailed below. Example quotes were selected with care taken to avoid quoting a participant more than once per narrative. Narratives are ordered and reported with the more commonly accepted narratives first and the newer narratives next.

The *discrimination* narrative was defined as when someone detransitioned due to experiencing discrimination or external social pressures. The *nonbinary* narrative consisted of answering that their current identification was "nonbinary/genderqueer" or providing open-text responses that described aspects of discovering or maintaining a nonbinary identification. Although there were no questions in the survey specifically asking about retransition, the *retransition* narrative was identified if participants expressed that they had retransitioned or resumed transition in any of the open-text responses in the survey. The *gender dysphoria was caused by trauma or a mental health condition* narrative was identified by selection for the answers, "what I thought were feelings of being transgender were actually the result of trauma," "what I thought were feelings of being transgender were actually the result of a mental health condition," "I discovered that my gender dysphoria was caused by something specific (ex. trauma, abuse, mental health condition)" or open-text responses consistent with these reasons. The *internalized homophobia/difficulty accepting oneself as a lesbian female, gay male, or bisexual person* narrative consisted of descriptions that the respondents' discomfort and distress about being lesbian, gay, or bisexual was related to their gender dysphoria, transition, or detransition, or that they assumed they were transgender because they did not yet understand themselves to be lesbian, gay or bisexual. The *social pressure to transition* narrative was identified with an affirmative

answer to whether they felt pressured to transition with an open-text response indicating that the pressure came from a person or group of people. The *misogyny* narrative was identified for natal female respondents with open-text responses using the word "misogyny" or expressing a hatred of femaleness.

Gender Identification at Start of Transition and at Survey Completion

Participants were asked how they identified their gender when they started their transition and at the time of survey completion. They were given options of female, male, nonbinary/genderqueer, trans man/FTM, trans woman/MTF, none of the above, and other. Responses were coded by natal sex and categorized as transgender, birth sex, nonbinary, and other. Answers that were combinations of the above categories were reported as combinations such as "birth sex and nonbinary."

Self-Appraisal of Transition and Detransition

One question asked if participants believe they were helped and another if they were harmed by their transition with options of "very much," "a little," or "not at all." These results were categorized into exclusively helped, exclusively harmed, and both helped and harmed. Participants were asked which of the following reflected their feelings about their transition: "I am glad that I transitioned," "I wish I had never transitioned," "Transitioning distracted me from what I should have been doing," "Transition was a necessary part of my journey." Participants were asked to rate their regret about their transition ("no regrets," "mild regrets," "strong regrets," and "very strong regrets") and were asked to indicate their satisfaction with their decisions to transition and detransition ("extremely satisfied," "very satisfied," "somewhat satisfied," "somewhat dissatisfied," "very dissatisfied," and "extremely dissatisfied"). Satisfaction options were collapsed into "satisfied" and "dissatisfied." In addition, participants were asked if they knew then what they know now, would they have chosen to transition.

Data Analysis

After data were cleaned, statistical analyses were performed using google sheets. Results are presented as frequencies, percentages, medians, means and standard deviations. *t* tests and chi-square tests were performed for selected variables and were considered significant for $p < .05$. Qualitative data were obtained from the open-text answers to questions that allowed participants to provide additional information. Selected open-text responses were categorized, tallied, and reported numerically. Salient respondent quotes and summaries from the qualitative data were selected to illustrate the quantitative results and to provide relevant examples.

Results

Before Transition

Mental health diagnoses and traumatic experiences before the onset of gender dysphoria. Table 2 shows data about psychiatric disorders, neurodevelopmental disabilities, NSSI, and trauma that were reported as occurring prior to the onset of gender dysphoria. Because these conditions and events occurred before participants began to feel gender dysphoric, they cannot be considered to be secondary to gender incongruence or transphobia.

Gender dysphoria onset and typology. Most participants (82.0%) were living with one or both parents when they first experienced gender dysphoria at a mean age of 11.2 years (SD = 5.6). The mean age of gender dysphoria onset was not statistically different between natal females ($M = 11.3$; SD = 5.4) and natal males ($M = 11.0$; SD = 5.9), $t(96) = 0.25$. By Blanchard typologies, 26.1% of natal females were exclusively homosexual and 73.9% non-homosexual while 6.5% of natal males were exclusively homosexual and 93.5% non-homosexual (Blanchard, 1985, 1989). Slightly more than half of the respondents (56.0%) experienced early-onset gender dysphoria and slightly less than half (44.0%) experienced late-onset gender dysphoria. Although late-onset gender dysphoria in natal females was largely absent from the scientific literature prior to 2012 (Steensma et al., 2013; Zucker & Bradley, 1995; Zucker et al., 2012a), 55.1% of the natal female participants reported that their gender dysphoria began with puberty or later. Because the information about the timing of gender dysphoria onset was obtained from participants reporting on their own experiences, it can be assumed that these cases were indeed late-onset rather than early-onset gender dysphoria that was concealed from parents and other people.

Transition reasons. Table 3 shows data about the reasons that individuals wanted to transition and the most frequently endorsed were: wanting to be perceived as the target gender (77.0%); believing that transitioning was their only option to feel better (71.0%); the sensation that their body felt wrong the way it was (71.0%), and not wanting to be associated with their natal sex (70.0%). Most participants believed that transitioning would eliminate (65.0%) or decrease (63.0%) their gender dysphoria and that with transitioning they would become their true selves (64.0%).

Sources of transition encouragement and friend group dynamics. Participants identified sources that encouraged them to believe transitioning would help them. Social media and online communities were the most frequently reported, including YouTube transition videos (48.0%), blogs (46.0%), Tumblr (45.0%), and online communities (43.0%) (see supplemental materials). Also common were people who the respondents knew offline such as therapists (37.0%); someone (28.0%) or a group of friends (27.0%) that they knew in-person. A subset of

Table 2 Mental health diagnoses and traumatic experiences prior to the onset of gender dysphoria

	Natal female *N* (%) *N* = 69	Natal male *N* (%) *N* = 31
*Diagnosed with a mental illness or neurodevelopmental disability**[a]		
Depression	27 (39.1%)	5 (16.1%)
Anxiety	22 (31.9%)	5 (16.1%)
Attention deficit hyperactivity disorder (ADHD)	10 (14.5%)	2 (6.5%)
Post-traumatic stress disorder (PTSD)	10 (14.5%)	1 (3.2%)
Eating disorders	10 (14.5%)	0 (0%)
Autism spectrum disorders	9 (13.0%)	1 (3.2%)
Bipolar disorder	9 (13.0%)	0 (0%)
Obsessive compulsive disorder	6 (8.7%)	3 (9.7%)
Borderline personality disorder	5 (7.2%)	0 (0%)
Schizophrenia or other psychotic disorders	1 (1.4%)	0 (0%)
None of the above	28 (40.6%)	17 (54.8%)
Other	7 (10.1%)	2 (6.5%)
Non-suicidal self-injury (NSSI)[b]		
Engaged in NSSI before the onset of gender dysphoria	19 (27.5%)	5 (16.1%)
Trauma[c]		
Experienced a trauma less than one year before the start of gender dysphoria	33 (47.8%)	4 (12.9%)

*May select more than one answer

[a]Natal sex difference for one or more pre-existing diagnoses (100-none of the above) was not significant [$\chi^2(1, 100) = 1.76$]

[b]Natal sex differences for NSSI before the onset of gender dysphoria was not significant ($\chi^2 = 1.52$)

[c]Experiencing a trauma less than one year before the start of gender dysphoria was statistically different [$\chi^2(1, 100) = 11.19$, $p < .001$] with natal females > natal males

Table 3 Transition reasons

	Natal female *N* (%) *N* = 69	Natal male *N* (%) *N* = 31
*Reasons for transition**		
I wanted others to perceive me as the target gender	53 (76.8%)	24 (77.4%)
I thought transitioning was my only option to feel better	50 (72.5%)	21 (67.7%)
My body felt wrong to me the way it was	50 (72.5%)	21 (67.7%)
I didn't want to be associated with my natal sex/natal gender	51 (73.9%)	19 (61.3%)
It made me uncomfortable to be perceived romantically/sexually as a member of my natal sex/natal gender	49 (71.0%)	18 (58.1%)
I thought transitioning would eliminate my gender dysphoria	43 (62.3%)	22 (71.0%)
I felt I would become my true self	42 (60.9%)	22 (71.0%)
I identified with the target gender	40 (58.0%)	24 (77.4%)
I thought transitioning would lessen my gender dysphoria	45 (65.2%)	18 (58.1%)
I felt I would fit in better with the target gender	36 (56.5%)	20 (64.5%)
I felt I would be more socially acceptable as a member of the target gender	38 (55.1%)	11 (35.5%)
I felt I would be treated better if I was perceived as the target gender	35 (50.7%)	14 (45.2%)
I saw myself as a member of the target gender	31 (44.9%)	18 (58.1%)
I thought transitioning would reduce gender-related harassment or trauma I was experiencing	35 (50.7%)	5 (16.1%)
I had erotic reasons for wanting to transition	9 (13.0)	12 (38.7%)
Other	9 (13.0%)	3 (9.7%)

*May select more than one answer

participants experienced the friendship group dynamics identified in previous work, including belonging to a friendship group that mocked people who were not transgender (22.2%), having one or more friend from the pre-existing friend group transition before the participant decided to transition (36.4%), and experiencing an increase in popularity after announcing plans to transition (19.6%) (Littman, 2018). Most did not have this experience (68.7%, 61.6%, and 62.9%, respectively).

Pressure to transition. More than a third of the participants (37.4%) felt pressured to transition. Natal sex differences in feeling pressured to transition were significant by chi-square test with natal females > natal males $\chi^2(1, 99) = 4.22$, $p = .04$. Twenty-eight participants provided open-text responses of which 24 described sources of pressure (17 described social pressures and 7 described sources that were not associated with other people). Clinicians, partners, friends, and society were named as sources that applied pressure to transition, as seen in the following quotes: "My gender therapist acted like it [transition] was a panacea for everything;" "[My] [d]octor pushed drugs and surgery at every visit;" "I was dating a trans woman and she framed our relationship in a way that was contingent on my being trans;" "A couple of later trans friends kept insisting that I needed to stop delaying things;" "[My] best friend told me repeatedly that it [transition] was best for me;" "The forums and communities and internet friends;" "By the whole of society telling me I was wrong as a lesbian;" and "Everyone says that if you feel like a different gender…then you just are that gender and you should transition." Participants also felt pressure to transition that did not involve other people as illustrated by the following: "I felt pressured by my inability to function with dysphoria" and "Not by people. By my life circumstances."

Experiences with clinicians. When participants first sought care for their gender dysphoria or desire to transition, more than half of the participants (53.0%) saw a psychiatrist or psychologist; about a third saw a primary care doctor (34.0%) or a counselor (including licensed clinician social worker, licensed professional counselor, or marriage and family therapist) (32.0%); and 17.0% saw an endocrinologist. For transition, 45.0% of participants went to a gender clinic (44.4% of those attending a gender clinic specified that the gender clinic used the informed consent model of care); 28.0% went to a private doctor's office; 26.0% went to a group practice; and 13.0% went to a mental health clinic (see supplemental materials).

The majority (56.7%) of participants felt that the evaluation they received by a doctor or mental health professional prior to transition was not adequate and 65.3% reported that their clinicians did not evaluate whether their desire to transition was secondary to trauma or a mental health condition. Although 27.0% believed that the counseling and information they received prior to transition was accurate about benefits and risks, nearly half reported that the counseling was overly positive about the benefits of transition (46.0%) and not negative enough about the risks (26.0%). In contrast, only a small minority found the counseling not positive enough about benefits (5.0%) or too negative about risks (6.0%) suggesting a bias toward encouraging transition.

Transition

Participants were on average 21.9 years old (SD = 6.1) when they sought medical care to transition with natal females seeking care at younger ages ($M = 20.0$; SD = 4.2) than natal males ($M = 26.0$; SD = 7.5), $t(97) = -5.07$, $p < .001$. Given that the majority of natal males were categorized as Blanchard typology non-homosexual, the finding that natal males sought medical care to transition at older ages than natal females is concordant with previous research (Blanchard et al., 1987). The average year for seeking care was more recent for natal females ($M = 2011$; SD = 3.8) than natal males ($M = 2007$; SD = 6.9), $t(96) = 2.78$, $p = .007$, and thus, there may have been differences in the care they received due to differences in the culture surrounding transition and the prevailing medical approaches to gender dysphoria for the time.

At the start of transitioning, nearly all (98.0%) of the participants identified as either transgender (80.0%), nonbinary (15.0%), or both transgender and nonbinary (3.0%). Participants identified which social, medical, and surgical steps they had taken to transition. Table 4 shows these steps, separated by natal sex where appropriate. Most respondents adopted new pronouns (91.0%) and names (88.0%), and the vast majority (97.1%) of natal females wore a binder. Most participants took cross-sex hormones (96.0%) and most natal males took anti-androgens (87.1%). The most frequent transition surgery was breast or chest surgery for natal females (33.3%). Genital surgery was less common (1.4% of natal females and 16.1% of natal males). Natal females took testosterone for a mean duration of 2.0 years (SD = 1.6). Natal males took estrogen for a mean duration of 5.1 years (SD = 5.9) and anti-androgens for 2.8 years (SD = 2.6). The minority of patients who took puberty blockers took them for a mean duration of less than a year ($M = 0.9$ years; SD = 0.6).

Detransition

Before deciding to detransition, participants remained transitioned for a mean duration of 3.9 years (SD = 4.1) with natal females remaining transitioned for a shorter period of time ($M = 3.2$ years; SD = 2.7) than natal males ($M = 5.4$ years; SD = 6.1), $t(96) = -2.40$, $p = .018$. When participants decided to detransition they were a mean age of 26.4 years old (SD = 7.4) though natal females were significantly younger ($M = 23.6$; SD = 4.5) than natal males ($M = 32.7$; SD = 8.8), $t(97) = -6.75$, $p < .001$. The mean calendar year when participants decided to detransition was 2014 ($M = 2014$; SD = 3.3), but the difference

Table 4 Steps taken for social, medical, and surgical transition

	N (%)
*Social transition**	
Pronouns	91 (91.0%)
Different name	88 (88.0%)
Clothes/hair/makeup	90 (90.0%)
Legal name change	49 (49.0%)
Gender/sex changed on government documents	36 (36.0%)
Voice training	20 (20.0%)
Natal female	
Wore a binder	67 (97.1%)
*Medical transition**	
Cross-sex hormones	96 (96.0%)
Puberty blockers	7 (7.0%)
Natal male	
Anti-androgens	27 (87.1%)
*Surgical transition**	
Face/neck surgery	5 (5.0%)
Natal female	
Breast/chest surgery	23 (33.3%)
Genital surgery (to create a penis)	1 (1.4%)
Natal male	
Breast implants	5 (16.1%)
Genital surgery (to create a vagina)	5 (16.1%)

*May select more than one answer

between natal females and natal males was not significant ($M = 2014$, SD = 3.3; $M = 2014$, SD = 3.5), $t(95) = 0.52$.

Respondents detransitioned for a variety of reasons and most (87.0%) selected more than one reason. The most frequently endorsed reason for detransitioning was that the respondent's personal definition of male and female changed and they became comfortable identifying with their natal sex (60.0%) (see Table 5). Other commonly endorsed reasons were concerns about potential medical complications (49.0%); transition did not improve their mental health (42.0%); dissatisfaction with the physical results of transition (40.0%); and discovering that something specific like trauma or a mental health condition caused their gender dysphoria (38.0%). External pressures to detransition such as experiencing discrimination (23.0%) or worrying about paying for treatments (17.0%) were less common.

Encouragement and pressure to detransition. Participants were asked to select sources that encouraged them to believe that detransitioning would help them. These included blogs (37.0%), Tumblr (35.0%), and YouTube detransition videos (23.0%) (see supplemental materials). At some point in their process, 23.2% felt pressured to detransition. There was no significant difference between natal females and natal males for feeling pressured to detransition, $\chi^2(1, 99) = 1.11$. Of the 21 open-text responses provided, 14 respondents expressed social pressure to detransition; three expressed internal pressure to detransition and four provided responses that were neither

Table 5 Reasons for detransitioning

	Natal female *N* (%) $N = 69$	Natal male *N* (%) $N = 31$
*Reasons for detransitioning**		
My personal definition of female or male changed and I became more comfortable identifying as my natal sex	45 (65.2%)	15 (48.4%)
I was concerned about potential medical complications from transitioning	40 (58.0%)	9 (29.0%)
My mental health did not improve while transitioning	31 (44.9%)	11 (35.5%)
I was dissatisfied by the physical results of the transition/felt the change was too much	35 (50.7%)	5 (16.1%)
I discovered that my gender dysphoria was caused by something specific (ex, trauma, abuse, mental health condition)	28 (40.6%)	10 (32.3%)
My mental health was worse while transitioning	27 (39.1%)	9 (29.0%)
I was dissatisfied by the physical results of the transition/felt the change was not enough	22 (31.9%)	11 (35.5%)
I found more effective ways to help my gender dysphoria	25 (36.2%)	7 (22.6%)
My physical health was worse while transitioning	21 (30.4%)	11 (35.5%)
I felt discriminated against	12 (17.4%)	11 (35.5%)
I had medical complications from transitioning	12 (17.4%)	7 (22.6%)
Financial concerns about paying for transition care	11 (15.9%)	6 (19.4%)
My gender dysphoria resolved	10 (14.5%)	5 (16.1%)
My physical health did not improve while transitioning	9 (13.0%)	2 (6.5%)
I resolved the specific issue that was the cause of my gender dysphoria	6 (8.7%)	4 (12.9%)
I realized that my desire to transition was erotically motivated	1 (1.4%)	5(16.1%)
Other	19 (27.5%)	6 (19.4%)

*May select more than one answer

or unclear. Regarding social pressure to detransition, seven participants expressed that the pressure came from partners, parents, or other family members as shown in the following example quotes: "I was threatened that if I did not immediately detransition I would NEVER see my […] children again," "My father very much wanted me to desist," and "Parents constantly encouraging me to detransition." Five participants expressed societal pressure to detransition as expressed in the following quotes: "I did not pass, I was mocked in public, I could not get a job. It was not ok to be trans" and "Well, I mean basically the entire world was against me transitioning, so yeah." One participant felt pressured by doctors and another one from a blog.

Detransition steps. Table 6 shows data about the social, medical, and surgical steps participants took to detransition. Nearly all participants medically detransitioned by ceasing cross-sex hormones (95.0%). Social detransition steps were also common and included returning to the use of previously used pronouns (63.0%) and birth names (33.0%) and changing one's clothes and hair presentations (48.0%). Surgical detransition steps were less common (9.0%).

Finding better ways of coping with gender dysphoria**.** Participants were asked to select responses that that they considered to have been better ways for them to cope with their gender dysphoria. Responses included community (44.0%), mindfulness/meditation (41.0%), exercise (39.0%), therapy (24.0%), trauma work (24.0%), medication to treat a mental health condition (18.0%), and yoga (14.0%).

Table 6 Social, medical, and surgical detransition steps

	N (%)
*Social detransition**	
Previous pronouns	63 (63.0%)
Clothes/hair/makeup	48 (48.0%)
Birth name	33 (33.0%)
New name (not birth name)	24 (24.0%)
None of the above	2 (2.0%)
*Medical detransition**	
Stopped cross-sex hormones	95 (95.0%)
Stopped puberty blockers	4 (4.0%)
Started hormones consistent with natal sex	14 (14.0%)
Natal male	
Stopped anti-androgens	17 (54.8%)
*Surgical detransition**	
Surgery to reverse changes from transition	9 (9.0%)

*May select more than one answer

Transition and Detransition Narratives

Several transition and detransition narratives emerged from the data. A sizable minority of participants (41.0%) expressed more than one narrative in their responses.

The *discrimination and external pressures to detransition* narrative was described by 29.0% of participants. Examples include: "I had to detransition in order to get a job"; "I was afraid of being homeless and unable to support myself"; "I felt much happier with myself but I couldn't go anywhere without being afraid. I passed okay but not perfectly. I was stared down and sneered at in the women's clothes section, I wouldn't dare use a public toilet because I'd find either violent men or women who wished an encounter with a violent man on me."

A *nonbinary* narrative was expressed by 16.0% of participants. Some described that they discovered their nonbinary gender identity during their transition, as in the following quotes: "I still was uncomfortable with my body and figured I should stop and make sure I really wanted to keep going. I didn't and I decided I must be nonbinary, not FTM"; "Transitioning didn't do what I thought I wanted it to. I had transitioned to the wrong gender. I still felt wrong. Then, I realized I was not male, but genderqueer. I detransitioned to suit my true identity." And others described a consistent nonbinary identification, as in the following quote, "I identified the same way that I did before. I had gotten what I wanted out of HRT and was ready to stop taking it." (Cross-sex hormones are sometimes referred to as "hormone replacement therapy" and abbreviated as HRT).

Three participants (3.0%) expressed the *retransition* narrative in open-text answers indicating that they had retransitioned, including the following quotes: "I am now transitioning for a second time"; I retransitioned after 5 years of detransitioning"; and "Anyway, I retransitioned over 10 years after detransitioning."

Most participants (58.0%) expressed the *gender dysphoria was caused by trauma or a mental health condition* narrative which included endorsing the response options indicating that their gender dysphoria was caused by something specific, such as a trauma or a mental health condition. More than half of the participants (51.2%) responded that they believe that the process of transitioning delayed or prevented them from dealing with or being treated for trauma or a mental health condition. The following are example quotes that were in response to why participants chose to detransition: "I slowly began addressing the mental health conditions and traumatic experiences that caused such a severe disconnect between myself and my body…"; "I was starting to become critical of transition because I felt that many people were doing it out of self-hatred and started to realize that applied to me as well"; "I was deeply uncomfortable with my secondary sex characteristics, which I now understand was a result of childhood trauma and associating my secondary sex characteristics with those events."

Despite the absence of any questions about this topic in the survey, nearly a quarter (23.0%) of the participants expressed the *internalized homophobia and difficulty accepting oneself as lesbian, gay, or bisexual* narrative by spontaneously describing that these experiences were instrumental to their gender dysphoria, their desire to transition, and their detransition. All

of the participants in this category indicated that they were either same-sex attracted exclusively or were same-sex attracted in combination with opposite-sex attraction (such as bisexual, pansexual, etc.). The following responses were written in as "other" for the question about why participants transitioned: "Transitioning to male would mean my attraction to girls would be 'normal'"; "being a 'gay trans man' (female dating other females) felt better than being a lesbian, less shameful"; "I felt being the opposite gender would make my repressed same-sex attraction less scary"; "I didn't want to be a gay man." Some participants described that it took time for them to gain an understanding of themselves as lesbian, gay, or bisexual as seen in the following: "At the time I was trying to figure out my identity and felt very male and thought I was transgender. I later discovered that I was a lesbian…"; and "Well, after deep discovery, I realized I was a gay man and realized that a sexual trauma after puberty might [have] confused my thought. I wanted to live as a gay man again." Several natal female respondents expressed that seeing other butch lesbians would have been helpful to them as shown by the following: "What would have helped me is being able to access women's community, specifically lesbian community. I needed access to diverse female role-models and mentors, especially other butch women."

The *social influence* narrative was identified where participants added information to the question about if they had felt pressured to transition and the response described pressure from a person or people. One-fifth (20.0%) of participants expressed that they felt pressured by a person or people to transition. Example quotes for social influence were described in a previous section.

Of the natal females, 7.2% expressed the *misogyny* narrative. Example quotes include: "…I realized how much of it [dysphoria] may have been caused by internalized misogyny and homophobia"; "Finally realizing there's nothing wrong or disgusting or weak about being female"; and "My transition was a desperate attempt to distance myself from womanhood and femaleness due to internalized lesbophobia and misogyny combined with a history of sexual trauma."

After Detransition

Disposition. At the time of survey completion, most participants had returned to identifying solely as their birth sex (61.0%) with an additional 10.0% identifying as their birth sex plus another identification. Fourteen percent of the participants identified solely as nonbinary with an additional 11.0% identifying as nonbinary plus a second identification. Eight percent of the participants identified solely as transgender with an additional 5.0% identifying as transgender plus another identification. Four percent of the responses did not fit into the above categories and were coded as "other." Figure 1 illustrates the distribution of participants' current gender identification (post-detransition). Only 24.0% of participants had informed

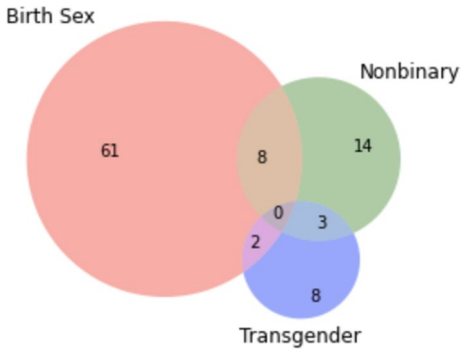

Fig. 1 Distribution of participants' current gender identification (after detransition) (n = 100). *Notes*: The sum of the numbers appearing in the "Birth Sex" circle indicates the number of participants who returned to identifying with their birth sex (71)—either as birth sex alone (61) or birth sex in addition to a second identification (10) represented in the overlap between two circles. For example, eight participants identify as their birth sex and as nonbinary. The sum of the numbers appearing in the "Nonbinary" circle indicates the number of participants who identify as nonbinary (25)—either as nonbinary alone (14) or nonbinary in addition to a second identification (11). The sum of the numbers appearing in the "Transgender" circle indicates the number of participants who identify as transgender (13)—either as transgender alone (8) or transgender in addition to a second identification (5). Four participants had responses that did not fit the categories above and were coded as "other"

the doctor or clinic that facilitated their transitions that they had detransitioned.

Self-appraisal of past transgender identification. Table 7 presents the data for responses endorsed by participants to reflect how they feel currently about having identified as transgender in the past. The statements most frequently selected included: "I thought gender dysphoria was the best explanation for what I was feeling" (57.0%), "My gender dysphoria was similar to the gender dysphoria of those who remain transitioned" (42.0%), "What I thought were feelings of being transgender actually were the result of trauma" (36.0%), "What I thought were feelings of being transgender actually were the result of a mental health condition" (36.0%).

Self-appraisal of transition and detransition. When asked to select which statement best reflects their feelings about their transition, nearly a third (30.0%) indicated that they wish they had never transitioned while 11.0% indicated they were glad they transitioned. Some (34.0%) selected the statement that transition "was a necessary part of [their] journey" but others (21.0%) indicated that the process of transitioning distracted them from what they should have been doing. Responses about whether transition helped or harmed them were also complicated. While 50.5% selected answers consistent with being both helped and harmed, 32.3% indicated that they were only harmed and 17.2% indicated that they were only helped. The majority of respondents were dissatisfied with their decision to transition (69.7%) and satisfied with their decision to detransition (84.7%). At least some amount of transition regret was

Table 7 Self-appraisal of past transgender identification

	Natal female *N* (%) *N* = 69	Natal male *N* (%) *N* = 31
*Self-appraisal about identifying as transgender in the past**		
I thought gender dysphoria was the best explanation for what I was feeling	39 (56.5%)	18 (58.1%)
My gender dysphoria was similar to the gender dysphoria of those who remain transitioned	32 (46.4%)	10 (32.3%)
What I thought were feelings of being transgender actually were the result of trauma	31 (44.9%)	5 (16.1%)
What I thought were feelings of being transgender actually were the result of a mental health condition	28 (40.6%)	8 (25.8%)
Someone else told me that the feelings I was having meant that I was transgender and I believed them	25 (36.2%)	10 (32.3%)
I still identify as transgender	20 (29.0%)	10 (32.3%)
I believed I was transgender then, but I was mistaken	16 (23.2%)	6 (19.4%)
I was transgender then but I am not transgender now	15 (21.7%)	7 (22.6%)
I formerly identified as transgender and now identify as genderqueer/nonbinary	12 (17.4%)	5 (16.1)
My gender dysphoria was different from the gender dysphoria of those who remain transitioned	11 (15.9%)	4 (12.9%)
I was never transgender	8 (11.6%)	3 (9.7%)
I thought I had gender dysphoria but I was mistaken	4 (5.8%)	4 (12.9%)
I never had gender dysphoria	1 (1.4)	2 (6.5%)
N/A as I did not identify as transgender in the past	0 (0%)	1 (3.2%)
Other	18 (26.1%)	5 (16.1%)

*May select more than one answer

common (79.8%) and nearly half (49.5%) reported strong or very strong regret. Most respondents (64.6%) indicated that if they knew then what they know now, they would not have chosen to transition.

Discussion

This study was designed to explore the experiences of individuals who obtained medical and surgical treatment for gender dysphoria and then detransitioned by discontinuing the medications or having surgery to reverse the changes from transition. The findings of this study, however, should not be assumed to be representative of all individuals who detransition. Although this study further documents that detransitioners exist, the prevalence of detransition as an outcome of transition is unknown. Only a small percentage of detransitioners (24.0%) informed the clinicians and clinics that facilitated their transitions that they had detransitioned. Therefore, clinic rates of detransition are likely to be underestimated and gender transition specialists may be unaware of how many of their own patients have detransitioned, particularly for patients who are no longer under their care.

This research demonstrates that the experiences of individuals who detransition are varied and the reasons for detransition are complex. Nearly all participants identified as transgender or nonbinary at the start of their transition and most sought transition because they did not want to be associated with their natal sex, their bodies felt wrong the way they were, and they believed that transition was the only option to relieve their distress. Some were helped by transition and only detransitioned because they were pressured to do so by people in their lives, society, or because they had medical complications. Some were harmed by transition and detransitioned because they concluded that their gender dysphoria was caused by trauma, a mental health condition, internalized homophobia, or misogyny—conditions that are not likely to be resolved with transition. These findings highlight the complexity of gender dysphoria and suggest that, in some cases, failure to explore co-morbidities and the context in which the gender dysphoria emerged can lead to misdiagnosis, missed diagnoses, and inappropriate gender transition. Some individuals detransitioned because their gender dysphoria resolved, because they found better ways to address their symptoms, or because their personal definitions of male and female changed and they became comfortable identifying as their natal sex.

The study sample was predominantly young natal females, many of whom experienced late-onset gender dysphoria which mirrors the recent, striking changes in the demographics of gender dysphoric youth seeking care as well as the youth described by their parents in Littman (2018) (see also Aitken et al., 2015; de Graaf et al., 2018; Zucker, 2019). Concerns have been raised that this new cohort of gender dysphoric individuals is unlike previous cohorts. Professionals have started to call for caution before treating this cohort with interventions with permanent effects because the etiologies, desistance and persistence rates,

expected duration of symptoms, and whether this new population is helped or harmed by gender transition is still unknown (D'Angelo et al., 2021; Kaltiala-Heino et al., 2018). The natal females and natal males in this sample differed on several dimensions, including that natal females were younger than natal males when they sought transition, when they decided to detransition, and at the time of survey completion. Natal females were more likely than natal males to have experienced a trauma less than one year before the onset of their gender dysphoria and were more likely to have felt pressured to transition. Compared to natal males, natal females remained transitioned for a shorter duration of time before deciding to detransition. Additionally, natal females transitioned more recently than natal males, so their experiences may vary due to changing trends in the clinical management of gender dysphoria and the cultural settings in which they became gender dysphoric.

The study findings covered a wide range of detransition experiences that are consistent with the diversity of experiences described in previously published clinical case reports and case series. Overlap of findings include: transition regret; absence of transition regret; re-identification with birth sex; continued identification as transgender; improvement or worsening of well-being with transition; retransitioning; detransitioning due to external social pressures; nonbinary identification; and recognizing and accepting oneself as homosexual or bisexual (D'Angelo, 2018; Djordjevic et al., 2016; Levine, 2018; Pazos Guerra et al., 2020; Turban & Keuroghlian, 2018; Turban et al., 2021; Vandenbussche, 2021). The population in this study is similar to the population in Vandenbussche in that both were predominantly natal females in their mid-20s. Because the current study recruited in 2016–2017 and Vandenbussche recruited in 2019, the similar mean age of participants may reflect the age of individuals who can be reached in online detransitioner communities. Several findings in this study were consistent with Vandenbussche's findings, including similar reasons for detransition (realizing that their gender dysphoria was related to other issues, finding alternatives to address gender dysphoria, gender dysphoria resolved, etc.). Although these two studies were recruited in different years, had different eligibility criteria, and included participants from several countries, it is possible that there may be some overlap of study populations.

The current study findings provide additional insight into the complex relationships between internalized homophobia, gender dysphoria, and desire to transition. Contrary to arguments against the potential role of homophobia in gender transitions (Ashley, 2020), participants reported that their own gender dysphoria and desire to transition stemmed from the discomfort they felt about being same-sex attracted, their desire to not be gay, and the difficulties that they had accepting themselves as lesbian, gay or bisexual. For these individuals, exploring their distress and discomfort around sexual orientation issues may have been more helpful to them than medical and surgical transition or at least an important part of exploration before making the decision to transition. This research adds to the existing evidence that gender dysphoria can be temporary (Ristori & Steensma, 2016; Singh et al., 2021; Zucker, 2018). It has been established that the most likely outcome for prepubertal youth with gender dysphoria is to develop into lesbian, gay, bisexual (LGB) (non-transgender) adults (Ristori & Steensma, 2016; Singh et al., 2021; Wallien & Cohen-Kettenis, 2008; Zucker, 2018). And, temporary gender dysphoria may be a common part of LGB identity development (Korte et al., 2008; Patterson, 2018). Therefore, intervening too soon to medicalize gender dysphoric youth risks iatrogenically derailing the development of youth who would otherwise grow up to be LGB non-transgender adults. Participants who detransitioned because they became comfortable identifying as their natal sex and because their gender dysphoria resolved further support that gender dysphoria is not always permanent.

The data in this study strengthen, with first-hand accounts, the rapid-onset gender dysphoria (ROGD) hypotheses which, briefly stated, are that psychosocial factors (such as trauma, mental health conditions, maladaptive coping mechanisms, internalized homophobia, and social influence) can cause or contribute to the development of gender dysphoria in some individuals (Littman, 2018). Littman also postulated that certain beliefs could be spread by peer contagion, including the belief that a wide range of symptoms should be interpreted as gender dysphoria (and proof of being transgender) and the belief that transition is the only solution to relieve distress. The current study supports the potential role of psychosocial factors in the development of gender dysphoria and further suggests, by participant responses that transitioning prevented or delayed them from addressing their underlying conditions, that maladaptive coping mechanisms may be relevant for some individuals. The potential role of social influence is demonstrated as well. First, when respondents were asked to describe how they currently feel about having identified as transgender in the past, more than a third endorsed the option, "Someone told me that the feelings I was having meant that I was transgender, and I believed them." Second, a subset of participants experienced the unique friendship group dynamics reported in Littman where peer groups mocked people who were not transgender and popularity within the friend group increased when respondents announced their plan to transition. Additionally, respondents identified several social sources that encouraged them to believe that transitioning would help them including: YouTube transition videos, blogs, Tumblr, and online communities. And finally, 20.0% of participants felt pressured to transition by social sources that included friends, partners, and society. More research is needed to further explore these hypotheses.

The current study and the Turban et al. (2021) analysis of the USTS data share some similarities and differences. Similarities include the use of convenience samples, targeted recruitment, and anonymous data collection. The findings of Turban et al. (including external pressures to detransition and transgender

identification after detransition) are a subset of the array of experiences described in the current study. The current study differed from James et al. (2016) and Turban et al. in that it enrolled participants based on the criterion of detransition after medical or surgical transition regardless of how they currently identified, recruited from communities with diverse perspectives about transition and detransition, used a precise definition for detransition that specifies the use of medication or surgery, and included answer options that were relevant to many different types of detransition experiences. In contrast, the USTS only enrolled transgender-identifying individuals regardless of whether they medically or surgically transitioned, recruited from communities likely to have similar perspectives about transition and detransition, and provided multiple choice answer options that were relevant to a narrower range of detransition experiences (James et al., 2016). Further, the definition used by the USTS for "detransitioned" (having "gone back to living as [their] sex assigned as birth, at least for a while") is quite vague. Although Turban et al. provide valuable information about the subset of transgender-identifying people who may have detransitioned, the current study provides a more comprehensive view of individuals who detransition after medical or surgical transition.

Over the past 15 years, there have been substantial changes in the clinical approach to gender dysphoric patients notable for a shift from approaches that employ thorough evaluations and judicious use of medical and surgical transition (the watchful waiting or Dutch approach, the developmentally informed approach, and the medical model of care) to approaches with minimized or eliminated evaluation and liberal use of transition interventions (the affirmative approach and the informed consent model of care) (Cavanaugh et al., 2016; de Vries & Cohen-Kettenis, 2012; Meyer et al., 2002; Rafferty et al., 2018; Schulz, 2018; Zucker et al., 2012b). This trend is prominent in the U.S. where the American Academy of Pediatrics endorsed the affirmative approach in 2018 and Planned Parenthood currently uses the informed consent model to provide medical transition in more than 200 clinics in 35 states (Planned Parenthood, 2021; Rafferty et al., 2018). It is plausible that an unintended consequence of these clinical shifts may be an increase in people who detransition. Many participants in this study believe that they did not receive an adequate evaluation by a clinician before transition. The definition of "adequate evaluation" was not provided in the survey and may be open to respondent interpretation. But given the complexities of the gender dysphoria described in the current study, one might consider a low bar of "adequate" to be the exploration of factors that could be misinterpreted as non-temporary gender dysphoria as well as factors that could be underlying causes for gender dysphoria. The most recently emerging approach to gender dysphoria is called the "exploratory approach" which is a neutral psychotherapeutic approach to help individuals gain a deeper understanding of their gender distress and the factors contributing to their dysphoria (Churcher Clarke & Spiliadis, 2019; Spiliadis, 2019). The study's findings suggest that an exploratory type of approach may have been beneficial to some of the respondents. Future research is needed to determine which patients are best treated by which approaches long term.

Patients considering medical and surgical interventions deserve accurate information about the risks, benefits, and alternatives to that treatment. In this sample, nearly half of the participants reported that the counseling they received about transition was overly positive about the benefits of transition and more than a quarter reported that the counseling was not negative enough about the risks. Several participants felt pressured to transition by their doctors and therapists. If these types of clinical interactions are verified, exploration is needed to determine the extent to which this situation occurs and what measures might be taken to ensure that clinicians provide patients with their options accurately and dispassionately.

There are several obstacles to obtaining accurate rates of detransition and desistance, including stigma and the low numbers of detransitioners who inform their clinicians that they detransitioned. One approach to bypass some of these barriers would be to incorporate non-judgmental questions about detransition and desistance into nationally representative surveys that collect health data. For example, the Behavioral Risk Factor Surveillance System contains an optional module about sexual orientation and gender identity that includes two questions to explore gender issues (Downing & Przedworski, 2018). By changing one existing question, "Do you consider yourself to be transgender?" into two questions, "Have you ever, at any point in your life, considered yourself to be transgender?" and "Do you currently consider yourself to be transgender?" and by adding a follow-up question if answers indicate past but not current transgender identification, "Did you ever take puberty blockers, cross-sex hormones, anti-androgens, or have any surgery as part of your transition?", valuable information about desistance, detransition, and current transgender identification could be obtained. These types of questions may also be of use in clinical practice and electronic medical records. The information gained about rates of detransition and desistance would enhance transgender healthcare by aiding informed consent processes at the start of any medical or surgical transition.

One of the strengths of this study is that it is one of the largest samples of detransitioners to date. Other strengths include the use of a precise definition for detransition, enrollment of detransitioners regardless of their post-detransition gender identification, recruitment from communities with likely divergent views about transition and detransition, and collaboration with two individuals who had detransitioned which helped to create a survey instrument with questions relevant to a variety of detransition experiences and enhanced the recruitment efforts.

There are several limitations to this study that should be considered when interpreting the findings. Like Vandenbussche (2021), James et al. (2016), and Turban et al. (2021), this study

used a cross-sectional design, anonymous surveying, and a convenience sample and therefore shares the same limitations that are inherent to these methodologies. These limitations include that conclusions about causation cannot be determined, identities of participants cannot be verified, and the findings of this study may not be generalizable to the entire population of people who detransition or to people outside of the countries where participants were from. Although this study reached out to communities with differing perspectives about transition and detransition, targeted recruitment and convenience samples always introduce the limitations associated with selection biases which should be addressed in future research. Finally, many of the participants in this study had less than ideal outcomes to their medical and surgical transitions, and it is possible that these experiences may have colored some of the responses.

Additional research is needed to determine the prevalence of detransition as an outcome of transition and to identify and meet the psychological and medical needs of the emerging detransitioned population. Because many individuals who detransition re-identify with their birth sex, are no longer connected to LGBT communities, and don't return to gender clinics, future research about detransition needs to expand recruitment efforts beyond gender clinics and transgender communities. The development and testing of non-medical interventions for gender dysphoria could provide valuable options to be used as alternatives or in conjunction with medical and surgical treatments. Because of the potential for some to experience trauma, mental health conditions, internalized homophobia, and misogyny as gender dysphoria, research needs to be conducted on the evaluation process before transition to find approaches that respectfully and collaboratively explore factors that might contribute to gender-related distress. There continues to be an absence of long-term outcomes evidence for youth treated with medical and surgical transition and a lack of information about the trajectories of youth experiencing late-onset gender dysphoria–research is needed to address these gaps. Continued work is needed to reduce rigid gender roles, increase representation of gender stereotype nonconformity, and to address discrimination and social pressures exerted against people who are transgender, lesbian, gay, bisexual, and gender stereotype non-conforming.

Conclusion

This study described individuals who, after transitioning with medications or surgery, have detransitioned. The prevalence of detransitioning after transition is unknown but is likely underestimated because most of the participants did not inform the doctors who facilitated their transitions that they had detransitioned. There is no single narrative to explain the experiences of all individuals who detransition and we should take care to avoid painting this population with a broad brush. Some detransitioners return to identifying with their birth sex, some assume (or maintain) a nonbinary identification, and some continue to identify as transgender. Some detransitioners regret transitioning and some do not. Some of the detransitioners reported experiences that support the ROGD hypotheses, including that their gender dysphoria began during or after puberty and that mental health issues, trauma, peers, social media, online communities, and difficulty accepting themselves as lesbian, gay, or bisexual were related to their gender dysphoria and desire to transition. Natal female and natal male detransitioners appear to have differences in their baseline characteristics and experiences and these differences should be further delineated. Future research about gender dysphoria and the outcomes of transition should consider the diversity of experiences and trajectories. More research is needed to determine how best to provide support and treatment for the long-term medical and psychological well-being of individuals who detransition. Findings about detransition should be used to improve our understanding of gender dysphoria and to better inform the processes of evaluation, counseling, and informed consent for individuals who are contemplating transition.

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Declarations

Conflict of interest The author has no relevant financial or non-financial conflicts of interest to disclose.

Consent to Participate Electronic consent was obtained from all participants included in the study. On the first page of the online survey, participants were informed of the research purpose and potential risks and benefits of participating, that their participation was voluntary, and were presented with a way to contact the researcher. The research survey questions were displayed only if the participant clicked "agree" which indicated that the participant read the information, voluntarily agreed to participate, and were at least 18 years of age.

Ethical Approval The research was determined to be Exempt Human Research by the Program for the Protection of Human Subjects of the Icahn School of Medicine at Mount Sinai in New York, NY. All procedures were performed in accordance with the ethical standards of the Program for the Protection of Human Subjects at the Icahn School of Medicine at Mount Sinai and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

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