



A Latent Class Analysis of Interrupted Gender Transitions and Detransitions in the USA and Canada

Kinnon R. MacKinnon^{1,2} · Naail Khan³ · Katherine Newman³ · Pablo Expósito-Campos^{4,5} · Wren Ariel Gould² · Annie Pullen Sansfaçon⁶ · S. Rudd⁷ · June S. H. Lam^{8,9}

Received: 12 December 2024 / Revised: 29 July 2025 / Accepted: 30 July 2025
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2025

Abstract

Research into detransition—stopping, shifting, or reversing an initial gender transition—remains limited despite its increasing visibility in society and healthcare settings. While previous studies with adults identified the reasons and experience of detransition as heterogeneous, researchers have not developed clear, empirically-validated concepts to examine these phenomena. This study used latent class analysis to characterize distinct detransition experiences among 957 adolescents and adults (aged 16–74 years; 78.8% assigned female at birth; AFAB) living in the USA (73.6%) and Canada (26.4%). Using self-reported reasons for detransition as indicator variables, we identified four distinct detransition classes. Participants rated factors using Likert scales, allowing quantitative assessment of each dimension's influence on their detransition pathway. Class A ($n=316$, 14.6% Transgender/Gender-Diverse (TGD) identity, 89.9% AFAB) strongly endorsed mental health-related factors and changes in self-identity, with moderately high scores on dissatisfaction with treatment. Class B ($n=186$, 62.4% TGD identity, 87.1% AFAB) scored moderately high on satisfaction with treatments and in changing self-identity. Class C ($n=182$, 62.3% TGD identity, 75.8% AFAB) strongly endorsed discrimination and interpersonal factors and had moderate scores in additional dimensions. Class D ($n=273$; 95.3% TGD identity, 62.3% AFAB) strongly endorsed discrimination, and had moderate scores in healthcare access barriers. The prevalence of medical transition across the four classes ranged between 62.9 and 65.8%. Transfeminine, AMAB participants were more frequently typed into classes strongly reporting discrimination. Findings illustrated that detransition is driven by multidimensional factors and can occur alongside regret and satisfaction with transition-related decisions. Future research is required to develop rigorous conceptual frameworks for studying detransition and gender identity development among gender-diverse populations.

Keywords Transgender · Gender dysphoria · LGBTQ · Detransition · Latent class analysis

✉ Kinnon R. MacKinnon
kinnonmk@yorku.ca

¹ School of Social Work, York University, 4700 Keele Street, Toronto, ON M3J 1P3, Canada

² Dalla Lana School of Public Health, University of Toronto, Toronto, ON, Canada

³ Department of Psychology, York University, Toronto, ON, Canada

⁴ Department of Clinical and Health Psychology and Research Methods, Faculty of Psychology, University of the Basque Country, Donostia-San Sebastián, Gipuzkoa, Spain

⁵ Predoctoral Research Fellowship Program, Department of Education of the Government of the Basque Country, Vitoria-Gasteiz, Araba, Spain

⁶ School of Social Work, University of Montreal, Montreal, PQ, Canada

⁷ Department of Psychology, Washington State University, Pullman, WA, USA

⁸ Department of Psychiatry, Temerty Faculty of Medicine, University of Toronto, Toronto, ON, Canada

⁹ Gender Identity Clinic, Centre for Addiction and Mental Health, Toronto, ON, Canada

Introduction

Stopping, shifting, or reversing an initial gender transition, also referred to as detransition, is an understudied sociomedical phenomenon that has become central to contentious debates among clinicians, researchers, political actors, legal professionals, and “culture war” critics (Lawless, 2024; MacKinnon et al., 2023a). The increasing emergence of detransition and transition regret in care settings (Expósito-Campos et al., 2023; Pullen Sansfaçon et al., 2023a, 2023b, 2024b) and in the academic literature highlights a need for rigorous empirical research and improved care services for transgender and gender-diverse populations (TGD) (Butler & Hutchinson, 2020; Charlton & Bond, 2024; Coleman et al., 2022; de Vries & Hannema, 2023; Irwig, 2022; MacKinnon et al., 2022a).

This article presents a new, empirically-driven typology of four detransition sub-groups. Given that detransition has become a subject of great political and healthcare significance, all the while lacking a clear, uniform definition, this article aims to better characterize it. Clinician-scientists have advised using more precise terminology, and to study separately: (1) discontinuation of hormonal treatments; (2) identity fluidity; and (3) regret (Turban et al., 2022). However, these phenomena can overlap and the extent to which they converge is unknown. To what extent does detransition co-occur with decisional regret or satisfaction with transition-related decision-making? Are older clinical studies that explored regret with predominantly adult transfeminine, assigned male at birth (AMAB) people useful in understanding detransition/regret that seems to occur today more frequently among transmasculine, assigned female at birth (AFAB) young adults? (MacKinnon et al., 2023a). To our knowledge, this is the first large-scale effort to employ novel online and community-based methods to sample individuals who have detransitioned in Canada or the USA since transition-related healthcare was scaled-up from the early 2000s to the mid-2010s (MacKinnon et al., 2025).

The Study of Detransition and Regret

Early clinician-scientists who worked with TGD adults recognized reasons for detransition as heterogeneous, emerging from difficulty with the gender transition process, social and psychological complexities, and/or as an expressed feeling of decisional regret (Dhejne et al., 2014; Kuiper & Cohen-Kettenis, 1998; Pfäfflin, 1993). Across the historical literature, “regret” was operationalized in different ways: (1) a TGD person’s disclosure of a wish, in hindsight, to have had made a different transition-related medical decision (Kuiper & Cohen-Kettenis, 1998; Wiepjes et al.,

2018); (2) a TGD patient who did not always explicitly disclose regret but may have partially or fully reversed the social/medical steps taken for the initial transition (Kuiper & Cohen-Kettenis, 1998; Pfäfflin, 1993); or (3) an objective measure of administrative requests to legally change the gender marker documents back to be concordant with birth registered sex (following an initial gender transition) (Dhejne et al., 2014; Landén et al., 1998). In a widely-cited total population study using administrative data, Dhejne et al. (2014) estimated that transition “regret” was 2.2% in Sweden. However this study did not collect or analyze data on satisfaction/dissatisfaction with medical decision-making for all of the 681 TGD people in the sample who had received medical treatments. Regret instead referred only to those who formally applied to reverse their legal documents back to their birth-registered sex (Hildebrand-Chupp, 2020).

In light of these divergent ways of measuring transition regret, and the difficulties to estimate the total size of the TGD population, it is hard to know the extent to which the older literature can guide research on detransition/regret occurring today. Following from prior conceptualizations introduced by older literature, present estimates of regret or detransition would range from less than 1% to over 16% (Expósito-Campos et al., 2023; MacKinnon et al., 2024; Olson et al., 2024), while prevalence of discontinuation of hormonal treatments ranges from 2 to 30% (Boyd et al., 2022; Roberts et al., 2022; van der Loos et al., 2022).

More recently, research on detransition has included community samples of individuals who self-identify with an experience of detransitioning, retransitioning (e.g., resuming gender transition after a temporary detransition), or who self-identify with terms detransitioner or detrans. Some of these studies have involved community-based research methods, such as being led by researchers with lived experiences, or engaging detransitioned project consultants to enhance community and patient/public understanding (Littman et al., 2024; MacKinnon et al., 2023a, 2023b, 2023c; Maragos, 2024; Vandenbussche, 2022).

Studies of both clinical and community samples have explored shifts in gender identity over time, including changes in identity that occur following an initial social transition (Cohen et al., 2023; Durwood et al., 2022; Gonzales Real et al., 2024), and/or after a medical gender transition (Butler et al., 2022; Cavve et al., 2024; Cohen et al., 2023; de Rooy et al., 2023). Until 2012, binary medical transitions (e.g., male-to-female; female-to-male) were required via the Standards of Care of the World Professional Association for Transgender Health (Coleman et al., 2012). Some qualitative data suggest that this system’s enforcement of binary transgender, stepwise transitions could be a source of decisional regret for some people who later detransition and/or express regret (MacKinnon et al., 2023b; Pullen Sansfaçon

et al., 2023a). Some nonbinary people seek to reverse aspects of their initial binary medical transition (MacKinnon et al., 2023b). Thus, more recognition of nonbinary, individualized, and flexible care may plausibly prevent some forms of regret. Others have found that the dichotomy created to separate TGD and cisgender people may also be a source of detransition, constraining identities into rigid categories (Pullen Sansfaçon et al., 2024b). Therefore, it is relevant to explore identity fluidity following medical treatment received by TGD people for sources of satisfaction, dissatisfaction, or regret.

Characterizing Detransition Factors, Experiences, and Feelings

Among the first to theorize regret experiences was Pfäfflin (1993), who emphasized differences between “minor” and “major” regrets. “Minor” regret referred to dissatisfaction with outcomes, health complications, or lack of support from family. “Major” regret referred to the development of “gender dysphoria in the new gender role” usually after surgery (p. 70). Today, some detransitioned people call this “reverse dysphoria” (MacKinnon et al., 2023a; Pullen Sansfaçon et al., 2023a). Kuiper and Cohen-Kettenis (1998) similarly recognized “regret” as a heterogeneous experience. After interviewing 10 Dutch adults (9 AMAB, 1 AFAB) identified through clinical networks, support groups, and newspaper advertisements, they suggested that regret appeared in the following forms: (1) reversal of the gender role with expressed feelings of regret; (2) reversal of the gender role without expressed feelings of regret (some even verbalizing satisfaction with the medical decision); (3) no gender role reversal but regretting medical transition, such as expressing that they would not undergo the same procedure again; and (4) no gender role reversal or consciously/self-described regret, but “regret” was assumed by others due to loneliness, on-going suicide attempts, and other negative social or psychiatric outcomes.

Introduced more than 20 years prior, Kuiper and Cohen-Kettenis’ (1998) detransition/regret four-group typology shares similarities with newer scholarship. For instance, Janssen (2021) presented clinical cases of detransition with and without regret, differentiating experiences based on whether medical decisions were explicitly regretted or not. Hildebrand-Chupp (2020) introduced detransition as three related concepts: the act of detransitioning, the detransitioned identity (emphasis added), and the negative transition experience. For Hildebrand-Chupp (2020), these three potentially discrete experiences comprise *detrans* as an umbrella term (akin to “TGD” as an umbrella term). This approach, taken together with (primarily online) community samples of people who self-identify with language relating to detransition, reflects the emergence of *detrans*/*detransitioned*/*desister* as contemporary identity categories. Vandenbussche’s (2022)

study is one example that emphasized a detransitioned identity criterion to be eligible for the survey. Likewise, Expósito-Campos (2021) suggested dividing detransition into two categories: core or primary detransition, including those who stop identifying as TGD and re-identify with their sex/gender assigned at birth, mostly for internal reasons; and non-core or secondary detransition, including individuals who do not stop identifying as TGD and detransition mostly for external reasons such as discrimination or inability to access medical services. The following section examines research on detransition and regret paying specific attention to dimensions such as sex, gender identity, age, and psychosocial health.

Sex/Gender: Based on data collected via parental reports, Littman (2018) introduced a hypothesis of “rapid-onset gender dysphoria” (ROGD) to explain the recent rise in the prevalence of post-pubertal young people reporting TGD identities (primarily observed among AFAB adolescents and young adults). Littman proposed that for some young people, TGD identity development may be shaped in part by social influence or psychosocial coping processes, including internalized homophobia, neurodevelopmental conditions, and/or psychosocial challenges. The study’s methodology has been debated, with particular concerns raised about reliance on parent-only reports and the representativeness of the sample (Ashley, 2020; Broderick, 2023). It has also been noted that TGD youth may realize their identity privately before ever disclosing it publicly (Ashley, 2020). However, a subsequent community survey by Littman et al. (2024) found that when 78 detransitioned individuals (aged 18–33; 91% AFAB) were presented with the ROGD hypothesis, 53% of this sample felt that the theory applied to them, 23% said they “did not know,” and 24% said “no.” A recent representative US national survey of 1.9 million adults found a sharp rise in self-reported TGD identities between 2014 and 2022, disproportionately driven by racially-white, transmasculine AFAB young people aged 18–24 (Twenge et al., 2025). During the same period, the prevalence of reporting a TGD identity did not change significantly among trans women or AMAB people, Black or Hispanic individuals, or people aged 35 or older, suggesting there is plausibly a socio-cultural element to TGD identity development in some young people (among other likely explanations such as increasing social acceptance for gender-diversity).

Recent studies, largely using community and online sampling, have found that most individuals who detransition reporting primarily internal reasons (e.g., change in identity) are AFAB. Reflecting Hildebrand-Chupp’s (2020) conceptualization of *detrans*, which includes “negative transition experiences,” many of these studies identify detransition alongside some negative or ambivalent feelings. For example, 92% of participants (total $n = 237$) in Vandenbussche’s (2022) *detrans* community survey were AFAB, 60% indicated a need to cope with feelings of regret, and 45% of those

who accessed medical interventions reported that they did not feel adequately informed about the treatments. In Littman's (2021) survey ($n = 100$, 69% AFAB), feelings of transition regret were common, with almost half reporting strong or very strong transition regret. Pullen Sansfaçon et al., (2023a) found that over half of their sample of 20 (95% AFAB) expressed negative feelings about the initial transition, such as regret and grief. Often, however, these negative experiences intersected with neutral or positive feelings, leading to ambiguity. Similarly, MacKinnon et al. (2022a, 2022b) found that a third of their participants ($n = 28$, 64% AFAB) experienced regret or ambivalent feelings about their initial transition and the care they received (MacKinnon et al., 2022b). Looking at a community sample of 720 TGD youth and young adult Canadians/Americans (81% AFAB) who had initiated a medical transition, MacKinnon et al. (2024) found that 121 (16.8%) reported discontinuing treatments, with a majority stopping due to health concerns or a change in gender identity. However, 37% of those who stopped treatment reported they wished they had not, potentially implying they regretted stopping treatment. This literature shows that while negative feelings such as regret can be present, these can be accompanied by a more complex array of emotions and perspectives regarding transition-related interventions. This is why some advocate against simply framing detransition as "regret" (Slothouber, 2021) and being precise with concepts (Hildebrand-Chupp, 2020).

Expressing a nonbinary identity, as well as being AMAB, have both been associated with detransition—potentially explained by external factors such as discrimination with not being perceived as one's felt gender identity or difficulty with "passing." Nonbinary detransition could be related to only desiring short-term hormonal care to cause specific physical changes (MacKinnon et al., 2024). Turban et al. (2021) also found that a history of detransitioning was independently associated with two factors: being AMAB and identifying as nonbinary. This suggests that each factor—assigned sex and gender identity—may have distinct contributions to detransition experiences. It is important to note that Turban et al.'s study sampled broadly from TGD communities, not from individuals who self-identify as detrans/detransitioned. In their sample, 55.1% were transfeminine and AMAB, and a large proportion (82.5%) reported at least one external factor contributing to detransition, such as lack of support or gender minority stressors. Similarly, in Sweden, Dhejne et al. (2014) found a slightly higher rate of legal gender marker reversal applications among AMAB (2.3%) versus AFAB (2.0%) individuals. In Spain, Gómes-Porras et al. (2020) found that being AMAB and lacking family support predicted detransition. In Littman's (2021) international survey of 100 individuals who discontinued or reversed transition-related medical treatments, 35.5% of the AMAB participants cited discrimination as a reason for detransition, compared

to 17.4% of AFAB participants. Additionally, 16% of all respondents cited a nonbinary gender identity as influencing their decision to detransition; of these, the majority were AFAB, though some were AMAB. In a study of chest masculinizing mastectomy outcomes, Tang et al. (2022) identified two cases (0.95% of the total sample, $n = 209$) where patients expressed regret; both were nonbinary.

Age: In the context of both pediatric and adult care, age can be considered a variable of interest. It has been suggested that some young people who realize their TGD identity at later ages, after puberty or older, are distinct from those with a realization prior to puberty (Arnoldussen et al., 2023; Coleman et al., 2022; Fahrenkrug et al., 2025). Per gender clinic data, TGD people who presented earlier to gender clinics report more gender nonconformity in childhood, while youth who presented at an older age in clinics were more often AFAB people (2.4:1), although the AFAB:AMAB ratio was also higher in younger presenting groups (Arnoldussen et al., 2023). For example, a study of 462 TGD youth (84.8% AFAB) attending a German gender identity clinic found that a later realization of TGD identity was associated with more internalizing issues such as anxiety, depression, self-harm, and suicidality (Fahrenkrug et al., 2025). Some research also indicates that age and pubertal stage at first visit, rather than the duration of TGD identity, predict poorer mental health (Sorbara et al., 2021). In a clinical sample of youth aged under 16, Bauer et al. (2022) found no significant link between having a recent TGD identity realization and depression, psychological distress, past diagnosis of mental health issues, gender dysphoria, self-harm, or suicidality. On the contrary, recent gender realization was associated with lower levels of anxiety and marijuana use. Others have suggested distinct trajectories of gender dysphoria relating to neurodivergence and age of referral for treatments (de Rooy et al., 2024; Topaz et al., 2024), and more internalizing mental health challenges have been associated with a later realizing of TGD identity (Fahrenkrug et al., 2025). Understanding baseline mental health and well-being in the context of TGD identity realization is useful to understand and interpret data from individuals who report detransitioning due to treatments not resolving gender dysphoria, that gender dysphoria was related to other issues, or mental health worsening after transition (MacKinnon et al., 2023a, 2023b, 2023c; Vandenbussche, 2022).

There appear to be age-specific patterns regarding discontinuing treatments or detransition. For example, in their sample of 10 patients who detransitioned or expressed regret with treatment Kuiper and Cohen-Kettenis (1998) found that half of their participants had a late realization of TGD identity (after adolescence), with 90% reporting no atypical gender role behaviors as children. Butler et al. (2022) reported on 1089 youth who were assessed for transition-related endocrine treatment. Among them, 8.2% of the total sample,

re-identified with their birth-assigned sex, and a higher proportion did so before the age of 16 years old than after. Three percent ceased to identify as TGD after initial consultation but prior to treatment and 5.5% stopped after initiating treatment. Similarly, in a retrospective study, Gómes-Porras et al. (2020) found that initiating a transition at age 18 or older was associated with a reduced likelihood of detransition. Other studies have yielded mixed or contrasting findings regarding the relationship between age and detransition (Dhejne et al., 2014; Expósito-Campos et al., 2023; Roberts et al., 2022), with most focused on adolescents and adults rather than preadolescents.

Neurodivergence/psychological health: The prevalence of neurodivergent conditions and mental health complexities among individuals who detransition is noteworthy, though not necessarily different from the general TGD population. Hall et al. (2021) found a higher prevalence of neurodevelopmental conditions and higher adverse childhood experiences scores (ACEs) among those who stopped attending an adult gender services in the UK, including individuals who had detransitioned/expressed regret after treatment. MacKinnon et al. (2024) found that individuals diagnosed with schizophrenia had greater odds of reporting having discontinued medical treatments. Recent clinical studies (e.g., Cohen et al., 2023; Kettula et al., 2025; Korpaisarn & Modzelewski, 2019; Pazos Guerra et al., 2020) have also reported detransition in the context of psychotic-type disorders. Almost half of those who detransitioned in the study by Gómes-Porras et al. (2020) had a history of depression, self-harm, and personality disorders. Participants in Vandenbussche's (2021) online detrans community study also reported a high prevalence of being diagnosed with depressive disorder (70%), anxiety disorder (63%), post-traumatic stress disorder (33%), attention-deficit/hyperactivity disorder (ADHD) (24%), autism spectrum disorder (ASD) (20%), eating disorders (19%), and personality disorders (17%). Among adolescent TGD young people who present to gender clinics at later stages of puberty compared to earlier, there appears to be a higher prevalence of neurodivergence, including ASD, ADHD, and intellectual giftedness (de Rooy et al., 2024; Topaz et al., 2024).

Religious beliefs: A few studies have suggested a potential relationship between individual beliefs and experiences of discontinuing treatments and detransition. In a community survey of 720 TGD youth and young adults, MacKinnon et al. (2024) found that participants who endorsed a current Christian religious identity had higher odds of stopping gender-affirming medical treatments. In a survey of 46 transition-related surgeons, of which 25 reported encounters with patients with regret, the authors found that spiritual or religious conflict/pressure was a driver of detransition in 8.1% of cases (Narayan et al., 2021). Likewise, in Turban et al.'s (2021) analysis, religious pressure accounted for detransition in 5.1% of participants.

The Present Study

The Detransition Analysis, Representation and Exploration (DARE) study was bi-national, mixed-methods, and integrated principles of community engagement. Data were collected beginning with a cross-sectional online survey, followed by 42 semi-structured in-depth qualitative interviews with select participants. This paper presents a latent class analysis of the survey data.

Method

Participants

We sampled a heterogeneous group of youth and adults who self-identified with having a life experience of stopping, shifting, or reversing an initial gender transition for any reason. In order to obtain a large and diverse sample for the purpose of robust analysis, we aggregated across definitions of detransition/regret in the literature. We also included individuals who desired to detransition but felt unable to take steps, because regret and detransition do not always overlap (Olson et al., 2024). Study adverts, the study website, the informed consent form, and the survey explicitly used the word “detransition” and mentioned examining shifts in identity after transition and retransition. Participation was not restricted to any particular TGD or detransitioned/detrans identity, nor did we include restrictions on the history of interventions used for the initial transition, though having ever engaged in a social and/or medical transition was required. Vandenbussche (2022) explains:

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 (p. 1603).

To be eligible to take the survey, participants were required to provide written informed consent, which included consent to collect and use IP address data, and to confirm they met all of the following eligibility requirements:

1. Age 16 or older;
2. Have ever stopped, shifted, or reversed an initial gender transition (or desire to detransition but feel unable to take any steps);
3. Currently live in the USA or Canada;
4. Able to complete a survey in English, French, or Spanish

Following from prior community samples (see MacKinnon et al., 2023b; Pullen Sansfaçon et al., 2024b; Turban et al., 2021), participants were eligible if they had initiated a social transition only, a medical transition only, or both social/medical. Eligibility was furthermore determined via self-report as well as by collecting participants' IP address/geolocation to confirm geographic eligibility. Survey responses with IP addresses outside the geographic inclusion were removed from the dataset. For a detailed account of the study's sampling methodology and the process of removing bot/scam/fraud responses, see MacKinnon et al. (2025).

Procedure

To obtain a demographically diverse sample the research team developed three different recruitment flyers, each designed to appeal to individuals who had different pathways to detransition, such as a change in self-conceptualized identity or because they felt forced to detransition due to their environment. These flyers explicitly advertised being inclusive of a range of reasons for stopping transition, identity shifts, loss of access to healthcare, or forced detransition. They were widely distributed online in English, Spanish, and French. Paid and unpaid online advertising was distributed across eight major social media platforms including Facebook, Instagram, Reddit, Twitter/X, TikTok, Discord, Tumblr, and YouTube (total advertising cost: \$7494.81 CAD). A total of 7.7 million social media accounts were reached across more than 50 online social media sites, closed discussion groups, and subreddits (MacKinnon et al., 2025). Hashtags equally targeting LGBTQ+, TGD, and detransitioned audiences were utilized for social media ads. The online ads were thematically similar to the flyers and advertised entry into a raffle draw for a chance to win a \$50.00 gift card.

The survey was also promoted via direct e-mails sent to over 600 TGD and LGBTQ+ serving organizations, gender care providers, and over 1200 former LGBTQ+ research participants in the US and Canada. Physical study flyers were posted in person at several LGBTQ+ organizations, gender clinics, and universities, primarily in the Canadian province of Ontario, though additional study flyers may have been shared or publicly posted in the US or Canada without our knowledge. Overall, participants most frequently reported learning about the survey from online sources such as Tumblr, Reddit, and Meta (Facebook/Instagram). Per study website traffic data, Facebook was the most frequent referral source directing people to the survey.

Online recruitment methods, especially those that offer compensation to participants, are vulnerable to manipulation from organized bots and scam responses (Pullen Sansfaçon et al., 2024a). For the current project, this is further exacerbated by partisan politicization, stigma, and rhetoric surrounding the experience of detransition. It was imperative

for this project to develop a strict screening protocol based on recommendations from previous work (Chandler & Paolacci, 2017; Pullen Sansfaçon et al., 2024a; Roehl & Harland, 2022) to mitigate the influence of any scam or politically-motivated responses. This protocol involved conducting Zoom screenings with survey respondents whose responses were flagged as suspicious and had consented to being contacted by the researchers. Participants who gave consistent answers to their survey responses were included in the final dataset. Based on the interviews, a total of 30 flagged surveys were included in the final dataset (190 participants were invited to the screening interview, of which 48 attended). Upon completion of all screening protocols, approximately 30% of completed surveys did not meet study eligibility criteria (e.g., reporting never having socially or medically transitioned; IP outside of US/Canada) and/or were identified as nonsense/fraudulent. For a complete description of the nonsense/fraud identification protocol, see MacKinnon et al. (2025).

Measures

Open-ended survey items that allowed for participants to write-in a response were reviewed by five members of the research team (KMK, NK, KN, PEC, JHSL) and re-coded into an existing survey option when appropriate. These questions included gender identity, sexual orientation identity, race/ethnicity, mental/physical health conditions (formally diagnosed by a healthcare provider or self-diagnosed/self-identified by the participant). Write-in responses that occurred more than three times were reviewed by the team to determine if a new response category was necessary or if the response could be incorporated into an existing response category. The full survey is available in the Supplement.

The decision regret scale was completed for regret associated with social and medical transition, exploring the extent to which participants wished they had made a different past decision (Brehaut et al., 2003). We obtained separate regret scores for social and medical transitions. The scale consisted of five questions, two of which were reverse coded. Higher scores on this scale (max 100, min 0) are associated with higher regret with a decision, with a score of 0 indicating no regret at all. We measured the internal consistency of the medical regret and social regret questions by calculating the Cronbach's alpha for each scale. We found acceptable reliability for both the medical regret (Cronbach's $\alpha = 0.97$, Bootstrapped 95% CI [0.97–0.98]) and social regret scale (Cronbach's $\alpha = 0.94$, Bootstrapped 95% CI [0.94–0.95]).

Because exposure to trauma and high scores on childhood adversity are variables of interest in the study of detransition/regret (Hall et al., 2021; Vandenbussche, 2022), the survey retrospectively measured exposure to ACEs that occurred under the age of 18, such as emotional, physical, or sexual

abuse. We used a 13-item Center for Disease Control version applied for the US nationally-representative TGD health survey, *TransPop* (Meyer, 2021). An ACEs score was obtained by summing all the “yes” responses; a score of 0 indicates the participant was not exposed to any adverse events in childhood.

We also used a 4-item modified version of the Recalled Childhood Gender Identity (RCGI; Zucker et al., 2006) scale, previously used in the *TransPop* study (Meyer, 2021). The RCGI was designed to assess participants’ retrospective accounts of gendered behaviors and internal sense of gender in childhood (e.g., toy preferences, the gender of movie characters imitated). Items were rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores reflecting childhood behaviors and gender identity more stereotypically aligned with the participant’s assigned sex at birth. Lower scores reflect more gender nonconforming interests and expressions in childhood. In our sample, the scale showed relatively weak internal consistency (standardized Cronbach’s $\alpha = 0.53$; bootstrapped 95% CI [0.46–0.58]), suggesting that gendered childhood experiences may be multifaceted and not easily captured by a single underlying factor in this population.

Data Analysis

A main objective of this study was to quantify and characterize detransition sub-types and to understand the emerging care needs among this population. To identify unobserved groupings (e.g., profiles, subpopulations) from multivariate data, we used latent class analysis (LCA). LCA is a latent variable clustering technique that is a subset of structural equation modeling (Collins & Lanza, 2009; Hagenaars & McCutcheon, 2002). This technique has been applied in various studies, including those focusing on minoritized groups. Each participant in an LCA is given a probability of belonging to a particular subgroup based on shared characteristics. The probabilistic approach of LCA allows for more nuanced inferences regarding the nature of the subpopulations (Weller et al., 2020). Therefore, LCA is preferable to distance-based clustering methods (e.g., structural equation modeling). LCA offers unprecedented insight into sub-populations of individuals who self-identify with experiences of detransition, and to rigorously test past theories and typologies developed via clinical and community-derived data.

We used responses to 21 4-point Likert-scale questions as indicator variables. These Likert scale items were data-driven from prior surveys (Littman, 2021; Turban et al., 2021; Vandembussche, 2022), qualitative studies (MacKinnon et al., 2023a, 2023b, 2023c), and clinical insights (Cohen et al., 2023; Hall et al., 2021; Narayan et al., 2021). Items covered a wide range of possible dimensions as to why an individual detransitioned (see Supplement). The ordinal data from the

Likert-scale questions were treated as categorical data for the purposes of the LCA, which does not meaningfully influence LCA results (Linzer & Lewis, 2011). LCA was performed using the R package ‘poLCA’ (Linzer & Lewis, 2011), with solutions determined for 2–8 classes. While there is no consensus on the best criteria for selecting an optimal LCA class solution (Weller et al., 2020), we followed general best practices that emphasize reporting multiple fit statistics and theoretical interpretability (Collins & Lanza, 2009; Hagenaars & McCutcheon, 2002; Weller et al., 2020).

To quantify the strength of fit for each class solution, we calculated the Bayesian Information Criterion (BIC), which previous research has identified as the most reliable fit statistic (Nylund et al., 2007). Along with BIC, the Akaike Information Criterion (AIC), log-likelihood, and the relative entropy were compared across class solutions. To further guide our class solution selection, we used the “elbow” method to identify the class solution that represented the point of diminishing returns in the improvement of the fit statistics (Nylund-Gibson & Choi, 2018). Using the poLCA package, we simultaneously conducted LCA and multinomial regression to identify potential pre-transition and during initial transition factors that predict the sub-group of a participant using the following command in R (slightly edited for clarity): *lcr_results <- poLCA (27 indicator scale variables ~ sex at birth + age of realization + used hormones + used puberty blockers + had surgery + ACEs score, nclass = 4, data = data, nrep = 100, na.rm = F, graphs = F, maxiter = 100,000)*.

Previous research has shown that using identified latent classes as a dependent variable in multinomial logistic regression to predict an individual’s latent class from a covariate significantly biases the strength of the relationship (Bolck et al., 2004). Instead, we used the “one-step approach” to estimate the relationship between latent class and covariates simultaneously with the identification of the latent classes (Muthén, 2004). This method is referred to as latent class regression (LCR). Based on previous research (described above), we used the following predictors: sex registered on birth certificate, age of realizing a TGD identity, duration of time from age of realization to initiating social transition, adverse childhood experience score (Boullier & Blair, 2018), puberty blocker usage, prior hormone usage, and number of transition-related surgical interventions.

All significance testing was done with R statistical software. To identify group differences between the LCA subpopulations we used permuted analysis of variance (ANOVA) using the r package permuco (Frossard & Renaud, 2021) and pairwise-Welch’s *t* tests for post hoc comparisons. To correct for multiple comparisons in pairwise testing, we applied a false discovery rate (FDR) correction, signified by *q* values. For categorical data, chi-square tests were used to assess differences between classes.

Results

Latent Class Analysis

The LCA identified four distinct classes among participants based on their responses to 21 indicator variables, which were grouped a priori into six-dimensional themes (see Supplement for the Likert scale questions and grouped dimensions). Fit statistics across solutions for 1 through 8 classes are shown in Fig. 1. We visually identified a 4-class solution as the most consistent point of diminishing returns. Following recommendations from previous studies, we confirmed that the posterior probabilities for each identified class were greater than .90 (Weller et al., 2020). The classes were labeled A ($n = 316$), B ($n = 186$), C ($n = 182$), and D ($n = 273$). Table 1 contains basic demographic information for all four classes.

To better understand the uniqueness of these classes, the Likert scale responses to the questions about reasons for

detransitioning were averaged (see Supplement for the Likert scale questions and the development of the grouped dimensions). The detransition dimensions were grouped theoretically, driven by prior community and clinically-derived data on reasons for detransition/regret gathered via survey and in-depth interviews of people with personal experiences (see Introduction).

Class Characteristics and Detransition Sub-Types

The four classes were characterized by self-reported strongly endorsed reasons for detransition (see Fig. 2; 4-class LCA). Class A strongly endorsed neurodivergence/mental health-related factors, changes in identity/resolution of gender dysphoria, and they had moderately high scores for dissatisfaction with treatment or medical complications. This suggests that participants in this class experienced significant psychological and mental health considerations, evolving perceptions of their gender, and some dissatisfaction with medical treatments. Class B scored moderately high on satisfaction with treatments,

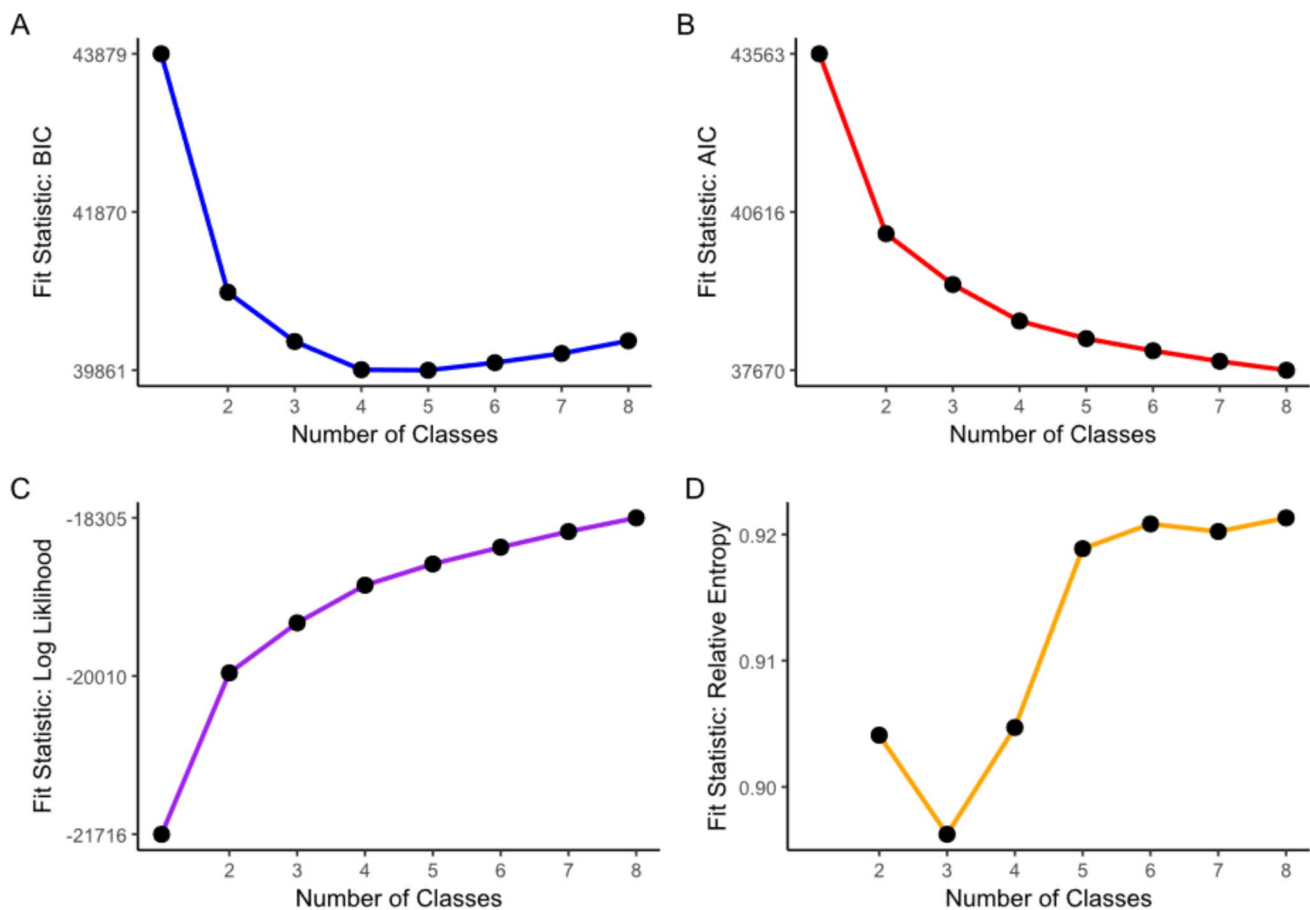


Fig. 1 Fit statistics for $k=2-7$ LCA Solutions with 2–8 Classes. Note: Panel A displays BIC values reaching minimum 4–5 classes, while Panel B shows steadily decreasing AIC values across different class solutions. Panel C demonstrates increasing log likelihood sta-

tistics that plateaus with more classes, and Panel D reveals relative entropy peaking at 6 classes. Based on these metrics and previous findings, a 4-class solution was selected as optimal

Table 1 Demographics by Latent Class Analysis group

	A	B	C	D
Age (in years) (M, SD)	24.72 (5.87)	26.46 (7.98)	25.54 (7.50)	27.03 (9.40)
16–17 (count)	23 (7.28%)	11 (5.91%)	20 (10.99%)	19 (6.96%)
18–24 (count)	152 (48.10%)	75 (40.32%)	74 (40.66%)	115 (42.12%)
25–29 (count)	89 (28.16%)	48 (25.81%)	49 (26.92%)	55 (20.15%)
30–39 (count)	46 (14.56%)	42 (22.58%)	29 (15.93%)	61 (22.34%)
40–49 (count)	6 (1.90%)	6 (3.23%)	7 (3.85%)	12 (4.40%)
50+ (count)	0 (0.00%)	4 (2.15%)	3 (1.65%)	11 (4.03%)
<i>Sex assigned at birth</i>				
Male	31 (9.81%)	22 (11.83%)	44 (24.18%)	102 (37.36%)
Female	284 (89.87%)	162 (87.10%)	138 (75.82%)	170 (62.27%)
<i>Country</i>				
United States	254 (80.38%)	118 (63.44%)	133 (73.08%)	199 (72.89%)
Canada	62 (19.62%)	68 (36.56%)	49 (26.93%)	74 (27.11%)
<i>Education</i>				
Some high school, no diploma	36 (11.39%)	9 (4.84%)	24 (13.19%)	26 (9.52%)
High school graduate	45 (14.24%)	22 (11.83%)	25 (13.74%)	37 (13.55%)
Some college or trade school, no degree	53 (16.77%)	30 (16.13%)	28 (15.38%)	41 (15.02%)
College or trade school graduate	28 (8.86%)	11 (5.91%)	15 (8.24%)	20 (7.33%)
Some university, no degree	47 (14.87%)	23 (12.37%)	21 (11.54%)	35 (12.82%)
Bachelor's degree	61 (19.30%)	44 (23.66%)	38 (20.88%)	40 (14.65%)
Some graduate work, no degree	4 (1.27%)	8 (4.30%)	4 (2.20%)	13 (4.76%)
Master's degree (e.g., MA, MS, MBA)	25 (7.91%)	20 (10.75%)	7 (3.85%)	16 (5.86%)
Some doctoral or professional work, no degree	1 (0.32%)	5 (2.69%)	2 (1.10%)	3 (1.10%)
Doctoral or professional degree (e.g., PhD, MD, JD)	0 (0.00%)	2 (1.08%)	3 (1.65%)	15 (5.49%)
No Response	10 (3.16%)	9 (4.84%)	8 (4.40%)	13 (4.76%)
<i>Religion/faith in childhood</i>				
Protestant	88 (27.85%)	53 (28.49%)	62 (34.07%)	107 (39.19%)
Catholic	86 (27.22%)	61 (32.80%)	57 (31.32%)	76 (27.84%)
Agnostic	73 (23.10%)	42 (22.58%)	35 (19.23%)	58 (21.25%)
Atheist	57 (18.04%)	29 (15.59%)	24 (13.19%)	33 (12.09%)
No religion	46 (14.56%)	25 (13.44%)	27 (14.84%)	39 (14.29%)
Jewish	29 (9.18%)	14 (7.53%)	13 (7.14%)	16 (5.86%)
Unitarian	6 (1.90%)	9 (4.84%)	3 (1.65%)	7 (2.56%)
Buddhist	8 (2.53%)	6 (3.23%)	7 (3.85%)	3 (1.10%)
Pagan	5 (1.58%)	2 (1.08%)	8 (4.40%)	9 (3.30%)
Mormon	10 (3.16%)	3 (1.61%)	3 (1.65%)	6 (2.20%)
Anglican	7 (2.22%)	6 (3.23%)	3 (1.65%)	5 (1.83%)
Indigenous	4 (1.27%)	2 (1.08%)	5 (2.75%)	9 (3.30%)
Other Christian	7 (2.22%)	3 (1.61%)	3 (1.65%)	4 (1.47%)
Muslim	6 (1.90%)	2 (1.08%)	1 (0.55%)	4 (1.47%)
Orthodox Christian	8 (2.53%)	3 (1.61%)	0 (0.00%)	2 (0.73%)
Other religion	4 (1.27%)	1 (0.54%)	1 (0.55%)	4 (1.47%)
Jehovah witness	2 (0.63%)	1 (0.54%)	2 (1.10%)	2 (0.73%)
Anabaptist	2 (0.63%)	1 (0.54%)	0 (0.00%)	1 (0.37%)
Hindu	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (0.73%)
Bahá'í	0 (0.00%)	1 (0.54%)	0 (0.00%)	0 (0.00%)
Sikh	1 (0.32%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
<i>Religiosity in childhood</i>				
Not at all religious	78 (24.68%)	45 (24.19%)	30 (16.48%)	48 (17.58%)
Slightly religious	80 (25.32%)	50 (26.88%)	46 (25.27%)	74 (27.11%)

Table 1 (continued)

	A	B	C	D
Somewhat religious	70 (22.15%)	38 (20.43%)	50 (27.47%)	64 (23.44%)
Pretty religious	42 (13.29%)	36 (19.35%)	36 (19.78%)	42 (15.38%)
Very religious	43 (13.61%)	14 (7.53%)	20 (10.99%)	44 (16.12%)
No response	3 (0.95%)	3 (1.61%)	0 (0.00%)	1 (0.37%)
<i>Current Religiosity</i>				
Not at all religious	139 (43.99%)	89 (47.85%)	65 (35.71%)	152 (55.68%)
Slightly religious	79 (25.00%)	44 (23.66%)	52 (28.57%)	58 (21.25%)
Somewhat religious	46 (14.56%)	24 (12.90%)	32 (17.58%)	31 (11.36%)
Pretty religious	30 (9.49%)	17 (9.14%)	19 (10.44%)	24 (8.79%)
Very religious	20 (6.33%)	9 (4.84%)	14 (7.69%)	7 (2.56%)
No response	2 (0.963%)	3 (1.61%)	0 (0.00%)	1 (0.37%)
<i>Household income</i>				
Less than \$10,000	16 (5.06%)	9 (4.84%)	15 (8.24%)	20 (7.33%)
\$10,000 to less than \$15,000	11 (3.48%)	5 (2.69%)	16 (8.79%)	16 (5.86%)
\$15,000 to less than \$20,000	17 (5.38%)	13 (6.99%)	11 (6.04%)	15 (5.49%)
\$20,000 to less than \$30,000	20 (6.33%)	7 (3.76%)	18 (9.89%)	22 (8.06%)
\$30,000 to less than \$40,000	24 (7.59%)	10 (5.38%)	11 (6.04%)	26 (9.52%)
\$40,000 to less than \$50,000	27 (8.54%)	13 (6.99%)	11 (6.04%)	14 (5.13%)
\$50,000 to less than \$60,000	18 (5.70%)	13 (6.99%)	8 (4.40%)	17 (6.23%)
\$60,000 to less than \$80,000	26 (8.23%)	27 (14.52%)	13 (7.14%)	23 (8.42%)
\$80,000 to less than \$100,000	18 (5.70%)	8 (4.30%)	16 (8.79%)	25 (9.16%)
\$100,000 to less than \$150,000	35 (11.08%)	20 (10.75%)	19 (10.44%)	24 (8.79%)
\$150,000 or more	41 (12.97%)	25 (13.44%)	12 (6.59%)	21 (7.69%)
Unsure	52 (16.46%)	25 (13.44%)	24 (13.19%)	38 (13.92%)
No response	11 (3.48%)	11 (5.91%)	8 (4.40%)	12 (4.40%)
<i>Received income from within the last 12 months</i>				
Public social assistance	39 (12.34%)	20 (10.75%)	35 (19.23%)	35 (12.82%)
Public disability support	13 (4.11%)	11 (5.91%)	11 (6.04%)	23 (8.42%)
Neither	255 (80.70%)	148 (79.57%)	131 (71.98%)	215 (78.75%)
<i>Race/ethnicity</i>				
White	288 (92.01%)	161 (87.89%)	145 (80.56%)	229 (85.45%)
Jewish	38 (12.14%)	20 (10.93%)	17 (9.44%)	23 (8.58%)
Indigenous	21 (6.71%)	11 (6.01%)	17 (9.44%)	27 (10.07%)
Latin American	19 (6.07%)	9 (4.92%)	19 (10.56%)	23 (8.58%)
Black	13 (4.15%)	5 (2.73%)	21 (11.67%)	11 (4.10%)
East Asian	12 (3.83%)	7 (3.83%)	7 (3.89%)	10 (3.73%)
Middle Eastern	8 (2.56%)	6 (3.28%)	5 (2.78%)	7 (2.61%)
Southeast Asian	6 (1.92%)	4 (2.19%)	4 (2.22%)	0 (0.00%)
South Asian	1 (0.32%)	0 (0.00%)	2 (1.11%)	1 (0.37%)
Other	1 (0.32%)	1 (0.55%)	2 (1.11%)	2 (0.75%)
<i>Multi-racial</i>				
White and Black	3 (0.96%)	3 (1.64%)	3 (1.67%)	2 (0.75%)
White and non-Black	60 (19.17%)	30 (16.39%)	36 (20.00%)	47 (17.54%)
Black and non-White	2 (0.64%)	0 (0.00%)	2 (1.11%)	3 (1.12%)
Non-White and non-Black	8 (2.56%)	4 (2.19%)	2 (1.11%)	4 (1.49%)

moderate in changing perceptions on their identity/gender dysphoria, and very low in all other dimensions. This suggests that Class B's pathway to detransition had little to do with external

social stressors or negative feelings about treatments received. Overall, Class C members reportedly faced substantial external, involuntary factors and interpersonal stressors along with

Radar Plots of Detransition Pathways Across Four Latent Classes



Fig. 2 Radar plots of detransition pathways across four latent classes. Note: Radar plots illustrating the detransition reasons for four latent classes (A–D), with sample sizes of 316, 186, 182, and 273 participants respectively. Each plot displays six thematic dimensions (clockwise): treatment satisfaction, gender minority stressors, treatment dissatisfaction/complications, shifting self-identity, neurodivergence/

mental health, and access to care barriers. Each Classes distinguishing detransition pathways are bolded. The plots represent the strength of each theme based on participants' Likert scale responses. For further information regarding the development of the Figure, see Supplement 1 and 2

other internal and multidimensional drivers such as discrimination/lack of support/romantic rejection, with moderate scores in most other dimensions. Overall, Class D members strongly endorsed gender minority stressors prompting detransition, such as discrimination/lack of support/romantic rejection as well as strong satisfaction with treatments. Class D also had moderate scores in healthcare access barriers and very low scores in all other dimensions.

Life Experiences and the Probability of Class Identification

Using LCR, different factors were analyzed in their influence on participant classification probabilities. Covariates were controlled, with results shown in Fig. 3. AMAB participants demonstrated twice the likelihood of Class D membership compared to AFAB participants. Age of TGD identity realization emerged as a significant predictor with earlier TGD identity realization correlated with increased Class D membership. Later age of TGD identity realization predicted higher probabilities of membership in the other classes. Medical intervention history also proved influential, as participants who reported

fewer surgeries and no history of puberty blocker use showed higher probabilities of Class D membership. Conversely, participants who underwent more surgical procedures were likelier to be classified into Classes A and B. Higher ACEs scores corresponded with increased probability of Class C categorization. Notably, hormone usage showed no significant impact on classification probabilities across any class, likely due to high overall usage across the sample.

Class Demographics

Analysis revealed significant demographic variations across classes. Age differences were statistically significant between classes ($F(3, 953) = 4.93, p < 0.002$), with Class A participants being significantly younger than those in both Class B ($t(500) = -2.79, q = 0.014$) and Class D ($t(587) = -3.65, q = 0.002$). Class A also includes a disproportionately high number of U.S. participants (80.4%) whereas Class B includes a greater proportion of Canadian participants (36.5%), even though a smaller number of them participated in the survey. There is no difference in proportion of participants from the USA and Canada in Classes C and D.

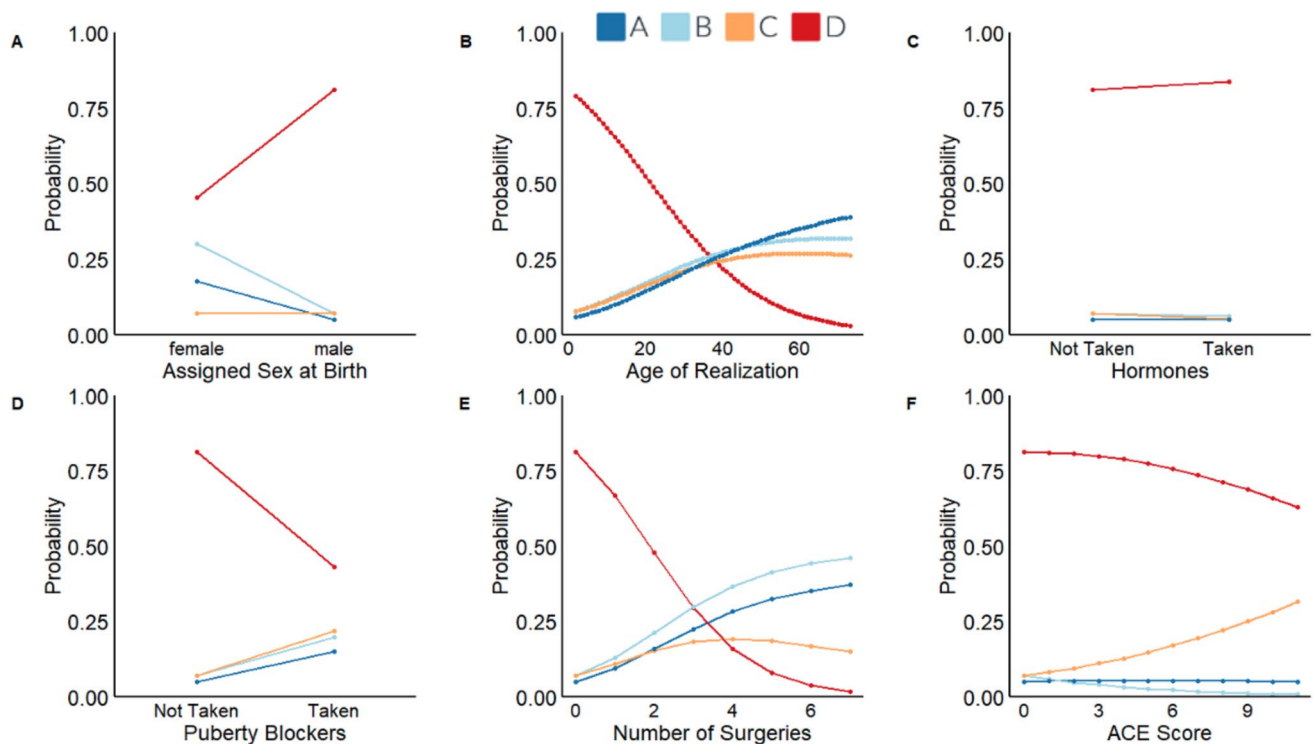


Fig. 3 Probabilistic distribution of key variables across latent classes. Figure shows the probability distributions for six key variables across four latent classes (A–D). Panel A displays distributions by ASAB,

Panel B shows age of realizing a TGD identity, Panel C represents hormone treatment status, Panel D indicates puberty blocker usage, Panel E shows number of surgeries, and Panel F presents ACE scores

Sexual orientation patterns (Asexual, Monosexual, Pluri-sexual, and Not sure/questioning) also varied significantly across classes ($\chi^2(9, N=957)=19.79, p=0.02$). See Table 2 and the Supplement. Class A predominantly identified as monosexual, with 42% reporting a gay or lesbian orientation. In contrast, Classes B, C, and D showed higher rates of pluri-sexual orientations (e.g., bisexual and pansexual identities), as illustrated in Fig. 4.

There were significant between-class differences in the total number of reported lifetime mental health-related diagnoses ($F(3, 953)=7.14, p<0.002$). Class A reported significantly more mental health-related diagnoses compared to both Class B ($t(500)=2.87, q=0.008$) and Class D ($t(587)=4.37, q=0.002$). Additionally, Class C participants reported more diagnoses than those in Class D ($t(453)=2.52, q=0.025$). The prevalence of formally medically diagnosed mental health conditions is shown in Table 3.

Table 2 Sexual orientation frequencies by latent class (multiple selection)

	A	B	C	D
Asexual	20 (6.33%)	17 (9.14%)	16 (8.74%)	48 (17.52%)
Bisexual	131 (41.46%)	78 (41.94%)	90 (49.18%)	130 (47.45%)
Gay/homosexual	13 (4.11%)	18 (9.68%)	23 (12.57%)	40 (14.60%)
Lesbian/homosexual	121 (38.29%)	51 (27.42%)	36 (19.67%)	47 (17.15%)
Pansexual	8 (2.53%)	26 (13.98%)	28 (15.30%)	52 (18.98%)
Queer	24 (7.59%)	72 (39.25%)	61 (33.33%)	119 (43.43%)
Straight/heterosexual	46 (15.56%)	22 (11.83%)	19 (10.38%)	22 (8.03%)
Two-Spirit	0 (0.00%)	2 (1.08%)	2 (1.09%)	4 (1.46%)
Not sure or questioning	26 (8.23%)	16 (8.60%)	16 (8.74%)	15 (5.47%)

Participants were asked to select all sexual orientations that they identified with

Totals do not equal 100%

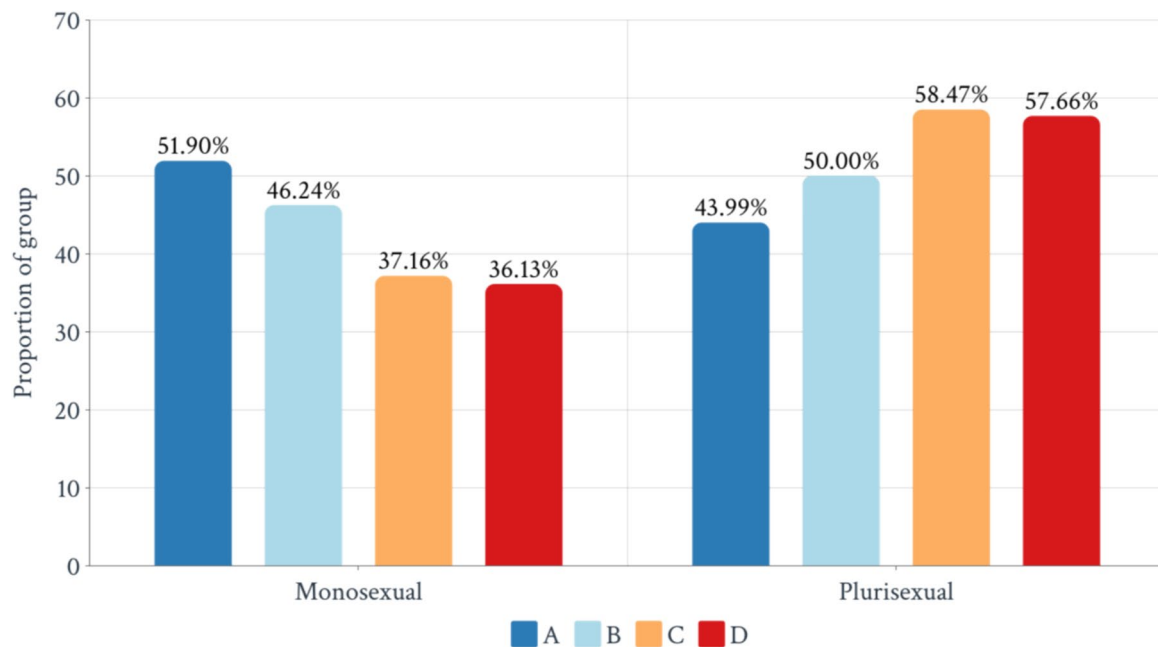


Fig. 4 Distributions of monosexual and plurisexual orientations across latent classes. Note: Individuals who selected both a plurisexual (bisexual, pansexual) identity with monosexual identities (lesbian, straight) were coded as plurisexual. Individuals who selected

queer+monosexual options were coded as monosexual. Individuals who selected queer+bisexual/pansexual were coded as plurisexual. Participants were only classified as questioning if there were no monosexual or pansexual orientations selected

History of Transgender/Gender-Diverse Identity and Timelines to Social/Medical Transition

We explored the association between the classes and their history of first realizing a TGD identity and timelines to social/medical transition interventions. As shown in Table 4, significant differences between classes in the timing of TGD identity realization and subsequent transition access and milestones were found. Class D reported significantly earlier realization of a TGD identity compared to Class A ($t(587) = -3.30, q = 0.002$), Class B ($t(457) = -2.40, q = 0.036$) and Class C ($t(453) = -2.51, q = 0.036$) (Fig. 5).

The transition timeline analysis, illustrated in Fig. 6, revealed notable patterns. Class D members were significantly less likely to have socially transitioned compared to class A ($\chi^2(1, N = 589) = 8.51, p = 0.021$). Additionally, Class D demonstrated longer intervals between identity realization and social transition compared to Class A ($t(564) = 7.38, q = 0.001$), Class B ($t(434) = 3.18, q = 0.003$), and Class C ($t(587) = 3.20, q = 0.003$). In contrast, Class A showed significantly shorter intervals between realization and social transition compared to both Class B ($t(490) = -2.93, q = 0.003$) and Class C ($t(483) = -2.94, q = 0.003$).

Similar patterns emerged in the timing of medical transition. Class D exhibited longer intervals between identity realization and medical transition compared to Class A ($t(360) = -6.15, q = 0.001$), Class B ($t(279) = -2.69, q = 0.015$), and

Class C ($t(278) = -3.16, q = 0.004$). Class A demonstrated significantly shorter intervals between TGD identity realization and medical transition compared to both Class B ($t(490) = -2.46, q = 0.030$) and Class C ($t(324) = -2.27, q = 0.030$). While access to any transition-related medical intervention was comparable across classes, significant differences emerged in the timing and extent of interventions accessed. Class A initiated medical transition at a significantly younger age compared to both Class C ($t(324) = -3.23, q = 0.005$) and Class D ($t(360) = -4.45, q = 0.001$). In terms of absolute numbers, a majority of participants who reported starting a medical transition under the age of 18 were classified as Class As.

Analysis of surgical procedures revealed distinct patterns across classes. Class D showed significantly lower rates of transition-related surgery compared to Class A ($\chi^2(1, N = 589) = 27.04, q < 0.001$), Class B ($\chi^2(1, N = 459) = 25.70, q < 0.001$), and Class C ($\chi^2(1, N = 455) = 6.38, p = 0.023$). Class B demonstrated higher surgical rates compared to Class C ($\chi^2(1, N = 368) = 4.67, q = 0.045$). In terms of total surgeries, Class D reported significantly fewer procedures compared to Class A ($t(587) = -5.41, q < 0.001$), Class B ($t(457) = -5.33, q < 0.001$), and Class C ($t(453) = -2.67, q = 0.017$), while Class B reported significantly more surgeries than Class C ($t(366) = 2.28, q = 0.040$).

Table 3 Medically diagnosed mental health conditions

Medical diagnosis	A	B	C	D	q (FDR corrected)
Anxiety	255 (80.7%)	130 (69.9%)	127 (69.8%)	176 (64.5%)	0.55
Mood disorders	230 (72.8%)	126 (67.7%)	126 (69.2%)	181 (66.3%)	0.55
Attention-deficit/hyperactivity disorder	127 (40.2%)	72 (38.7%)	82 (45.1%)	108 (39.6%)	0.09
Trauma-related disorder	130 (41.1%)	53 (28.5%)	65 (35.7%)	90 (33.0%)	0.73
Autism spectrum disorder	81 (25.6%)	50 (26.9%)	46 (25.3%)	66 (24.7%)	.057
Eating disorders	80 (25.3%)	25 (13.4%)	35 (19.2%)	33 (12.1%)	0.73
Obsessive disorders	64 (20.3%)	25 (13.4%)	35 (19.2%)	20 (7.3%)	0.73
Personality disorders	47 (14.9%)	22 (11.8%)	32 (17.6%)	24 (8.8%)	0.92
Substance use disorders	40 (12.7%)	17 (9.1%)	24 (13.2%)	15 (5.5%)	0.55
Dissociative disorders	18 (5.7%)	4 (2.2%)	7 (3.9%)	11 (4.0%)	0.73
Psychotic disorders	16 (5.1%)	5 (2.7%)	11 (6.0%)	4 (1.5%)	0.55
Somatic disorders	4 (1.3%)	2 (1.1%)	3 (1.7%)	4 (1.5%)	0.56
Other neurodevelopmental	4 (1.3%)	1 (0.5%)	2 (1.1%)	3 (1.1%)	0.08
Impulse disorders	3 (0.95%)	0 (0.0%)	3 (1.7%)	1 (0.4%)	0.92
Sleep disorders	2 (0.6%)	2 (1.1%)	1 (0.6%)	1 (0.4%)	0.55

Table 4 Access characteristics and timelines of initiating interventions by latent class

	A	B	C	D	q (FDR correction)
Age of realization ^a (years)	15.50	15.4	15.50	13.90	0.007
Social transition (%)	98.42	97.31	95.60	93.41	0.020
Age of social transition (mean)	17.20	18.40	18.40	18.3	0.057
Age of realization to social transition (years)	1.69	2.88	2.85	4.57	<0.001
Years between social and medical transitions	2.43	2.50	2.45	2.82	0.279
Medical transition (%)	65.19	67.2	65.93	61.54	0.657
Age of medical transition (years)	20.00	21.20	22.00	22.80	<0.001
Age of realization to medical transition (years)	4.42	6.04	5.78	8.48	<0.001
Took hormones ^b	63.61	64.52	62.09	60.81	0.844
Took puberty blockers (%)	7.91	7.53	9.89	4.03	0.111
Had surgery ^c	32.59	34.41	23.63	13.92	<0.001
Number of surgeries	0.47	0.46	0.34	0.18	<0.001
Age of first surgery (mean)	21.40	23.90	24.20	24.00	0.026

^aAge of TGD identity realization was reported by participants^bIncludes: estrogen, testosterone, and “other hormones”; not puberty blockers^cAt least one transition-related surgery reported

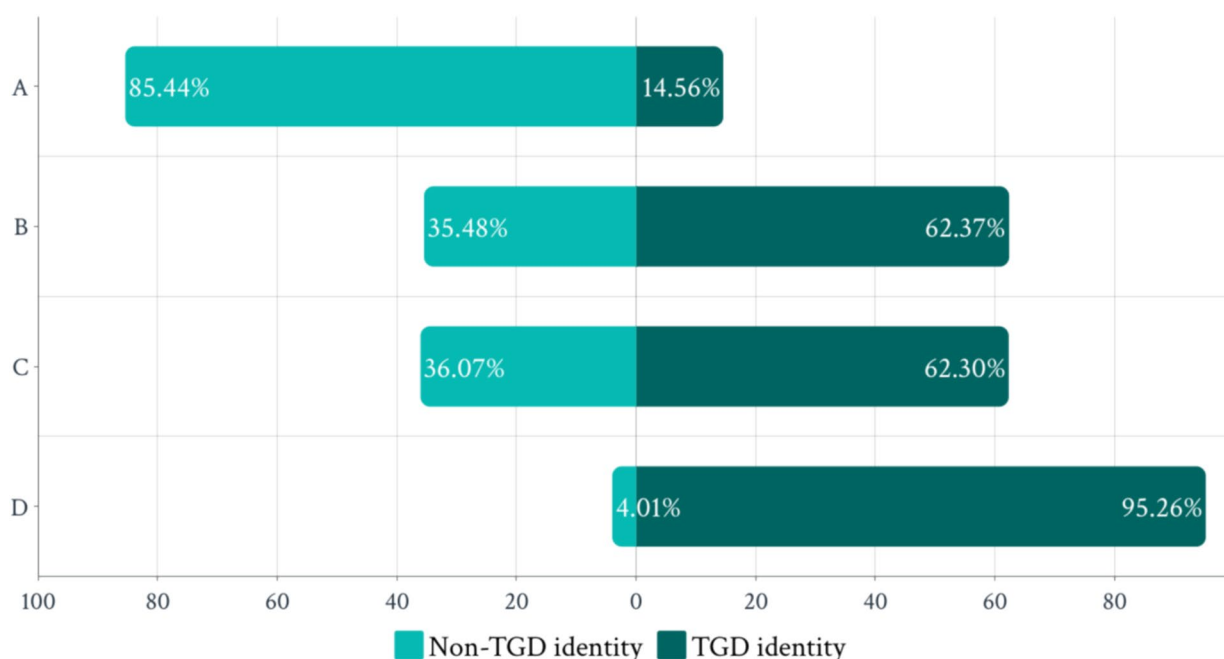
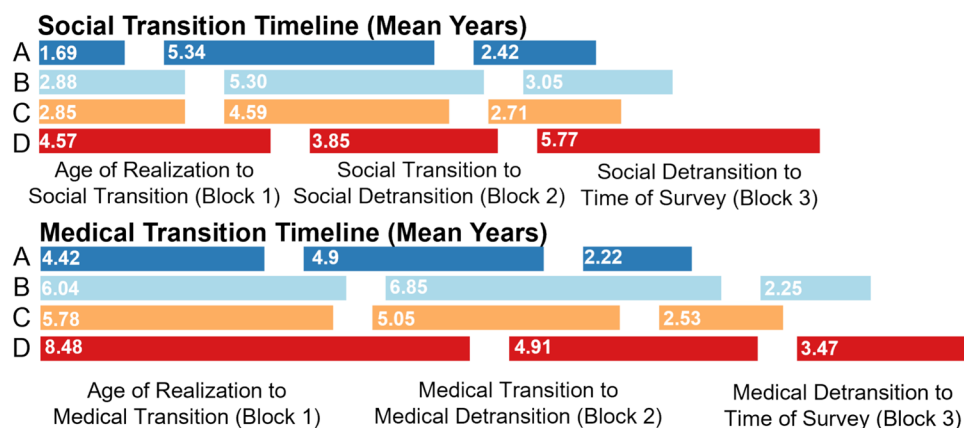


Fig. 5 Current gender identity by latent class. Transgender/Gender Diverse Identity: trans man, trans woman, nonbinary, genderqueer, gender-fluid, agender, two-spirit, woman (discordant with assigned sex/gender), and man (discordant with assigned sex/gender). Non-

TGD: man, woman (concordant gender with assigned sex/gender), gender nonconforming man, gender nonconforming woman, detrans man, detrans woman, and open-text responses that mentioned rejection of gender identity/preference for identifying with biological sex

Fig. 6 Age of transgender/gender diverse (TGD) identity realization, social and medical transition timelines. Note: Mean timelines calculated using the self-reported age of TGD identity realization with social and medical transition/detransition date reported, and age reported at time of survey. Participants provided year and month data for dates. If the month variable was missing, June (midway through the year) was entered for calculations



The mean ages at first surgery also varied significantly, with Class A undergoing their first surgical procedure at a younger age (21.4) compared to Class B (24) ($t(159) = -2.61$, $q = 0.025$), Class C (24.2) ($t(139) = -2.77$, $q = 0.025$) and Class D (24) ($t(133) = -2.46$, $q = 0.025$). Class A had the greatest proportion of participants who initiated surgery before the age of 18. Detailed information regarding age of identity realization, and access to social transition and medical transition interventions can be found in Tables 4 and 5.

Current Gender Identity and History of Detransition/Retransition

There were differences found across the classes in terms of the number of lifetime gender identities/expressions reported, and current TGD identities. A chi-square test of independence revealed significant differences in current gender identities (e.g., man, woman, detrans man, detrans woman, trans woman, trans man, nonbinary) across classes ($\chi^2(3, N = 950) = 405.83$, $p < 0.001$). As shown in Fig. 6, the majority of Class A participants (85.4%) did not affirm a TGD identity at the time of survey. In contrast, most participants

Table 5 Age-based distribution of medical/surgical interventions across latent classes

	A (n = 316)	B (n = 182)	C (n = 186)	D (n = 273)
Initiated hormonal treatment < 18	72 (22.78%)	49 (26.34%)	17 (9.13%)	31 (11.36%)
Initiated hormonal treatment > 18	100 (31.65%)	58 (31.18%)	67 (36.81%)	102 (37.36%)
Initiated surgery < 18	17 (5.37%)	4 (2.15%)	6 (3.30%)	1 (0.37%)
Initiated surgery > 18	72 (22.78%)	49 (26.34%)	33 (17.58%)	30 (10.99%)

Proportions calculated using the LCA group total as the denominator

Table 6 Mean number of lifetime gender identities/expressions reported by latent class

LCA subgroup	Total number of lifetime gender identities/expressions ^a <i>Mean (SD)</i>
A	4.35 (2.06)
B	4.31 (2.00)
C	4.28 (2.26)
D	3.94 (1.96)

^aIncludes: man; gender nonconforming man; woman, gender nonconforming woman, detrans man, detrans woman, trans man, trans woman, two-spirit, nonbinary, genderfluid, genderqueer, agender, Something else, please specify

in Class B (62.4%), C (62.3%), and D (95.3%) reported a current TGD identity (Table 6).

Analysis of retransition patterns revealed significant differences between classes ($\chi^2(3, N = 944) = 170.77, p < 0.001$). A minority of Class A reported retransition experiences (19.0%), while Class D showed a markedly different pattern, with the majority (71.4%) reporting a history of detransition and retransition experiences. See Table 7. Timing analysis through one-way ANOVA showed that Class D participants stopped or reversed their transition significantly earlier than the other three classes ($F(3, 308) = 9.91, p < 0.001$). The median year for transition cessation was 2017 for Class D, compared to 2022 for Classes A, B, and C.

Decisional Regret Analysis

As shown in Fig. 7, we analyzed participants' decisional regret regarding both social and medical transition decisions using the Decision Regret Scale (DRS) (Brehaut, 2003). Social transition regret scores (Fig. 7a) varied significantly across classes ($F(3, 899) = 366.30, p < 0.001$). Class A reported the highest mean social regret ($M = 76.5, SD = 21.6$), followed by Class C ($M = 45.9, SD = 26.0$), Class

Table 7 Access to decision-making supports prior to transitioning, retransition experience

	A	B	C	D
Did you have a mental health assessment to help you with making transition-related decisions?				
Yes	121 (38.29%)	101 (54.30%)	80 (43.96%)	159 (58.24%)
No	166 (52.53%)	73 (39.25%)	87 (47.80%)	95 (34.80%)
Unsure	27 (8.54%)	10 (5.38%)	14 (7.69%)	19 (6.96%)
No response	2 (0.63%)	2 (1.08%)	1 (0.55%)	0 (0.00%)
Did you attend talk therapy to help you with making transition-related decisions?				
Yes	154 (48.73%)	111 (59.68%)	98 (53.85%)	174 (63.74%)
No	154 (48.73%)	68 (36.56%)	78 (42.86%)	94 (34.80%)
Unsure	6 (1.90%)	4 (2.15%)	5 (2.75%)	5 (1.83%)
No response	2 (0.63%)	3 (1.61%)	1 (0.55%)	0 (0.00%)
Do you desire to stop or reverse your initial gender transition but feel unable to?				
Yes	81 (25.6%)	30 (16.1%)	53 (29.1%)	10 (3.7%)
No	235 (74.4%)	156 (83.9)	129 (70.9%)	263 (96.3%)
Stopped or reversed an initial gender transition and then started transitioning again (retransition) ^a				
Yes	60 (18.99%)	63 (33.87%)	86 (47.25%)	195 (71.43%)
No	250 (79.11%)	120 (64.52%)	94 (51.65%)	76 (27.84%)

^aSome participants did not complete this question (A = 6, B = 3, C = 2, and D = 2)

B ($M = 33.7, SD = 27.7$), and Class D ($M = 14.1, SD = 17.0$). Pairwise comparisons revealed that Class A's social transition regret was significantly higher than all other classes ($q < 0.001$ for all comparisons). Conversely, Class D showed significantly lower regret than Classes B and C ($q < 0.001$),

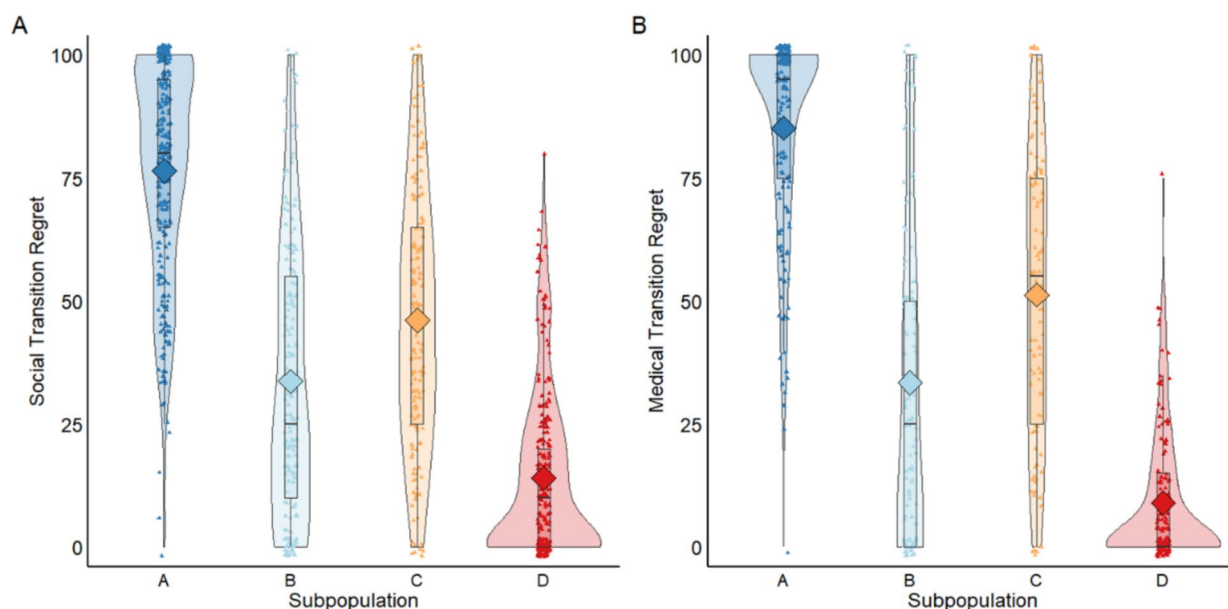


Fig. 7 Social and medical transition regret scores by latent class. Note: Individual participant scores (decision regret scale) are represented by triangles, while group means are shown as diamonds. For

classes A, B and C, both social and medical transition regret scores ranged from 0 to 100, while class D scores ranged from 0 to 75 for both domains. 7a: social transition; 7b: medical transition

while Class C reported higher social transition regret than Class B ($t(345) = 4.24, q < 0.001$).

Medical transition regret analysis showed a similar pattern (Fig. 7b), with significant between-group differences ($F(3, 539) = 293.30, p < 0.001$). Class A again reported the highest mean regret ($M = 85.1, SD = 20.1$), followed by Class C ($M = 50.8, SD = 29.3$), Class B ($M = 33.4, SD = 32.5$), and Class D ($M = 9.0, SD = 13.5$). Pairwise comparison revealed that Class A's medical transition regret was significantly higher than all other classes ($q < 0.001$). Class D demonstrated significantly lower regret than Class B and C ($q < 0.001$), while Class C showed higher medical decision regret than Class B ($t(212) = 4.08, q < 0.001$).

Recalled Childhood Experiences

Analysis of childhood experiences revealed significant differences in both ACEs scores ($F(3, 910) = 15.09, p < 0.001$) and Recalled Childhood Gender Identity (RCGI) scores ($F(3, 920) = 12.22, p < 0.001$). Class C reported significantly higher ACEs scores compared to all other classes ($q < 0.003$). Class B showed significantly lower ACEs scores compared to Class A and D ($q < 0.003$). Regarding RCGI scores, Class D reported significantly lower scores compared to all other classes, suggesting greater childhood gender nonconformity compared to Class A; ($t(437) = -5.60, q < 0.001$) Class B; and ($t(439) = 3.83, q < 0.001$) and Class C ($t(568) = -5.18, q < 0.001$) (Fig. 8).

Discussion

These results offer unprecedented insights regarding sociodemographic profiles and characteristics of four discrete detransition and interrupted gender transition pathways. However, the study was not designed to evaluate the effectiveness of transition-related healthcare and these findings are not generalizable to the broader TGD population. The study identified four detransition classes based on participants' self-reported reasons: A ($n = 316$), B ($n = 186$), C ($n = 182$), and D ($n = 273$). These results extend prior work (Littman, 2021; Littman et al., 2024; MacKinnon et al., 2023a, 2023b, 2023c; Pullen Sansfaçon et al., 2023a, 2023b, 2024b; Turban et al., 2021; Vandenbussche, 2022; Walls et al., 2025), highlighting that detransition is heterogeneous, and can occur alongside satisfaction and regrets with transition-related social and medical transition processes (see Janssen, 2021).

Our novel approach using LCA offers greater conceptual clarity for future research and data-informed clinical care. Interestingly, hormonal therapy use did not predict class membership. This could be explained by the overall high access to hormonal care across the sample. Instead, factors such as prevalence of reported internalizing mental health (depression, eating disorders), higher ACEs and decision regret scores, age, and assigned sex seemed to characterize class differences, rather than specific medical transition pathways. Consistent and clear terminology is important, as the field of transition-related healthcare increasingly recognizes identity shifts, detransition, and regret as possible

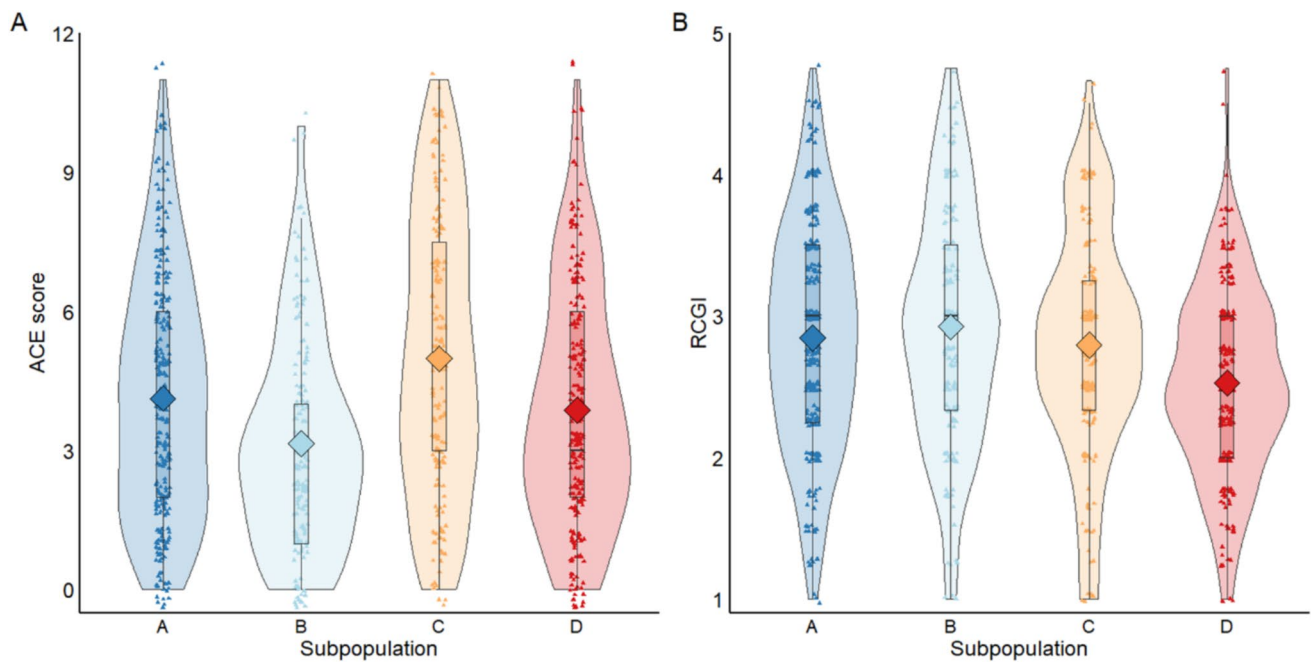


Fig. 8 ACEs and RCGI scores by latent class group. Note: Individual participant scores are represented by triangles, while group means are shown as diamonds. 7a: ACEs; 7b: RCGI

outcomes. These are discrete from a temporary pause in transition due to involuntary factors such as lack of access to transition-related medical treatments and discrimination, or other gender minority stressors with transitioning. For conceptual clarity, “detransition” may more accurately reflect the experiences observed in Classes A, B, and C, who reported higher scores on internal dimensions relating to detransition. Class D, however, seem to describe a temporary, or involuntary detransition; which could be considered an “interrupted gender transition.” However, just as for TGD individuals, it is important to respect self-identification for those who stop or reverse a transition.

The concept of an interrupted gender transition was introduced by Walls et al. (2025), from a secondary analysis of the 2015 US Transgender Survey (USTS) sample (55.1% AMAB). Class D shares similarities with this sample such as greater representation of transfeminine, AMAB participants (37.6%) and most importantly, endorsement of lack of support, discrimination, romantic rejection, and other external, interpersonal pressures prompting detransition. Likewise, the 2015 USTS study recruited individuals who currently affirmed a TGD identity, suggesting they had a temporary detransition followed by (presumably) retransitioning, which seems consistent with what Class D reported. Of Class D, 95.3% currently affirmed a TGD identity and 72.1% reported a history of temporary detransition and retransitioning. Class D recalled very low social and medical transition regret scores, satisfaction with medical treatments, and a longer timeline from the age of realization to starting transitioning in

comparison to the other three classes. While Class D shares many similarities with other classes, D is inarguably unique in their strong endorsement of externally-driven detransition and low scores on other factors. Similar to our observations about Class D, MacKinnon et al. (2023c) interviewed transfeminine people who recalled a temporary detransition in which they repressed their feelings and identities, and later retransitioned when in more supportive environments. Class D is 62% transmasculine/AFAB which shows the phenomenon of external and interpersonal factors prompting an interrupted gender transition can also affect transmasculine people.

Detransition, as described by Vandebussche (2022) and Hildebrand-Chupp (2020) involves a shift in self-conceptualization, particularly regarding sex/gender/gender dysphoria. From Vandebussche’s (2022) sample comprising 92% female detransitioners, among the top two reasons endorsed were: realizing gender dysphoria was related to other issues (70%) and health concerns (62%). Forty-three percent reported a change in political beliefs as a reason for detransition. Narayan et al. (2021) found that a change in gender identity or religious beliefs were endorsed as primary reasons for regret in a majority of surgical patients. Several additional studies show that identity shifts are common among people who detransition and/or express regret (Haarer, 2022; Littman et al., 2024; Maragos, 2024). Historically, detransition/regret was sometimes observed as stemming from core identity instability, psychological complexity, uncertainty regarding medical treatments, not strictly meeting criteria

for “transsexualism,” or relatedly, realizing a gay identity after medical treatments (Kuiper & Cohen-Kettenis, 1998; Wiepjes et al., 2018). Class A seems similar to these descriptions with the main exceptions being that Class A are largely AFAB (89.9%) and aged 29 and younger (83.5%). Historically, most documented people with regret were AMAB well over the age of 30 (see Kuiper & Cohen-Kettenis, 1998; Landén et al., 1998; Wiepjes, 2018). In the present study, internal shifts in identity prompting detransition were more frequently reported by AFAB participants.

Class A seems close in profile to the detransitioners described by Littman et al. (2024), Kettula et al. (2025), Pullen Sansfaçon et al. (2023a, 2023b, 2024b), and Vandembussche’s (2022) studies, and many Class A members would also fit Pfäfflin’s (1993) characterization as having “major regret.” Indicating also a “core detransition” (per Expósito-Campos, 2021), most in Class A did not report a current TGD identity (85.4%). Forty-two percent reported a gay or lesbian identity, with 51.9% being monosexual (the highest monosexual prevalence among the four classes), and 43.9% were plurisexual. Class A reported the highest decisional regret scores for both social and medical transition, and thus experienced detransition with regret (Janssen, 2021). Class A also had a significantly higher burden of formally diagnosed conditions, particularly internalizing disorders (e.g., anxiety [80.7%], eating disorders [25%], and trauma-related disorders [40%]). They reported an average of 4.4 lifetime gender identities/expressions—the highest among the four classes—suggesting substantial identity/expression fluidity. This is especially striking given that Class A also had the youngest mean age. Members of this class were likelier to live in the USA, to report overall greater household income (35% reported \$80,000/year or more), and to be racially white, suggesting potentially a higher overall socio-economic status in comparison to members of B, C, and D. This relatively higher socio-economic status may further explain the greater and earlier access to medical/surgical treatments in Class A.

Although reporting of the in-depth qualitative analysis is out of this study’s scope, our research team has interviewed several Class A members and other individuals whose experiences reflect this profile. We encourage other researchers to study these experiences closely in terms of long-term psychosocial and medical outcomes, in order to provide TGD and detransitioning people with data-driven care (Expósito-Campos et al., 2024). Transition regret, particularly among patients who began a medical process as adolescents, requires further research attention.

A potential interpretation of identity-related change among individuals in Classes A and B relates to the sociocultural context in which many participants came to understand their gender. Over the past 10–15 years, public messaging has increasingly emphasized that gender nonconformity in childhood or adolescence—such as rejecting traditional gender

roles, gender nonconforming behavior, or expressing same-gender attraction—may be a sign of being transgender. For some individuals, this framing may have contributed to misinterpreting gender nonconformity as an indicator to pursue transition. Within these classes, many shifted their identities from TGD to non-TGD and gay or lesbian. This interpretation extends Vandembussche’s (2022) findings and aligns with qualitative narratives shared by some detransitioned gender-nonconforming sexual minority participants in studies by MacKinnon et al. (2023a, 2023b, 2023c), Pullen Sansfaçon et al. (2023a, 2023b, 2024b), and Maragos (2024), who described a process of realizing that their gender-variance did not necessarily mean they were transgender/transsexual, later re-identifying as gay or lesbian.

Classes B ($n = 186$) and C ($n = 182$) offer novel findings regarding detransition without regret, and regret/desire to detransition without taking any steps, illustrating complexity. While Class B strongly endorsed satisfaction with treatments and reported low regret scores, this class was also moderately high on a change in self-identity/resolution of dysphoria. Most members of Class B detransitioned with overall treatment satisfaction and low levels of regret, which extends Kuiper and Cohen-Kettenis’ (1998) study that found detransition can occur alongside satisfaction with the initial medical decisions. In Class B, 62.4% currently affirmed a TGD identity, and they reported an average of 4.3 lifetime gender identities/expressions. Class C, on the other hand, had high regret scores, on average, and 29.1% reported a desire to detransition but felt unable to take steps, suggestive of decisional regret without detransition, with 62.3% currently affirming a TGD identity.

These results offer insights on the study of decisional regret in the context of identity. Given that transition-related healthcare may be ego-syntonic with TGD identity and gender affirmation, expressing decisional regret with these interventions may be ego-dystonic (inconsistent with or distressing to a TGD person’s sense of identity). Class A members reported the highest overall decision regret scores, with only 14.6% reporting a TGD identity. Class C had the second highest DRS scores, with the second lowest prevalence of TGD identities (62.3%). By contrast, Class D reported the lowest decision regret scores, with 95.3% reporting a current TGD identity. This finding calls for further exploration, particularly as it relates to studying satisfaction/dissatisfaction with transition-related medical decision-making and TGD and detrans identity development. On the subject of regret, the unique intersections between transition-related medical treatments and the affirmation of identity likely confound comparisons between transition regret to most other healthcare domains.

Clinical Implications

Clinically, our findings support several recommendations. It is important to discuss with TGD patients pursuing medical transition the current state of knowledge and the possibility of treatment dissatisfaction and future identity shifts as part of the informed consent process prior to pursuing medical transition (Coleman et al., 2022; MacKinnon et al., 2023a, 2023b, 2023c). The high number of lifetime genders and gender expressions indicates significant gender fluidity in many of the participants. Clinicians should not rule out future identity shifts, or dissatisfaction with treatment, and should be prepared to facilitate and support exploration of treatment expectations. Although detransition is a relatively rare outcome, it tends to occur several years after an initial TGD identity realization, as evidenced by our findings and Kettula et al. (2025). Care providers can make clear to patients their willingness to support them even in the long-term, including if they detransition or experience regret in the distant future. A gender clinic in Finland made several changes to their policies based on lived experiences of detransition, including the abolishment of the need for referrals when returning to the gender clinic to discuss detransition care (Kettula et al., 2025).

The classes in this study exemplify different lived experiences and gender trajectories that may resonate with some who present for initial transition-related care. In comparison to Classes A, B, and C, participants in Class D seemed to recall greater childhood gender nonconformity. It is crucial that researchers, clinicians, and policy-makers do not mischaracterize Class D experiences as regret-driven or as caused by identity shifts. Class D experiences reflect individuals who report gender minority stressors (e.g., discrimination, lack of support, barriers to healthcare, etc.) and who had an interrupted gender transition or forced detransition. Clinical work with these service users should focus on mitigating external stressors, offering coping strategies for hostile environments (e.g., therapy groups adapted to navigate life as a TGD person), and building supportive networks (Camp et al., 2023). This might also include providing psychoeducation for families/communities and advocacy for inclusive environments to reduce the potential impact of these drivers of unwanted detransitions. Support for retransition is also crucial for this group, including clinical support and resources that focus on practical steps for retransition, discuss potential challenges, and reaffirm individuals' gender identity.

Those who have experiences that fit within Class B, who have overall treatment satisfaction, may benefit from validation of having a fluid gender identity and expression, and that detransition may not reflect a “failure” or “mistake” but rather evolving self-exploration. Individuals may need clinical and social support spaces for integration of their transition life experiences with their current gender identity/expression.

Classes A and C participant experiences highlight the potential intersection of childhood trauma and mental health challenges with gender dysphoria and regret, given the relatively higher ACEs scores, trauma-related diagnoses, and decision regret scores. This signals the importance of offering a clinical space to discuss and address adverse life histories in the initial decision-making around medical transition interventions and during/after detransition. Prior research has theorized exposure to childhood adversities and trauma impacting embodied feelings, gender dysphoria, transition, and detransition—reported primarily by trans men and detransitioned women (Devor, 1994, 1997; Gould et al., 2024; Vandenbussche, 2022). Classes A and C also show the highest prevalence of internalizing and obsessive disorders and may be prone to rumination, which could impact transition trajectories, feelings, and mental healthcare needs. Since many Class C participants desired to detransition but felt unable to take steps, clinicians should aim to reduce stigma surrounding post-transition identity changes and identifying potential of feelings of grief, ambivalence, and ambiguous loss, as identified by prior research (Pullen Sansfaçon et al., 2023a, 2023b, 2024b). Exploration of detransition should consider current needs and safety, and an open discussion that detransition could bring improvements in well-being and authenticity, however it might also introduce new life stressors (due to challenges of “reversing” medical transition steps and being perceived as gender nonconforming). Class A and C experiences also point to the need to offer psychosocial care services that are affirming, sensitive, and non-judgmental to explore complex negative emotions including regret, grief, and ambiguous loss (Expósito-Campos et al., 2024).

Our findings support the need to offer concurrent access to assessments and psychosocial supports that are developmentally-informed, and access to treatment for mental health conditions in parallel with transition-related care, as outlined by the WPATH Standards of Care version 8 (Coleman et al., 2022). Hormonal and surgical care decision-making should also allow for sufficient time for patient-led exploration and ensure all choices are well-informed.

Strengths and Limitations

To our knowledge, this is among the most comprehensively designed study aimed to examine gender identity fluidity, detransition, transition satisfaction, and regrets since access to this care was widely scaled up in North America over the last 10–15 years. Its principal strengths are, first, the use of an inclusive, empirically-driven sampling strategy that reached a large and diverse sample of individuals with varied perspectives on transition and detransition (MacKinnon et al., 2025). A second strength was utilizing LCA, which enabled us to elegantly test and quantify detransition typologies

(e.g., internal factors versus external, interpersonal factors; current identity, satisfaction, regret, etc.). Future research should engage TGD and detrans individuals in fine-tuning data collection and analysis on these experiences, and to offer feedback on how Classes A, B, C, and D are labeled. This could enhance rigor and community-engaged terminology and concepts.

Several limitations require mentioning. These include, first, the use of a cross-sectional, retrospective survey design that was administered online with a non-probabilistic sample of youth and adults. The survey was long (estimated time to completion was up to 45 min) and most questions were optional, meaning that missing values and non-completion were both issues. Furthermore, the survey was not available via paper copy which may have introduced a selection bias toward younger people, and those who have social media accounts such as Reddit, Twitter/X, TikTok, Tumblr, Facebook, and Instagram. Second, some participants were recalling pre- and intra- transition-related life experiences that spanned several decades, introducing recall bias. We also acknowledge that the TGD population is diverse, a large majority of whom do not detransition, and that the delivery of transition-related care can vary greatly by geopolitical jurisdiction. Future studies should focus on more closely examining specific geopolitical regions, with attention to regions that have introduced restrictions on transition-related healthcare. At the time of data collection (December 2023–April 2024), very few restrictions on transition-related healthcare had been implemented. Given increased restrictions and bans on this care, it is likely that more detransitions and interrupted gender transitions will occur as time passes (Yurcaba, 2025).

Although the LCA approach is a strength, it may give the impression of class membership being a permanent state of reality. However, it is possible that class membership could shift over time. This is very likely to occur if self-conceptualized understandings of reasons for detransition change. Someone in Class A could, over time, retransition and reconceptualize their life experience more similar to an interrupted gender transition, and vice-versa. Class C members who report regret and desire to take steps to detransition but have not yet done so, may do so in the future. At two-year follow-up, only two of the 10 older adults interviewed by Kuiper and Cohen-Kettenis (1998) had retransitioned. Turban et al. (2021) and Walls et al. (2025) seemed to include TGD retransitioners with a history of an interrupted transition. Future longitudinal research could examine regret and retransition patterns and the extent to which fluidity of class membership occurs (and which sociodemographic characteristics are predictive of these patterns).

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10508-025-03264-6>.

Funding Social Sciences and Humanities Research Council of Canada, 435-2023-1099.

Data Availability Research participants did not provide consent to have their data made publicly available. Requests to access the dataset can be made to the corresponding author and will be discussed among the research team.

Code Availability Relevant code is included in the Methods. Requests for data and code can be made to the corresponding author.

Declarations

Conflict of interest Annie Pullen Sansfaçon is supported by a Canada Research Chair. The authors have no additional relevant disclosures or conflicts to declare.

Ethical Approval This study received ethical approval from York University (e2023-298). All study procedures followed protocol #3964.

References

- Arnoldussen, M., De Rooy, F. B. B., de Vries, A. L. C., Van Der Miesen, A. I. R., Popma, A., & Steensma, T. D. (2023). Demographics and gender-related measures in younger and older adolescents presenting to a gender service. *European Child & Adolescent Psychiatry*, 32(12), 2537–2546. <https://doi.org/10.1007/s00787-022-02082-8>
- Ashley, F. (2020). A critical commentary on ‘rapid-onset gender dysphoria.’ *Sociological Review*, 68(4), 779–799. <https://doi.org/10.1177/0038026120934693>
- Bolck, A., Croon, M., & Hagenaars, J. (2004). Estimating latent structure models with categorical variables: One-step versus three-step estimators. *Political Analysis*, 12(1), 3–27. <https://doi.org/10.1093/pan/mpd001>
- Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Paediatrics & Child Health*, 28(3), 132–137. <https://doi.org/10.1016/j.paed.2017.12.008>
- Boyd, I., Hackett, T., & Bewley, S. (2022). Care of transgender patients: A general practice quality improvement approach. *Healthcare*, 10(1), 121. <https://doi.org/10.3390/healthcare10010121>
- Brehaut, J. C., O’Connor, A. M., Wood, T. J., Hack, T. F., Siminoff, L., Gordon, E., & Feldman-Stewart, D. (2003). Validation of a decision regret scale. *Medical Decision Making*, 23(4), 281–292. <https://doi.org/10.1177/0272989X03256005>
- Broderick, T. (2023). Evidence undermines ‘rapid onset gender dysphoria’ claims. *Scientific American*. <https://www.scientificamerican.com/article/evidence-undermines-rapid-onset-gender-dysphoria-claims/>.
- Butler, C., & Hutchinson, A. (2020). Debate: The pressing need for research and services for gender desisters/detransitioners. *Child and Adolescent Mental Health*, 25(1), 45–47. <https://doi.org/10.1111/camh.12361>
- Butler, G., Adu-Gyamfi, K., Clarkson, K., El Khairi, R., Kleczewski, S., Roberts, A., Segal, T. Y., Yogamanoharan, K., Alvi, S., Amin, N., Carruthers, P., Dover, S., Eastman, J., Mushtaq, T., Masic, U., & Carmichael, P. (2022). Discharge outcome analysis of 1089 transgender young people referred to paediatric endocrine clinics in England 2008–2021. *Archives of Disease in Childhood*, 107(11), 1018–1022. <https://doi.org/10.1136/archdischild-2022-324302>

- Camp, J., Morris, A., Wilde, H., Smith, P., & Rimes, K. A. (2023). Gender- and sexuality-minoritized adolescents in DBT: A reflexive thematic analysis of minority-specific treatment targets and experience. *Cognitive Behaviour Therapist*, 16, e36. <https://doi.org/10.1017/S1754470X23000326>
- Cavve, B. S., Bickendorf, X., Ball, J., Saunders, L. A., Thomas, C. S., Strauss, P., Chaplyn, G., Marion, L., Siafarikas, A., Ganti, U., Wiggins, A., Lin, A., & Moore, J. K. (2024). Reidentification with birth-registered sex in a Western Australian pediatric gender clinic cohort. *JAMA Pediatrics*, 178(5), 446. <https://doi.org/10.1001/jamapediatrics.2024.0077>
- Chandler, J. J., & Paolacci, G. (2017). Lie for a dime: When most pre-screening responses are honest but most study participants are impostors. *Social Psychological and Personality Science*, 8(5), 500–508. <https://doi.org/10.1177/1948550617698203>
- Charlton, L., & Bond, R. (2024). Clinical considerations and endocrinological implications in the detransition process. *Best Practice & Research Clinical Endocrinology & Metabolism*, 38(5), 101932. <https://doi.org/10.1016/j.beem.2024.101932>
- Cohen, A., Gomez-Lobo, V., Willing, L., Call, D., Damle, L. F., D'Angelo, L. J., Song, A., & Strang, J. F. (2023). Shifts in gender-related medical requests by transgender and gender-diverse adolescents. *Journal of Adolescent Health*, 72(3), 428–436. <https://doi.org/10.1016/j.jadohealth.2022.10.020>
- Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., DeCuypere, G., Feldman, J., Fraser, L., Green, J., Knudson, G., Meyer, W. J., Monstrey, S., Adler, R. K., Brown, G. R., Devor, A. H., Ehrbar, R., Ettner, R., Eyler, E., Garofalo, R., Karasic, D. H., ... Zucker, K. (2012). Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *International Journal of Transgenderism*, 13(4), 165–232. <https://doi.org/10.1080/15532739.2011.700873>
- Coleman, E., Radix, A. E., Bouman, W. P., Brown, G. R., de Vries, A. L. C., Deutsch, M. B., Ettner, R., Fraser, L., Goodman, M., Green, J., Hancock, A. B., Johnson, T. W., Karasic, D. H., Knudson, G. A., Leibowitz, S. F., Meyer-Bahlburg, H. F. L., Monstrey, S. J., Motmans, J., Nahata, L., ... Arcelus, J. (2022). Standards of care for the health of transgender and gender diverse people, version 8. *International Journal of Transgender Health*, 23(sup1), S1–S259. <https://doi.org/10.1080/26895269.2022.2100644>
- Collins, L. M., & Lanza, S. T. (2009). *Latent class and latent transition analysis: With applications in the social, behavioral, and health sciences*. John Wiley & Sons.
- de Rooy, F. B. B., Arnoldussen, M., Steensma, T. D., Popma, A., Kreukels, B., & de Vries, A. (2023). (237) Long term follow-up of gender and sexuality in early treated transgender adolescents. *Journal of Sexual Medicine*, 20(Supplement_4), qdad062.088. <https://doi.org/10.1093/jsxmed/qdad062.088>
- de Rooy, F. B. B., Arnoldussen, M., van der Miesen, A. I. R., Steensma, T. D., Kreukels, B. P. C., Popma, A., & de Vries, A. L. C. (2024). Mental health evaluation of younger and older adolescents referred to the center of expertise on gender dysphoria in Amsterdam, The Netherlands. *Archives of Sexual Behavior*, 53(8), 2883–2896. <https://doi.org/10.1007/s10508-024-02940-3>
- de Vries, A. L. C., & Hannema, S. E. (2023). Growing evidence and remaining questions in adolescent transgender care. *New England Journal of Medicine*, 388(3), 275–277. <https://doi.org/10.1056/NEJMe2216191>
- Devor, H. (1994). Transsexualism, dissociation, and child abuse: An initial discussion based on nonclinical data. *Journal of Psychology & Human Sexuality*, 6(3), 49–72.
- Devor, H. (1997). *FTM: Female-to-male transsexuals in society*. Indiana University Press.
- Dhejne, C., Öberg, K., Arver, S., & Landén, M. (2014). An analysis of all applications for sex reassignment surgery in Sweden, 1960–2010: Prevalence, incidence, and regrets. *Archives of Sexual Behavior*, 43(8), 1535–1545. <https://doi.org/10.1007/s10508-014-0300-8>
- Durwood, L., Kuvalanka, K. A., Kahn-Samuels, S., Jordan, A. E., Rubin, J. D., Schnelzer, P., Devor, A. H., & Olson, K. R. (2022). Retransitioning: The experiences of youth who socially transition genders more than once. *International Journal of Transgender Health*, 23(4), 409–427. <https://doi.org/10.1080/26895269.2022.2085224>
- Expósito-Campos, P. (2021). A typology of gender detransition and its implications for healthcare providers. *Journal of Sex & Marital Therapy*, 47(3), 270–280. <https://doi.org/10.1080/0092623X.2020.1869126>
- Expósito-Campos, P., Pérez-Fernández, J. I., & Salaberria, K. (2024). A qualitative metasummary of detransition experiences with recommendations for psychological support. *International Journal of Clinical and Health Psychology*, 24(2), 100467. <https://doi.org/10.1016/j.ijchp.2024.100467>
- Expósito-Campos, P., Salaberria, K., Pérez-Fernández, J. I., & Gómez-Gil, E. (2023). Gender detransition: A critical review of the literature. *Actas Españolas de Psiquiatría*, 51(3), 98–118.
- Fahrenkrug, S., Becker-Hebly, I., Herrmann, L., Barkmann, C., Hohmann, S., & Bindt, C. (2025). Onset age and internalizing problems in adolescents with gender dysphoria: Is there an association? *Archives of Sexual Behavior*, 54(4), 1341–1359. <https://doi.org/10.1007/s10508-025-03118-1>
- Frossard, J., & Renaud, O. (2021). Permutation tests for regression, ANOVA, and comparison of signals: The permuco package. *Journal of Statistical Software*, 99, 1–32. <https://doi.org/10.18637/jss.v099.i15>
- Gómez-Porras, M., Hurtado-Murillo, F., Gómez-Balaguer, M., Pazos-Guerra, M., Martín-González, A., Broccoli, A., Meneses González, D., Rodríguez-Collados, M., Del Castillo-Villaescusa, C., Cuiñán-Navarro, E., & Morillas-Ariño, C. (2020). Gender incongruence: Detransitions and regrets. *Revista Desexología*, 9(1), 7–23.
- Gonzales Real, A., Lobato, M. I. R., & Russell, S. T. (2024). Trajectories of gender identity and depressive symptoms in youths. *JAMA Network Open*, 7(5), e2411322. <https://doi.org/10.1001/jamanetworkopen.2024.11322>
- Gould, W. A., MacKinnon, K. R., Lam, J. S. H., Enxuga, G., Abramovich, A., & Ross, L. E. (2024). Detransition narratives trouble the simple attribution of madness in transantagonistic contexts: A qualitative analysis of 16 Canadians' experiences. *Culture, Medicine, and Psychiatry*, 48(2), 247–270. <https://doi.org/10.1007/s11013-023-09838-0>
- Haarer, M. L. (2022). *A phenomenological study of the experience of gender detransitioning*. Regent University. <https://www.proquest.com/docview/2730306748?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>
- Hagenaars, J. A., & McCutcheon, A. L. (2002). *Applied latent class analysis*. Cambridge University Press.
- Hall, R., Mitchell, L., & Sachdeva, J. (2021). Access to care and frequency of detransition among a cohort discharged by a UK national adult gender identity clinic: Retrospective case-note review. *Bjpsych Open*, 7(6), e184. <https://doi.org/10.1192/bjo.2021.1022>
- Hildebrand-Chupp, R. (2020). More than 'canaries in the gender coal mine': A transfeminist approach to research on detransition. *Sociological Review*, 68(4), 800–816. <https://doi.org/10.1177/0038026120934694>
- Irwig, M. S. (2022). Detransition among transgender and gender-diverse people—An increasing and increasingly complex phenomenon. *Journal of Clinical Endocrinology & Metabolism*, 107(10), e4261–e4262. <https://doi.org/10.1210/clinem/dgac356>
- Janssen, A. (2021). Understanding gender “detransition” with and without regret. *Journal of the American Academy of Child and Adolescent Psychiatry*, 60(10), S4. <https://doi.org/10.1016/j.jaac.2021.07.023>

- Kettula, K., Puustinen, N., Tynkkynen, L., Lempinen, L., & Tuisku, K. (2025). Gender dysphoria and detransitioning in adults: An analysis of nine patients from a gender identity clinic from Finland. *Archives of Sexual Behavior*, 54, 1981–1990. <https://doi.org/10.1007/s10508-025-03176-5>
- Korpaisarn, S., & Modzelewski, K. (2019). MON-195 trans-transgender female: Gender identity reversal following irreversible gender affirming surgeries. *Journal of the Endocrine Society*, 3(Supplement 1), 195. <https://doi.org/10.1210/je.2019-MON-195>
- Kuiper, A., & Cohen-Kettenis, P. (1998). Gender role reversal among postoperative transsexuals. *International Journal of Transgenderism*, 23, 1. https://www.researchgate.net/publication/270273121_Gender_Role_Reversal_among_Postoperative_Transsexuals
- Landén, M., Wälinder, J., Lambert, G., & Lundström, B. (1998). Factors predictive of regret in sex reassignment. *Acta Psychiatrica Scandinavica*, 97(4), 284–289. <https://doi.org/10.1111/j.1600-0447.1998.tb10001.x>
- Lawless, J. (2024). A major UK report says trans children are being let down by toxic debate and lack of evidence. *AP News*. <https://apnews.com/article/uk-transgender-health-care-children-e3e94aad2994da7296880915f9b2e6ed>
- Linzer, D. A., & Lewis, J. B. (2011). polCA: An R package for polytomous variable latent class analysis. *Journal of Statistical Software*, 42(10), 456. <https://doi.org/10.18637/jss.v042.i10>
- Littman, L. (2018). Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria. *PLoS ONE*, 14(3), e0214157. <https://doi.org/10.1371/journal.pone.0202330>
- Littman, L. (2021). Individuals treated for gender dysphoria with medical and/or surgical transition who subsequently detransitioned: A survey of 100 detransitioners. *Archives of Sexual Behavior*, 50(8), 3353–3369. <https://doi.org/10.1007/s10508-021-02163-w>
- Littman, L., O'Malley, S., Kerschner, H., & Bailey, J. M. (2024). Detransition and desistance among previously trans-identified young adults. *Archives of Sexual Behavior*, 53(1), 57–76. <https://doi.org/10.1007/s10508-023-02716-1>
- MacKinnon, K. R., Expósito-Campos, P., & Gould, W. A. (2023a). Detransition needs further understanding, not controversy. *BMJ*, 381. <https://doi.org/10.1136/bmj-2022-073584>
- MacKinnon, K. R., Gould, W. A., Ashley, F., Enxuga, G., Kia, H., & Ross, L. E. (2022a). (De)transphobia: Examining the socio-politically driven gender minority stressors experienced by people who detransitioned. *Bulletin of Applied Transgender Studies*, 1(3–4), 235–259. <https://doi.org/10.57814/8ND4-6A89>
- MacKinnon, K. R., Gould, W. A., Enxuga, G., Kia, H., Abramovich, A., Lam, J. S. H., & Ross, L. E. (2023b). Exploring the gender care experiences and perspectives of individuals who discontinued their transition or detransitioned in Canada. *PLoS ONE*, 18(11), e0293868. <https://doi.org/10.1371/journal.pone.0293868>
- MacKinnon, K. R., Jeyabalan, T., Strang, J. F., Delgado-Ron, J. A., Lam, J. S. H., Gould, W. A., Cooper, A., & Salway, T. (2024). Discontinuation of gender-affirming medical treatments: Prevalence and associated features in a nonprobabilistic sample of transgender and gender-diverse adolescents and young adults in Canada and the United States. *Journal of Adolescent Health*, 75, 569–577. <https://doi.org/10.1016/j.jadohealth.2024.05.015>
- MacKinnon, K. R., Khan, N., Newman, K. M., Gould, W. A., Marshall, G., Salway, T., Pullen Sansfaçon, A., Kia, H., & Lam, J. S. (2025). Introducing novel methods to identify fraudulent responses (sampling with sisypus): Web-based LGBTQ2S+ mixed-methods study. *Journal of Medical Internet Research*, 27, e63252. <https://doi.org/10.2196/63252>
- MacKinnon, K. R., Kia, H., Gould, W. A., Ross, L. E., Abramovich, A., Enxuga, G., & Lam, J. S. H. (2023c). A typology of pathways to detransition: Considerations for care practice with transgender and gender diverse people who stop or reverse their gender transition. *Psychology of Sexual Orientation and Gender Diversity*, 12(1), 142–153. <https://doi.org/10.1037/sgd0000678>
- MacKinnon, K. R., Kia, H., Salway, T., Ashley, F., Lacombe-Duncan, A., Abramovich, A., Enxuga, G., & Ross, L. E. (2022b). Health care experiences of patients discontinuing or reversing prior gender-affirming treatments. *JAMA Network Open*, 5(7), e2224717. <https://doi.org/10.1001/jamanetworkopen.2022.24717>
- Maragos, A. C. (2024). *Detransition emergence*. University of Missouri-Kansas City. https://mospace.umsystem.edu/xmlui/bitstream/handle/10355/101623/Maragos_umkc_0134D_12140.pdf?sequence=1&isAllowed=y
- Meyer, I. H. (2021). *TransPop, United States, 2016–2018: Version 1* (Version v1). ICPSR—Interuniversity Consortium for Political and Social Research. <https://doi.org/10.3886/ICPSR37938.V1>
- Muthén, B. (2004). Latent variable analysis: growth mixture modeling and related techniques for longitudinal data. In D. Kaplan, *The SAGE Handbook of Quantitative Methodology for the Social Sciences* (pp. 346–369). SAGE Publications, Inc. <https://doi.org/10.4135/9781412986311.n19>
- Narayan, S. K., Hontscharuk, R., Danker, S., Guerriero, J., Carter, A., Blasdel, G., Bluebond-Langner, R., Ettner, R., Radix, A., Schechter, L., & Berli, J. U. (2021). Guiding the conversation—Types of regret after gender-affirming surgery and their associated etiologies. *Annals of Translational Medicine*, 9(7), 605–605. <https://doi.org/10.21037/atm-20-6204>
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal*, 14(4), 535–569. <https://doi.org/10.1080/10705510701575396>
- Nylund-Gibson, K., & Choi, A. Y. (2018). Ten frequently asked questions about latent class analysis. *Translational Issues in Psychological Science*, 4(4), 440–461. <https://doi.org/10.1037/tps0000176>
- Olson, K. R., Raber, G. F., & Gallagher, N. M. (2024). Levels of satisfaction and regret with gender-affirming medical care in adolescence. *JAMA Pediatrics*, 178, 1354–1361. <https://doi.org/10.1001/jamapediatrics.2024.4527>
- Pazos Guerra, M., Gómez Balaguer, M., Gómez Porras, M., Hurtado Murillo, F., Solá Izquierdo, E., & Morillas Ariño, C. (2020). Transsexuals: Transitions, detransitions, and regrets in Spain. *Endocrinología, Diabetes y Nutrición*, 67(9), 562–567. <https://doi.org/10.1016/j.endinu.2020.03.008>
- Pfäfflin, F. (1993). Regrets after sex reassignment surgery. *Journal of Psychology & Human Sexuality*, 5(4), 69–85. https://doi.org/10.1300/J056v05n04_05
- Pullen Sansfaçon, A., Gelly, M. A., Gravel, R., Medico, D., Baril, A., Susset, F., & Paradis, A. (2023a). A nuanced look into youth journeys of gender transition and detransition. *Infant and Child Development*, 32(2), e2402. <https://doi.org/10.1002/icd.2402>
- Pullen Sansfaçon, A., Gravel, E., & Gelly, M. A. (2024). Dealing with scam in online qualitative research: Strategies and ethical considerations. *International Journal of Qualitative Methods*, 23, 16094069231224610. <https://doi.org/10.1177/16094069231224610>
- Pullen Sansfaçon, A., Gravel, É., Gelly, M., Planchat, T., Paradis, A., & Medico, D. (2024b). A retrospective analysis of the gender trajectories of youth who have discontinued a transition. *International Journal of Transgender Health*, 23, 74–89. <https://doi.org/10.1080/26895269.2023.2279272>
- Pullen Sansfaçon, A., Planchat, T., Gelly, M. A., Baril, A., Susset, F., & Millette, M. (2023b). Understanding the experiences of youth who have discontinued a gender transition: Provider perspectives. *Psychology of Sexual Orientation and Gender Diversity*, 12(1), 154–164. <https://doi.org/10.1037/sgd0000644>

- Roberts, C. M., Klein, D. A., Adirim, T. A., Schvey, N. A., & Hisle-Gorman, E. (2022). Continuation of gender-affirming hormones among transgender adolescents and adults. *Journal of Clinical Endocrinology & Metabolism*, 107(9), e3937–e3943. <https://doi.org/10.1210/clinem/dgac251>
- Roehl, J., & Harland, D. (2022). Imposter participants: Overcoming methodological challenges related to balancing participant privacy with data quality when using online recruitment and data collection. *The Qualitative Report*, 27(11), 2469–2485. <https://doi.org/10.46743/2160-3715/2022.5475>
- Slothouber, V. (2021). *Narratives of de/retransition: Disrupting the boundaries of gender and time*. The University of Western Ontario. <https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=10485&context=etd>
- Sorbara, J. C., Ngo, H. L., & Palmert, M. R. (2021). Factors associated with age of presentation to gender-affirming medical care. *Pediatrics*, 147(4), e2020026674. <https://doi.org/10.1542/peds.2020-026674>
- Topaz, E., Perl, L., Raphael, I., Sheppes, T., Erez, G., Israeli, G., Segev-Becker, A., Oren, A., & Shechner, T. (2024). Mental health and timing of gender-related events among transgender and gender-diverse children and adolescents seeking gender-affirming consultation and care. *Psychiatry Research*, 342, 116175. <https://doi.org/10.1016/j.psychres.2024.116175>
- Turban, J. L., Brady, C., & Olson-Kennedy, J. (2022). Understanding and supporting patients with dynamic desires for gender-affirming medical interventions. *JAMA Network Open*, 5(7), e2224722. <https://doi.org/10.1001/jamanetworkopen.2022.24722>
- Turban, J. L., Loo, S. S., Almazan, A. N., & Keuroghlian, A. S. (2021). Factors leading to “detransition” among transgender and gender-diverse people in the United States: A mixed-methods analysis. *LGBT Health*, 8(4), 273–280. <https://doi.org/10.1089/lgbt.2020.0437>
- Twenge, J. M., Wells, B. E., Le, J., & Rider, G. N. (2025). Increases in self-identifying as transgender among US adults, 2014–2022. *Sexuality Research & Social Policy*, 22, 755–773. <https://doi.org/10.1007/s13178-024-01001-7>
- van der Loos, M. A. T. C., Hannema, S. E., Klink, D. T., Den Heijer, M., & Wiepjes, C. M. (2022). Continuation of gender-affirming hormones in transgender people starting puberty suppression in adolescence: A cohort study in the Netherlands. *The Lancet Child & Adolescent Health*, 6(12), 869–875. [https://doi.org/10.1016/S2352-4642\(22\)00254-1](https://doi.org/10.1016/S2352-4642(22)00254-1)
- Vandenbussche, E. (2022). Detransition-related needs and support: A cross-sectional online survey. *Journal of Homosexuality*, 69(9), 1602–1620. <https://doi.org/10.1080/00918369.2021.1919479>
- Walls, N. E., Call, J., Holloway, B. T., Mammadli, T., & Whitfield, D. L. (2025). Interrupted gender transitions: Underlying motivations as correlates of psychosocial risks. *International Journal of Transgender Health*, 26, 119–133. <https://doi.org/10.1080/26895269.2023.2299020>
- Weller, B. E., Bowen, N. K., & Faubert, S. J. (2020). Latent class analysis: A guide to best practice. *Journal of Black Psychology*, 46(4), 287–311. <https://doi.org/10.1177/0095798420930932>
- Wiepjes, C. M., Nota, N. M., De Blok, C. J. M., Klaver, M., de Vries, A. L. C., Wensing-Kruger, S. A., De Jongh, R. T., Bouman, M.-B., Steensma, T. D., Cohen-Kettenis, P., Gooren, L. J. G., Kreukels, B. P. C., & Den Heijer, M. (2018). The Amsterdam Cohort of Gender Dysphoria Study (1972–2015): Trends in prevalence, treatment, and regrets. *Journal of Sexual Medicine*, 15(4), 582–590. <https://doi.org/10.1016/j.jsxm.2018.01.016>
- Yurcaba, J. (2025). House passes tax bill that would ban Medicaid from covering transition-related care. *NBC News*. <https://www.nbcnews.com/nbc-out/out-politics-and-policy/house-passes-tax-bill-bans-medicare-covering-transition-related-care-rcna208618>
- Zucker, K. J., Mitchell, J. N., Bradley, S. J., Tkachuk, J., Cantor, J. M., & Allin, S. M. (2006). The Recalled Childhood Gender Identity/Gender Role Questionnaire: Psychometric properties. *Sex Roles*, 54(7–8), 469–483. <https://doi.org/10.1007/s11199-006-9019-x>

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.