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Original article

Age of Realization and Disclosure of Gender Identity Among Transgender Adults

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A B S T R A C T

Purpose: The “rapid-onset gender dysphoria” (ROGD) hypothesis theorized, based on a parent-report survey, a distinct and more transient form of gender dysphoria in which individuals purportedly come to understand themselves as transgender and/or gender diverse (TGD) suddenly during adolescence. This study evaluated components of ROGD by (1) estimating the prevalence among TGD adults of first realizing one’s TGD identity after childhood (i.e., after the onset of puberty), and (2) assessing the median time between realizing one’s gender identity and disclosing this to someone else.

Methods: We conducted a secondary analysis of the 2015 US Transgender Survey, a survey of 27,715 TGD adults in the United States. Participants were asked the age at which they first realized their gender identity was different than societal expectations based on their sex assigned at birth and grouped by “childhood realization” (ages ≤ 10 years) and “later realization” (ages > 10). They were also asked the age at which they first shared their gender identity with another person.

Results: Of 27,497 participants, 40.8% reported “later realization” of TGD identities. Within the “childhood realization” group, the median age of sharing one’s gender identity with another person was 20. In this group, the median time between realization of one’s gender identity and sharing this with another person was 14 years.

Discussion: A substantial proportion of TGD adults reported realizing their gender identity was different from societal expectations based on their sex assigned at birth during adolescence or later. Several years typically elapsed between participants’ TGD identity realization and sharing this with another person. The results of this study do not support the ROGD hypothesis.

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IMPLICATIONS AND CONTRIBUTION

Some have theorized that people who initially realize their transgender and/or gender diverse (TGD) identities during adolescence will not continue to hold TGD identities in adulthood. This study found that later onset of TGD identity realization was common among TGD adults.

Conflicts of interest: Dr. Turban reports receiving textbook royalties from Springer Nature and expert witness payments from The American Civil Liberties Union and Lambda Legal. He has received a pilot research award for general psychiatry residents from The American Academy of Child & Adolescent Psychiatry and Its Industry Donors (Arbor & Pfizer) and a research fellowship from The Sorensen Foundation. Dr. Keuroghlian reports receiving textbook royalties from McGraw Hill. No other disclosures were reported.

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Transgender and gender diverse (TGD) people are those whose gender identity differs from societal expectations relating to their sex assigned at birth [1]. TGD people suffer from elevated rates of societal stigma which, along with dysphoria among some people related to their body developing in a way that does not align with their gender identity, contributes to higher rates of adverse mental health outcomes than among cisgender peers [2]. Several studies to date have shown that various forms of social and clinical gender affirmation for TGD adolescents, such as social affirmation, pubertal suppression, and gender-affirming hormone therapy, result in favorable mental health outcomes [3–14].

Much research involving TGD populations has focused on people who came to realize their TGD identities prior to puberty (i.e., during childhood). More recently, there has been increased recognition that not all TGD people come to understand their gender identity during this early developmental stage, with some people first realizing their TGD identities in adolescence or later [15]. Some have proposed that adolescents who first realize their TGD identities after the onset of puberty may be experiencing “rapid-onset gender dysphoria” (ROGD), which entered the scientific literature in a 2018 manuscript that surveyed only parents of TGD youth [16]. The ROGD hypothesis asserts that individuals first realize their TGD identities during adolescence or later (i.e., after pubertal onset) due to “social contagion,” underlying mental illness, or as a “maladaptive coping mechanism” [15,16]. It also asserts that for these individuals, TGD identities arise “rapidly” with no such prior history, though others have pointed out that the adolescents whose parents participated in this study may have realized their gender identity prior to sharing this with their parents, making the realization appear “rapid” to parents, when in reality substantial time may have elapsed between these adolescents realizing their TGD identities and then sharing these with their parents [15]. Additionally, the ROGD hypothesis suggests that TGD identification is “temporary” for people who first realize their TGD identities in adolescence or later [16]. The original ROGD study exclusively documented responses from parents who reported that their child started experiencing gender dysphoria after pubertal onset, and the author argued that a higher proportion of people with “late-onset” gender dysphoria would be cause for concern [17,18]. Parents who reported that their child had experienced prepubertal gender dysphoria were excluded from the study [16]. Although one study empirically investigated and did not find evidence to support the “social contagion” component of the ROGD hypothesis [19], its other assertions remain largely untested.

Following publication of the initial ROGD manuscript, a correction was issued highlighting that, “ROGD is not a formal mental health diagnosis at this time... this report did not collect data from the adolescents and young adults or clinicians and therefore does not validate the phenomenon” [20]. The methodology of the original ROGD paper has been extensively critiqued elsewhere [15]. Despite weak empirical underpinnings, components of the ROGD hypothesis have been prominently featured in mainstream media discourse [21] and extensively used to advance antitransgender legislation (e.g., prohibition of gender-affirming medical care for TGD adolescents) across the United States [22]. Of note, all relevant major American medical organizations oppose such legislation [22].

The current study utilized data from the 2015 US Transgender Survey (USTS), the largest survey of TGD people to date with

27,715 participants. We examined two subsets of TGD adults: those who came to understand their TGD identities during childhood and those who came to understand their TGD identities during adolescence or later. First, we describe the demographic differences between these groups. Second, we examined whether TGD identities that are first realized in adolescence or later do not persist into adulthood by assessing the proportion of TGD adults in the United States who first came to realize their TGD identities during this later developmental period. Third, because some have noted that gender dysphoria may seem later in onset from the perspective of parents due to youth not disclosing their identities during childhood [15], we examined the ages at which people with childhood realization of their TGD identities first shared these identities with another person.

Methods

Study population

The USTS is a cross-sectional non-probability survey of TGD participants aged 18 years and older that was conducted in collaboration with the National Center for Transgender Equality and over 400 community organizations [23]. With successful recruitment of 27,715 participants from all 50 US states as well as Washington D.C., Puerto Rico, and US territories abroad, the final USTS sample comprises the largest existing data set of TGD people to date. Participants completed survey questions and psychological measures during the data collection period between August and September 2015. The protocol for the current study was approved by the Fenway Institutional Review Board, and the full USTS protocol was approved by the University of California, Los Angeles Institutional Review Board. Informed consent was obtained from all participants. Since we were interested in age of TGD identity realization, we restricted the current study to participants who answered the question, “At about what age did you begin to feel that your gender was “different” from your assigned birth sex?” This resulted in the inclusion of 27,497 participants in our analytic sample.

Demographic variables

Several demographic variables were collected, including age at the time of survey completion (US census categories to capture potential cohort effects), gender identity, sex assigned at birth, sexual orientation (seven-level recode from the USTS), race/ethnicity (US census categories), education level, employment status, relationship status, and total household income. Other variables known to be associated with mental health outcomes among TGD people were also collected, including family support of gender identity [24], K-12 harassment on the basis of perceived gender identity [25], lifetime exposure to gender identity change efforts (i.e., attempts to make TGD people identify as cisgender) [26], history of gender-affirming hormone therapy [6], and history of treatment with pubertal suppressant medication [12].

Age of TGD identity realization

As outlined above, participants were asked the age at which they felt that their gender was different from societal expectations based on their sex assigned at birth and were

provided with a drop-down list of integer ages from 1 through 99 years. Participants were divided into two groups based on their responses: childhood realization (those who reported age of TGD identity realization at 10 years old or younger), and later realization (those who reported age of TGD identity realization at 11 years or older). Since the specific ages at which participants reached Tanner stage 2 of puberty were not collected in the USTS, age 10 was used as the cutoff to approximate the onset of puberty. This cutoff is consistent with findings from prior studies of the age at which secondary sexual characteristics began to develop among large, national samples of youth in the United States [27,28].

Age of sharing TGD status with other people

Participants were asked, “At about what age did you first start to tell others than you were trans (even if you did not use that word)?” and were provided with a drop-down list of integers from 1 through 99 years, as well as an option to indicate that they had not told others that they are TGD.

Statistical analyses

We employed descriptive statistics to compare groups with childhood versus later age of TGD identity realization on demographic variables. Pearson chi-square tests were used to examine potential group differences in categorical variables and Rao-Scott chi-square tests were performed for weighted data. In supplemental analyses, we repeated analyses using survey weights created by the USTS to adjust for race/ethnicity, age, and education [23]. Analyses were conducted with SPSS version 25 and weighted analyses with SAS software, version 9.4.

Results

Demographic differences between groups

The two age groups differed significantly with regard to age, gender identity, sex assigned at birth, sexual orientation, race/ethnicity, education level, employment status, relationship status, family support of gender identity, exposure to K-12 harassment, lifetime exposure to gender identity change efforts, having ever received pubertal suppression, and having ever received gender-affirming hormones (Table 1). Of note, a larger percentage of participants in the later realization group identified as nonbinary or genderqueer (49.1%) compared to those in the childhood realization group (25.2%) (Table 1). The later realization group also had a larger proportion of participants assigned female sex at birth (63.2% vs. 53.1%), a smaller proportion of participants who experienced K-12 harassment based on gender identity (13.1% vs. 26.9%), a smaller proportion of participants with a history of exposure to gender identity change efforts (13.1% vs. 22.1%), and smaller proportions of participants receiving pubertal suppression (0.2% vs. 0.4%) or gender-affirming hormones (34.8% vs. 56.6%) (Table 1). Similar patterns were observed when analyses were repeated with the USTS-provided survey weights (Table A1).

Age of realization of TGD identity

The distribution of age of TGD identity realization across our analytic sample is displayed in Figure 1. Of the 27,497 participants included in our sample, 16,279 (59.2%) reported age of TGD identity realization at 10 years old or younger (i.e., childhood realization group), and 11,218 (40.8%) reported age of TGD identity realization at 11 years old or older (i.e., later realization group). Use of USTS-provided survey weights yielded weighted proportions of 69.8% of participants in the childhood realization group and 30.2% in the later realization group.

Age at which participants with childhood realization shared their TGD identities with other people

For the childhood realization group, the distribution of ages at which participants first told someone else about their TGD identities is displayed in Figure 2. The median age at which those in the childhood realization group first told someone about their gender identity was 20 years and the median number of years between realizing their TGD identities and telling another person was 14 years. With survey weights applied, the childhood realization group had a median of 17 years between realizing their identities and first telling someone, with a median of age 22 for the latter. Figure 3 shows, for the childhood realization group, the number of years that elapsed between participants coming to understand their gender identities and then sharing these with another person.

Discussion

There has been substantial recent discussion of the ROGD hypothesis in the context of state legislative policy regarding TGD youth [29,30].

The current study examined the notion that TGD identities associated with “later realization” are transient and will not continue into adulthood. Though prevalence estimates from non-probability samples should be taken with caution, in this study of 27,497 TGD adults, a substantial proportion of participants (40.8%) reported that they did not come to realize their TGD identities until adolescence or later, in contrast to the assumption of identity transience for this group that is an inherent component of the ROGD hypothesis [16]. While prospective data would be needed to determine the precise percentage of continuation of TGD identities for those who come to understand their gender identity in adolescence or later, this study shows that adolescent or later realization of one’s TGD identity is not uncommon among TGD adults.

We also examined the notion that parental knowledge of their progeny’s TGD identities coincides with the age at which these children realize their TGD identities. Among participants who reported childhood realization of their TGD identities at 10 years old or younger, the median age at which this group first disclosed their TGD identities to someone else was 20 years old, many years after their childhood TGD realization and approximate age of pubertal onset [27,28]. It is clear that even among participants who had childhood realization of their TGD identities, a large proportion did not disclose their TGD identities to anyone until much later in life. As such, assertions based solely on data from persons who are not privy to internal identity processes among TGD youth, such as the parental respondents whose data the ROGD hypothesis was principally derived from,

Table 1
Demographics N = 27,497

	At about what age did you begin to feel that your gender was “different” from your assigned birth sex?		x ²	P
	Age ≤ 10 n = 16,279	Age 11 + n = 11,218		
	n (%)	n (%)		
Age (census)			1,708.6	<.001
18–24	5,439 (33.4)	6,322 (56.4)		
25–44	7,043 (43.3)	3,856 (34.4)		
45–64	3,224 (19.8)	825 (7.4)		
65+	573 (3.5)	215 (1.9)		
Gender identity			1,634.1	<.001
Woman or trans woman	6,444 (40.7)	2,871 (26.2)		
Man or trans man	5,397 (34.1)	2,696 (24.6)		
Nonbinary/Genderqueer	3,999 (25.2)	5,377 (49.1)		
Sex assigned at birth			280.6	<.001
Female	8,639 (53.1)	7,094 (63.2)		
Male	7,640 (46.9)	4,124 (36.8)		
Sexual orientation			779.7	<.001
Asexual	1,464 (9.0)	1,501 (13.4)		
Bisexual	2,437 (15.0)	1,659 (14.8)		
Gay/Lesbian	2,983 (18.3)	1,611 (14.4)		
Heterosexual/Straight	2,609 (16.0)	723 (6.4)		
Pansexual	2,771 (17.0)	2,252 (20.1)		
Queer	2,957 (18.2)	2,690 (24.0)		
Not listed	1,058 (6.5)	782 (7.0)		
Race			86.8	<.001
American Indian/Alaska Native	238 (1.5)	76 (0.7)		
Asian/Asian American	385 (2.4)	305 (2.7)		
Black/African American	483 (3.0)	289 (2.6)		
Latino/a or Hispanic	916 (5.6)	530 (4.7)		
Multiracial	804 (4.9)	474 (4.2)		
Native Hawaiian/Pacific Islander	46 (0.3)	14 (0.1)		
Racial/Ethnic minority not listed	478 (2.9)	257 (2.3)		
White/European American	12,929 (79.4)	9,273 (82.7)		
Education level			49.1	<.001
Less than high school	492 (3.0)	407 (3.6)		
High school graduate/General Educational Development	1,961 (12.0)	1,479 (13.2)		
Some college/Associate’s degree	7,395 (45.4)	5,346 (47.7)		
Bachelor’s degree or higher	6,431 (39.5)	3,986 (35.5)		
Employment status			83.9	<.001
Employed	10,852 (85.3)	7,014 (80.5)		
Unemployed	1,874 (14.7)	1,696 (19.5)		
Relationship status			68.4	<.001
Partnered	8,234 (52.3)	5,113 (47.2)		
Unpartnered	7,495 (47.7)	5,723 (52.8)		
Total household income			7.4	.06
< \$25,000	4,744 (31.5)	3,342 (33.1)		
\$25,000 – \$49,999	3,417 (22.7)	2,234 (22.1)		
\$50,000 – \$99,000	3,773 (25.1)	2,446 (24.2)		
> \$100,000	3,107 (20.7)	2,074 (20.5)		
Family support of gender identity			560.8	<.001
Supportive	7,663 (49.3)	4,595 (42.4)		
Neutral	2,697 (17.4)	1,819 (16.8)		
Unsupportive	2,496 (16.1)	1,266 (11.7)		
Family does not know	2,680 (17.3)	3,158 (29.1)		
K-12 harassment	4,378 (26.9)	1,469 (13.1)	755.3	<.001
Ever exposed to gender identity change efforts	2,802 (22.1)	929 (13.1)	236.9	<.001
Ever had gender-affirming hormone therapy	9,131 (56.6)	3,866 (34.8)	1,259.6	<.001
Ever had puberty blocking hormones	70 (0.4)	18 (0.2)	15.1	<.001

Percentages are calculated from the total of non-missing values. Bold indicates statistically significant.

may be largely inaccurate. In reality, it is likely that gender dysphoria experienced by many such TGD youth is not “rapid-onset,” [16] but rather that TGD youth disclose their TGD identities to their parents and others years after their personal realization. Based on our clinical experience, we speculate that this is due in large part to fear of rejection and stigma; further research is needed in this area.

We found several demographic differences between participants who came to realize their gender identity as children and those who came to realize in adolescence or later. Firstly, participants who came to realize their TGD identities in adolescence or later were more likely to report identifying as nonbinary or genderqueer. This may be due to younger children having less exposure to concepts and terminology regarding nonbinary and

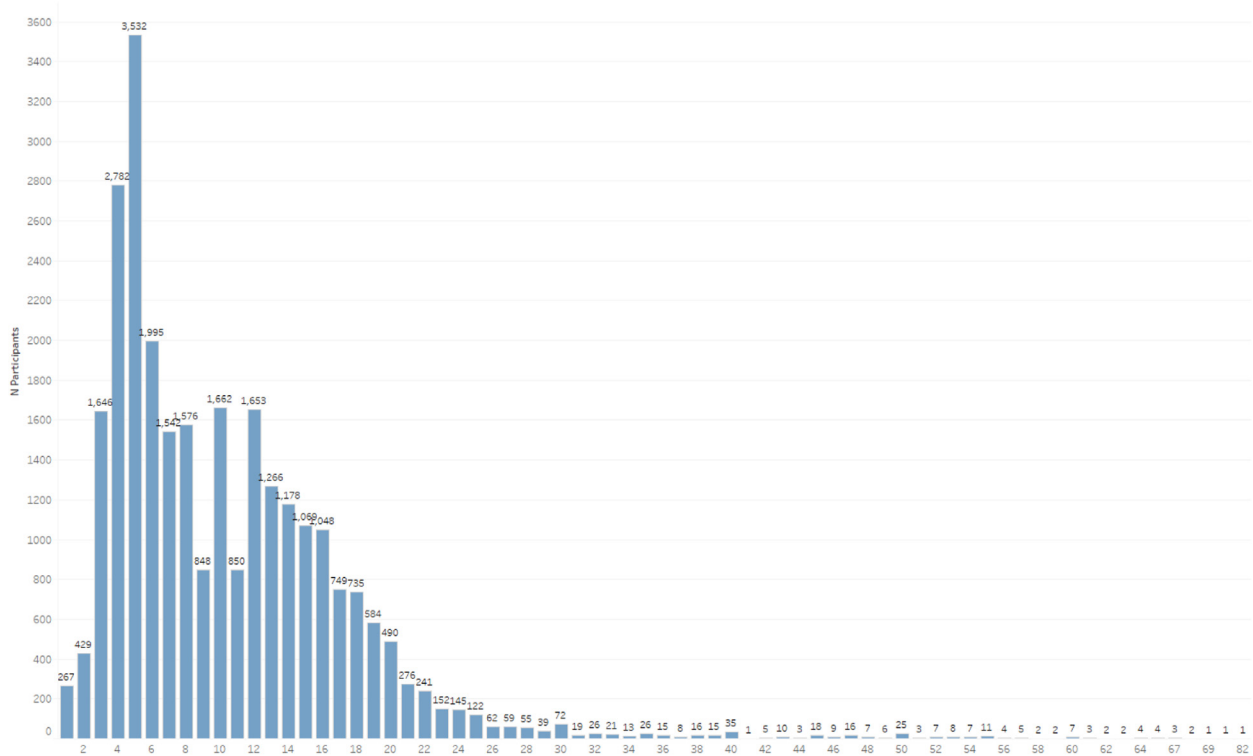


Figure 1. Age at which participants first came to realize their TGD identities, “At about what age did you begin to feel that your gender was “different” from your assigned sex at birth?”

genderqueer identities, thus decreasing the likelihood of them readily understanding their TGD identities as such. Those with later realization were also more likely to have been assigned a female sex at birth. This finding is notable, given that the ROGD hypothesis asserts that ROGD primarily impacts people assigned female sex at birth. Given that all participants were surveyed as adults, this finding provides additional evidence that people assigned female sex at birth who have later realization of TGD identities often nevertheless continue to identify as TGD into adulthood [16]. One potential reason for a greater proportion of those assigned female sex at birth coming to identify as TGD during adolescence or later may be due to higher levels of stigma that develop in middle and high school years in response to gender diversity among TGD youth assigned male sex at birth; more research is needed in this area.

Participants who came to realize their gender identity later were also less likely to have accessed gender-affirming medical care (pubertal suppression or gender-affirming hormones), a difference perhaps due to their providers having lower levels of comfort initiating gender-affirming medical care for patients with later realization of their TGD identities. Of note, current clinical guidelines do not exclude such adolescents from accessing gender-affirming care [31]. Other possible explanations for this disparate access to gender-affirming medical care include financial barriers, with some participants no longer having coverage on parental insurance plans when beginning to seek care. Of note, some TGD people may not desire gender-affirming medical interventions. The higher proportion of nonbinary individuals in the later realization group may in part explain the lower rates of access to

gender-affirming medical care. While gender-affirming medical care is vital for many nonbinary individuals, others do not desire such interventions. Though some binary TGD individuals also do not desire gender-affirming medical interventions, rates of not desiring gender-affirming medical interventions appear to be higher among those with nonbinary identities [32]. Stigma and discrimination toward people with nonbinary identities can also create barriers to accessing gender-affirming medical care and lead some individuals to believe such options are not available to them. In addition, participants who realized their TGD identities after the onset of adolescence, when compared to those with earlier realization of their TGD identities, may have had less-to-no time for seeking gender-affirming medical care within the developmental window for pubertal suppression.

Participants with childhood realization were more likely to have experienced gender identity change efforts, which may reflect young children being more susceptible to these practices being initiated by parents. The parents of participants with later realization may not have been aware of their child’s TGD identity during childhood or adolescence, when parents still have the authority to enroll TGD youth in gender identity change efforts. More research is needed in this area. These participants were also more likely to have experienced K-12 harassment based on gender identity, highlighting the importance of providing supportive school environments for TGD youth [25].

The substantially harmful effects of recent antitransgender legislation for TGD youth are important to note. Indeed, legislators in Arkansas and Alabama recently passed legislation

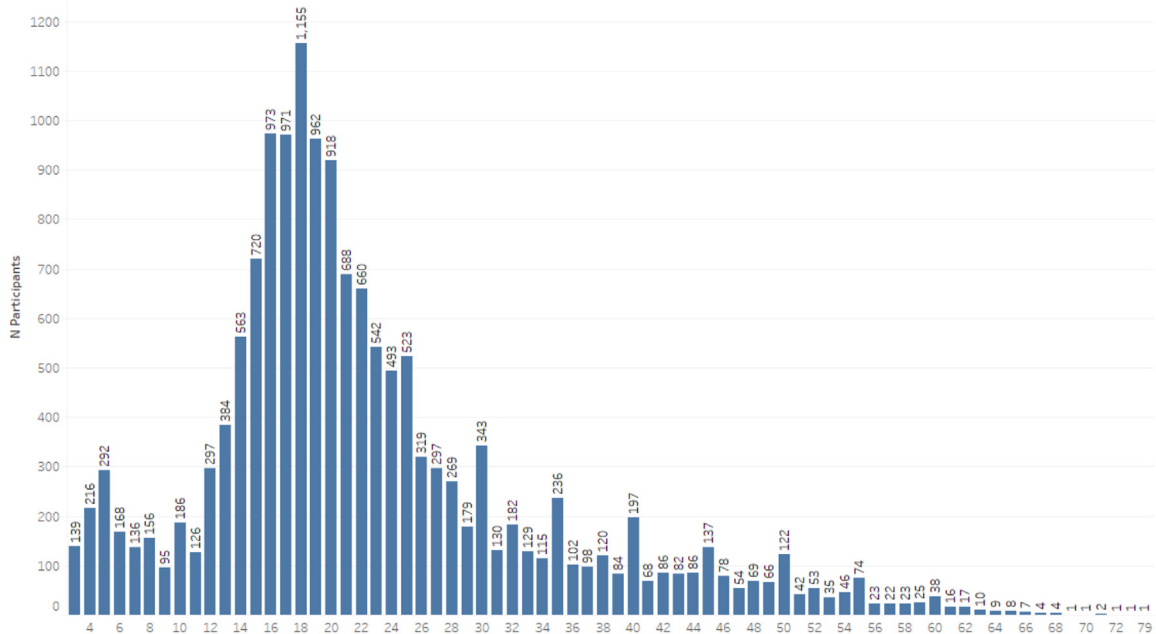


Figure 2. Age at which participants with childhood realization of their TGD identity shared their gender identity with another person, “At about what age did you first start to tell others that you were trans (even if you did not use that word)?”

that outlaws the provision of gender-affirming medical care (though both laws have been blocked by preliminary injunctions), and several more states are in the process of establishing similar antitransgender legislation. These laws have been widely justified in the political arena with

ROGD-related rhetoric [30], and the resulting structural barriers are expected to have deleterious effects on TGD youth well-being [8,14,22,30]. Our findings undermine many of the key assumptions of the ROGD hypothesis, arguing against its use in these legislative debates.

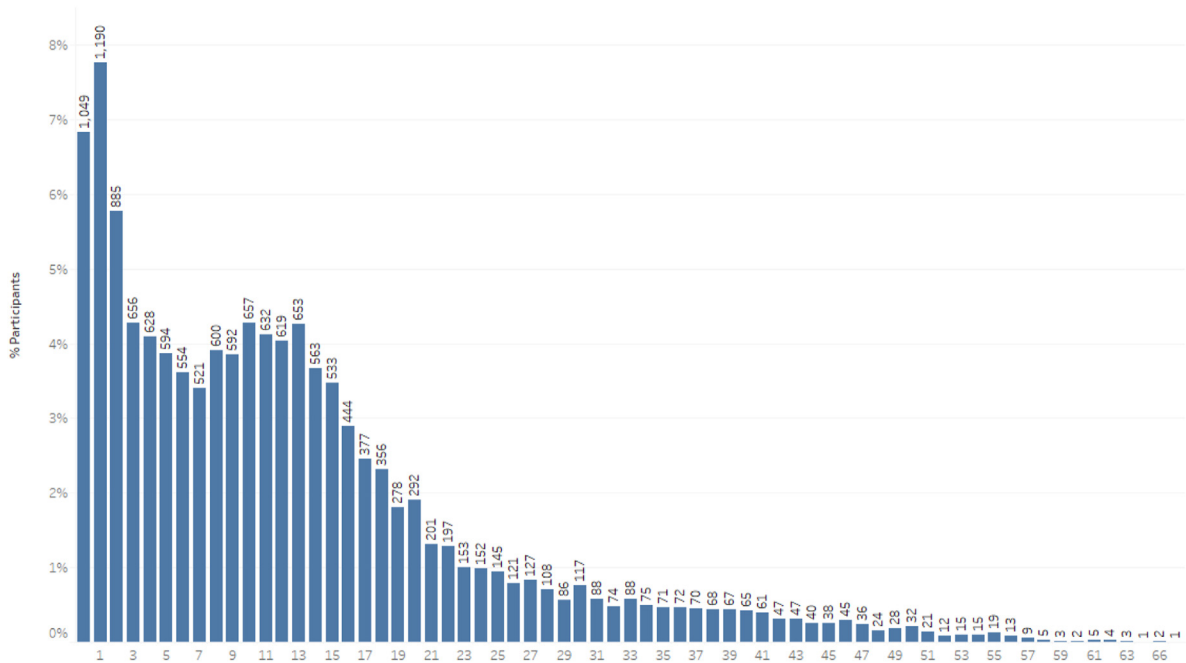


Figure 3. Years between gender identity realization and disclosure among participants with childhood realization of their TGD identities.

Limitations

While the USTS includes a large sample covering an extensive geographic area within the United States, its non-probability design means that prevalence estimates should be taken with caution. Of note, however, non-probability studies such as the USTS are of particular value in the context of TGD health research, given their ability to recruit large sample sizes and ask questions of particular relevance to TGD people [33]. The USTS sample is younger, less racially diverse, and more highly educated when compared to probability samples of TGD people in the United States [34]. We aimed to address these limitations by also providing supplemental analyses using survey weights. Moreover, the USTS lacked specific data on age of pubertal onset, and consequently, we utilized a cutoff of 10 years old as the estimated age of pubertal onset [27,28]. Mean ages of reaching Tanner stage 2 can also differ by sex assigned at birth, which may impact results. This estimation may limit our classifications of childhood and post-childhood gender identity realization. Although the current study establishes that a substantial proportion of TGD adults had later realization of their TGD identities, future longitudinal studies are needed to understand so-called “persistence” rates. Importantly, neither gender fluidity per se, nor changes over time in an individual’s desire to pursue gender affirmation, are pathological and/or necessarily suggestive of affirmation-related regret, as we have discussed previously [35–37].

In conclusion, these results suggest that the realization of one’s TGD identity during adolescence or later is not particularly unusual among TGD individuals in the United States, and that first disclosure of one’s TGD identity often occurs many years after initial identity realization. These findings do not support the ROGD hypothesis.

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Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2023.01.023>.

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Supplemental Table 1. Demographics (USTS Survey Weights Employed)
N=27,497

		<i>At about what age did you begin to feel that your gender was “different” from your assigned birth sex?</i>			
		Age <=10 n=16,279	Age 11+ n=11,218	X ²	P
		%	%		
Age (census)				99.9	<.0001
	18 – 24	8.5	19.9		
	25 – 44	38.0	40.5		
	45 – 64	38.7	24.6		
	65+	14.8	14.9		
Gender Identity				200.0	<.0001
	Woman or Trans Woman	60.7	44.7		
	Man or Trans Man	25.4	21.8		
	Nonbinary / Genderqueer	13.9	33.4		
Sex Assigned at Birth				22.4	<.0001
	Female	32.8	40.7		
	Male	67.2	59.3		
Sexual Orientation				101.0	<.0001
	Asexual	7.1	8.8		
	Bisexual	16.6	21.2		
	Gay / Lesbian	20.6	17.6		
	Heterosexual / Straight	28.1	14.1		
	Pansexual	12.5	15.4		
	Queer	9.2	16.1		
	Not listed	5.9	6.8		
Race				9.3	.23
	American Indian / Alaska Native	1.1	0.6		
	Asian / Asian American	2.3	3.2		
	Black / African American	12.3	12.4		
	Latino/a or Hispanic	15.3	13.7		
	Multiracial	1.9	1.4		

	Native Hawaiian / Pacific Islander	0.6	0.2		
	Racial / Ethnic Minority Not Listed	2.2	3.3		
	White / European American	64.4	65.2		
Education Level				5.3	.15
	Less than high school	15.0	11.5		
	High school graduate / GED	27.3	29.2		
	Some college / Associate's degree	30.5	31.4		
	Bachelor's degree or higher	27.1	28.0		
Employment Status				2.5	.11
	Employed	86.2	83.9		
	Unemployed	13.8	16.1		
Relationship Status				0.7	.42
	Partnered	49.9	48.3		
	Unpartnered	50.1	51.6		
Total Household Income				0.8	.86
	< \$25,000	34.6	34.1		
	\$25,000 – \$49,999	23.7	23.1		
	\$50,000 – \$99,000	23.2	22.9		
	> \$100,000	18.5	19.9		
Family support of gender identity				93.3	<.0001
	Supportive	51.7	41.1		
	Neutral	17.5	16.1		
	Unsupportive	16.3	13.2		
	Family doesn't know	14.6	29.6		
K-12 Harassment		23.2	9.8	70.9	<.0001
Ever exposed to gender identity change efforts		21.0	15.6	6.4	<.01
Ever had gender-affirming hormone therapy		64.5	44.9	114.4	<.0001
Ever had puberty blocking hormones		0.2	0.0	3.0	.08

Note: Percentages are calculated from the total of non-missing values.

1
2
3