

Factors Associated With Age of Presentation to Gender-Affirming Medical Care

Julia C. Sorbara, MD, MSc,^{a,b} Hazel L. Ngo, HBSc,^{c,d} Mark R. Palmert, MD, PhD^{a,b,e}

abstract

BACKGROUND: Gender-incongruent youth may present to gender-affirming medical care (GAMC) later in adolescence and puberty when hormone blockers provide less benefit. Factors influencing age of presentation to GAMC have not been described.

METHODS: A sequential mixed methods study. Participants were categorized on the basis of age at presentation to GAMC. Youth presenting at ≥ 15 years comprised the older-presenting youth, whereas those presenting at < 15 years comprised the younger-presenting youth. Caregivers were categorized on the basis of the youth's age of presentation. Twenty-four individuals were interviewed, 6 youth and 6 caregivers from each age category. Thematic analysis identified themes related to timing of presentation to GAMC. Themes differentially endorsed between older and younger youth or between caregivers of older and younger youth were used to design a questionnaire distributed to 193 youths and 187 caregivers. Responses were compared between age groups for youths and caregivers.

RESULTS: Five themes differed between age groups: validity of gender identity, gender journey barriers, influential networks, perceptions of medical therapy, and health care system interactions. Questionnaires were completed by 121 youths and 121 caregivers. Compared with younger-presenting youth, older-presenting youth recognized gender incongruence at older ages, were less likely to have caregivers who helped them access care or LGBTQ+ (lesbian, gay, bisexual, transgender, queer) family members, more often endorsed familial religious affiliations, and experienced greater youth-caregiver disagreement around importance of GAMC.

CONCLUSIONS: Family environment appears to be a key determinant of when youth present to GAMC. Whether this association occurs through affecting transgender identity formation and recognition requires further study.



^aDivision of Endocrinology and ^bDepartment of Pediatrics, Hospital for Sick Children and University of Toronto, Toronto, Ontario, Canada; and ^cDepartment of Applied Psychology and Human Development, Ontario Institute for Studies in Education and ^dDepartments of Psychology and ^ePhysiology, University of Toronto, Toronto, Ontario, Canada

Dr Sorbara conceptualized and designed the study, collected data, analyzed and interpreted the data, drafted the initial manuscript, and reviewed and revised the manuscript; Ms Ngo participated in data analysis and interpretation, designed data collection tools, and reviewed the manuscript for important intellectual content; Dr Palmert conceptualized, designed, and supervised the study, participated in data analysis, and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

DOI: <https://doi.org/10.1542/peds.2020-026674>

Accepted for publication Jan 6, 2021

WHAT'S KNOWN ON THIS SUBJECT: Gender-incongruent youth face barriers to gender-affirming care and often present to care later in adolescence and puberty when hormone blockers provide less benefit. Factors influencing age of presentation to care have not been described.

WHAT THIS STUDY ADDS: With this mixed methods study, we identified family-related differences between youth who presented to gender-affirming care at older versus younger ages. Our findings suggest family environment is an important determinant of the age at which gender-incongruent youth present to care.

To cite: Sorbara JC, Ngo HL, Palmert MR. Factors Associated With Age of Presentation to Gender-Affirming Medical Care. *Pediatrics*. 2021;147(4):e2020026674

Gender-incongruent youth often experience distress from the discrepancy between sex assigned at birth and experienced gender¹ and have high rates of mental health problems.²⁻⁹ Although the use of hormone blockers and/or gender-affirming hormones (gender-affirming medical care [GAMC]) can provide psychological benefit,^{10,11} some youth present to care at older ages and in late stages of puberty.^{2-5,7} The timing of presentation to GAMC is relevant because hormone blockers can prevent unwanted physical changes when initiated before puberty is complete.¹² In addition, although a cause-effect relationship has not been established, an association between later presentation to GAMC and worse mental health among gender-incongruent youth has been identified.²

Barriers to GAMC^{13,14} as well as the care-seeking experiences¹⁵⁻¹⁷ and decision-making processes^{18,19} of gender-incongruent youth have been described. However, the important questions of whether gender-incongruent youth who present for GAMC at older ages have different care-seeking experiences or face different barriers than youth who present younger have not been addressed.

Given the lack of data regarding factors that influence timing of presentation to GAMC, we performed a mixed methods study to explore and compare care-seeking experiences of older and younger youth seeking GAMC, including assessment of both youth and caregivers.

METHODS

This study was conducted at the Transgender Youth Clinic at The Hospital for Sick Children in Toronto, Canada, an interdisciplinary clinic that provides GAMC to pubertal youth (<18 years of age) with gender dysphoria.^{2,4,20,21} Data collection and

analyses were approved by the hospital as a quality improvement project designed to better understand access to care.

Study Design

We performed a sequential exploratory mixed methods study with a qualitative phase (semistructured interviews) and subsequent quantitative phase (questionnaire design and survey).^{22,23} Youth who presented to the clinic at ≥ 15 years of age were classified as older-presenting youth, whereas those <15 at presentation were classified as younger-presenting youth; this is a cutoff that assures the majority of older youth have experienced significant pubertal development before presentation.

Qualitative Data Collection

Youth and caregivers seen in the Transgender Youth Clinic over a 3-month period with conversational proficiency in English were eligible to participate in semistructured interviews, excluding those who had initiated GAMC before the first clinic visit. Stratified purposeful sampling based on age at first clinic visit was used to identify candidates. Additional features such as assigned sex and current medical therapy were considered during candidate selection to increase variability within each age stratum. Informed consent was obtained separately from youth and caregivers for the interview and its audio recording.

Each participant was interviewed alone and in private. Interviews occurred on the same day as a clinical encounter. One member of the study team conducted all interviews using a script that asked open-ended questions to explore youths' journeys to GAMC. Topics, informed by clinical experience and existing literature,^{13-15,17,24} included the gender history; clinic referral process; health care experiences; support systems; family, cultural, and religious

perspectives; and requests for unscripted input. The interview sample size was determined a priori and consisted of 6 participants in each of the following categories: older-presenting youth, caregivers of older-presenting youth, younger-presenting youth, and caregivers of younger-presenting youth.

Thematic Analysis

Audio recordings were transcribed verbatim and analyzed by using Dedoose version 8.2.14.²⁵ Thematic analysis was used to analyze transcripts and identify factors influencing the timing of presentation to GAMC.²⁶⁻²⁸ All transcripts were coded by a primary coder (J.C.S.) and 1 of 3 secondary coders. Regular meetings between the primary and secondary coders resolved discrepancies and refined the evolving code tree until a semifinal code tree was created. An additional reader then reviewed the transcripts, and the code tree was then further refined in discussion with the primary coder. Topics were then organized into themes reported to influence timing of presentation to GAMC.

Theme presence in a given transcript was used to determine each theme's case count. Theme case counts were tallied within each of the 4 interview groups, allowing for comparison of representation between older and younger youth and the caregivers of older and younger youth. Themes with case counts differing by ≥ 3 (at least half of the group size) were considered to be differentially represented between age groups.

Quantitative Data Collection

Separate questionnaires were designed for youth and caregivers. Themes differentially represented between age groups served as the foundation for questions and response choices. Demographic and gender history data were also collected.

Questionnaires were reviewed for content and face validity by

a pediatric endocrinologist, an adolescent medicine physician, and a nurse practitioner who care for transgender youth; a pediatrician with experience in qualitative research; and a psychologist in the field of gender identity. Revised questionnaires were reviewed by 2 pediatric endocrinology trainees for usability, readability, and length. After further revision, questionnaires were piloted with 2 clinic patients and 4 caregivers for feedback related to readability, usability, and language. Final versions of the youth and caregiver questionnaires contained 44 and 49 items, respectively, and required 20 to 25 minutes to complete. Single and multiple choice, open-ended, and 7-item Likert-type scale questions were used (Supplemental Table 7).

Questionnaires were administered on paper to youth and caregivers between December 2018 and May 2019. Only follow-up patients were included to reduce burden at initial consultations. Respondents completed the questionnaire only once, and only 1 caregiver responded per youth. Youth could participate if their caregiver declined and vice versa. Questionnaires were anonymous, and details regarding those who declined participation were not recorded. However, numbers of questionnaires distributed were documented. Quantitative data were managed by using Research Electronic Data Capture.²⁹

Statistical Analysis

Unclear responses (ie, 2 answers chosen despite requirement for a single response) were classified as unanswered³⁰ and excluded from analyses. Descriptive statistics were used to summarize responses among groups. Continuous variables were not normally distributed and were reported as median and interquartile range (IQR) and compared between groups by using the Mann-Whitney *U* test. Categorical variables were

TABLE 1 Characteristics of Youth Interview Participants (*N* = 12)

Youth	Older-Presenting Youth (<i>n</i> = 6)	Younger-Presenting Youth (<i>n</i> = 6)
Age at first visit, median (IQR), y	15.9 (15.3, 16.7)	13.2 (12.9, 14.5)
Age at interview, median (IQR), y	18.0 (16.7, 18.0)	13.8 (12.6, 14.9)
AFAB, No. (%)	3 (50)	5 (83)
Medical therapy at time of interview, No. (%)		
None	1 (17)	2 (33)
Hormone blockers only	2 (33)	3 (50)
Hormone blockers and gender-affirming hormones	3 (50)	1 (17)

reported as percentages. Pearson's χ^2 or Fisher's exact test was used to test for association between variables and age categories.

Seven-item Likert-type scale questions were used to explore whether youth or caregivers perceived religious affiliations, ethnicity, family members, living situation, school environment, and friends to have impacted timing of presentation to GAMC. Responses were assigned a score from -3 ("delayed first clinic visit a lot") to +3 ("helped me/young person come to clinic much sooner") (Supplemental Table 7). For these questions, if responses were placed between options, the option closest to the response was used; if responses were in the middle of 2 options, the less extreme was used. Factors were classified as hindering if they were viewed as having delayed care (negative scores) or helping if they were perceived to have led to earlier care (positive scores). Factors with neutral responses were classified as neither helping nor hindering. For each respondent, positive and negative scores were tallied to reflect the totality of both positive and negative influences on the youth's ability to access GAMC. A "net help score" was derived by the difference between the total helping score and the absolute value of the total hindering score. Scores were compared between groups by using the Mann-Whitney *U* test.

Responses regarding importance and timing of GAMC were scored from -3

(GMAC "very unimportant"/"should not start for a very long time") to +3 ("very important"/"should start as soon as possible") (Supplemental Table 7). Differences between youth and caregiver responses represented the degree of youth-caregiver (dyad) agreement, with absolute values ranging from 0 (complete agreement) to 6 (maximal disagreement). Rates of complete agreement and degree of youth-caregiver agreement were compared between older-presenting and younger-presenting dyads by using Pearson's χ^2 test and the Mann-Whitney *U* test, respectively. Statistical analyses were conducted by using SPSS 25.0 (IBM SPSS Statistics, IBM Corporation).³¹

RESULTS

Qualitative Interviews

To identify themes regarding care-seeking experiences, 24 participants were interviewed (Tables 1 and 2). Two-thirds of youth were assigned female at birth (AFAB) and 75% of caregivers were of AFAB youth, consistent with our clinic population of ~75% AFAB youth.^{2,4,20} Age-based differences in theme representation were identified for 5 themes (summarized below) and 9 subthemes related to timing of presentation to GAMC (see Table 3 for illustrative quotes).

Validity of Gender Identity

Youth and caregivers described looking to the youth's gender expression to interpret and evaluate

TABLE 2 Characteristics of Caregiver Interview Participants (*N* = 12)

Caregivers	Caregivers of Older-Presenting Youth (<i>n</i> = 6)	Caregivers of Younger-Presenting Youth (<i>n</i> = 6)
Role, No. (%)		
Mother	3 (50)	6 (100)
Father	3 (50)	0 (0)
Youth age at first visit, median (IQR), y	15.5 (15.2, 16.7)	12.9 (12.5, 14.8)
Youth assigned sex at birth, No. (%)		
Female	4 (67)	5 (83)
Male	2 (33)	1 (17)
Medical therapy at time of interview, No. (%)		
None	1 (17)	2 (33)
Hormone blockers only	3 (50)	0 (0)
Hormone blockers and gender-affirming hormones	2 (33)	4 (67)

gender incongruence. Younger-presenting youth and caregivers recalled expression of the identified gender in childhood, prompting subsequent feelings of expectedness and acceptance. Conversely, more caregivers of older-presenting youth described a lack of indication of gender incongruence in childhood and inconsistencies in gender expression after coming out. Some of these caregivers expressed concern that their child's transgender identity was externally motivated.

Gender Journey Barriers

Religion was perceived by older youth and caregivers as a barrier to expression or exploration of gender identity. Additionally, older youth and caregivers described discomfort discussing gender identity, which they viewed as delaying presentation to care.

Influential Networks

Younger youth and caregivers cited connections to the lesbian, gay, bisexual, transgender, queer (LGBTQ+) community as a facilitator of care-seeking experiences. Conversely, older youth and caregivers described having to navigate family tensions related to the youth's gender incongruence, which complicated care seeking.

Initial Perceptions of Medical Therapy

The importance of medical therapy was a common theme. However, caregivers of younger-presenting youth felt that initiation of medical intervention was time sensitive and described urgency related to possible mental health benefits.

Health Care System Interactions

Whereas younger youth initially discussed gender identity with their primary care provider (PCP), older-presenting youth discussed gender-related concerns with allied health professionals before having discussions with a physician. Younger youth experienced a streamlined pathway to clinic, being referred directly from their PCP. Conversely, older-presenting youth and their caregivers described interacting with more providers before Transgender Youth Clinic referral.

Quantitative Questionnaires

Questionnaires were designed on the basis of identified themes, and 380 were distributed to eligible youth (*n* = 193) and caregivers (*n* = 187) in clinic over 6 months. Questionnaires were completed by 121 youth (62 older-presenting, 59 younger-presenting) and 121 caregivers (55 of older-presenting youth, 66 of

younger-presenting youth) for an overall response rate of 64%. Fifty-two older-presenting and 57 younger-presenting youth-caregiver dyads participated (see Table 4 for demographics).

Similarities Between Older and Younger Youth and Caregivers

In contrast to the qualitative findings, we did not identify age-based differences in the proportions of caregivers who reported recognizing their child's gender incongruence before them coming out or who endorsed questioning their child's feelings about gender identity (Supplemental Table 8). Among caregivers who did question the gender identity, similar numbers of caregivers of older- and younger-presenting youth reported absence of recognized childhood signs, lack of corresponding gender expression, or concern around external motivators as the most significant reason for questioning their child's gender identity. Most youth, regardless of age category, reported waiting to come out after recognizing their gender identity, indicating median wait times of 1.5 to 2 years. During the interviews, older youth and their caregivers described gender-related family tensions more often, but no age-based differences were observed in the quantitative study.

Questionnaires also did not reveal differences in health care system interactions between older and younger youth and their caregivers. The proportions of youth and caregivers who identified the PCP as the initial health care system contact and who endorsed interactions with multiple different physicians before Transgender Youth Clinic referral were similar between age groups. Most questionnaire respondents, regardless of age, reported a sense of urgency with respect to GAMC initiation.

TABLE 3 Interview Themes Differentially Endorsed Between Older-Presenting Youth and Caregivers and Younger-Presenting Youth and Caregivers

Themes (1–5) and Subthemes (a and b)	Older-Presenting Youth and Caregivers	Younger-Presenting Youth and Caregivers
1. Validity of gender identity		
a. Gender expression	Lack of expression of affirmed gender OlderC of AFAB youth: I didn't see any...I don't know, there [were] no signs... there was nothing really when she was growing up, right? I was really close to her and you know we had a good father-daughter relationship and... never, never once was it mentioned or hinted or, or any sign or anything 'till, like I said, 12, 13 maybe...	Early expression of affirmed gender YoungerC of AFAB youth: I was not surprised at all. I birthed 4 girls, and so having the 3 older female siblings, I could see the difference in [my child] right from the very beginning, well, I would say probably from 2 or 3 years old. It did not come as a surprise to me at all when he told me.
b. External factors	Concern that gender incongruence is externally motivated OlderC of AMAB youth: ...[she's] very impressionable and [she's] very naive and if somebody tells [her] what to do... from my perspective, I could be wrong... [she] was looking for something, cause [she's] looking for friends and looking for a group...I think it was the timing [and] that [she] was looking for something so desperately to fit in.	— —
2. Gender journey barriers		
a. Religion	Religious tensions as barrier to expression or exploration of affirmed gender AMAB OlderY: I grew up in a pretty religious community... there were a lot of stereotypical things that were...done and expected and I was just really sensitive... I had to change who I was and I had to just act the way everyone else did. So I just knew all the stereotypes from a young [age] and I started placing them on myself.	— —
b. Discomfort discussing gender identity	Youth unwillingness to discuss gender incongruence AFAB OlderY: [If I would have done something differently], I think I would've spoken up earlier and not have been so shy about the way I feel. Cause that...kinda held me back too... so if I had [spoken] up earlier I could have gotten better help I think and more support.	— —
3. Influential networks		
a. LGBTQ+ community	— —	LGBTQ+ groups and individuals as resources AFAB YoungerY: I probably wouldn't have got here that smoothly or fast or even at all if I was in a mainstream school...my therapist before was transgender so if I hadn't been seeing like trans people or like LGBTQ people or like been around them, I'm not sure how I would have got here.
b. Family	Family tensions AFAB OlderY: It's kind of a struggle cause my mom she was against it and stuff like that, so I had to use other people's support to get me where I needed ... at the time I was still under 18 so [my mom] was "I'm not consenting to [medical intervention]" so we were trying to find ways to work around it so that I could get to where I wanted to get to.	— —
4. Initial perceptions of medical therapy		
a. Time sensitive	— —	Sense of urgency related to medical assessment or therapy YoungerC of AFAB youth: ... we knew that [medical intervention] needed to happen right away from, for medical transition [and] hormone therapy because...when he looks in the mirror he's distressed because he doesn't look like himself, how he knows he ought to be.
5. Health care system interactions		
a. Initial health care system contact for gender-related issues	Allied health before medical involvement OlderY AFAB: I saw a social worker... for like a year I think, maybe more, about gender. We would just talk about it once a month, maybe twice, but it wasn't really getting anywhere cause just talking to someone who's learning about it also didn't do very [much] for me, so I decided I wanted to take another step [and] asked, "How do I stop this from happening?"	PCP as initial contact YoungerC of AFAB youth: And I was not familiar with the whole process myself... we just decided that we would contact our family doctor and try to figure out... what resources there were. [We] just started the journey right then with our family doctor.
b. Transgender youth clinic referral process	Multiple health care contacts before clinic referral OlderC of AFAB youth: I agreed to take her to the family doctor. We saw the family doctor and he said that he's not going to prescribe anything... and then she got referred to a specialist...and he referred her here.	Referral made by PCP soon after disclosure of gender-related concerns YoungerC of AFAB youth: ...when he said he wanted to be a boy, which was the summer of grade, which was grade 7, I brought him to [the] pediatrician...who referred us here.

Themes highlight differences between age groups based on summative case code counts. Illustrative quotes appear after participant descriptor and colon. AMAB, assigned male at birth; OlderC, caregiver of older-presenting youth; OlderY, older-presenting youth; YoungerC, caregiver of younger-presenting youth; YoungerY, younger-presenting youth; —, not applicable.

Differences Between Older and Younger Youth and Caregivers

Older-presenting youth recognized their gender incongruence at older ages than younger-presenting youth (Table 5), but intervals between recognition of gender identity, coming out, and clinic referral were similar for both age groups (Supplemental Table 8). Caregivers of younger youth reported more often than caregivers of older youth that uncertainty around how to describe feelings related to gender identity delayed coming out (Fig 1A). Discomfort around discussing gender and concerns around family response were endorsed more frequently by caregivers of older compared with younger youth as reasons for waiting to come out (Fig 1A).

Rates of personal religious affiliation were similar among youth from both age groups (Supplemental Table 8). However, older-presenting youth and their caregivers were more likely to report that their family identified with a specific religion (Table 5, Supplemental Table 8) and to view family religion as a reason for waiting to come out (Fig 1A) compared with younger-presenting youth and their caregivers. Fewer older than younger youth had caregivers who helped them access GAMC. Although >80% of youth and caregivers reported connections to the LGBTQ+ community, fewer older than younger youth reported having LGBTQ+ family members (Table 5, Fig 1B, Supplemental Table 8).

When youth-caregiver dyads were assessed, youth from both age groups reported waiting longer to come out after recognizing their gender identity than the delay perceived by their caregivers (2.0 years [IQR 0.33–4.25] vs 0.0 years [IQR 0.00–0.21]; $P < .001$). Youth from both age groups felt more strongly about the importance and urgency

of GAMC than their caregivers. However, youth-caregiver discrepancy related to importance of GAMC was greater within older dyads compared with younger dyads (Table 6).

Finally, net help scores were calculated to reflect the totality (number and degree) of helping and hindering factors reported to impact access to GAMC. Older youth endorsed significantly lower net help scores than younger youth (Table 5, Fig 1C).

DISCUSSION

Why many gender-incongruent youth present to GAMC later in adolescence and puberty^{2-5,7} is an important unanswered clinical question. To begin to address this knowledge gap, we conducted a sequential exploratory mixed methods study and have identified several factors among transgender youth and their caregivers associated with age of presentation to GAMC.

Familial, but not personal, religious affiliation was endorsed more often by older-presenting youth and their caregivers than by younger-presenting youth and their caregivers. Older-presenting youth were also less likely to have LGBTQ+ family members. Given reported associations between religiosity and transphobia,³²⁻³⁴ it is possible that gender-incongruent youth from religious families feel less supported around their gender identities and are more reluctant to disclose gender incongruence. Parental support^{13,16,17} and the ways in which a young person's transgender identity impacts their family³⁵ have been shown to influence the ability of gender-incongruent youth to access GAMC. That fewer older than younger youth had a caregiver who helped them access GAMC suggests another factor that could lead to their later presentation to care. Overall, older-presenting youth reported having less

support in accessing GAMC and lower net help scores (which included support attributed to caregivers, school, and peers) than younger-presenting youth.

It is interesting that the times from recognition of gender incongruence to coming out and to GAMC referral were similar for older- and younger-presenting youth. These data raise the possibility that family environment may act upstream of the care-seeking journey, impacting timing of presentation to GAMC by influencing when youth recognize their gender incongruence. Family adjustment and impact have been previously implicated in the development of transgender identities,³⁵ and as quotes in Table 3 suggest, religious environments and lack of examples of sexual and gender diversity may reinforce gender stereotypes. Conversely, the presence of LGBTQ+ family members may promote sensitivity to feelings of gender incongruence and provide examples that challenge traditionally held norms. Parental support as well as connectedness to family, school, and peers have been identified by others as protective factors for the mental health of transgender youth,³⁶⁻⁴² findings consistent with our hypothesis that these same factors may act upstream to influence the processes of formation and recognition of one's transgender identity, ultimately impacting when youth present to care.

Our data point to another interesting aspect regarding recognition of gender incongruence. Both younger- and older-presenting youth recognized their gender incongruence before their caregivers, and consistent with what we² and others^{7,15} have reported, both groups waited a number of years to come out after recognizing their gender identity. Conversely, caregivers reported recognizing their child's gender incongruence and their child coming out as nearly

TABLE 4 Demographic Characteristics of Questionnaire Respondents

	Older-Presenting Youth (n = 62)	Younger-Presenting Youth (n = 59)	P	Caregivers of Older-Presenting Youth (n = 55)	Caregivers of Younger-Presenting Youth (n = 66)	P
Youth current age, median (IQR), y	17.3 (16.5, 17.6)	15.9 (14.7, 16.7)	<.001	17.3 (16.3, 17.5)	15.9 (14.9, 16.6)	<.001
Youth age at first visit, median (IQR), y	16.1 (15.6, 16.9)	14.0 (13.1, 14.3)	<.001	16.0 (15.3, 16.7)	14.0 (13.0, 14.4)	<.001
Youth age at referral, median (IQR), y	15.5 (15.0, 16.0)	13.2 (12.8, 14.0)	<.001	15.3 (15.0, 16.0)	13.0 (13.0, 14.0)	<.001
AFAB, No. (%)	49 (79)	47 (80)	.93	44 (80)	52 (79)	.90
Youth gender identity, No. (%)			.50 ^b and .14 ^c			.79 ^b and .35 ^c
Male/trans male	38 (61)	42 (71)	—	36 (66)	46 (70)	—
Female/trans female	10 (16)	11 (19)	—	10 (18)	13 (20)	—
Nonbinary ^a	9 (15)	4 (7)	—	7 (13)	6 (9)	—
Option not listed	3 (5)	2 (3)	—	2 (4)	1 (2)	—
Role, No. (%)						.91 ^b
Mother	—	—	—	38 (69)	45 (68)	—
Father	—	—	—	7 (13)	7 (11)	—
Parent	—	—	—	6 (11)	8 (12)	—
Other (stepparent, adoptive parent, grandparent, legal guardian, other)	—	—	—	3 (5)	6 (9)	—
Self-reported ethnicity, No. (%)			.16 ^b			.37 ^b
White	48 (77)	46 (78)	—	45 (82)	52 (79)	—
People of color (African Canadian, Asian, Hispanic, Southeast Asian, Middle Eastern or Arab, Indigenous [First Nations, Inuit, Metis], other)	8 (13)	2 (3)	—	6 (11)	4 (6)	—
>1 ethnicity	6 (10)	8 (14)	—	4 (7)	9 (14)	—
Household income, No. (%), CAD\$.88 ^b
<25 000	—	—	—	4 (7)	5 (8)	—
25 000–49 999	—	—	—	6 (11)	6 (9)	—
50 000–74 999	—	—	—	8 (15)	10 (15)	—
75 000–99 999	—	—	—	8 (15)	16 (24)	—
100 000–249 999	—	—	—	16 (29)	21 (32)	—
≥250 000	—	—	—	4 (7)	3 (5)	—
Educational attainment, No. (%)						.84 ^b
Some high school	—	—	—	2 (4)	3 (5)	—
High school diploma	—	—	—	6 (11)	5 (8)	—
Some college or university	—	—	—	13 (24)	12 (18)	—
College or university degree or diploma	—	—	—	23 (42)	34 (52)	—
Master's, doctorate, other professional degree	—	—	—	9 (16)	12 (18)	—

CAD\$, Canadian dollar; —, not applicable.

^a Includes agender and gender-fluid identities.

^b P value reflects comparison of distribution of all responses between groups and was calculated using only the number of subjects who provided a response.

^c P value reflects comparison of distribution between binary gender responses (male/trans male and female/trans female) and responses that were not explicitly binary (nonbinary and option not listed). Frequencies may not add up to 100 because of rounding and/or small numbers who did not respond.

contemporaneous events. These findings contrast descriptions of apparently rapid development of gender dysphoria among older adolescents.^{4,3} Instead, our data suggest that perceived rapidity may reflect caregiver unawareness of both the existence and duration of their child's transgender identity before an explicit disclosure.

Although our study's quantitative and qualitative findings mostly aligned, some age-based differences in themes were not observed in the survey

results. For example, questionnaire data did not reflect age-based differences in the perceived urgency of GAMC. Rather, initial perceptions of GAMC differed by role, with youth attributing more importance and urgency to GAMC than their caregivers. Quantitative analyses did reveal that greater youth-caregiver disagreement regarding the importance of GAMC was associated with later presentation to care. Additionally, the propensity of older-presenting youth, rather than

younger-presenting youth, to have interacted with multiple providers before GAMC referral was not reflected in the quantitative data where approximately equal numbers (20%) of youth and caregivers from both age groups endorsed this experience (Supplemental Table 8). Whereas the qualitative phase provided insight into individual experiences and revealed areas for further focus, quantitative methods allowed those experiences to be evaluated within a larger

TABLE 5 Statistically Different Youth and Caregiver Questionnaire Responses by Age Category

	Older-Presenting Youth (<i>n</i> = 62)	Younger-Presenting Youth (<i>n</i> = 59)	<i>P</i>	Caregivers of Older-Presenting Youth (<i>n</i> = 55)	Caregivers of Younger-Presenting Youth (<i>n</i> = 66)	<i>P</i>
Elements of gender journey						
Age at recognition of gender incongruence, median (IQR), y	12.5 (11.1, 14.0); <i>n</i> = 60	9.5 (7.0, 11.8); <i>n</i> = 58	<.001	14.3 (13.3, 15.1); <i>n</i> = 51	12.0 (11.0, 13.0); <i>n</i> = 66	<.001
Age at coming out, median (IQR), y	14.3 (13.5, 15.1); <i>n</i> = 59	12.6 (11.9, 13.2); <i>n</i> = 55	<.001	14.7 (14.0, 15.3); <i>n</i> = 50	12.4 (11.0, 13.1); <i>n</i> = 63	<.001
Religion						
Family affiliated with religious group, No. (%)	33 (53); <i>n</i> = 62	15 (27); <i>n</i> = 56	.004	27 (50); <i>n</i> = 54	19 (29); <i>n</i> = 65	.02
Influential networks						
≥1 helpful caregiver, No. (%)	26 (44); <i>n</i> = 59	41 (75); <i>n</i> = 55	.001	—	—	—
LGBTQ+ family member, No. (%)	13 (21); <i>n</i> = 61	25 (45); <i>n</i> = 55	.006	16 (30); <i>n</i> = 54	20 (31); <i>n</i> = 64	.85
Helping and hindering factors						
Net help score, median (IQR)	0.0 (0.0–3.0)	3.0 (0.0–6.0)	.003	0.0 (0.0–3.0)	0.50 (0.0–4.0)	.31

Responses that differed significantly by age category are displayed. The number of respondents for each question is noted beside the response value. Additional response data can be found in Supplemental Table 8. —, not applicable.

population. In this way, one set of results does not discredit the other; rather, the results highlight the value of a mixed methods approach.

The findings from this quality improvement initiative have implications for clinical practice. Factors related to family environment did not appear to delay presentation to GAMC once the youth had recognized and communicated their transgender identity. However, the later recognition is an important piece of clinical data, potentially identifying youth whose families may be struggling more with acceptance of the transgender identity and who

may benefit from more support as they navigate their youth's gender journey. Our findings also suggest that exposure to individuals from the LGBTQ+ community is associated with earlier recognition of transgender identity, emphasizing the importance of LGBTQ+ visibility in society. Although outside the realm of direct clinical practice, pediatric health care providers do have a role in advocating for LGBTQ+ representation in various settings, including schools and health care environments. Finally, our data highlight opportunities to address potential delays in accessing GAMC by enhancing PCP's knowledge of

available local services and stressing the need for timely referrals.

This study has limitations. As a retrospective study, it is subject to recall bias. Participants did not know of our intention to analyze responses by age, but they were informed of a focus on care-seeking experiences, which may have influenced their responses. Our questionnaire response rate was high (64%), but we did not collect data for those who declined to participate and cannot evaluate if our respondents are fully representative of our clinic. However, anonymity was deliberate to promote truthfulness of responses, and the age-based differences we identified

TABLE 6 Paired Youth-Caregiver Questionnaire Responses

	Youth (<i>n</i> = 109)	Caregivers (<i>n</i> = 109)	<i>P</i>	Older-Presenting Dyads (<i>n</i> = 52)	Younger-Presenting Dyads (<i>n</i> = 57)	<i>P</i>
Elements of gender journey						
Age of recognition of gender incongruence, median (IQR), y	11.3 (8.0, 13.0); <i>n</i> = 107	13.0 (12.0, 14.0); <i>n</i> = 105	<.001	—	—	—
Time from recognition of gender incongruence to coming out, median (IQR), y	2.0 (0.3, 4.3); <i>n</i> = 103	0.0 (0.0, 0.2); <i>n</i> = 102	<.001	—	—	—
Importance of GAMC						
Considered "very important," No. (%)	87 (80); <i>n</i> = 109	54 (50); <i>n</i> = 109	<.001	—	—	—
Degree of response difference, median (IQR)	—	—	—	1 (0.0, 3.0); <i>n</i> = 52	0 (0.0, 2.0); <i>n</i> = 57	.03
Urgency of GAMC						
Should start "as soon as possible," No. (%)	56 (51); <i>n</i> = 109	32 (30); <i>n</i> = 107	.001	—	—	—
Response difference, median (IQR)	—	—	—	1 (0.0, 2.0); <i>n</i> = 50	0 (0.0, 2.0); <i>n</i> = 57	.20

Paired youth-caregiver data are displayed. Dyads refer to youth-caregiver pairs. The number of respondents for each question is noted beside the response value. Additional response data can be found in Supplemental Table 9. —, not applicable.

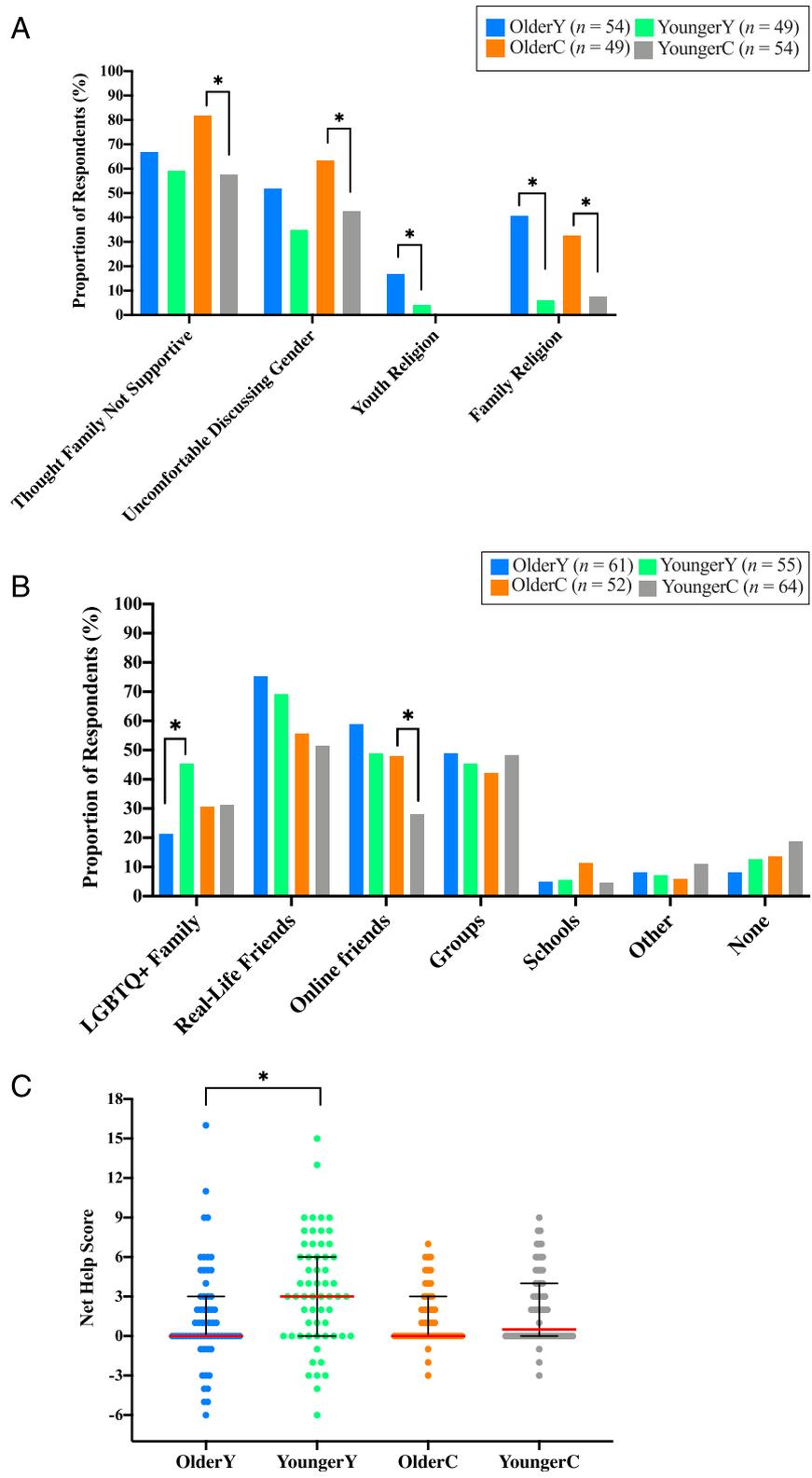


FIGURE 1

Distribution of selected questionnaire responses and net help scores by role and age category. Net help score is defined as the difference between the total helping and the absolute value of the total hindering score. Scores represent the degree of support youth or caregivers reported related to accessing GAMC and are presented as median (red line) and IQR (black lines). A, Reasons why youth waited to come out about their gender identity. B, Connections to the LGBTQ+ community at the time of initial Transgender Youth Clinic visit. C, Net help scores endorsed by youth and caregivers. * $P < .05$. OlderC, caregiver of older-presenting youth; OlderY, older-presenting youth; YoungerC, caregiver of younger-presenting youth; YoungerY, younger-presenting youth.

remain valid among the participants even if the group was not fully representative of our clinic.

We acknowledge that our analysis cannot capture experiences of all gender-incongruent youth. Participants were limited to those who accessed GAMC at a tertiary care hospital and, similar to other studies involving gender-incongruent persons,^{4,4,5} were predominantly white. They also were of high socioeconomic status. However, the question posed (regarding what factors affect timing of presentation to GAMC) necessitates the use of a clinic-based sample.

CONCLUSIONS

Older age and later pubertal stage at presentation to GAMC have been

associated with higher rates of mental health problems among transgender youth² and can result in less benefit from hormonal blockade for some youth. Our novel data reveal that youth who presented to GAMC at older ages recognized their gender incongruence later, were less likely to have caregivers who helped them access GAMC or to have LGBTQ+ family members, were more likely to endorse a familial religious affiliation, experienced greater youth-caregiver disagreement around the importance of medical intervention and, overall, endorsed less support in accessing care. Our data suggest environment may be a determinant of transgender identity formation and recognition, affecting when youth present to GAMC. Further research is needed to validate our findings and develop

strategies to facilitate timely access to GAMC.

ACKNOWLEDGMENTS

We thank the youth and caregivers who participated in this study. We also thank Meryl Acker, MSc, and Ana Stosic, MSc, for their contributions to qualitative data analysis for which they did not receive compensation.

ABBREVIATIONS

AFAB: assigned female at birth
GAMC: gender-affirming medical care
IQR: interquartile range
LGBTQ+: lesbian, gay, bisexual, transgender, queer
PCP: primary care provider

Address correspondence to Julia C. Sorbara, Division of Endocrinology, The Hospital for Sick Children, 555 University Ave, Toronto, ON, Canada M5G 1X8. E-mail: julia.sorbara@sickkids.ca

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2021 by the American Academy of Pediatrics

FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: Dr Sorbara received salary support from the Canadian Pediatric Endocrine Group Fellowship Program.

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

COMPANION PAPER: A companion to this article can be found online at www.pediatrics.org/cgi/doi/10.1542/peds.2020-038257.

REFERENCES

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. Washington, DC: American Psychiatric Press; 2013
2. Sorbara JC, Chiniara LN, Thompson S, Palmert MR. Mental health and timing of gender-affirming care. *Pediatrics*. 2020;146(4):e20193600
3. Khatchadourian K, Amed S, Metzger DL. Clinical management of youth with gender dysphoria in Vancouver. *J Pediatr*. 2014;164(4):906–911
4. Chiniara LN, Bonifacio HJ, Palmert MR. Characteristics of adolescents referred to a gender clinic: are youth seen now different from those in initial reports? *Horm Res Paediatr*. 2018;89(6):434–441
5. Spack NP, Edwards-Leeper L, Feldman HA, et al. Children and adolescents with gender identity disorder referred to a pediatric medical center. *Pediatrics*. 2012;129(3):418–425
6. de Vries AL, Doreleijers TA, Steensma TD, Cohen-Kettenis PT. Psychiatric comorbidity in gender dysphoric adolescents. *J Child Psychol Psychiatry*. 2011;52(11):1195–1202
7. Olson J, Schragger SM, Belzer M, Simons LK, Clark LF. Baseline physiologic and psychosocial characteristics of transgender youth seeking care for gender dysphoria. *J Adolesc Health*. 2015;57(4):374–380
8. Holt V, Skagerberg E, Dunsford M. Young people with features of gender dysphoria: demographics and associated difficulties. *Clin Child Psychol Psychiatry*. 2016;21(1):108–118
9. Reisner SL, Vettters R, Leclerc M, et al. Mental health of transgender youth in care at an adolescent urban community health center: a matched retrospective cohort study. *J Adolesc Health*. 2015;56(3):274–279
10. de Vries AL, McGuire JK, Steensma TD, Wagenaar EC, Doreleijers TA, Cohen-Kettenis PT. Young adult psychological outcome after puberty suppression and

- gender reassignment. *Pediatrics*. 2014; 134(4):696–704
11. de Vries AL, Steensma TD, Doreleijers TA, Cohen-Kettenis PT. Puberty suppression in adolescents with gender identity disorder: a prospective follow-up study. *J Sex Med*. 2011;8(8): 2276–2283
 12. Kreukels BP, Cohen-Kettenis PT. Puberty suppression in gender identity disorder: the Amsterdam experience. *Nat Rev Endocrinol*. 2011;7(8):466–472
 13. Gridley SJ, Crouch JM, Evans Y, et al. Youth and caregiver perspectives on barriers to gender-affirming health care for transgender youth. *J Adolesc Health*. 2016;59(3):254–261
 14. Puckett JA, Cleary P, Rossman K, Newcomb ME, Mustanski B. Barriers to gender-affirming care for transgender and gender nonconforming individuals. *Sex Res Soc Policy*. 2018;15(1):48–59
 15. Pullen Sansfaçon A, Temple-Newhook J, Suerich-Gulick F, et al.; Stories of Gender-Affirming Care Team. The experiences of gender diverse and trans children and youth considering and initiating medical interventions in Canadian gender-affirming speciality clinics. *Int J Transgenderism*. 2019; 20(4):371–387
 16. Newhook JT, Benson K, Bridger T, Crowther C, Sinnott R. The TransKidsNL study: healthcare and support needs of transgender children, youth, and families on the island of Newfoundland. *Can J Commun Ment Health*. 2018;37(2): 13–28
 17. Riggs DW, Bartholomaeus C, Sansfaçon AP. ‘If they didn’t support me, I most likely wouldn’t be here’: transgender young people and their parents negotiating medical treatment in Australia. *Int J Transgend Health*. 2019; 21(1):3–15
 18. Daley T, Grossoehme D, McGuire JK, Corathers S, Conard LA, Lipstein EA. “I couldn’t see a downside”: decision-making about gender-affirming hormone therapy. *J Adolesc Health*. 2019;65(2):274–279
 19. Clark BA, Marshall SK, Saewyc EM. Hormone therapy decision-making processes: transgender youth and parents. *J Adolesc*. 2020;79:136–147
 20. Chiniara LN, Viner C, Palmert M, Bonifacio H. Perspectives on fertility preservation and parenthood among transgender youth and their parents. *Arch Dis Child*. 2019;104(8): 739–744
 21. Bonifacio JH, Maser C, Stadelman K, Palmert M. Management of gender dysphoria in adolescents in primary care. *CMAJ*. 2019;191(3): E69–E75
 22. Creswell JW, Plano Clark VL, Gutmann M, Hanson W. Advanced Mixed Methods Research Designs. In: Tashakkori A, Teddlie C, eds. *Handbook of Mixed Methods in Social & Behavioral Research*. Thousand Oaks, CA: Sage; 2003:209–240
 23. Dossett LA, Kaji AH, Dimick JB. Practical guide to mixed methods. *JAMA Surg*. 2020;155(3):254–255
 24. Lerner JE, Robles G. Perceived barriers and facilitators to health care utilization in the United States for transgender people: a review of recent literature. *J Health Care Poor Underserved*. 2017;28(1):127–152
 25. *Dedoose [Web Application]. Version 8.0.35*. Los Angeles, CA: SocioCultural Research Consultants, LLC; 2019
 26. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101
 27. King N. Using Templates in the Thematic Analysis of Text. In: Cassell C, Symon G, eds. *Essential Guide to Qualitative Methods in Organizational Research*. London, United Kingdom: Sage; 2004: 257–270
 28. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9): 1277–1288
 29. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research Electronic Data Capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2): 377–381
 30. Pokorny SB, Jason LA, Schoeny M, Curie CJ, Townsend SM. Eliminating invalid self-report survey data. *Psychol Rep*. 2001;89(1):166–168
 31. IBM SPSS Statistics [computer program]. Version 25.0. Armonk, NY: IBM Corporation; 2017
 32. Kanamori Y, Cornelius-White JHD, Pegors TK, Daniel T, Hulgus J. Development and validation of the transgender attitudes and beliefs scale. *Arch Sex Behav*. 2017;46(5): 1503–1515
 33. Nagoshi JL, Adams KA, Terrell HK, Hill ED, Brzuzy S, Nagoshi CT. Gender differences in correlates of homophobia and transphobia. *Sex Roles*. 2008;59(7):521
 34. Tee N, Hegarty P. Predicting opposition to the civil rights of trans persons in the United Kingdom. *J Community Appl Soc Psychol*. 2006;16(1): 70–80
 35. Katz-Wise SL, Budge SL, Fugate E, et al. Transactional pathways of transgender identity development in transgender and gender nonconforming youth and caregivers from the trans youth family study. *Int J Transgend*. 2017;18(3): 243–263
 36. Johns MM, Lowry R, Andrzejewski J, et al. Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students - 19 states and large urban school districts, 2017. *MMWR Morb Mortal Wkly Rep*. 2019;68(3): 67–71
 37. Eisenberg ME, Gower AL, McMorris BJ, Rider GN, Shea G, Coleman E. Risk and protective factors in the lives of transgender/gender nonconforming adolescents. *J Adolesc Health*. 2017; 61(4):521–526
 38. Travers R, Bauer G, Pyne J, Bradley K, Gale L, Papadimitriou M. Impacts of Strong Parental Support for Trans Youth: A Report Prepared for Children’s Aid Society of Toronto and Delisle Youth Services. Ontario, Canada: TransPulse; 2012
 39. Simons L, Schragger SM, Clark LF, Belzer M, Olson J. Parental support and mental health among transgender adolescents. *J Adolesc Health*. 2013; 53(6):791–793
 40. Reisner SL, Greytak EA, Parsons JT, Ybarra ML. Gender minority social stress in adolescence: disparities in

adolescent bullying and substance use by gender identity. *J Sex Res.* 2015; 52(3):243–256

41. Veale JF, Peter T, Travers R, Saewyc EM. Enacted stigma, mental health, and protective factors among transgender youth in Canada. *Transgend Health.* 2017;2(1):207–216
42. Johns MM, Beltran O, Armstrong HL, Jayne PE, Barrios LC. Protective factors among transgender and gender variant youth: a systematic review by socioecological level. *J Prim Prev.* 2018; 39(3):263–301
43. Littman L. Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria. *PLoS One.* 2018;13(8):e0202330
44. Scheim AI, Bauer GR, Coleman TA. Sociodemographic differences by survey mode in a respondent-driven sampling study of transgender people in Ontario, Canada. *LGBT Health.* 2016; 3(5):391–395
45. Saewyc EM, Pyne J, Frohard-Dourlent H, Travers R, Veale JF. *Being Safe, Being Me in Ontario: Regional Results of the Canadian Trans Youth Health Survey.* Vancouver, BC: Stigma and Resilience Among Vulnerable Youth Centre, School of Nursing, University of British Columbia; 2017