

“I Have to Decide How Attached to that Future I Feel”: Fertility Intentions and Desires Among Transmasculine Young Adults

Alisher A. Cottrill

is a recent graduate of the Harvard T.H. Chan School of Public Health and a former Research Coordinator at Planned Parenthood League of Massachusetts. His research has focused on the impact of stigma and stigmatized identities on reproductive health and health access.

✉ acottrill@hsph.harvard.edu

Elizabeth Janiak

is an Assistant Professor at Harvard Medical School. She is an interdisciplinary public health researcher whose work measures the impacts of public policy and social stigma on access to and quality of reproductive health care, primarily focused on abortion and contraceptive care in the US.

Allegra R. Gordon

is a social epidemiologist and Assistant Professor at Boston University School of Public Health. She has worked in LGBTQI+ health for 20 years. She uses quantitative and qualitative methods to examine the impacts of stigma and gender norms on mental and physical health among adolescents and young adults.

Jennifer Potter

is a Professor of Medicine at Harvard Medical School and co-chair of The Fenway Institute. Potter is a national leader in the field of SGM health. Her work focuses on advancing LGBTQI+ health equity via implementation of trauma-informed approaches to care and integrating SGM health education across the medical education continuum.

Madina Agénor

is an Assistant Professor in the Department of Behavioral and Social Sciences at Brown University School of Public Health. Her research examines sexual and reproductive health inequities in relation to intersecting social positions and systems—including race/ethnicity and racism, sexual orientation and heterosexism, and gender identity and cissexism.

Though many transmasculine individuals pursue pregnancy, childbirth, and parenthood in their lifetimes, research on the reproductive health needs of this population remains limited. This study aimed to explore the fertility intentions and desires of transmasculine young

adults, as well as the multilevel factors that influence their pregnancy-related decisions. We conducted in-depth interviews with transmasculine young adults aged 18–29 ($N = 21$) in Boston, MA, USA between February and July of 2018. Interviews were transcribed and analyzed using a thematic analysis approach involving inductive and deductive coding via a codebook applied by two independent coders. While many participants reported no lifetime desire for pregnancy, a sizable minority expressed some desire to become pregnant in the future. Fertility intentions were shaped by a range of anticipated barriers, including gender dysphoria, difficulty navigating gendered stereotypes about pregnancy, inadequate information about fertility and pregnancy for transmasculine individuals, and a lack of health providers with the training and experience to offer high-quality pregnancy-related care to transmasculine patients. Multilevel interventions that address cisnormative stigma and discrimination in reproductive health care settings, improve patient-provider communication, and increase provider fluency with transmasculine health needs are necessary to facilitate access to the full spectrum of fertility-related services among transmasculine young adults.

KEYWORDS transgender, transmasculine, reproductive health, fertility, pregnancy

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Many transmasculine people—namely, transgender men and other individuals who are assigned female at birth (AFAB) and whose gender identity falls along the masculine spectrum—count pregnancy, childbirth, and parenthood among their lifetime goals (Besse, Lampe, and Mann 2020; Ellis, Wojnar, and Pettinato 2015; Hoffkling, Obedin-Maliver, and Sevelius 2017; Light et al. 2014; MacDonald et al. 2016; Obedin-Maliver and Makadon 2015; Stark et al. 2019; Sterling and Garcia 2020). Though much of the current literature on this topic has focused exclusively on transgender men, efforts to expand this research to include nonbinary AFAB individuals have reported a similar diversity of intentions and desires around fertility and pregnancy (Ellis, Wojnar, and Pettinato 2015; MacDonald et al. 2016; Moseson et al. 2021; Stark et al. 2019). A survey of transgender men following gender-affirming surgery by Wierckx and colleagues (2012) found that 22% of participants had children and 54% desired them in the future. Likewise, a survey of transgender and gender nonconforming youth by Chen and colleagues (2019) found that 60.9% of participants were interested in exploring options for family formation and 35.9% desired biological children. Though research on pregnancy prevalence among transmasculine individuals remains scarce, a survey of 1,694 transgender men and nonbinary AFAB adults by Moseson and colleagues (2021) found that 12% had been pregnant at least once, 11% desired a future pregnancy, and 16% were undecided about their pregnancy goals.

While some transmasculine people may choose to pursue gender-affirming surgeries that impact their fertility (e.g., hysterectomy/salpingo-oophorectomy), not all transmasculine individuals desire fertility-related medical interventions (Abern, Cook, and Maguire 2019). Those who do may opt for oocyte or embryo cryopreservation to preserve their fertility prior to any such surgery (Cheng et al. 2019; Sterling and Garcia 2020), or choose to delay surgery until after pregnancy has been achieved

(Ellis, Wojnar, and Pettinato 2015). Though high levels of endogenous testosterone are associated with infertility in people with ovaries, the long-term effects of exogenous testosterone as part of gender-affirming hormone therapy remain understudied. Limited research on transgender men has shown that some individuals can experience pregnancy during or after testosterone use (Light et al. 2014; Obedin-Maliver and Makadon 2015). Indeed, prior research on the pregnancy experiences of transgender men, and transmasculine patients more broadly, has consistently identified a group of respondents who report a lifetime history of testosterone use prior to pregnancy, and many who choose to take a hiatus from testosterone use for the purpose of becoming pregnant (Ellis, Wojnar, and Pettinato 2015; Hoffkling, Obedin-Maliver, and Sevelius 2017; Light et al. 2014; MacDonald et al. 2016).

The decision to pursue pregnancy and childbirth is a complex one regardless of gender identity, and transmasculine individuals cite many of the same motivations as cisgender women for choosing this route to parenthood, such as social recognition, intimacy with a romantic partner, and positive engagement with the capabilities of one's body (Besse, Lampe, and Mann 2020; Ellis, Wojnar, and Pettinato 2015). Nonetheless, limited research shows that transgender men and other transmasculine individuals face unique barriers to pregnancy and childbirth, including cisnormative bias, stigma, and discrimination in health care settings in particular and in society in general, which limit their access to the full spectrum of reproductive health services (Besse, Lampe, and Mann 2020; Ellis, Wojnar, and Pettinato 2015; Hoffkling, Obedin-Maliver, and Sevelius 2017; James et al. 2016; MacDonald et al. 2016; Nixon 2013). Even in the absence of overt discrimination, transmasculine patients frequently report instances of erasure in reproductive health settings due to cisnormative assumptions about who can and will experience pregnancy. These include misgendering by clinical staff, gender-exclusive language on signage and educational materials, or electronic medical records that limit available data fields and billing codes based on a patient's registered gender (Besse, Lampe, and Mann 2020; Moseson et al. 2020). Alongside these barriers, the reproductive choices of transgender individuals are often further restricted by legislation that makes permanent sterilization a requirement for legal recognition of one's gender in some states, potentially forcing individuals to make difficult decisions about their fertility that do not reflect their underlying pregnancy goals (Nixon 2013).

Despite these well-documented barriers, research on pregnancy and fertility decision-making among this population remains limited. Moreover, much of the literature to date has focused on individuals who have already carried a pregnancy to term and thus does not account for the perspectives and experiences of those who are still deciding whether or not to pursue pregnancy within their lifetime (Ellis, Wojnar, Pettinato 2015; Hoffkling, Obedin-Maliver, and Sevelius 2017; Light et al. 2014; MacDonald et al. 2016). Compared to their older counterparts, young adults are both less likely to have undergone gender-affirming surgeries that impact their fertility and more likely to experience an unintended pregnancy while their fertility is preserved, placing them at an important crossroads of reproductive health decision-making (Beckwith et al. 2017; CDC 2016). In order to address this gap in the literature, we conducted a qualitative study to explore the fertility intentions and desires of transmasculine U.S. young adults, as well as the unique multilevel factors that may influence their decision-making around fertility and pregnancy.

Our findings contribute to the limited research on this topic and inform future studies and interventions that enable transmasculine young adults to make informed decisions about their fertility and facilitate access to high-quality, person-centered pregnancy-related services that address the unique reproductive health needs and concerns of this marginalized population.

MATERIALS AND METHODS

Participant sampling and recruitment

We used a purposive sampling strategy (Marshall 1996; Patton 2002) to select participants according to the following eligibility criteria: a gender identity along the transmasculine spectrum (e.g., man, transgender man, transmasculine, or nonbinary); assigned a female sex at birth; aged 18–29 years; had an assigned male at birth (AMAB) sexual partner in the last five years; and resides in the greater Boston area. All participants self-identified as transmasculine, alone or in combination with other gender identities, at screening, though participants were surveyed both at screening and at the end of the interview on preferred terms for their gender identity and gender expression to better capture the full diversity of gender identities and expressions in the transmasculine population. Participants were selected as part of a larger study exploring the reproductive health care needs and experiences of transmasculine young adults and were therefore not screened on the basis of their fertility intentions and desires or their pregnancy history. Participants were recruited through community-based, health care, and student organizations, email listservs, and Facebook groups that served transmasculine young adults (Patton 2002), as well as through recruitment ads posted on Craigslist. Additional participants were recruited via a snowball sampling strategy in which participants were asked to inform potentially eligible individuals in their social networks about the study (Arcury and Quandt 1999; King and Horrocks 2010; Marshall 1996; Patton 2002).

Data collection

We conducted in-depth interviews with 21 transmasculine young adults on topics pertaining to their pregnancy, contraception, and abortion beliefs, attitudes, and experiences. In-depth interviews were conducted in Boston, MA between February and July 2018 using a semi-structured interview guide developed based on the scientific literature (King and Horrocks 2010). The interview guide, which was reviewed by members of the study population and experts in transgender health, consisted of open-ended questions and probes pertaining to the following topics: pregnancy intentions and attitudes, perceptions of and attitudes toward contraceptive and abortion care, contraceptive method preferences and experiences, differential treatment by health care providers in reproductive health care settings, patient-provider communication in the context of contraception, abortion care, and fertility preservation, and health systems barriers to and facilitators of reproductive health care. Interviews were conducted by two members of the study team, a biracial, young adult cisgender woman and a white, young adult transgender man. All interviews were conducted in person in a private room in a university office building or health care facility and lasted between 36 and 66 minutes ($M = 51$). Interviews were conducted in English and audio-recorded upon

obtaining written informed consent from participants. Participants received a \$25 gift card for their time. All research activities were approved by the Office of Human Research Administration at Harvard Longwood Medical Area.

Data analysis

Interview audio recordings were transcribed verbatim and entered into Dedoose (version 8.1.8) for analysis. Interview transcripts were analyzed using a template style thematic analysis approach (Crabtree and Miller 1999; Fereday and Muir-Cochrane 2006; King 2004). Data analysis began with immersion in the data and team-based codebook development and refinement (Crabtree and Miller 1999; MacQueen et al. 1998). The initial hierarchical codebook was developed collaboratively among research team members and included both deductive codes based on the scientific literature and in-depth interview guide and inductive codes based on four interview transcripts. Two independent coders each applied the codebook to these four transcripts to test its fit to the data and ensure consistency in its application. Codes were merged, refined, and discarded, and coding discrepancies were discussed and resolved by consensus between the two coders and Principal Investigator. The codebook was then applied to the entire sample and periodically refined based on emerging patterns and discussions among research team members. Approximately 20% of transcripts were double-coded by two independent coders to further ensure consistent application of the codebook throughout the coding process (Fereday and Muir-Cochrane 2006; King and Horrocks 2010; MacQueen et al. 1998). For the present manuscript, coded text fragments pertaining to fertility intentions and desires were further organized into themes and sub-themes (Crabtree and Miller 1999; Fereday and Muir-Cochrane 2006; King 2004) and a matrix was used to systematically identify and delineate similarities and differences among study participants (Miles, Huberman, and Saldana 2014). Memo writing, searching for disconfirming evidence, and regular research team discussions were also used to facilitate the identification and refinement of themes and sub-themes (Miles, Huberman, and Saldana 2014).

RESULTS

Participant characteristics

Participants ($N = 21$) ranged in age from 18 to 29 years, with a mean age of 25 years ($SD = 3.1$). The majority identified as transgender men ($n = 9, 42.9\%$), nonbinary ($n = 8, 38.1\%$), or transmasculine ($n = 5, 23.8\%$), though these categories were not mutually exclusive, and the majority reported current testosterone use ($n = 13, 61.9\%$). Most participants identified as white ($n = 16, 80.0\%$), were born in the United States ($n = 20, 95.2\%$), and had a bachelor's degree or more ($n = 17, 81.0\%$). The majority identified as queer ($n = 14, 66.7\%$) and reported having sex with a cisgender man in the past year ($n = 14, 73.7\%$). Only one participant had ever been pregnant or received abortion care ($n = 1, 4.8\%$), and none had ever given birth. When asked about their lifetime fertility desires, the majority of participants ($n = 14, 66.7\%$) reported that they did not want to become pregnant during their lives; however, a substantial minority expressed either uncertainty ($n = 5, 23.8\%$) or an unequivocal desire ($n = 2, 9.5\%$) to become pregnant in the long term.

Table 1. Social, Economic, and Health Care Characteristics of Transmasculine Individuals Aged 18–29 Years (N = 21)

Variable	<i>n</i>	%
Gender identity*		
Man or male	5	24
Transgender or trans man or male	9	43
Transmasculine	5	24
Genderqueer	4	19
Gender non-conforming	4	19
Non-binary	8	38
Gender fluid	3	14
Agender	3	14
Bigender	1	5
Another gender identity	2	10
Lifetime desire for pregnancy		
Yes	2	10
No	14	67
Unsure	5	24
Currently taking testosterone		
Yes	13	62
No	8	38
Changed gender markers on any legal document		
Yes	10	48
No	11	52
Race/ethnicity* (<i>n</i> = 20)		
White	16	80
Black or African American	2	10
Latinx or Hispanic	2	10
Asian/Asian American or Pacific Islander	1	5
Native or Indigenous	1	5
Bi/multiracial	2	10
Another race/ethnicity	2	10
U.S. born		
Yes	20	95
No	1	5
Relationship status*		
Not dating anyone	4	19
Dating one person	11	52
Dating multiple people	4	19
Living with a partner	5	24
Married	0	0
Divorced, separated, widowed	0	0

Another relationship status	1	5
Sexual orientation identity*		
Heterosexual	0	0
Queer	14	67
Lesbian	1	5
Bisexual	7	33
Gay	6	29
Asexual	1	5
Not sure	1	5
Another sexual orientation identity	2	10
Sexual attraction*		
Cisgender women	17	81
Transgender women	17	81
Cisgender men	19	90
Transgender men	18	86
Non-binary AFAB individuals	18	86
Non-binary AMAB individuals	20	95
No one	0	0
Gender of lifetime sexual partners [†] (<i>n</i> = 19)		
Cisgender women	18	95
Transgender women	10	53
Cisgender men	18	95
Transgender men	11	58
Non-binary AFAB individuals	9	47
Non-binary AMAB individuals	5	26
No one	0	0
Past-year sexual partners [†] (<i>n</i> = 19)		
Cisgender women	8	42
Transgender women	3	16
Cisgender men	14	74
Transgender men	4	21
Non-binary AFAB individuals	5	26
Non-binary AMAB individuals	0	0
No one	1	5
Gender expression*		
Masculine	12	57
Androgynous	12	57
Genderqueer	1	5
Gender fluid	1	5
Another gender expression	1	5
Usual health care provider*		
Physician	13	62
Nurse (RN or NP)	9	43

Physician assistant	2	10
Not sure	1	5
Another provider	1	5
Usual site of sexual and reproductive health care*		
Private doctor's office	3	14
Community health center	15	71
Hospital clinic	3	14
Planned Parenthood clinic	3	14
Another site	2	10

Note. Percentages may not add to 100% due to rounding error and/or non-mutually exclusive categories. Asterisks (*) indicate that categories are not mutually exclusive. AFAB = assigned female at birth; AMAB = assigned male at birth.

Theme 1: Fertility and pregnancy were often considered in the context of plans for gender-affirming health services

Participants reported a wide range of attitudes towards fertility and pregnancy. Many felt strongly that they did not want to become pregnant. A 29-year-old white, male-identified participant summarized his feelings in this way:

That's definitely one of those things that has always been a pretty hard no for me, and so I've, since becoming sexually active, been pretty diligent about making sure that was never [...] going to come up.

Among those who did not want to become pregnant, some specifically regarded the loss of fertility as a positive potential consequence of pursuing gender-affirming medical services, such as hormone-replacement therapy or surgery. Referring to the experience of signing an informed consent document explaining that testosterone may decrease individuals' ability to conceive, another participant, a 27-year-old transgender man, described:

I also kind of laughed because, you know, even before I knew that I was trans, I knew that I did not want to be a pregnant person. So that was honestly probably the easiest thing I did that day.

In contrast, several participants expressed a desire to keep their options open, and to consider the possibility of a future pregnancy when structuring their plans for gender-affirming medical services and other health goals. One participant, a 27-year-old white, nonbinary participant who reported wanting to start testosterone use but had not yet done so, stated:

There's a lot of people who say that there isn't actually a risk of becoming infertile, but there is a chance [...] and so I have to decide how attached to that future I feel.

Another 21-year-old multiracial, nonbinary participant echoed this sentiment when discussing considerations around the timing and sequencing of testosterone use and gender-affirming surgery:

When thinking about whether I should start taking T [testosterone] or [...] if I ever decide to get top [chest] surgery, whether I want to be pregnant and have a baby would definitely be on that list.

While many participants reported uncertainty about their pregnancy-related goals,

some cited a strong intention to have biological children and expressed confidence in their ability to navigate any emotional or medical barriers that might arise. As stated by one 26-year-old white transgender man:

I really want to be a parent. I want to grow a baby. [...] I don't really know what sort of gender feelings might show up, but I also know that I'm just going to be really excited to be a parent, and I think that will end up overshadowing any distressing stuff.

Among participants who desired pregnancy, nearly all felt that their gender identity and perceived gender expression would alter the experience of preserving their fertility or carrying a pregnancy to term, and many felt that the process would be more difficult as a result. Anticipated barriers fell into three broad categories: (1) dysphoria and gendered stigma associated with being visibly pregnant as a masculine-identified person, (2) difficulty accessing fertility- and pregnancy-related services due to gendered stigma in health care settings, and (3) lack of trust in health care providers to offer pre-, peri-, and postnatal care that meets the needs of transmasculine patients. These concerns were shared by participants across a wide range of fertility desires and intentions, though participants differed on how surmountable they perceived these barriers to be and how heavily each factored into their decision-making around pregnancy.

Theme 2: Perceptions of pregnancy as a gendered experience complicated decision-making around fertility and pregnancy

Pregnancy as a source of gender dysphoria

Many participants believed that pregnancy and childbirth would be a source of gender dysphoria for them, due to the hormonal and bodily changes inherent in the process. Several participants commented on the need to halt testosterone during and prior to the pregnancy, due to its potential impact on fertility and fetal development (WPATH 2011). As stated by a 26-year-old white, nonbinary participant:

I think it [pregnancy] would be hard and weird. [...] I think the biggest thing in my understanding is that you have to be off T for at least a little while before getting pregnant and then for the duration of the pregnancy.

Some participants cited dysphoria as their primary reason for choosing not to pursue pregnancy. One participant, a 27-year-old transgender man, emphasized:

It's just a whole other animal that if I woke up tomorrow with this crazy urge to be pregnant, I think that would just tear me apart.

For others, the need to halt or delay gender-affirming services was one factor to weigh among many, albeit one about which they expressed some concern. As stated by another participant, a 26-year-old white transgender man:

I mean, I would [stop testosterone] because that's what I would need to do to have children, but menstruating again, I haven't done that in a couple of years, so I'm not looking forward to that.

Pregnancy as a driver of cisnormative stigma

For many participants, concerns about the physical symptoms of pregnancy were compounded by cisnormative stigma expressed as fears of ostracization and discrimina-

tion that might result if they were to be perceived as pregnant in an androgynous or masculine body. A 28-year-old white transgender man described this as his primary reason for choosing not to preserve his fertility or attempt a planned pregnancy in his lifetime:

I would have loved to have been able to, but I just don't think I could. Not for the physical piece of it, which I actually would have enjoyed, but for the social aspect of it. [...] There are visible changes that happen to your body, and people questioning, and people looking. I just couldn't have done that.

A 27-year-old transgender man shared a similar concern:

The idea of being a pregnant man is terrifying, you know. I have a lot of anxiety about getting clocked as trans all the time. You know, I'll butch up, like in an Uber, like talking to some dude, you know. I'm constantly afraid of getting clocked as trans or even gay.

Pregnancy as a gender-neutral state

Among participants who reported some lifetime desire to become pregnant, many coped with the potential for gender dysphoria and cisnormative stigma by reframing pregnancy as a gender-neutral and strictly biological state. A 28-year-old white transgender man stated:

It's something that my body can do. My body is uniquely my own and I don't think of it as a female body in any way. It's just like, these are my parts, and this is what they can do.

A 20-year-old Latinx, agender participant echoed this sentiment:

It's weird because I want to be a mom and I want to be a dad at the same time. [...] I feel like my reproductive organs don't make me necessarily feminine because I feel like gender is just so mental.

Theme 3: Open patient–provider communication was hindered by health care providers' gendered assumptions about patients' pregnancy goals

Although many participants reported that they had not discussed their fertility intentions with a health care provider, those who had done so expressed difficulty communicating their needs due to the gendered assumptions they encountered in health care settings. Participants often found themselves caught between two competing stereotypes: (1) that all individuals with a uterus will want to become pregnant in their lifetime and (2) that all transmasculine individuals will want to avoid pregnancy and eventually seek to end their fertility. While the latter stereotype was more salient for participants seeking to plan for pregnancy or preserve their fertility, the former was raised by participants who wished to end their fertility, emphasizing that gendered stereotypes can be a double-edged sword that does not appropriately serve either group.

Provider bias against treatments that may compromise fertility potential

Participants who reported that their providers were not aware, or not fully supportive, of their gender identity expressed frustration that their fertility was often prioritized over their other health care needs, regardless of their stated pregnancy intentions. A 29-year-old white, nonbinary and agender participant who reported no lifetime preg-

nancy desire shared the experience of seeking care for an unrelated ophthalmological condition:

I don't know what the medication would have been, but my ophthalmologist was like, 'Well, I could prescribe you this medication, a particular medication that we don't prescribe to women who are pregnant or might become pregnant, and I'd be hesitant to prescribe it to you.' [...] That was a weird interaction, because I was like, 'Oh, I could be denied a medication.'

Interactions in which fertility was prioritized over other health care needs were common for participants pursuing a total hysterectomy, a common gender-affirming surgery that results in permanent loss of fertility. This was especially true for participants whose providers were unaware of their gender identity or who wanted the surgery primarily to address other health care needs, such as pregnancy prevention. As stated by one 22-year-old white transgender man:

I brought it up to my doctor, and I was like, 'Hey, I would like to be sterile indefinitely because I've known I don't want kids forever,' and she's like, 'You're 20. Good luck.'

Similarly, some participants felt pressured to disclose their gender identity to health care providers sooner than they would have liked in order to overcome providers' insistence on preserving the fertility of patients they perceive as women. A 27-year-old white, nonbinary participant described the experience of seeking a hysterectomy to control the symptoms of endometriosis:

I'd love to get a hysterectomy, and that's where it almost came up on the phone. [...] I was like, 'And you know, if I have to get a hysterectomy, that won't be the end of the world,' And she's like, 'Oh, but you'll want to have kids.' [...] So that kind of thing. I'll probably have to mention [my gender identity].

Provider reluctance to address fertility and pregnancy with transmasculine patients

On the other hand, participants who felt that their providers viewed them primarily as transgender men expressed frustration that fertility and pregnancy were no longer considered a relevant part of their health care. As stated by one 27-year-old white, nonbinary participant:

I think the fact that I present more masculinely does affect things. I think people assume that I'm not interested in physically reproducing. I don't think any providers ask me about [...] what I want.

Several participants felt that their providers adopted a one-size-fits-all approach, in which they expected all transmasculine patients to pursue the same set of gender-affirming medical services, without regard for fertility preservation or pregnancy planning. A 24-year-old white, nonbinary participant described their experience this way:

I think that because providers see me, and it's very clear that they're checking the box 'transman' in their head [...] I see an attitude of reduced flexibility around what my needs might be. So it's like, 'Got it. You're a man. You want this, this, and this.' And I'm like, 'Do I, though? Is that what I need?'

Another participant, a 22-year-old white transgender man, expressed a similar sentiment:

A lot of people are concerned about how the narrative around transition often includes sterilization, and there's sort of this idea that you have to go through all of these steps.

This approach was particularly alienating for participants whose decision-making around fertility preservation and fertility loss had been painful or complex. A 28-year-old white transgender man, who ultimately chose to pursue a hysterectomy, described his provider's behavior in the weeks leading up to the procedure:

I think she was erring so much on the side of being supportive and like, 'This is great. This is the next step in your [...] transition process,' that when I tried to bring up that real sadness it was like, 'Oh, no, no. This is what you need to do.'

Finally, some participants felt pressured to hide the complexity of their emotions around fertility loss during the hysterectomy process, lest their providers question their preparedness for the procedure or deny them access to other gender-affirming medical services in the future. As stated by one 21-year-old multiracial, nonbinary participant:

I think if I'm going to the doctor and saying something, I know that anything I say could end up in my record and be passed from doctor to doctor, and so I only want to say things that I'm comfortable with that happening with.

Similarly, another participant, a 28-year-old white transgender man, explained:

I'm afraid that if I voice any [...] sadness around it, then they would start questioning, and then the barriers would go into place around being able to access that. So, I feel like in some situations, I've had to say what I know they want to hear, but not necessarily honoring the true feeling behind it.

Theme 4: Health care providers often lacked knowledge and fluency in transmasculine fertility and pregnancy needs

Lack of guidance from providers around potential fertility loss

Many participants felt that they were forced to make decisions about their fertility sooner and with less information than they would have preferred in order to progress toward their gender-affirmation goals. For example, nearly all participants believed that testosterone would decrease their fertility, but most were unsure how immediate or permanent this effect would be. As stated by one 22-year-old white, nonbinary, and genderqueer participant:

The informed consent that I signed to start [testosterone] was ten pages of, 'You may or may not be able to become pregnant. You may or may not. You may or may not.' [...] And to sign that at 21 was kind of like, 'Oh, I wish I knew more.'

Another 21-year-old multiracial, nonbinary participant shared their stress at having to navigate fertility preservation at such a young age:

[It] feels really stressful and overwhelming, and like a whole bunch of things that I wish I didn't have to think about because I know that I don't

want to have a baby for a while, but because I need to make peace with my body in the meantime I have to deal with it now.

Lack of guidance from providers on fertility preservation and pregnancy planning

For many participants, this stress was amplified by a sense that they could not rely on their health care providers to offer meaningful guidance on fertility preservation options, due to lack of provider knowledge, experience, or comfort discussing pregnancy with transgender patients. A 26-year-old white transgender man reported the following interaction with his surgeon:

I got chest surgery two years ago and I saw a surgeon who does a lot of chest surgery, and I was like, 'Oh, I'm thinking about having children at some point. Do you know if I can lactate or what would happen?' [...] She's like, 'I don't know.' She's like, 'I perform this surgery on women who have a breast reduction [...] but yours is obviously a lot more than a reduction, so I don't know.'

Further, several participants expressed frustration that they were warned of the impact testosterone might have on their fertility but given little guidance on how to navigate the potentially complex and expensive process of extracting and preserving their eggs. As stated by one 26-year-old white transgender man:

They're like, 'Oh, we recommend that you save your eggs,' but [...] it's very expensive and that's all they said, so I was just like, 'Okay, we'll see.'

Another participant, a 28-year-old white transgender man, shared a similar experience:

I was trying to ask around banking of eggs, or what are some options to maintain future fertility, and it was just kind of brushed under the rug like, 'Oh, that's just really expensive. You're not going to be able to do that.'

Perceived lack of providers with experience in caring for transmasculine patients during pregnancy

Likewise, several participants expressed concerns about the lack of health care providers with the knowledge, training, and experience to provide transmasculine individuals with high-quality pre-, peri-, and postnatal care. As stated by one 26-year-old white transgender man:

There's not a lot of trans men who become pregnant and give birth, not that anyone has information about anyway, so I don't [...] know where I would go.

Another participant, a 27-year-old transgender man, elaborated on this fear:

I don't know even if a doctor would understand the full impact of, you know, half a decade on hormones and stuff. [...] Even if I could find the most trans pregnancy experienced doctor, how many of those has he or she actually experienced providing care to, you know, maybe two?

Many participants endorsed a general strategy of doing their own research ahead of health care encounters, as well as crowdsourcing advice and information from their communities. As stated by one 26-year-old white nonbinary participant:

My method is 100% to walk in informed. And so, like, I will crowdsource

information from people that I know that would be experts. So, like, I will ask my friends who are doctors and nurses [...] and then walk in demanding the things that I need, as opposed to walking in and asking for recommendations, because historically doctors' recommendations are [...] poorly informed on the way my life works.

However, pregnancy was viewed as more complex than the typical health care encounter, and at least one participant, a 26-year-old white transgender man, felt that lack of confidence in provider expertise was enough to make him question the feasibility of having biological children:

I will think a lot about [...] where I would get medical care and who would be qualified to help me with that, if there were complications or anything like that. Like the one or two people in Boston who have helped trans men have children may or may not be equipped to deal with things that come up. So, I don't know if I'll do it.

Importance of open patient–provider dialog

Among participants who felt confident in their ability to navigate a future pregnancy, several emphasized the importance of finding a provider with whom they had a respectful and trustworthy rapport. Some felt that their history of negative health care experiences could be leveraged to better establish these relationships in the future. As stated by one 24-year-old white, nonbinary participant:

I think, in general, my experience with [...] my current PCP. Again, it's incredibly communicative. I understand that has a great deal to do with her, and also it does have something to do with me walking into the room and being, you know, my capacity to medically advocate for myself unfortunately comes from a lot of poor experience.

Others stressed the need for better representation of transmasculine individuals among health care providers, as well as clinical staff, patient navigators, and peer educators, and expressed a desire to serve as a resource for other patients themselves. As stated by one 29-year-old white, nonbinary participant:

That's the kind of stuff that I just didn't even realize was missing until recently, where I'm like, you know, it would be really, really nice to take a workshop on my own health led by somebody who's lived it. It would also be nice to feel invited into that process, you know? [...] I would love to be available to people.

When asked what approaches they would like to see from health care providers in the future, nearly all participants emphasized the need for open communication between providers and their transmasculine patients around fertility and pregnancy. As stated by one 28-year-old white transgender man:

I do know some patients don't want to have that conversation, and that's fine, but some definitely do. So being open to having that conversation and knowing what the potential options are around adoption or banking of eggs and those kind of different options. That would've been super helpful to me when I started to transition.

A 24-year-old white, nonbinary participant echoed this sentiment:

I see a lot of value in providers asking more questions about patients'

[...] hopes, thoughts, and feelings around their reproductive health and those organ systems or anatomical systems.

Further, participants urged providers to be aware of the diversity of fertility needs, intentions, and desires that exist among transmasculine individuals. A 28-year-old white transgender man shared the following:

I feel like people get one narrative in their heads and that's that. [...] So that's one of my big things with providers is everybody's experience is individual, and so you can't assume one person's individual experience based on collective experience with the community.

DISCUSSION

Prior research on fertility and pregnancy among transgender men, and transmasculine people more broadly, has chiefly focused on the perspectives of individuals who have already carried a pregnancy to term (Ellis, Wojnar, and Pettinato 2015; Hoffkling, Obedin-Maliver, and Sevelius 2017; Light et al. 2014; MacDonald et al. 2016). Our findings expand upon this literature by exploring the perspectives of transmasculine young adults, many of whom were still grappling with the decision of whether or not to incorporate pregnancy or fertility planning into their life goals. Consistent with prior work (Besse, Lampe, and Mann 2020; Hoffkling, Obedin-Maliver, and Sevelius 2017; Moseson et al. 2021; Wierckx et al. 2012), participants expressed a wide range of attitudes towards pregnancy. A majority felt certain that they did not desire pregnancy in their lifetime, while a small minority had already chosen to structure their plans for gender-affirming medical services and other major life events around an intended future pregnancy. However, by focusing on a younger, childless cohort, our findings offer additional insight into the perspectives of a third group who, though they may have some lifetime desire for pregnancy, feel ambivalent or undecided due to the perceived difficulty of carrying a pregnancy as a transmasculine individual. These perspectives are unlikely to be included in research that singles out individuals who have already given birth, but they offer a valuable outlook on the barriers that may prevent transmasculine individuals from accessing the full spectrum of options for their fertility and reproductive health.

Despite recent strides in visibility and societal acceptance, transgender people still face considerable cisnormative bias, stigma, and discrimination in health care settings (Poteat, German, and Kerrigan 2013). As many as 33% of transgender respondents on the 2015 U.S. Transgender Survey reported at least one negative health care experience related to their gender identity in the past year, such as being asked unnecessary or invasive questions by a health care provider, being verbally harassed in a health care setting, or being denied access to health care services (James et al. 2016). Furthermore, as many as 23% reported choosing not to seek a health service when they needed it at least once in the past year for fear of mistreatment related to their gender identity, and 24% reported at least one experience in the past year in which they were required to educate their provider about their needs as a transgender patient (James et al. 2016). These results are not surprising, given the lack of training providers receive that is geared towards transgender patient populations. As of 2020, only 16% of medical schools accredited by the Liaison Committee on Medical Education reported

offering a comprehensive LGBTQI+ competency training program, and only 48% reported offering any training on LGBTQI+ patients in their curriculum (Moseson et al. 2020). A 2015 survey of OB-GYNs in the United States found that fewer than half had received education on LGBTQI+ health during their residencies and fewer than 20% had received training on transgender patients (Unger 2015). In this context, pregnancy and childbirth represent a difficult choice for many pregnancy-capable transmasculine and nonbinary individuals, who are routinely forced to navigate a complex set of medical, structural, and psychosocial obstacles with incomplete information and inadequate support from their health care providers.

The present findings document several key barriers faced by transmasculine individuals who are considering pregnancy and highlight concerns about the impact of cisnormative stigma and discrimination in reproductive health care settings. These concerns are in line with the narratives of transgender men, and transmasculine people more broadly, who have experienced pregnancy and childbirth, many of whom report instances of discrimination and stigmatizing behavior from their health care providers, including rudeness, invasive questioning, incorrect name and pronoun use, and denial of key services such as lactation coaching (Light et al. 2014; MacDonald et al. 2016). The exclusion of pregnancy-capable transmasculine people from clinical narratives of pregnancy and childbirth has its roots in repronormativity, the pervasive assumption that childbearing is essential to, and indivisible from, femininity and womanhood (Karaian 2013; Radi 2020). As mainstream visibility of the transgender community has increased, these pressures have been compounded by the evolution of transnormativity, a normative framework that selectively legitimizes transgender narratives and experiences that conform to certain social and medical standards, such as identification with a binary gender, pursuit of gender-affirming medical services in line with that gender, and rejection of the social norms and physical characteristics associated with one's assigned sex (Johnson 2016). In the context of reproductive health care, these biases may serve to portray pregnancy and masculinity as fundamentally incompatible, making it difficult for nonbinary and transgender patients to receive support for their gender identity and their fertility goals without undermining one or the other (Karaian 2013; Johnson 2016).

In the present work, participants cited gendered assumptions held by providers about their pregnancy goals, as well as the lack of provider fluency with transmasculine reproductive health needs, as two of the most significant barriers to establishing an open dialog with their providers about their options for fertility and pregnancy. On the one hand, participants whose providers did not know of, or did not fully support, their gender identity often described feeling pressure to prioritize fertility preservation over a variety of other health needs, and, in some cases, to disclose their gender identity sooner than they would have liked in order to justify pursuing medical services that would put their future fertility at risk. On the other hand, participants whose providers were nominally supportive of their gender identity often reported feeling that their providers no longer considered fertility and pregnancy a relevant part of their health care, and, in some cases, reported feeling pressure to hide their fertility desires lest their providers retract their support or question their readiness for gender-affirming medical care. The tension between the repronormative pressure to preserve fertility in some cases and the transnormative pressure to opt out of it in others pro-

duces a system in which individuals may feel that they are effectively forced to choose between gaining full recognition of their gender identity in reproductive health care settings and engaging with the reproductive capabilities of their body (Johnson 2016).

Prior research has suggested that access to respectful and non-stigmatizing preconception counseling can significantly reduce feelings of loneliness and isolation among transmasculine patients preparing for pregnancy (Besse, Lampe, and Mann 2020). These findings were echoed by participants in the present work, who emphasized the importance of an open and respectful rapport with a trustworthy provider in their assessment of pregnancy as a feasible goal. Consistent with prior work, participants endorsed care navigation strategies geared towards seeking out more positive patient-provider relationships, such as leveraging negative past experiences for self-advocacy in clinical encounters, relying on peer advocates and social supports to better prepare for difficult conversations, and seeking out transmasculine providers who might better understand their health care needs (Seelman and Poteat 2020). As such, our findings highlight a pressing need to equip health care providers with the training and experience required to offer pre-, peri-, and post-natal care that meets the needs of this population, as well as increase representation of transmasculine individuals in health care roles. Further, our findings emphasize the need for providers to offer flexible care that avoids making assumptions about the fertility intentions and desires of transmasculine patients.

These recommendations would be further bolstered by systems-level interventions that target the wider policy landscape in which reproductive health services are delivered. The World Professional Association for Transgender Health (WPATH), as well as the American Society for Reproductive Medicine (ASRM) and the American College of Obstetricians and Gynecologists (ACOG), have all issued guidance recommending that transgender patients receive counseling on potential fertility loss and fertility preservation options prior to the start of gender-affirming hormone therapy (ACOG 2021; ASRM 2015; WPATH 2011). Despite this, fertility preservation techniques such as oocyte retrieval and cryopreservation remain prohibitively expensive for many patients, with out-of-pocket costs as high as \$9,253 per procedure, in addition to the costs of long-term storage (Lyttle Schumacher et al. 2017). While a number of U.S. states have enacted fertility insurance laws mandating health insurance coverage for fertility-related diagnostic services and infertility treatments, only eleven (i.e., California, Colorado, Connecticut, Delaware, Illinois, Maryland, New Hampshire, New Jersey, New York, Rhode Island, and Utah) have enacted mandates requiring some insurers to extend coverage to fertility preservation services in cases of medically-induced infertility (Kyweluk, Reinecke, and Chen 2019; RESOLVE 2022). Application of these mandates is often restricted to cases where fertility-compromising treatments are deemed “medically necessary,” criteria which were developed in the context of cis-gender women undergoing cancer treatments and which may not be understood to apply equally to transmasculine patients in all states (Kyweluk, Reinecke, and Chen 2019). Additional legislation to ensure that existing mandates may be applied in the context of gender-affirming medical care, as well as the development of similar mandates in other states, would represent a crucial step towards making fertility preservation accessible to all who desire it. At the same time, not all transmasculine individuals will choose to pursue gender-affirming medical services that impact their fertility,

and existing legislation that makes fertility-compromising treatments, such as certain gender-affirming surgeries, a prerequisite for individuals to gain access to identification that matches their gender identity are discriminatory and should be repealed wherever possible (Nixon 2013).

Limitations

These results have several limitations. First, although participants reported a diversity of attitudes, intentions, and desires around pregnancy, only one individual in our sample had ever been pregnant and none had given birth. Thus, we were unable to identify or explore any systematic differences between individuals who are willing and able to pursue pregnancy and those who desire pregnancy but do not ultimately pursue it. Second, because these data were gathered as part of a broader study that also examined experiences with contraception, unintended pregnancy, and abortion, participants were only eligible if they reported an assigned male at birth (AMAB) sexual partner within the past five years, a requirement that does not reflect the full range of transmasculine individuals' sexual and romantic relationships or family configurations. Further, because our goal was, in part, to explore transmasculine young adults' experiences navigating reproductive health services, we did not recruit for or include gender diverse AFAB individuals who did not view themselves as transmasculine, alone or in combination with other gender identities, in the present study. Thus, our results may not be applicable to gender diverse people who do not identify as transmasculine and whose experiences may differ from those described here. Finally, a majority of participants in our study sample were white, college-educated individuals enrolled in a private health plan. Nearly all were U.S. born, and all were fluent English speakers. Further all participants resided in or around the greater Boston area. As a result, our findings may not reflect the experiences of transmasculine people of color, individuals with less than a college-level education, or those enrolled in a public health plan or who lack health insurance. Likewise, they may not reflect the experiences of transmasculine individuals who face linguistic or cultural barriers or who reside in regions with different social and political climates and different levels of access to health insurance and health care. Nonetheless, these findings offer insights into the factors that influence decision-making around fertility and pregnancy among transmasculine U.S. young adults, with a particular focus on the decision-making of individuals who have not yet gone through the process of becoming pregnant or giving birth and who are, in many cases, still grappling with the decisions and the barriers described throughout.

CONCLUSION

Transmasculine individuals seeking to become pregnant must navigate a complex set of structural, institutional, interpersonal, and psychosocial barriers—both inside and outside of the health care system. Health care providers are well-positioned to reduce the impact of these barriers by offering high-quality, non-stigmatizing pre-, peri-, and post-natal care to all patients regardless of gender identity or expression. Moreover, health care providers should strive to maintain open communication with transmasculine patients about their fertility desires and intentions in the context of other health care needs, such as efforts to minimize gender dysphoria and any plans for tes-

tosterone use or gender-affirming surgeries. Likewise, health care institutions should ensure that providers and staff are trained in best practices for supporting transmasculine patients, including the use of gender-inclusive language in patient-provider communication and educational materials, correct name and pronoun use, and reliance on person-centered patient-provider communication that avoids making gendered assumptions about patients' sexual and reproductive health needs, preferences, and experiences.

Providers and institutions alike should be aware of and prepared to address the wider structural- and institutional-level barriers faced by transmasculine patients accessing and navigating reproductive health care, such as difficulty obtaining health insurance coverage for oocyte cryopreservation and other key fertility services. Further, health care institutions should make additional efforts to incorporate transmasculine perspectives into health information and services delivery, including in the form of peer-to-peer sexuality education, peer-led health care navigation programs, collaboration with transmasculine communities in developing patient educational materials, and improved representation and retention of transmasculine health care providers. Systems-level interventions that mandate or incentivize insurance coverage for fertility services, ensure that transmasculine patients are not excluded from such coverage on the basis of gender identity, and discourage the use of proof-of-surgery requirements in applications for updated identification documents should also be considered. Finally, efforts to address institutional cissexism in health care settings by incorporating comprehensive training on the health needs of transmasculine patients, and gender diverse patients overall, into medical and nursing school curricula, continuing education for health professionals, and institutional staff trainings should be used to bolster these strategies, as should efforts at wider advocacy to address structural cissexism in society as a whole.

Despite significant barriers, many transmasculine individuals desire parenthood, and many choose to become pregnant and give birth. A greater understanding of the fertility-related needs, intentions, desires, and experiences of this population, as well as multilevel interventions that advance access to high-quality reproductive health care and address cissexism and other forms of discrimination in health care and other settings, will enable health care providers and organizations to better support the reproductive health, autonomy, and dignity of all people across the full spectrum of gender identities and expressions.

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