


BMJ Open Effective fertility counselling for transgender adolescents: a qualitative study of clinician attitudes and practices

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ABSTRACT

Objective Fertility counselling for trans and gender diverse (TGD) adolescents has many complexities, but there is currently little guidance for clinicians working in this area. This study aimed to identify effective strategies for—and qualities of—fertility counselling for TGD adolescents based on clinicians' experiences.

Design We conducted qualitative semi-structured individual interviews in 2019 which explored clinician experiences and fertility counselling practices, perspectives of the young person's experience and barriers and facilitators to fertility preservation access. Data were analysed using thematic analysis.

Setting This qualitative study examined experiences of clinicians at the Royal Children's Hospital—a tertiary, hospital-based, referral centre and the main provider of paediatric TGD healthcare in Victoria, Australia.

Participants We interviewed 12 clinicians from a range of disciplines (paediatrics, psychology, psychiatry and gynaecology), all of whom were involved with fertility counselling for TGD adolescents.

Results Based on clinician experiences, we identified five elements that can contribute to an effective approach for fertility counselling for TGD adolescents: a multidisciplinary team approach; shared decision-making between adolescents, their parents and clinicians; specific efforts to facilitate patient engagement; flexible personalised care; and reflective practice.

Conclusions Identification of these different elements can inform and hopefully improve future fertility counselling practices for TGD adolescents, but further studies examining TGD adolescents' experiences of fertility counselling are also required.

INTRODUCTION

The term trans and gender diverse (TGD) describes 'people whose gender differs from what was presumed for them at birth'.¹ In order to better align their physical bodies with their gender identity, TGD young people may seek to block their puberty (with gonadotrophin-releasing hormone analogues) or use gender-affirming hormones (GAH) in the form of oestrogen or testosterone.^{2 3} These therapies, however, may impact on fertility. As such, clinical guidelines recommend fertility

Strengths and limitations of this study

- This is the first qualitative study to examine qualities and strategies for effective fertility counselling for transgender adolescents.
- Different types of clinicians, with backgrounds in paediatrics, mental health and gynaecology, were interviewed to give a broad range of perspectives.
- Thematic analysis allows the close examination and comparison of the similarities and differences between clinician perspectives to generate insights into effective fertility counselling.
- This study examines the experiences of clinicians from a single centre with high rates of fertility preservation; approaches to promote effective fertility counselling identified in this study may not be directly applicable to other clinical practice in different socioeconomic settings.

counselling prior to commencement of such treatments and consideration of fertility preservation (FP) measures, such as sperm or oocyte freezing.³⁻⁶

However, there are many challenges in providing fertility counselling, especially to TGD adolescents.^{7 8} For example, there have been concerns over whether fertility counselling is taking place at a stage when TGD adolescents may not yet have the maturity to adequately consider their fertility in the context of their future needs.⁹⁻¹² Consistent with this, many TGD adolescents are unsure of their parenthood desires and believe that they may change over time.^{13 14} In addition, many TGD people prioritise medical gender affirmation over fertility for mental health reasons^{15 16} or see fertility counselling as a barrier to receiving GAH^{11 15 17}; therefore, some patients may only fully consider their future fertility after medical gender affirmation.^{9 10 17 18} Further, multiple provider-related barriers to the provision of adequate fertility counselling to adolescents have been identified, including a lack of training/

knowledge around the impacts of hormones or FP options.^{7 18}

In keeping with these challenges, published rates of FP vary enormously and reveal a possible gap between patient needs and FP practices. For example, across three North American clinics, only 0%–14.2% of adolescents assigned male at birth accessed FP,^{10 17 19} but in more recent Dutch and Australian studies these rates were 38% and 62%, respectively.^{20 21} Although such discrepancies may reflect inherent differences between cohorts in the desire for genetic parenthood—after all, many TGD people either state a preference for other routes to parenthood like fostering and adoption or do not wish to be parents at all^{22 23}—it is also possible that many TGD adolescents who wish to be biological parents in the future are missing out on FP services. Consistent with this, a previous Dutch study found that 37.5% of adult transgender women would have accessed FP if it were offered at the time of their medical gender affirmation,²⁴ and 39.5% of TGD adolescents in a recent North American survey stated an interest in having biological children.¹³

Currently, a limited number of studies^{7 18 25 26} have examined clinician experiences of fertility counselling for TGD adolescents, and there is little guidance for clinicians working in this field. These few previous studies in this area mostly focused on identifying barriers and challenges to fertility counselling and preservation. In contrast, given the previously high reported rates of FP at our clinic in Australia,²¹ this study aimed to identify qualities and strategies for effective fertility counselling by exploring our clinicians' experiences of fertility counselling.

METHODS

Study design and setting

This qualitative study examined clinician experiences of fertility counselling for TGD adolescents at the Royal Children's Hospital Gender Service (RCHGS). The RCHGS is a tertiary, hospital-based, referral centre and the main provider of paediatric TGD healthcare in Victoria, Australia. Fertility counselling at the RCHGS involves clinicians with backgrounds in paediatrics (grouped as 'paediatricians', and involves paediatricians, adolescent medicine physicians, endocrinologists), mental health (psychologists and psychiatrists) and gynaecology. The research team comprised clinicians (including a junior doctor, paediatricians and a gynaecologist), a bioethicist and social science academics,²⁷ and the study goal was to reflect on and improve current fertility counselling practices.

Participants and recruitment

Purposive sampling was used to recruit a group of RCHGS clinicians, with the aim of including all disciplines involved in fertility counselling. The criterion for inclusion was experience providing fertility counselling for TGD adolescents, and clinicians were emailed an

invitation to participate. Of the 18 clinicians invited, 17 expressed interest in participating and 12 were selected with a range of backgrounds in paediatrics, mental health and gynaecology. Participants did not receive any benefits for their participation.

Data collection

In order to gain an understanding of clinicians' approach to fertility counselling, semi-structured, in-depth, individual interviews were undertaken.^{27 28} We developed an interview guide based on a literature review²⁹ and the experiences of practitioners in the research team. Interviews explored clinician practices and experiences of fertility counselling, clinician perspectives of the young person's experience of fertility counselling and barriers and facilitators to accessing fertility preservation. Between March and May 2019, participants were interviewed either in-person or over the phone by TCL, who had no prior relationship with the participants. Interview audios were digitally recorded and transcribed verbatim by a professional transcription service, after which the accuracy of the transcripts was manually verified. No participants withdrew from the study. Transcripts were de-identified, and names replaced with unisex pseudonyms generated randomly with an online tool.³⁰

Data analysis

Data were analysed using thematic analysis, which is commonly used to develop patterns within text data.^{28 31} Using an inductive method involving constant comparison, we compared themes and experiences within and between each interview.^{31 32} Data were coded using line by line coding via NVivo V.12 by TCL, with further refinement of codes throughout the iterative coding process with input from the research team.^{32 33} CD and KR independently read a selection of transcripts and developed themes, to support the final theme set developed from the data. Saturation (or data adequacy)^{34 35} was achieved when no new codes were generated.

Patient and public involvement

Patients or the public were not involved in the design and conduct of this study.

RESULTS

In total, 12 clinicians were interviewed (4 paediatricians, 5 mental health clinicians and 3 gynaecologists). Their experience in providing fertility counselling ranged between 2 months to 10 years (mean±SD: 4.0±3.0 years), and thus captured a range of views from different levels of experience. Interview durations were between 39 and 70 min (mean±SD: 51±11 min).

We developed five themes from this data set. These included: (1) collaborative approaches to fertility discussions between adolescent patients and clinicians; (2) clinician perspectives on future parenting desires of patients: barriers and facilitators; (3) clinician views on

FP counselling and potential patient dysphoria; (4) clinician perspectives on the risks and benefits of FP; and (5) clinician views on effective practices in FP counselling for TGD adolescents. Due to the dearth of guidance for clinicians on how to provide fertility counselling for TGD adolescents, this paper specifically focuses on the last of these themes.

From the experiences and perspectives of all 12 clinicians, five main elements of an effective approach to fertility counselling for TGD adolescents were developed, including: a multidisciplinary practice model; shared decision-making between young people, parents and clinicians; strategies for patient engagement; flexible individualised approaches; and reflective practice among clinicians. Each of these elements will be discussed in turn below, with supporting quotes provided in tables.

Multidisciplinary team

In this setting, TGD adolescents discussed fertility with different types of clinicians at different times. Clinicians believed that the multidisciplinary team was important in providing effective fertility counselling, with individual clinicians bringing expertise and experience from their respective disciplines to the team. Thus, while all clinicians discussed the same broad range of topics with patients in fertility counselling, each discipline had a facet in which they were experts: paediatricians focused predominantly on medical side effects of hormones; mental health clinicians framed conversations around emotions, experiences and potential futures; and gynaecologists had the most experience with FP (table 1A).

Systematically addressing fertility with different disciplines had the added benefit of spreading information provision and discussion over multiple sessions and team members. This ensured that patients were provided ample time and opportunity to develop thoughts around fertility from medical, psychological and future-oriented views (table 1B). Furthermore, clinicians found that the benefits of a multidisciplinary approach went beyond the additive strength of involving different disciplines for a patient; it decreased barriers (table 1C), building a community of practice with access to specialist supports—fertility specialists and surgeons—as well as an avenue for communication and advice in managing difficult scenarios (table 1D,E).

Shared decision-making

Providing fertility counselling involved facilitating shared decision-making around fertility with both adolescents and their parents. This role went beyond just informing about the effects of hormones on fertility and options for FP; it included exploration of patient values around future relationships, family and different routes to parenthood—sometimes including fostering and adoption—to inform a ‘values-based judgement’ (Rowan, gynaecologist) that hopefully minimised potential future regrets around FP (table 2A).

Beyond exploring values, supporting families in shared decision-making involved facilitating conversation between adolescent and parents to understand, explore and manage resistance or difficulties in conversations around fertility (table 2B,C). Thus, an effective strategy for fertility counselling involved calming both parties, acknowledging different viewpoints and advocating for young peoples’ desires around current and future fertility.

Clinicians recognised that an important part of the process of decision-making was allowing time for families to think and for patients to gain more experience to inform their decisions (table 2D,E). Because the decision-making process takes time, clinicians found that ‘provision of written information needs to happen’ (Rowan, gynaecologist) so that patients could revisit information in their own time. In this way, clinicians found that effective shared decision-making involved not only information provision and exploration of values, but also the facilitation of discussion within families.

Patient engagement

Clinicians found that patient engagement could sometimes be difficult. For example, discussions of fertility and FP could trigger gender dysphoria or be seen as a potential impediment to a TGD person’s strong and immediate desire to commence medical gender affirmation (table 3A). Consistent with this, clinicians expressed concern that some young trans people struggled to completely consider their fertility (table 3B). Therefore, it was important that clinicians established a comfortable and safe space for patients to engage in discussion that may cause some discomfort to patients.

To decrease barriers to engagement, clinicians found re-framing fertility discussions a useful strategy. For instance, clinicians removed gendered connotations from fertility and parenthood in discussions with patients (table 3C). One clinician found a way to reframe fertility counselling as a fortunate opportunity for individualised adolescent sex education—one which is not generally promoted to cisgender adolescents (table 3D). Further, in order to decrease patient anxiety, clinicians found that ‘humour often really works very well’ (Elliot, gynaecologist) (table 3E).

Flexible personalised care

Clinicians also suggested that personalised care was important to address specific patient needs. For example, some TGD people have neurodevelopmental issues, including intellectual disability or autism spectrum disorder.³⁶ Clinicians, therefore, individualised their approaches to these patients by spending more time, using more concrete language or using targeted modes of communication (table 4A–C). In tailoring fertility counselling to individuals, clinicians also emphasised the need to recognise and respect the diversity of patient perspectives (table 4D).

In addition to neurodevelopmental differences, clinicians recognised other factors that could influence the

**Table 1** Multidisciplinary team. All participants have given consent to participate in this study and for their responses to be published with randomly assigned unisex pseudonyms.

Topic	Quote	Participant
A Different clinician roles in a multidisciplinary team	“I do sometimes sit in on clinics with the physicians... they kind of go into the science a bit more than I would. For me, it’s much more about the overall procedure, how we’re feeling about it and how to manage the feelings around it.”	Peyton, mental health clinician
	“I see my role in terms of providing fertility counselling as part of the larger [whole]... Counselling around hormone use and fertility—making people aware of the implications for their fertility in relation to different hormonal treatments—is an important component.”	Avery, paediatrician
	“[I do] more than just discuss fertility preservation... discussions around sexuality and sexual enjoyment... as well as touching on surgical stuff in the future... as surgeons, we’re more familiar with having those discussions.”	Alexis, gynaecologist
B Space for reflection	“I think there’s a really strong focus on like the multidisciplinary approach... there are multiple clinicians who are having similar discussions with the young person. So like mental health clinicians are having those discussions and allowing space to reflect on it and discuss it between sessions, but the medical professionals are also doing that in their way and considering [it] with the family and the young person.”	Blake, mental health clinician
C Decreased access barriers	“I think what’s good about the RCH is that, as a multidisciplinary service... it’s reasonably well integrated... [and patients] don’t have to wait a long time to get fertility counselling done and hopefully it’s meant that there are less barriers to fertility preservation for those who want to do it... I think in a system where those providers were existing in a more separate manner, I think that’s a greater barrier.”	Avery, paediatrician
D Community of practice	“I think the fact that... we’ve got our physicians and mental health clinicians within the one team... that probably makes a difference to how we do things... there are incidental opportunities for contact and knowing each other’s work really well. I think that probably works better for families cos it’s a little more integrated vs referring to an external person that works elsewhere who you’d never actually see.”	Peyton, mental health clinician
E Managing difficult scenarios	“... in [a difficult] situation, particularly as a [mental health clinician], I would be referring to the paediatrician and the fertility specialists so that all the information possible can be provided to them... and also potentially seek input from the ethics crew here.”	Quin, mental health clinician

RCH, Royal Children’s Hospital.

ways patients thought and felt about their fertility, and used several strategies to provide individualised care and navigate these challenges. For example, the importance of addressing mental ill-health in patients and how this could affect engagement with fertility counselling was highlighted (table 4E). Furthermore, clinicians suggested that many young transgender people (not unlike most people regardless of their age and gender identity) had binary thought processes, and that they were averse to the

idea of fertility or biological parenting due to gendered connotations (table 4F).

Reflective practice

Given the various challenges described above, one quality which clinicians believed improved fertility counselling was reflective practice. In this way, clinicians felt it important to be mindful not only of their internal biases and clinical practices, but to also be considerate of the

Table 2 Shared decision-making. All participants have given consent to participate in this study and for their responses to be published with randomly assigned unisex pseudonyms.

Topic	Quote	Participant	
A	Exploration of patient values	<p>“[Fertility counselling] is exploring ‘Have you thought about it and... have you thought about whether you wanted your own genetic children?’... ‘Have you thought about whether you wanted to save [or] retain your [fertility] potential?’... [and] talking about partners and who [they] might be interested in the future.”</p> <p>“Aiming to get the young person and the family to understand the implications of the treatment that they’re about to have so that they can actually give informed consent in a way that isn’t just about ‘Well this is how the procedure goes, and... there’s risk and the benefits’ but really ‘What does this mean for the rest of your life?’”</p>	<p>Alexis, gynaecologist</p> <p>Sawyer, mental health clinician</p>
	B	Supporting families in difficult conversations	<p>“For parents, it’s completely... appropriate to stress about their offspring’s future parenting... showing the parents that I understand their worries often makes a parent relax, and then you make the adolescent relax because you’re showing that you understand their worries...”</p> <p>“The other big fracture that brings about is when parents disagree [about treatment or fertility].”</p>
C		Exploring patient resistance	<p>“It’s a difficult space to work in... if I was to raise that topic and say ‘I wonder whether one of the reasons why you’re saying that (you don’t want children) is because you don’t want any more delays [to GAH]’, then it’s implying that they’ve been deceitful or withholding information, which is not very nice for the therapeutic setup.”</p> <p>“If they were really resistant to the idea of fertility preservation, then, being a psychologist, I would probably explore that a little bit.”</p>
	D	Prompting thought and discussion in the family	<p>‘I see... the discussions we start in the sessions as being just a prompt in a lot of cases for them to be able to think through it more and talk more about it... [to later reach] the decision of the family unit.’</p> <p>“I don’t think I’m there to make any decisions for them, I’m there to answer their questions. I think it is about informing them and allowing them to then take that space.”</p>
E		Changes in decision-making over time	<p>“People start to think about their fertility more when they’re in a particular life stage, either when they’ve found... a long-term partner that they want to parent with, or they’re at a particular point in their career where they can support having a child, or when they’re reaching a point in their age where their fertility might start to become more minimal or reduced...”</p> <p>“I’ve had one patient who was a trans girl who really didn’t want to do any fertility preservation... and then actually at the age of seventeen, she had a relationship... and then suddenly she was saying ‘Actually, maybe I will need my sperm’... So, yes, people can change over time.”</p> <p>“I saw someone who had gotten into a relationship between sessions when we were talking about it and that really actually did impact their thinking on it and... they were just able to be more reflective about it and whether they would want that...”</p>

GAH, gender-affirming hormones.

cultural settings surrounding their practice—both within the microcosm of the clinic and within the dominant heteronormative narratives of the public community.

For example, some clinicians recognised that their own personal experiences influenced how they perceived the importance of fertility (table 5A,B). Furthermore, clinicians reflected on how their clinical experiences affected their future practice. With experience, clinicians began to prompt increased depth of patient consideration of their fertility ‘rather than [fertility counselling] just being [a part of] a tick box [process] for hormones...’ (Taylor, mental health clinician) (table 5C). Other experiences, however, ‘seeing the dysphoria that [fertility

preservation] might cause’ (Avery, paediatrician) increased their caution around the potential negative impacts of FP.

Clinicians also reflected on the cultural appropriateness of the setting and delivery of care. For example, clinicians recognised that attending a ‘gynaecology’ clinic filled with cisgender female patients could be dysphoric for a transgender male, replacing terms like ‘gynaecologist’ with ‘fertility specialist’ (table 5D). Moreover, clinicians considered and challenged traditional gender roles around parenting in the community (table 5E).

Table 3 Patient engagement. All participants have given consent to participate in this study and for their responses to be published with randomly assigned unisex pseudonyms.

	Topic	Quote	Participant
A	Discomfort around discussing fertility	“There was one young trans female who really found the idea of giving sperm as distressing. The idea of having to touch their genitalia... was really difficult...”	Quin, mental health clinician
B	Concerns over decreased consideration of fertility	“... I have noticed that it is far more difficult for trans people to be able to imagine themselves in the future, whether that be as a mother, a father, even as a functioning adult.”	Taylor, mental health clinician
		“[There is] a coping mechanism of ‘I don’t want to explore this too much because I don’t want it to detract from the fact that I want gender affirming hormone therapy’.”	Riley, paediatrician
		“The big focus is wanting to transition... it’s very hard to see beyond that mountain.”	Alexis, gynaecologist
C	Remove gendered connotations	‘At the age that we’re getting [the patients], the idea of being pregnant means you’re a mother, and [they have the thought process of] ‘I’m a man so how can I be a mother, no that doesn’t work’. And likewise, I’ve actually had transgender women say, ‘I don’t want to be a father’... [we frame it as] not about you being seen as a father, it’s about whether you want to biologically contribute to creating new life...’	Peyton, mental health clinician
		“I talk about things in very generic ways;... ‘a person with testes’ or ‘sperm coming from someone’s testes’... as opposed to... ‘your testes’. Also I use language like ‘some people’ rather than gendering when I’m talking about concepts...”	Elliot, Gynaecologist
D	Reframing fertility counselling as a fortunate opportunity	“I talk about how whilst lots of trans kids maybe don’t want to talk about fertility... they’re lucky in a way because cisgender kids don’t have anyone sitting down to talk to them about fertility, but between ten and twenty percent of people will have sub or infertility.”	Elliot, gynaecologist
		“I try and frame it for the trans kids that, that it’s good that they get to have these conversations... it may be that you decide that you wanna use your ovaries but you can’t, just in the same way that a cisgender person may decide they wanna use their ovaries and they can’t.”	Elliot, gynaecologist
E	Use of humour to engage	“I always start with where they are now and I say, ‘Do you want to be pregnant right now?’ Like I make a joke of it if the situation allows, and they’ll go ‘No, of course not! Why would I? I’m male, why would I want to be pregnant?’ I’m like, ‘Great, correct answer. We’ve started on the right foot, let’s go from here’ and then kind of go... ‘This is okay for you not to want to be pregnant now... but I can’t predict where you’re going to be in twenty years’ time.”	Peyton, mental health clinician
		“And the way I talk about the uncertainties of the future is... say ‘Well... you’re fifteen or sixteen, you might end up with someone who hasn’t been born yet...”	Elliot, gynaecologist

DISCUSSION

While clinical guidelines internationally recommend that fertility counselling is provided to TGD individuals prior to commencement of hormonal therapy, there is little actual guidance as to what this should involve. By interviewing clinicians involved in fertility counselling, we developed a set of elements that promote effective fertility counselling for TGD adolescents.

The RCHGS consists of a clinical nurse consultant, general paediatricians, adolescent medicine physicians, endocrinologists, gynaecologists, psychologists and

psychiatrists. This multidisciplinary team model appears important for effective fertility counselling, not only to provide patients with specialist input but also so that knowledge and recommendations can be shared between clinicians—and reflected on—to build a community of practice. For example, the long-term effects of GAH on fertility are unclear,^{37 38} and FP options for TGD adolescents at different developmental stages can be complex. These complexities may pose a barrier to fertility counselling for a single clinician,¹⁸ and so having fertility specialist input directly available within the team is highly desirable.

Table 4 Flexible personalised care. All participants have given consent to participate in this study and for their responses to be published with randomly assigned unisex pseudonyms.

	Topic	Quote	Participant
A	Challenges of neurodiversity	“[Transgender adolescents with autism are] often very black and white in their thinking. So, if they don’t see themselves as being parents, they’re very quick to shut down fertility conversations...”	Avery, paediatrician
B	Time and rapport	“I spend a bit more time with people who are intellectually disabled, making sure that they understand the topic and making sure they understand the information... With people who are on the autism spectrum, it’s about gaining rapport so that I feel that they’re telling me what they’re really thinking, that they’re comfortable to speak about things.”	Elliot, gynaecologist
C	Targeted modes of communication	“If they’re less verbal and they’re less able to express themselves... (we’ll)figure out a way to discuss it visually—like drawing a picture of someone carrying a child and being like “When we have kids, [these are] some of the options”, like drawing a pregnant person and be like... ‘Have you considered... having kids other ways?’”	Blake, mental health clinician
D	Respecting patient autonomy	“I think often the kids with ASD are very certain about what they want and what they don’t want. And I see that as part of who they are, and we need to respect who they are... We can try and put forward different points of view and... give them the different scenarios—different possibilities and opportunities—and I think if they’re still adamant that they don’t want it, then we need to respect their decision.”	Jordan, paediatrician
E	Challenges of mental ill-health	“Someone who might be very depressed or anxious wouldn’t be thinking about the future in a positive way, or to see themselves as successfully raising their own family... it must influence their decision making, and we should certainly be taking that into account.” “There may be some people who are just so completely overwhelmed by their depression where they can’t [consider the future].”	Jordan, paediatrician Quinn, mental health clinician
F	Challenging gender stereotypes	“Most of the [trans]masculine people that I see find the idea of pregnancy aversive... Many of them, though, do show surprise when we tell them that hundreds of babies have been born to transgender males around the world... So, it’s not out of the realm of possibility if that was something that they wanted in the future.”	Peyton, mental health clinician

ASD, autism spectrum disorder.

Similarly, rather than referring patients to external clinicians whose experience with TGD adolescents may be limited, having a multidisciplinary team that specialises in seeing TGD adolescents is likely to decrease access barriers, improve the quality of care, promote internal discussions that are more complex and in more depth than typical letters of correspondence and contribute to professional development between clinicians of different disciplines. The latter is highly relevant, since gaps in clinician knowledge are likely to be a barrier to fertility discussions with TGD adolescents, as they have been in the oncofertility field.^{39 40}

Shared decision-making between clinicians and patients is also a critical element to promote effective fertility counselling. For clinicians, this involved not only exploration of patient values around different methods of family building, but also discussion of the effects of hormone therapy on fertility and FP options. Although the latter might seem obvious, previous studies suggest it is often forgotten. For instance, in a study of TGD adolescents in the USA, despite 35.9% of participants being interested

in biological parenthood, only 13.5% had discussed the potential ramifications of hormone therapy on fertility,¹³ demonstrating clear gaps in obtaining informed consent and meeting patient needs. Given such gaps, those interested in their fertility will likely turn to the internet or friends,⁴¹ and are at high risk of being inaccurately informed.⁴² Thus, as the clinicians in this study also observed, providing accurate and detailed fertility information that specifically targets TGD adolescents is essential. Looking ahead, the use of decision aids in this area should help adolescents manage the complex information involved and further promote shared decision-making.²⁵

Another important element of shared decision-making involved patients’ families, who can both promote and impair effective fertility counselling. On the one hand, some parents may avoid discussion of fertility or FP out of concern it may exacerbate their adolescent’s gender dysphoria. On the other hand, adolescents may feel pressured into undertaking FP by their parents (e.g., as a result of their parents’ stated or assumed desire for biological grandchildren).⁴¹ In keeping with this, previous research

**Table 5** Reflective practice. All participants have given consent to participate in this study and for their responses to be published with randomly assigned unisex pseudonyms.

	Topic	Quote	Participant
A	Sympathetic practice	“And being a new parent myself, I think that I would want to be able to have the option for that [biological parenthood] in the future, even if I really needed to affirm gender as a teenager.”	Taylor, mental health clinician
B	Mindfulness of personal biases	“I guess [I must be] mindful that [the importance of fertility] is again my cis heteronormative position, and to be mindful that... in the LGBTIQ community, where being the biological parent isn't a given...(it's) really important to provide fertility preservation options in counselling, but also to be receptive to the cultural beliefs and position of the patient and not kind of impose mine on them.”	Taylor, mental health clinician
C	Increased depth of consideration	“So initially it was more just allowing space to explore... different options and... referring on for the medical kind of aspect of it—to now... providing more general information and allowing that to kind of flow into considering different options and considering how different pathways might suit them.”	Blake, mental health clinician
D	Culturally appropriate care	“If they're a transgender male, just the idea of going to gynaecology when you're a male in terms of your identity can sometimes be a bit funny.” “...we just need to be careful with how we can make it more culturally appropriate for the patient when they come and see us. When they see 'gynaecology', that might cause some concern for them...”	Peyton, mental health clinician Rowan, gynaecologist
E	Challenging traditional gender roles	“I think also reassuring them that trans men can be really good fathers... [both] to kids that they have carried in their uterus... [or] to kids that they haven't carried in their uterus...”	Elliot, gynaecologist

reported that 72% of TGD adolescents would prefer to make fertility choices without input from their parents.⁴³ The reality is, however, that parents do usually get involved in such discussions especially for younger adolescents. Clinicians must therefore help families to navigate dominant sociocultural views that prioritise fertility and biological parenthood—as these may not match the priorities and values which are core to a fulfilled life for a TGD adolescent—and both parents and clinicians should aim to support a TGD young person's capacity to make decisions regarding their own reproduction.

Clinicians also highlighted that engaging patients in fertility discussions can be difficult, and shared their strategies to help overcome this. Consistent with the former, previous research has found that TGD adolescents have prioritised other life needs—like health, school and work, friends and money—before parenthood,¹⁹ and may have difficulty considering future parenthood due to gender dysphoria, their strong immediate desires to medically affirm their gender and for some, their current life stage.^{12 44} Other potential barriers to engagement are cis-normative notions of gender and parenthood that may limit ideas around fertility. Clinicians in this study therefore aimed to challenge these notions, engaging adolescents to evaluate how their fertility fits with their core values rather than preconceived notions of biological motherhood and fatherhood. Clinicians also identified structural factors that could negatively impact TGD adolescent engagement. For example, clinicians commented on the difficulties of referring transmasculine patients to a

gynaecology clinic. Many TGD people feel alienated in obstetric and gynaecology practices where the culture is geared towards cisgender women, and have faced a lack of suitable bathrooms, regular misgendering and sometimes even denial of service.^{45 46} In this way, offering clinical environments that are TGD-friendly—which includes the provision of appropriate information pamphlets, bathrooms, intake forms and training of medical and clerical staff—are also an essential component of fertility counselling for TGD adolescents. Finally, clinicians used other strategies to increase engagement, including the use of humour as well as tailored approaches that take into account mental ill-health and neurodevelopmental differences.

Reflective practice was also important in providing effective fertility counselling. For example, many TGD adolescents may not want to seek biological parenthood, and reflective practice helped clinicians to recognise and respect this decision by looking beyond cis heteronormative assumptions and norms. TGD people have previously felt pressured by clinicians to preserve their fertility,⁴⁷ and clinicians in this study were mindful of their own views about fertility and how their practices may be perceived by patients, including the observation that fertility counselling may be inherently uncomfortable for many TGD people.

In terms of study limitations, it is noteworthy that all the clinicians interviewed for this study were from a single centre, the RCHGS, where fertility counselling is provided to all patients prior to commencement of

puberty suppression or GAH. This was done intentionally in recognition of the fact that, as a publicly-funded multidisciplinary service, the RCHGS is able to offer comprehensive fertility counselling and minimise many of the cost and access barriers to FP, which is presumably why its rates of FP among TGD adolescents more closely align with rates at which TGD adolescents desire biological parenthood.^{13 21} Nevertheless, by only examining the experiences from a single centre, the strategies and approaches to promote effective fertility counselling that were developed from these data may not be directly applicable to other clinical settings, where access, equity and cost barriers may be much greater. Thus, further studies from other centres would be important.

Another key limitation of this study is that we do not explicitly consider patients' experiences in developing this set of elements that promote effective fertility counselling. A parallel study interviewing TGD adolescents who received fertility counselling at the RCHGS was conducted to investigate the broader experiences, barriers and useful qualities for fertility counselling from a patient perspective, but we have chosen to prepare a separate manuscript describing this work.

It is also important to highlight that the elements for effective practice developed from these data should be employed in flexible manner. For example, these elements pertain to the experiences of individual clinicians, and the suitability of their use in clinical practice will depend not only on the particular clinician and patient, but also on the dynamics of the clinician–patient relationship and the nature of the particular discussion. The use of humour, for instance, could be problematic in the wrong hands or circumstances, given its effectiveness is contextual, relational and culturally specific.¹⁵ At the same time, it is worth noting that many of the elements for effective practice described here need not be restricted to fertility counselling of TGD adolescents. After all, many of the issues raised here apply to TGD adults as well as to cisgender adolescents considering FP for other reasons (e.g., in oncology).

In conclusion, although adolescents are often perceived as lacking the maturity to make long-term fertility decisions, we believe that with the appropriate information and counselling, young people can be informed decision-makers in their lives. The various strategies and approaches developed from our data can hopefully help clinicians facilitate this, and should be kept in mind as future clinical guidelines and services for TGD adolescents are developed.

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REFERENCES

- 1 ACON. What is trans? 2020. Available: <https://www.transhub.org.au/101/what-is-trans>
- 2 Knudson G, De Sutter P. Fertility options in transgender and gender diverse adolescents. *Acta Obstet Gynecol Scand* 2017;96:1269–72.
- 3 Telfer MM, Tollit MA, Pace CC, *et al*. Australian standards of care and treatment guidelines for transgender and gender diverse children and adolescents. *Med J Aust* 2018;209:132–6.
- 4 Coleman E, Bockting W, Botzer M, *et al*. Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *Int J Transgend* 2012;13:165–232.
- 5 Hembree WC. Guidelines for pubertal suspension and gender reassignment for transgender adolescents. *Child Adolesc Psychiatr Clin N Am* 2011;20:725–32.
- 6 Hembree WC, Cohen-Kettenis PT, Gooren L, *et al*. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2017;102:3869–903.
- 7 Chen D, Kolbuck VD, Sutter ME, *et al*. Knowledge, practice behaviors, and perceived barriers to fertility care among providers of transgender healthcare. *J Adolesc Health* 2019;64:226–34.
- 8 Lai TC, McDougall R, Feldman D, *et al*. Fertility counseling for transgender adolescents: a review. *J Adolesc Health* 2020;66:658–65.
- 9 Mitu K. Transgender reproductive choice and fertility preservation. *AMA J Ethics* 2016;18:1119–25.
- 10 Nahata L, Tishelman AC, Caltabellotta NM, *et al*. Low fertility preservation utilization among transgender youth. *J Adolesc Health* 2017;61:40–4.
- 11 Wierckx K, Stuyver I, Weyers S, *et al*. Sperm freezing in transsexual women. *Arch Sex Behav* 2012;41:1069–1.
- 12 Chen D, Bernardi LA, Pavone ME, *et al*. Oocyte cryopreservation among transmasculine youth: a case series. *J Assist Reprod Genet* 2018;35:2057–61.
- 13 Chen D, Matson M, Macapagal K, *et al*. Attitudes toward fertility and reproductive health among transgender and gender-nonconforming adolescents. *J Adolesc Health* 2018;63:62–8.



- 14 Strang JF, Jarin J, Call D, *et al.* Transgender youth fertility attitudes questionnaire: measure development in Nonautistic and autistic transgender youth and their parents. *J Adolesc Health* 2018;62:128–35.
- 15 De Sutter P, Verschoor A, Hotimsky A. The desire to have children and the preservation of fertility in transsexual women: a survey. *Inte J Transgenderism* 2002;6:97–03.
- 16 Kyweluk MA, Sajwani A, Chen D. Freezing for the future: transgender youth respond to medical fertility preservation. *Int J Transgend* 2018;19:401–16.
- 17 Chen D, Simons L, Johnson EK, *et al.* Fertility preservation for transgender adolescents. *J Adolesc Health* 2017;61:120–3.
- 18 Tishelman AC, Sutter ME, Chen D, *et al.* Health care provider perceptions of fertility preservation barriers and challenges with transgender patients and families: qualitative responses to an international survey. *J Assist Reprod Genet* 2019;36:579–88.
- 19 Chiniara LN, Viner C, Palmert M, *et al.* Perspectives on fertility preservation and parenthood among transgender youth and their parents. *Arch Dis Child* 2019;104:739–744.
- 20 Brik T, Vrouenraets LJJJ, Schagen SEE, *et al.* Use of fertility preservation among a cohort of Transgirls in the Netherlands. *J Adolesc Health* 2019;64:589–93.
- 21 Pang KC, Peri AJS, Chung HE, *et al.* Rates of fertility preservation use among transgender adolescents. *JAMA Pediatr* 2020;174:890–891.
- 22 De Roo C, Tilleman K, T'Sjoen G, *et al.* Fertility options in transgender people. *Int Rev Psychiatry* 2016;28:112–9.
- 23 Riggs DW, Power J, von Doussa H. Parenting and Australian trans and gender diverse people: an exploratory survey. *Int J Transgend* 2016;17:59–65.
- 24 Wierckx K, Van Caenegem E, Pennings G, *et al.* Reproductive WISH in transsexual men. *Hum Reprod* 2012;27:483–7.
- 25 Johnson EK, Chen D, Gordon EJ, *et al.* Fertility-Related care for gender and sex diverse individuals: a provider needs-assessment survey. *Transgend Health* 2016;1:197–201.
- 26 Riggs DW, Bartholomaeus C. Toward trans reproductive justice: a qualitative analysis of views on fertility preservation for Australian transgender and Non-binary people. *J Soc Issues* 2020;76:314–37.
- 27 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
- 28 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
- 29 Lai TC, McDougall R, Feldman D, *et al.* Fertility counseling for transgender adolescents: a review. *J Adolesc Health* 2020;66:Article in Press:1–8.
- 30 Masterpiece Generator. Name generator, 2019. Available: <https://www.name-generator.org.uk/quick/>
- 31 Braun V, Clarke V. *Successful qualitative research: a practical guide for beginners*. London: SAGE Publications Ltd, 2013.
- 32 Glaser B, Strauss A. *The discovery of grounded theory: strategies for qualitative research*. Chicago, IL: Aldine de Gruyter, 1967.
- 33 Kendall J. Axial coding and the grounded theory controversy. *West J Nurs Res* 1999;21:743–57.
- 34 Liamputtong P, Ezzy D, Methods QR. *Melbourne*. 2nd ed. Victoria: Oxford University Press, 2005.
- 35 Vasileiou K, Barnett J, Thorpe S, *et al.* Characterising and justifying sample size sufficiency in Interview-Based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Med Res Methodol* 2018;18:148.
- 36 Strang JF, Kenworthy L, Dominska A, *et al.* Increased gender variance in autism spectrum disorders and attention deficit hyperactivity disorder. *Arch Sex Behav* 2014;43:1525–33.
- 37 De Roo C, Lierman S, Tilleman K, *et al.* Ovarian tissue cryopreservation in female-to-male transgender people: insights into ovarian histology and physiology after prolonged androgen treatment. *Reprod Biomed Online* 2017;34:557–66.
- 38 Schneider F, Kliesch S, Schlatt S, *et al.* Andrology of male-to-female transsexuals: influence of cross-sex hormone therapy on testicular function. *Andrology* 2017;5:873–80.
- 39 Klosky JL, Anderson LE, Russell KM, *et al.* Provider influences on sperm banking outcomes among adolescent males newly diagnosed with cancer. *J Adolesc Health* 2017;60:277–83.
- 40 Flink DM, Sheeder J, Kondapalli LA. A review of the oncology patient's challenges for utilizing fertility preservation services. *J Adolesc Young Adult Oncol* 2017;6:31–44.
- 41 Strang JF, Jarin J, Call D, *et al.* Transgender youth fertility attitudes questionnaire: measure development in nonautistic and autistic transgender youth and their parents. *J Adolesc Health* 2018;62:128–35.
- 42 Kreines FM, Farr A, Chervenak FA, *et al.* Quality of web-based family-building information for LGBTQ individuals. *Eur J Contracept Reprod Health Care* 2018;23:18–23.
- 43 Persky RW, Gruschow SM, Sinai N, *et al.* Attitudes toward fertility preservation among transgender youth and their parents. *Journal of Adolescent Health* 2020;67:583–9.
- 44 dicky lore, Ducheny KM, Ehrbar RD. Family creation options for transgender and gender nonconforming people. *Psychol Sex Orientat Gen Divers* 2016;3:173–9.
- 45 Charter R, Ussher JM, Perz J, *et al.* The transgender parent: experiences and constructions of pregnancy and parenthood for transgender men in Australia. *Int J Transgend* 2018;19:64–77.
- 46 James-Abra S, Tarasoff LA, Green D, *et al.* Trans people's experiences with assisted reproduction services: a qualitative study. *Hum Reprod* 2015;30:1365–74.
- 47 Bartholomaeus C, Riggs DW. Transgender and non-binary Australians' experiences with healthcare professionals in relation to fertility preservation. *Cult Health Sex* 2020;22:1–17.