Fertility Preservation in Transgender and Gender-Nonconforming Youth and Adolescents

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As medical transition for transgender people has become more widely available, treatments and the ethics surrounding them have become an area of significant debate. Social awareness of trans[1] people and their specific needs have fueled a movement towards more inclusive healthcare and access to potentially lifesaving gender-affirming treatments, such as hormone therapies and surgeries. Many of these treatments may result in infertility, potentially creating additional challenges having children later in life. Since fertility preservation options are generally considered elective procedures for fertile people of reproductive age, they are often only available to those who can afford this care. Additionally, these technologies are rarely made available, or even discussed, when the individual transitioning has not yet reached puberty. In order to outline the needs of these individuals, this chapter uses the example of fertility preservation for young oncology patients as an analogous situation to that of transgender and gender-nonconforming youth who are facing a decrease or potential loss of fertility. Here, in combination with discussions of bioethics and biomedicine with feminist and trans theory, an analysis of this particular population's rights to reproduction (and therefore fertility preservation) has a clear and distinct place among bioethical literature and constitutes an area in which continued investigation is necessary.

Trans identities, while recently benefitting from increased media attention, are still widely misunderstood by the general population and a large portion of the medical field. In order to ground this analysis there are a few essential assumptions, supported by current literature, which must be made to move forward. The first of

[1] For this discussion, "trans" indicates all individuals who identify as transgender, transsexual, and/or gender-nonconforming. This means that they do not identify with the sex they were assigned at birth, and therefore may aim to "transition" socially or medically to better align their physical and/or social selves with their internal sense of their gender.

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these assumptions is that trans people exist separate of a medicalized identity, and that the proper treatment of these individuals constitutes easing gender dysphoria. This can be accomplished through a variety of interventions, and whether social transition, psychotherapy, hormone therapy, surgery, or any combination of these treatments are included in this care should be determined on an individual basis (Coleman et al. 2012: 171). While therapeutic options have historically included psychotherapies with the intention of aligning the individual's gender[2] with their sex assigned at birth, these treatments are not considered ethical by current standards. Psychotherapies should instead be focused on "reducing … distress related to the gender dysphoria and on ameliorating any other psychosocial difficulties" (Coleman et al. 2012: 175). Many of these therapies however, including hormonal and surgical, result in or have the potential to result in infertility. This may represent a significant loss for the individual, but is generally seen as a necessary side effect of these care options (T'sjoen et al. 2013: 575).

It is also important to assert that there is desire for this analysis by the affected population; that transgender and gender-nonconforming people have interest in having children using their own genetic material. This desire has been made apparent through multiple studies and constitutes transphobic assumptions of these individuals to assume otherwise (Nixon 2013: 94). Research conducted within the past 5 years indicates that "many transgender persons are of reproductive age at the time of transition, and confirms that many may wish to have children after transition" (Ethics Committee 2015: 1112). Individuals who identify openly as transgender or gender-nonconforming, or who appear to deviate from a heteronormative family structure, have been historically discriminated against in access to assisted reproductive technologies (ARTs), as well as other ways of creating a family such as adoption (Ethics Committee 2015: 1112). Additionally, there is no indication that transgender people are less suited to be parents. The American Academy of Child and Adolescent Psychiatry released an assessment stating "there is no evidence to support that parents who are … transgender are per se deficient in parenting skills, child-centered concerns, and parent-child attachments compared with heterosexual [and presumably cisgender] parents" (Ethics Committee 2015: 1112).

It is important to note the interlocking oppressions present within populations which lack privilege. Racism and classism are just two of the potential social disadvantages that a trans person may experience in addition to cissexism[3]; however, classism is particularly of note in this analysis. Medical transition itself is expensive, and currently even those who can afford insurance are not guaranteed to have any particular aspect of their treatment covered. Fertility preservation represents an additional cost, which varies by treatment option but can cost hundreds to thousands

[2] Gender represents the internal sense of self one has in reference to the socially constructed roles of men and women. When an individual's gender is in line with their sex assigned at birth they are cisgender, and when their gender is not in line with their sex assigned at birth, they may identify as transgender.

[3] Cissexism is the belief that transgender people or their unique needs are inherently inferior to or less important than those of cisgender people.

of dollars for only potentially viable cells, and additional costs for the use of those cells (Snyder and Tate 2013: 175). This cost represents another example of transphobia, and is based on the assumption that hormonal and surgical treatments for gender dysphoria are elective, and therefore offering fertility preservation is seen as optional. As a result, only individuals who can afford to take on these additional costs will have potential access to seek out these resources.

In line with some of the arguments made around oncofertility,[4] individuals undergoing hormonal or surgical transition should not only be informed of and offered fertility preservation options, but they should also have these options covered by health insurance companies. In 2013, "the American Medical Association adopted a measure to support legislation that would require health insurers to cover fertility preservation when cancer treatments could result in infertility," on the grounds that fertility preservation represents "an essential part of the management of their cancer" (Nixon 2013: 96). For people seeking out hormonal and surgical treatments for gender dysphoria in which fertility is affected, discussions around fertility are similarly essential, and therefore should also be supported and covered by health insurance companies. "Young transgender people should not have to forego the prospect of future children in order to obtain certain hormone therapies and gender-confirming surgeries to alleviate their gender dysphoria" (Nixon 2013: 102). While having these options covered by insurance does not remove all classist implications, it does begin the conversation around access to fertility treatments, and would increase access considerably from the current out-of-pocket standard.

There are multiple issues that are commonly brought up in discussions around fertility treatment and preservation in transgender youth. Through the use of a reproductive justice framework, as well as bioethical and biomedical studies surrounding issues of fertility preservation and transgender care, these concerns can be understood and reimagined in order to make available these important technologies and allow transgender people to have biological children.

The first topic frequently brought into these discussions is that children and adolescents are either unable or unwilling to make decisions about their future reproduction, and that these young people are below the age of consent for an elective procedure such as tissue donation for preservation. This concern has multiple layers of complexity, and therefore must be broken down accordingly. This controversy can be entirely avoided by allowing the individual to reach the age of consent before making decisions surrounding fertility. Currently, medications such as GnRH analogues, commonly referred to as "puberty blockers" or simply "blockers," are used in order to suppress endogenous puberty in transgender and gender-nonconforming youth (Khatchadourian et al. 2014: 908). In this context, endogenous puberty is considered to be when an individual undergoes puberty according to the sex they were assigned at birth, which would typically result in a phenotypic presentation in line with their sex assigned at birth. Blockers allow for endogenous puberty to be halted, and are typically administered at or after Tanner Stage II (Coleman et al.

[4] Oncofertility is the use of fertility preservation and reproductive technologies in individuals undergoing cancer treatments.

2012: 177). This treatment is considered reversible since the individual will continue to undergo endogenous puberty if they stop participating in this treatment, and both treatment and cessation of blockers have relatively minimal side effects. Since feminizing and masculinizing hormone therapies are typically not started until the individual reaches the age of consent either, usually around age sixteen, this appears to completely avoid concerns of consent to treatment surrounding reproduction.

Occasionally, and particularly surrounding reproduction, the age of consent is still considered too young to be making the potentially life-changing decision such as whether or not they want biological children, and therefore to undergo this procedure. This is a fallacious argument however, particularly if the individual is seeking out feminizing or masculinizing hormone therapy after going through with fertility preservation. By making the decision to begin this form of hormone treatment, transgender and gender-nonconforming individuals make the decision to become temporarily infertile (while actively undergoing the therapy) with the potential of resulting in permanent infertility. By taking this as a known risk, transitioning individuals are making the choice to become infertile. Therefore, if this person would prefer to undergo fertility preservation, they are in fact providing themselves more options for their future, not fewer.

Potential for convincing or coercion from parents or guardians has been another significant area of concern. This could be a very real problem, particularly for trans men and gender-nonconforming individuals who were assigned female at birth. Often people who are perceived to have female bodies are expected to have a strong desire for biological children. This may present itself as an additional pressure on trans men, and particularly for those who do not want to seek out fertility preservation. Parents, guardians, or even physicians may feel the desire to encourage egg donation, whether it be out of concern for the trans person or out of selfish desires, such as the desire to be a grandparent. The simple potential for this option to be abused should not constitute a reason for it to not be offered. In fact, this is simply another reason to ensure that the individual is given options which are clearly explained, and that the individual's informed decision is honored. Recommendations from care providers such as mental health professionals, physicians, and endocrine or fertility experts should be obtained as necessary; however the final decision to participate in this process should be left to the individual. Additionally, conversations and counseling should be considered for the parents and/or guardians of the individual, in order to make sure that they are also well informed and equipped to support them.

The above concerns can be additionally countered by stating that these forms of fertility preservation are already being performed in cases of gonadotoxicity, such as in cancer treatments. The field of oncofertility has become a fertile area for this research, and has included studies involving people at multiple stages of life. Fertility preservation has been discussed as an essential part of cancer treatment, and it has become standard to offer fertility preservation options in preparation for future infertility or sterility in these treatments. These preservation options are offered to individuals as young as 2 years old, in which case they have far greater potential for parent's interests being considered over that of the child and are far less

likely to have the child's informed decision taken into account (Quinn et al. 2012: 38). Therefore denying any young individual the ability to use fertility preservation technologies, including not informing them of these options as a denial of the ability to choose, constitutes discrimination based on the individual's gender identity and decision to seek out medical transition.

The only other difference between the cases dealt with in oncofertility studies and in transgender youth is the issue of gender dysphoria. In order to undergo classical egg or sperm collection, an individual must reach a particular level of reproductive maturity. In individuals who undergo fertility preservation and medical transition after completing endogenous puberty, this is typically not a problem barring any additional fertility difficulties. If an individual chooses to take puberty blockers, these organs never fully develop, and as a result this classical form of collection is likely not an option (Coleman et al. 2012: 177). The argument is therefore often made that the mental toll of experiencing endogenous puberty is too great for someone who is transgender or gender-nonconforming, and should not be considered an option. While this is a legitimate concern, there are forms of collection that do not follow the classical ways, another area which has been thoroughly researched through pediatric oncofertility. These are still experimental procedures, and therefore some caution on the behalf of the physician is understandable if not warranted. However, there is still an essentialized assumption in this argument about experiences of dysphoria; particularly that it is experienced similarly for everyone who is transgender or gender-nonconforming. This is simply not the case, and a discussion about the potential benefits of undergoing a portion of endogenous puberty should be had in order to be sure that the individual is fully informed. If their gender dysphoria presents in a way that is manageable for them short term, or if they value stronger reproductive options over this struggle, they should be allowed to make that decision. This is not to say that counseling and mental health therapies should not be involved, and in fact these choices should be made with the support of a mental health professional; but the final, fully informed decision should be for to the transgender or gender-nonconforming individual to make for themselves.

Based on this analysis, a variety of recommendations can be made in relation to fertility preservation for youth and adolescents seeking out physical transition through hormone therapies and/or surgeries. There is importantly no treatment standard aside from providing information and options to the individual, because they must have the right to make decisions in regards to their own body and in accordance with their own personal experience with gender dysphoria. As such, fertility preservation should never be done without the person's consent, and should always be considered a process one must "opt in" to, as opposed to "opt out" of. Through an "opt in" treatment plan as conceived here, the transitioning individual would be able to stop any treatment at any time, for any reason (while following medical safety standards). Included in this would be any unanticipated effects of treatment, or changes in desire to preserve fertility. This allows for a plan that the individual can feel secure in, and would allow them to feel validated and supported in any decisions they make throughout their care. Below are two potential routes this care could take, which each separately address the concerns that have been raised about

fertility treatment for transitioning youth. It is also important to note that these interventions are based on the assumption that the transitioning youth has articulated their desire to transition prior to reaching Tanner Stage II of sexual development. If this is not the case, the routes below would need to be modified based on the potential remaining effectiveness of puberty blockers, the degree of endogenous puberty that has already taken place, and the age of the individual in relation to the age of consent.

Route 1: Egg or Sperm Collection upon Reproductive Maturity.

This allows the individual to develop to reproductive maturity without the use of hormone or surgical therapies, which would allow for classical sperm or egg donation methods at this time, and then beginning interventions such as hormone therapy or surgery after this time. The largest disadvantage to this problem is that it requires a certain amount of puberty to occur as a result of endogenous hormones, and may result in significantly increased dysphoria. While this is a distinct disadvantage, it is important that this is an option that is articulated to the transitioning youth. Gender dysphoria is experienced differently by different individuals, and the potential benefit of having viable reproductive tissue may outweigh potential dysphoria experienced. It is also important in this method that the treatment provider explain the level of sexual development that the person must reach in order to donate, particularly describing what gendered aspects of puberty (such as deepening of voice, hair growth, or breast tissue growth) will or will not be undone through feminizing or masculinizing hormone therapies (Coleman et al. 2012: 188).

Route 2: Use of Puberty Blockers until "Adulthood."

This option specifically addresses concerns surrounding youth's ability to make decisions about their future, particularly surrounding potential sexuality or parenthood. Puberty blockers (such as GnRH analogues) can begin to be administered following the Standards of Care, which recommends waiting until the individual reaches Tanner Stage II (Coleman et al. 2012: 177). Since this can begin as young as age nine, puberty blockers have been used to allow for time to explore and develop their gender identity. This time could also be used to develop an opinion on fertility treatments, as feminizing and masculinizing hormone therapies are typically not offered until the transitioning individual reaches the age of sixteen, or the local age of consent (Coleman et al. 2012: 178). At this point, the individual could make the decision to undergo endogenous puberty and egg or sperm donation as described in Route 1, or to seek out feminizing or masculinizing hormone therapy and/or surgery to continue their physical transition.

There are a few additional considerations and potential options that may be more appealing to transitioning individuals, however are considered potentially less effective or are still experimental procedures. One such procedure is the collection and preservation of either immature testicular or ovarian tissue. This would be a potential option for any transitioning individual prior to beginning treatment with feminizing or masculinizing hormone therapies, and would not require endogenous puberty to take place. This technology is still experimental; however it has been an area of continued research in oncofertility and where fertility may be affected by gonadotoxic therapies. While there are currently no human cases of this fertility preservation resulting in successful human embryos, animal testing has been promising, and both immature testicular and ovarian tissue has been collected from pediatric oncology patients, and other pediatric patients undergoing gonadotoxic therapies (Wyns et al. 2010: 312; Quinn et al. 2012: 38). Given this precedent, there is no reason that these methods could not also be an option for transgender youth, as this procedure is being done to retrieve ovarian tissue (the more invasive of the

two operations) as young as 2 years of age (Quinn et al. 2012: 38). While this is not guaranteed to be a viable option, it may represent an acceptable middle ground for youth who do not want to undergo endogenous puberty, but would still prefer to have some potential for children from their genetic material.

Another area of potential interest is the ability to collect sperm and eggs after having been on feminizing or masculinizing hormones. This research has shown to work in both transgender women and men. However, it has only been conducted on people with mature testicular or ovarian tissue (Gidoni et al. 2013: S170; Coleman et al. 2012: 197). This option is more suited to individuals who have been using feminizing or masculinizing hormone therapies for a shorter period of time, decreasing the likelihood of lasting effects impacting the specific tissue (Rodriguez-Wallberg et al. 2014: e160). Depending on the individual's particular gender dysphoria and desire for reproductive options, this may be an ideal option for some, particularly those who have only been on feminizing or masculinizing hormones for a few years. Further research should be done in order to determine if this is a viable option for those who have not fully undergone endogenous puberty.

A final area of consideration and current research is the possibility of uterine transplants for transgender women and transfeminine people. While this is not strictly an issue of fertility preservation, the potential for pregnancy can be an essential part of an individual's conception of femininity and motherhood, and therefore may be an important reproductive option. There have been limited studies on uterine transplants in cisgender women, which have been successful for a sufficient amount of time for a pregnancy (Ozkan et al. 2013: 473). This area of technological and surgical advancement has profound implications for some transgender women, and will likely add additional considerations to their reproductive choices once this procedure has been more thoroughly researched for this population, and on the effects that may result from transplanting into someone who was male assigned at birth.

All issues considered, transgender youth should have just as much of a right to reproductive justice and freedom as any other individuals. While there are certainly ongoing concerns about access to treatments and therapies for transgender individuals experiencing multiple layers of oppression, continued conversation is also needed with and in relation to younger populations. As technological advances create more possibilities, it is important that we continue to assess the unequal ways in which these technologies are made available, and the biases that continue to be expressed against transgender and gender-nonconforming individuals.

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