PRINCIPLES IN THE CARE OF TRANSGENDER AND INTERSEX PATIENTS

2023

October 12-14, 2023
FERTILITY PRESERVATION AMONG TRANSGENDER AND GENDER DIVERSE PATIENTS
EMPOWERING PATIENTS WITH INFORMATION AND REDUCING REGRET

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Chair, Division of Reproductive Endocrinology & Infertility
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIP(S) WITH INELIGIBLE COMPANIES

• Nothing to disclose

REFERENCES TO OFF-LABEL USAGE(S) OF PHARMACEUTICALS OR INSTRUMENTS

• Nothing to disclose

All relevant financial relationships have been mitigated.
PRESENTATION OVERVIEW

- Medical Society Guidelines
- Importance and Public Awareness
- Techniques Used / Successes
- Patient Experience
- Barriers
- Special Circumstances
- The Future
MEDICAL SOCIETY GUIDELINES

• ASRM\(^1\)
  - “Current data does not support restricting access to reproductive technologies to transgender persons and there is no data that shows concerns that children are harmed from being raised by transgender parents”
  - Strong encouragement to programs to offer fertility services
  - Programs that cannot offer services are ethically obliged to refer patients

• WPATH and Endocrine Society\(^2,3\)
  - All Transgender persons be counseled about the effect of treatment on fertility and options for fertility preservation before undergoing transition

• AMA and ACOG\(^4,5\)
  - Emphasize on the principle of justice and includes strong opposition to discrimination in health care delivery to LGBTQIA persons
TRANS PARENTS – MYTH BUSTERS

Most data is on children born prior to gender affirmation – All reassuring

- 1978 study: 16 children (mean age 11 yrs). At least one trans parent. Children did not differ in gender identity, gender role or sexuality compared to children raised by heterosexual families.\(^6\)

- 2002 and most recently 2013 (12-year follow-up) studies: At least one trans parent. No child exhibited gender dysphoria, they were all healthy, well-adjusted, exhibited secure attachment to parents and did not have gender-variant behavior.\(^7,8,9\)

- Loss of contact with trans parent may cause more harm than transition itself.\(^6,7,8\)
IMPORTANCE OF FERTILITY PRESERVATION

• Half of trans women and trans men wish to have children \(^{10,11,12}\)

• Trans persons with children have higher scores on mental health and vitality scores than those w/o children \(^{11}\)

• In trans women, parenting is identified as a suicide protective factor \(^{13}\)
PUBLIC AWARENESS/PERCEPTION

Cross sectional study: 14

- **1111** US residents (18-75 years)
  - **83.2%** response rate, **76.2%** completion rate
  - **76.2%** agreed to “Doctors should be able to help trans persons have biologic children”

- **In favor:** atheists/agonists, younger respondents, sexual minorities, divorced/widowed, democrats and non-parents

- **Against:** respondents that did not know a gay person, or knew one but without children

- **No differences:** across gender, geographic location, education or income
PATIENTS INTERESTED IN GENETIC PARENTHOOD CAN PURSUE FERTILITY PRESERVATION (FP) PRIOR TO GENDER AFFIRMATION.

<table>
<thead>
<tr>
<th>Options for Gender Fluid persons assigned Female at Birth</th>
<th>Options for Gender Fluid persons assigned Male at Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oocyte cryopreservation</td>
<td>• Sperm cryopreservation</td>
</tr>
<tr>
<td>• Embryo cryopreservation</td>
<td>• Surgical sperm extraction</td>
</tr>
<tr>
<td>• Options for pre-pubescent adolescents</td>
<td>• PESA = percutaneous epididymal sperm aspiration</td>
</tr>
<tr>
<td>• Ovarian tissue cryopreservation</td>
<td>• TESE = testicular sperm extraction;</td>
</tr>
<tr>
<td>• In-vitro maturation (IVM)</td>
<td>• Testicular tissue cryopreservation (TTC)</td>
</tr>
<tr>
<td></td>
<td>• Only option for pre-pubescent adolescents</td>
</tr>
</tbody>
</table>

FERTILITY PRESERVATION IN TRANSGENDER POPULATION – TRANS WOMEN

- Prior to gender affirmation surgery
  - Semen cryopreservation (from ejaculate or testicle)
  - Testicular tissue??
- Prior to gender affirmation surgery after hormones: Effects of gender affirming hormone treatment
  - Prolong estrogen treatment results reduced testicular volumes and a dose dependent reversible reduction in sperm motility and density 15, 16, 17
  - With very poor samples ART/IVF/ICSI is still an option 17
  - Histologically: Effects on Leydig cells. Three stages described 15
    - Stage I: Unaffected Leydig (LY) cells
    - Stage II: Lower number of LY cells, increased lipid drops and smooth ER
    - Stage III: Complete absence of LY cells. Persistence of pale Type A Spermatogonia (serve as stem cells)

Interruption of gender affirming hormone therapy for 3 months to restore therapy induced effects 18
- After gender affirmation surgery:
  - Penectomy and orchiectomy in trans women leads to irreversible sterility
  - Role of testicular tissue freezing??
<table>
<thead>
<tr>
<th>Fertility preservation method</th>
<th>Description</th>
<th>Special considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trans Women</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Sperm cryopreservation        | Cryopreservation of ejaculated sperm  
* Cis-Male Partner: Egg donor and Gestational Carrier  
* Cis-Female Partner: IUI or IVF with partner’s oocytes | • Established Method  
Future use with IUI or IVF for insemination of eggs  
Vibratory or electrical stimulus for ejaculation could be used |
| Surgical sperm extraction     | Percutaneous aspiration of sperm from the testis (TESE) or epididymis (PESA)  
* Cis-Male Partner: Egg donor and Gestational Carrier  
* Cis-Female Partner: IVF with partner’s oocytes | • Similar to above  
• Requires IVF for future use  
• Outpatient procedure |
| Testicular Tissue Cryopreservation (TTC) [only applicable to prepubertal trans girls] | Surgical biopsy of testicular tissue in pre-pubertal trans girls  
* Cis-Male Partner: IVM, egg donor and Gestational Carrier  
* Cis-Female Partner: IVM, IUI or IVF with partner’s oocytes | • Experimental worldwide  
• Only option for prepubertal trans girls  
• No reported live births |
FERTILITY PRESERVATION IN TRANSGENDER POPULATION – TRANS MEN

• Prior to gender affirming surgery
  • Oocyte or embryo cryopreservation
  • Ovarian tissue cryopreservation??

• Prior to gender affirming surgery after gender affirming hormones: Effects of gender affirming hormone treatment
  • Prolong masculinizing treatment could lead to reversible amenorrhea but ovarian follicles are not depleted \(^\text{18, 19}\)
  • Birth control needed while on T (usually an IUD, Copper containing good choice) \(^\text{20}\)

Interruptation of gender affirming hormone therapy for 3 months to restore therapy induced effects \(^\text{18}\)

• After gender affirming surgery:
  • Hysterectomy only:
    • Oocyte or embryo cryopreservation
    • Ovarian tissue cryopreservation??
  • Hysterectomy and bilateral oophorectomy:
    • Irreversible sterility
**OOCYTE AND EMBRYO CRYOPRESERVATION**

Four stages in IVF

- Superovulation
- Egg retrieval
- Fertilization/insemination
- Embryo transfer
OOCYTE AND EMBRYO CRYOPRESERVATION

Redrawn from presenter-supplied original; no source supplied.
**LANDMARK PAPERS FOR EMBRYO AND OOCYTE CRYOPRESERVATION**

Clinical outcomes from fertility preservation techniques in women

<table>
<thead>
<tr>
<th>Author</th>
<th>FP technique</th>
<th>Women/Indication</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolmans et al, (18)</td>
<td>Embryo cryopreservation</td>
<td>54/Cancer 33 returned/20 ET</td>
<td>22% LBR per ET 9 pregnancies 4 deliveries</td>
</tr>
<tr>
<td>Oktay et al, (19)</td>
<td>Embryo cryopreservation</td>
<td>33/Breast cancer 18 returned/55 ET</td>
<td>45% LBR per ET 26 pregnancies 18 deliveries</td>
</tr>
<tr>
<td>Cobo et al, (20)</td>
<td>Oocyte vitrification</td>
<td>Ovum donation programme</td>
<td>6.5% oocyte-to-baby rate CLBR increased with the number of oocytes used</td>
</tr>
<tr>
<td>Cobo et al, (21)</td>
<td>Oocyte vitrification</td>
<td>Delaying childbearing or non-oncological medical conditions</td>
<td>50% LBR per patient in women ≤35 years old 22.9% LBR per patient in women &gt;36 years old</td>
</tr>
</tbody>
</table>

Most data comes from Oncofertility Case Reports and Case Series’ in Trans patients with reassuring data 21,22
OVARIAN TISSUE CRYOPRESERVATION

• Basic concepts
• OTC (ovarian tissue cryopreservation) vs IVM (in vitro maturation) of eggs
OVARIAN LAYERS: OUTER CORTEX, INNER MEDULLA

- **Cuboidal epithelium**
- **Cortex** (contains ovarian follicles)
- **Medulla** (contains neurovascular structures)
- **Hilum**

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PREPARATION OF OVARIAN CORTICAL STRIPS
OVARIAN TISSUE CRYOPRESERVATION/TRANSPLANT AND IN VITRO MATURATION (IVM)

- Primordial follicle
- Primary follicle
- Secondary follicle
- Mature follicle
- Oocyte
- Thaw frozen tissue
- Transplant back to patient
- Conception
- Grow Follicle
- Follicle
- Mature Egg
- Egg
- Fertilize with Sperm
- Sperm
- Embryo
- Implant Embryo into Patient
- Birth

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EFFECTS OF PROLONG T ON FOLLICLES:
FOLLICULAR PHYSIOLOGY

Primordial follicles containing primary oocytes

At birth (no further development until sexual maturity)

FSH, LH secretion at sexual maturity

FIRST MEIOTIC DIVISION COMPLETED

SECOND MEIOTIC DIVISION STARTS

Early primary follicle

Primary follicle

Secondary follicle

Graafian follicle containing secondary oocyte

Corpus albicans

If no fertilization

Corpus luteum

Primordial follicles containing primary oocytes

OVULATION

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EFFECTS OF TESTOSTERONE ON OOCYTES

• 40 trans men

• Ovarian tissue analyzed at time of gender affirmation surgery (hysterectomy and oophorectomy)

• Average 58.18 ± 26.57 weeks of Testosterone treatment

• Follicles found in ovaries (68.52% primordial, 20.26% intermediate and 10.74% primary follicles, 0.46% Secondary follicles)

• 1313 oocytes obtained from ovaries of 35 patients

• Number of oocytes obtained dependent on AMH levels

• After 48 hours of IVM, 34.30% metaphase II mature oocytes obtained and 87.10% of those had normal spindle structures
EFFECTS OF TESTOSTERONE ON OOCYTES

Primordial follicle

Intermediate follicle

Primary follicle

Secondary follicle
EFFECTS OF TESTOSTERONE ON OOCYTES

Follicles flushed out of ovarian tissue

Germinal vesicle breakdown

Germinal vesicle

Mature (MII oocyte)
EFFECTS OF TESTOSTERONE ON OOCYTES

(a) * (b) ** (c) * (d) **
<table>
<thead>
<tr>
<th>Fertility preservation method</th>
<th>Description</th>
<th>Special considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trans Men</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Oocyte cryopreservation**   | Oocyte Cryopreservation  
Hormonal stimulation, freezing unfertilized eggs  
*Trans Men*: Use of partner sperm and gestational carrier  
*Cis-Female Partner*: donor sperm, implantation to partner’s uterus | • Established method  
• Does not need sperm  
• Live birth rates almost similar to freezing embryos |
| **Embryo Cryo**              | Hormonal stimulation, retrieval of sperm, insemination with donor or male partner  
*Trans Men*: Use of gestational carrier  
*Cis-Female Partner*: Donor sperm, implantation to partner’s uterus | • Similar to above  
• Requires use of donor gamete or need to have male partner |
| **Ovarian Tissue Cryopreservation (OTC)** | Removal of ovary and freezing outer layer (cortex)  
*Trans Men*: IVM and use of partner sperm and use of gestational carrier  
*Cis-Female Partner*: IVM, donor sperm, implantation to partner’s uterus | • Experimental in US  
• Only option for prepubertal trans boys  
• Will require need to transplant in future  
• More than 110 live births in cis women |
TRANS FERTILITY PRESERVATION EXPERIENCE

Limited data

• Transmen’s experience with fertility preservation: 23
  • 15 transmen (age 19-35). Genital examinations and discontinuation of testosterone can trigger gender incongruence and dysphoria
  • Coping strategies:
    • Focusing on reason for fertility preservation
    • Reaching out to friends and family for support
    • Cognitive approaches of not having a sense of hatred for one’s own body or using non-gender names for body parts

• Trans people’s experience with ART services: 24
  • Significant barriers noted. Improvement in the following recommended:
    • Assisted reproduction service provider education
    • Improvement in service and clinic practices
    • Improvement in clinic environment
BARRIERS TO FERTILITY PRESERVATION

• Transmen who decide to carry a pregnancy and give birth face a tremendous social stigma in society and in the transgender community.\(^{25}\)

• Transgender persons face more challenges if they decide to adopt.\(^{25}\)

• Many US states require certification of a physical transition in order to legally change one’s gender. rushes patients to sex reassignment w/o thought for FP.\(^{26}\)

• Low utilization of Fertility Preservation in Trans Youth.\(^{27}\)
  - Out of 73 patients, 72 had fertility preservation counseling prior to initiation of cross sex hormones
  - Only 2 attempted fertility preservation
  - Possible Reasons:
    - Feeling pressured by “societal norms”
    - Rush to start hormones
    - Low self esteem, hopelessness and sense of a foreshortened future

• More research is needed to examine parenthood goals among trans youth and adults
SPECIAL CIRCUMSTANCES AND PHYSICIAN AWARENESS

• Awareness of going off hormones prior to fertility preservation
• Sensitivity around pelvic examinations for transmen during oocyte/embryo freezing
• Use of non-gender terms for body parts (eg front hole rather than vagina)
• Transmen and pregnancy\textsuperscript{28, 29}
  • Addressing infant feeding in context men with and without chest surgery
  • Use chest feeding, rather than breast feeding
Transgender individuals represent a small, albeit growing, patient population that is encountered more frequently in clinical care due to improved insurance coverage and increasing awareness. 

Gender-affirming treatments, including both gender-affirming hormone therapy and gender-affirming surgery, pose significant risks to fertility potential and outcomes, ranging from potentially impaired fertility rates to full elimination of reproductive potential depending on the type of treatment pursued. However, there are relatively limited data specific to fertility preservation for transgender individuals. Current approaches to treatment are extrapolated from options for fertility preservation after oncologic diagnoses. In this review, we aim to summarize current clinical approaches, fertility preservation options, and patient experiences in fertility preservation for transgender individuals. Several forms of fertility preservation options are available depending on the pubertal status of a transgender individual. Despite the multiple options for fertility preservation, major barriers exist to patient care and there are reports of mixed patient experiences. Further awareness of this clinical situation and understanding of these processes will allow for comprehensive and specialized care for transgender individuals who may otherwise miss opportunities for adequate counseling or treatment options regarding fertility preservation.
**SPECIFIC AIMS**

<table>
<thead>
<tr>
<th>Aim 1 – T3</th>
<th>Aim 2 – T3</th>
<th>Aim 3 – T4</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Determine the utilization rate of fertility preservation among transgender patients.</td>
<td>• Needs assessment to explore patient care needs and perceptions of fertility preservation.</td>
<td>• Comparison analysis to assess differences in fertility preservation perspectives based on age, location, and social determinants of health</td>
</tr>
</tbody>
</table>
FERTILITY PRESERVATION

589 Patients Total

82 Had Interest in FP (13.92%)

39 Completed FP (6.62%)
AGE DISTRIBUTION

Current Age

Age at GAHT

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total Patient Population</th>
<th>Interest in FP</th>
<th>Completed FP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-17</td>
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<td></td>
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<tr>
<td>18-24</td>
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<tr>
<td>25-40</td>
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<tr>
<td>41-65</td>
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<tr>
<td>66+</td>
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</tbody>
</table>

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## RACE AND ETHNICITY

<table>
<thead>
<tr>
<th>Race</th>
<th>Ethnicity</th>
<th>Total Population</th>
<th>Interest in FP</th>
<th>Completed FP</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Not hispanic or Latino</td>
<td>504</td>
<td>70</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>Not hispanic or Latino</td>
<td>18</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>White Hispanic or Latino</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Asian Not hispanic or Latino</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other Hispanic or Latino</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Not hispanic or Latino</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Choose not to disclose</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Multiracial Not hispanic or Latino</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>American Indian/Alaskan Native Not hispanic or Latino</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>White Choose not to disclose</td>
<td>2</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Hispanic or Latino Hispanic or Latino</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
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<tr>
<td>Black or African American     Hispanic or Latino</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>White Unknown</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other Choose not to disclose</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Unknown Unown</td>
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<td>0</td>
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<tr>
<td>Multiracial Hispanic or Latino</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Multiracial Choose not to disclose</td>
<td>1</td>
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</table>
## SEX AND GENDER

<table>
<thead>
<tr>
<th>Sex Assigned at Birth</th>
<th>Total Population</th>
<th>Interest in FP</th>
<th>Completed FP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>339</td>
<td>55</td>
<td>37</td>
</tr>
<tr>
<td>Female</td>
<td>232</td>
<td>25</td>
<td>2</td>
</tr>
<tr>
<td>Choose not to disclose</td>
<td>14</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Uncertain</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender Identity</th>
<th>Total Population</th>
<th>Interest in FP</th>
<th>Completed FP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transgender Female</td>
<td>277</td>
<td>45</td>
<td>27</td>
</tr>
<tr>
<td>Transgender Male</td>
<td>172</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>Female</td>
<td>52</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Nonbinary or Genderqueer</td>
<td>61</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
• The Stanford Pediatric & Adolescent Gender Clinic is a single, multidisciplinary clinic team
  • Consists of specialists in pediatric endocrinology, adolescent medicine, gynecology, urology, psychology, and social work.
  • They have a Urologist & a Reproductive Endocrinology and Infertility (REI) specialist.

• If patients express interest in fertility preservation, a referral is placed to this specific adolescent fertility and REI specialist.
<table>
<thead>
<tr>
<th>Reference; country</th>
<th>Title</th>
<th>Data collection period</th>
<th>Population (age range)</th>
<th>FP utilization rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woreck et al. (32), 2011; Belgium</td>
<td>Reproductive wish in transsexual men</td>
<td>November 2009 to April 2010</td>
<td>Transsexual men: n = 50 (22–54 y)</td>
<td>37.5% (n = 18)</td>
</tr>
<tr>
<td>Nahata et al. (4), 2017; United States</td>
<td>Low FP utilization among transgender youth</td>
<td>January 2014 to August 2016</td>
<td>Transgender adolescents: n = 73 (9–18 y)</td>
<td>2.7% (n = 2)</td>
</tr>
<tr>
<td>Chen et al. (19), 2017; United States</td>
<td>FP for transgender adolescents</td>
<td>July 2013 to July 2015</td>
<td>Transgender male: n = 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Transgender female: n = 23</td>
<td>4.8% (n = 5)</td>
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<tr>
<td></td>
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<td>Transgender adolescents: n = 105 (14–21 y)</td>
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<td></td>
<td></td>
<td></td>
<td>Transgender male: n = 28</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Transgender female: n = 77</td>
<td></td>
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<tr>
<td>Armaund et al. (43), 2017; Sweden</td>
<td>Transgender men’s experiences of FP: a qualitative study Attitudes toward fertility and reproductive health among transgender and gender-nonconforming adolescents</td>
<td>March 2014 to December 2015</td>
<td>Transgender men: n = 15 (9–35 y)</td>
<td>n/a</td>
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<tr>
<td>Chen et al. (6), 2018; United States</td>
<td></td>
<td>September to October 2016</td>
<td>Sexual and gender minority adolescents: n = 165 (14–17 y)</td>
<td>n/a</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Man: n = 3</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Women: n = 1</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Transgender male: n = 64</td>
<td></td>
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<td></td>
<td></td>
<td>Transgender female: n = 8</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Genderqueer/gender-nonconforming: n = 90</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Transgender youth and parents: n = 25 (13–19 y)</td>
<td>n/a</td>
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<tr>
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<td></td>
<td></td>
<td>Transgender male: n = 14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Transgender female: n = 10</td>
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<td>Norbinary: n = 1</td>
<td></td>
</tr>
<tr>
<td>Strang et al. (34), 2018; United State</td>
<td>Transgender Youth Fertility Attitudes Questionnaire: measure development in nonautistic and autistic transgender youth and their parents</td>
<td>Not specified</td>
<td>Transgender and nonbinary adults: n = 409 (18–72 y)</td>
<td>7% (n = 28)</td>
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<td>Transgender male: n = 131</td>
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<td>Transgender female: n = 97</td>
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<td>Norbinary: n = 149</td>
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<td>Gender: n = 32</td>
<td></td>
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<tr>
<td>Riggs and Bartholomaeus (45), 2018; Australia</td>
<td>FP decision-making among Australian transgender and nonbinary adults</td>
<td>January to February 2018</td>
<td>Transgender adults: n = 189 (20–51 y)</td>
<td>9.6% (n = 7) of transgender women</td>
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<td>Transgender men: n = 90</td>
<td>3.1% (n = 2) of transgender men</td>
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<td>Transgender women: n = 99</td>
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<tr>
<td>Auer et al. (46), 2018; Germany</td>
<td>Desire to have children among transgender people in Germany: a cross-sectional multicenter study</td>
<td>November 2013 to October 2016</td>
<td>Transgender girls: n = 35 (12–17 y)</td>
<td>38% (n = 12)</td>
</tr>
<tr>
<td>Erik et al. (47), 2019; Netherlands</td>
<td>Use of FP among a cohort of transgirls in the Netherlands</td>
<td>2011–2017</td>
<td>Transgender girls: n = 35 (12–17 y)</td>
<td>38% (n = 12)</td>
</tr>
</tbody>
</table>

DISCUSSION – WHY DO EUROPEAN COUNTRIES HAVE HIGHER RATES OF FP UTILIZATION?

- European countries (Netherlands, Belgium) have increased insurance coverage of fertility preservation for transgender individuals
  - cost has been consistently reported as a barrier in US studies.
- US has high out of pocket fees - not only for procedures but also years of cryopreservation.
  - For patients with ovaries, this can cost tens of thousands of US dollars depending on the method of oocyte retrieval.
- Perceptions of adoption could also be at play - only 13% of Dutch patients reported interest in adopting children in the future compared to US and Canadian studies where 52–80% reported interest in adoption.
NEXT STEPS
EXPERIMENTAL DESIGN AND METHODS

Aim 2: Needs assessment to explore patient care needs and perceptions of fertility preservation

2 sets of semi-structured qualitative interviews will be conducted.

- Mayo Clinic TISCC Patients 18+ from 2015-2022
- Jasmyn Clinic Transgender and Gender Diverse Patients 18+.
- Mixed methods approach will be used to expand upon aim 1 chart review trends
EXPERIMENTAL DESIGN AND METHODS

Aim 3: Comparison analysis to assess differences in fertility preservation perspectives based on age, location, and social determinants of health

- Qualitative interviews will be done with patients of a local LGBTQ sexual health clinic, JASMYN, in Jacksonville, FL.

- Patients of JASMYN are more likely to have intersectional backgrounds including diverse race and ethnicity and may have less social and familial support of their gender identity than patients at Mayo Clinic.
THE FUTURE

- IVM of oocytes for trans boys/men
- IVM of testicular tissue for trans girls
- Uterus transplantation in trans women
- Qualitative Data to understand why fertility preservation is underutilized
REFERENCES


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