Testicular Tissue Cryopreservation: An Ethical Analysis

Background

Experimental testicular tissue cryopreservation (TTC) aims to preserve the future option of genetic reproduction for prepubescent males who are diagnosed with cancer.

- To date, no live births resulting from TTCP (in humans)
- Researchers are optimistic
- TTCP offered in research context
- TTCP raises a number of ethical considerations

Research Aims

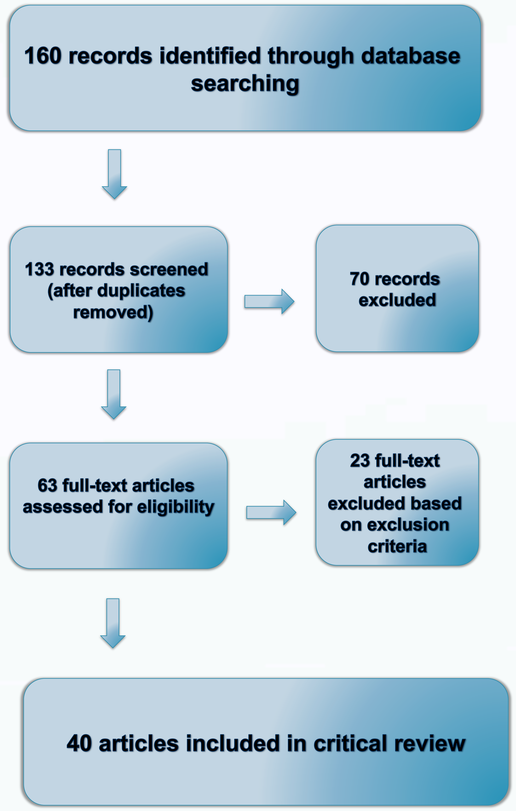
- Identify the key ethical considerations are raised in the literature on TTCP
- Identify gaps in ethical gaps in literature

Method

Critical review of the academic literature on the clinical (research) application of TTCP

- **Databases:** PubMed, Embase, and the Dalhousie University Library Catalogue
- **Search terms:** testicular tissue, immature sperm*, gonad*, cryopreserv*, freez*, fertility preservation, oncofertility, boy, child*, minor, prepube*, ethic*, moral*, consent, decis*, harm*, risk*, social
- **Search date:** Inception to September 2015
- **Inclusion Criteria:** full article accessible online, English, TTCP as primary or secondary subject, male population, pediatric/ young adolescent population, authors consider clinical application of TTCP
- **Exclusion Criteria*:*** articles that did not meet the inclusion criteria, no mention of any ethical considerations, TTCP in non-human animal research, policy statements, guidelines, responses to commentaries, conference proceedings

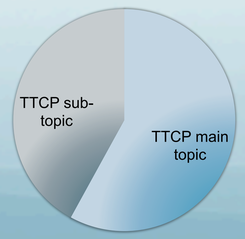
Articles hand-sorted, reviewed, coded, and evaluated



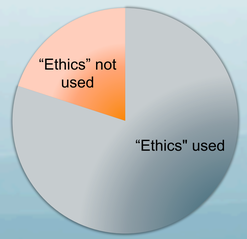
Results

- TTCP was mentioned in a range of articles on oncofertility
- All articles include some ethical considerations
- The depth of analysis varied
- 16 common ethical considerations were identified
- Ethical considerations fell under four key ethical principles:
  Autonomy, Beneficence, Nonmaleficence, and Justice

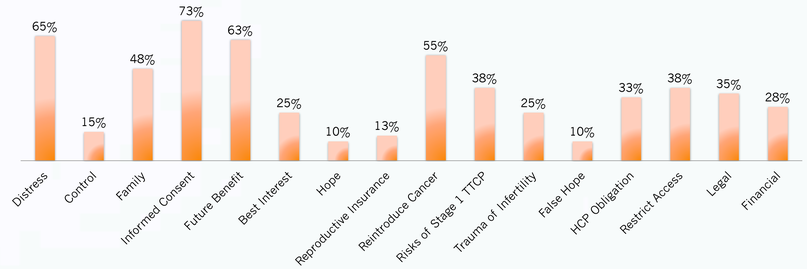
TTCP in Articles



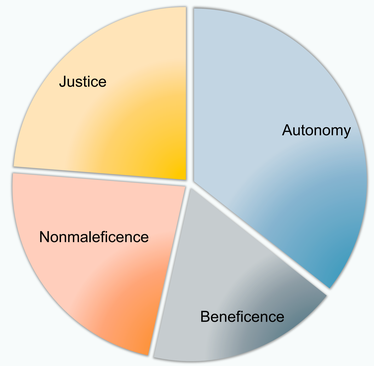
Use of Word "Ethics" in Articles



Ethical Considerations



Key Ethical Principles



Discussion and Conclusions

- The need for parental informed consent and the emotional distress associated with TTCP decision-making are cited most often. This may reflect standards of care and practical challenges in the pediatric oncology setting. The depth of these analyses may also reflect the high social values placed on patient autonomy and genetic procreation.
- Concerns about justice were discussed in least depth
- Gaps in ethical considerations: social context of decision-making (including gender norms, socio-economic factors, religion, healthcare environment, HPC relationship), therapeutic misconception, prioritization of genetic family-making, and cryopreserved tissue disposition/ third party uses

Additional ethical analyses of TTCP are needed.

NTE Impact Ethics

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