

Research Summary of High-Tech Sex Selection

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Research Summary of Darnovsky on Sex Selection

In the article by Marcy Darnovsky, the author speaks about various areas in high-tech sex selection. There are now pre-pregnancy sex selection methods that are being commercialized at a fast pace. These methods are strictly a way for parents to satisfy their desires for their children. These procedures are expensive, but are becoming a very large market for business. “Some fertility clinics are openly advertising sex selection for social reasons” (Darnovsky, 2003). Making adjustments to appearance by the use of Botox and breast augmentation, for example, or making adjustments to behavior and mood with the use of antidepressants, mood stabilizers, and Viagra, were done at first for therapeutic purposes, but now it has become something that is very encouraged. Darnovsky summarizes how the “technological, economic, cultural, and ideological developments have revived the issue of sex selection”. There are several concerns about sex selection. There are claims saying that it could “reinforce misogyny, sexism, and gender stereotypes, undermine the well-being of children by treating them as commodities, skew sex ratios in local populations, further commercialization of reproduction, and open the door to high-tech consumer eugenics” (Darnovsky, 2003).

There are many debates about sex selection in the United States. Feminist bioethicists debated this topic in the 190s and early 1990s. During a time, choosing the sex of a child was done by using prenatal diagnostic tests, and then terminating the pregnancy if the outcome was the undesired sex. Ultrasound scanning and amniocentesis was used frequently in the 1970s generally for abortions of babies that had Down syndrome or other similar conditions that were unwanted. This became very routine. In the 1980s and early 1990s feminists like Helen Bequaert Holmes argued that the selection of traits of future generations is a form of eugenics. Mary Anne

Warren, a philosopher, asserted that it could be considered a 'gendercide', which is basically no less of a moral catastrophe than genocide. However, many feminists argued that when limiting these types of abortions that were based on sex selection, this would fall under the category of threatening the reproductive rights of women. Later in the mid 1990's, the issue of sex selection faded.

Sex selection is largely involved with abortion politics. Some bioethicists have argued in favor of parents choosing the sex of their offspring due to the new technologies of sex selection that been on the rise. They also brought in profit. A lawyer and bioethicist named John Robertson who worked in the fertility industry wrote, "The risk that exercising rights of procreative liberty would hurt offspring or women - or contribute to sexism is generally - is too speculative and uncertain to justify infringement of those rights" (Darnovsky, 2003). He focused more on individual liberties, rather than a society as a whole. Many argue about the distinction between an abortion because of an unwanted pregnancy, versus choosing traits and qualities of their child. These are two different cases. Many political conversations and policy changes suggest that because of the fact that the newer sex selection technologies are initiated before pregnancy, they don't exactly affect a woman's right or access to abortion. In the United States, it was easier to differentiate sex selection from abortion politics.

Discussions arose about eugenics becoming immoral. Mary Anne Warren stated that "...the the contribution of sex selection to a new is 'implausible', meaning that 'there is at present no highly powerful interest group which is committed to the development and use of immoral forms of human genetic engineering'" (Darnovsky, 2003). About two decades later, powerful figures developed new sex selection further, and figures such as bioethicists, biotech

entrepreneurs and ideological libertarians started promoting a new market-based, high-tech eugenics. Many scientists began consistently using new technologies on lab animals first. Pre-Implantation Genetic Diagnosis, also known as PGD, came about in 1990. It consisted of identifying and removing embryos that were affected by genetic conditions that were very serious. These scientists describe PGD as already being a eugenic technology. In more recent years, it has been used to screen for genetic conditioning and to see if your future child would develop a sickness. Another issue arose where bioethicist Edgar Dahl asserted that “if a ‘safe and reliable genetic test’ for sexual orientation were to become available, ‘parents should clearly be allowed’ to use it, as long as they are permitted to select for homosexual as well as heterosexual children” (Darnovsky, 2003). Personally, I view this as highly unethical. It is not ethical to select the sexual orientation of your child, just as if your child had already been born today and you disliked their homosexuality, and if they had a chose to change that, they would. It should solely rely on how they are born. Children will then be seen as ‘commodities’ and would essentially lower their self worth. Genetic is becoming increasingly controversial. The future could possibly allow for changing hair color or eye color, or even go as far as rejecting children that don’t inherit ‘superior intelligence’. Margaret Talbot argued, “If we allow people to select a child’s sssex, then there really is no barrier to picking embryos - or, ultimately, genetically programming children - based on any whim, any faddish notion of what constitutes superior stock....A world in which people (wealthy people, anyway) can custom-design human beings unhampered by law or social sanction is not a dystopian sci-fi fantasy any longer but a realistic scenario. It is not a world most of us want to live in” (Darnovsky, 2003). I would agree with Talbot, that most would disagree with these new methods.

Many have found that there has been a national issue for having preferences for girls. Many cultures have specific traditions that favor girls over having sons, so many would suggest that these methods would not be bad in this case. Essentially, we would be creating a nation of young girls. This significantly attributes to sexism and gender stereotyping. It also would be considered stereotyping cause typically those who are wealthy and have preference for a female are looking for certain qualities and traits of a girl in mind. MicroSort, which is a sperm sorting method, emerged in 1995. “In it, a fluorescent dye added to a sperm sample binds to chromosomal DNA. Because sperm that carry X chromosomes contain slightly more DNA than those with Y chromosomes, the sample can be sorted using a process called ‘flow cytometry’” (Darnovsky, 2003). A subject that was involved in the first MicroSort technology said, “I wanted to have someone to play Barbies with and to go shopping with; I wanted the little girl with long hair and pink fingernails” (Darnovsky, 2003). While it’s alright to want a girl like this, it’s not very ethical to tailor your child to be like this because of your preference. This eliminates any and all originality, freedom, and personal expression of the child. Sex selection remains misunderstood and evaluated. There are still ethical concerns about child-bearing and social consequences, as well as marketing.

Pre-pregnancy sex selection is generally very expensive. Prenatal screening is the most commonly used method. Pre-implantation genetic diagnosis is an embryo screen technique that consists of “fertilizing an egg and removing a single cell from each embryo in a batch that has been creating using in vitro fertilization. Technicians test the cells for particular chromosomal arrangements or genetic sequences; then one or more embryos that meet the specific criteria - in the case of sex selection for a boy, those with both X and Y chromosomes -

are implanted in a woman's body" (Darnovsky, 2003). The cost of PGD ranges between \$3,000 and \$5,000 for an IVF cycle. There may be small risks that are unknown that accompany PGD, but the receivers must be willing to take this risk. Statistically, if the parents of 5% of the four million babies that are typically born in the United States used MicroSort at its current cost, the annual cost would be close to \$1.4 billion. This is very tempting commercially and marketing-wise to the fertility industry. However, this raises awareness and concern for others that do not agree.

Research summary of Robertson on Preimplantation Genetic Diagnosis

In the article, 'Extending preimplantation genetic diagnosis: medical and non-medical uses', author J A Robertson speaks of a controversial topic of Preimplantation genetic diagnosis (PGD). PDG is a method that requires ethical, legal and social scrutiny. According to Robertson, PDG is growing. In this article, he discusses both the medical and non-medical uses of PDG, and discusses the issues at hand.

Statistically, he states that more than two thirds of PDG has screened out embryos with chromosomal abnormalities in older invitro fertilization patients, and also in patients with a history of miscarriage. Approximately 1000 cycles of it have involved single gene mutational analysis. This requires additional skills beyond karyotyping for aneuploidies, "including the ability to conduct the multiplex polymerase chain reaction(PCR) of the gene of interest and related markers" (Robertson, 2003). Recent studies have shown that there have been new uses for PDG, to detect mutations for to recognize the possibility of cancer and for late onset disorders like Alzheimer's disease. Also, parents that have children that need hematopoietic stem cell transplants have used PDG to be certain that their future child doesn't have a disease. Robertson claims that this method is ethically controversial because it involves the screening and possible destruction of embryos, and also the selection of offspring on the basis of expected traits. Such screening for diseases is limited by few diseases that single gene predispositions are known of.

There are new medical uses for PDG. They can either be categorized as medical and non-medical. The new medical uses screen for rare Mendelian disease, but also for likelihood of

diseases, and HLA matching for children. Non-medical uses generally do not relate to the health of in resulting children or other family members. With the exception of gender, it is unrealistic that non-medical screening for other traits such as sexual orientation, hair, intelligence, etc. will happen anytime soon.

PGD for gender selection is controversial, because like Darnovksy said, there is bias against females. Gender selection has significant social effects, such as having great disparities in the sex ratio of the population. According to Robertson, it enforces cultural notions of male privilege and contributes to sexism towards women. Many argue that this is justified and the sexism is overridden by justifying the desire for gender variety in children.

Ultimately, even though new justifications and methods for PGD are emerging, it will most likely remain a small part of reproductive practices for a while. The controversy remains strong with use of PGD in selecting gender or other traits that are non-medical.

Outside Sources Review

According to the Journal of the Formosan Medical Association, some ethical issues raised about PDG are the the issues raised by the ‘rescue baby’, in which condition the baby was “created” for saving the sibling's lives in diseases where such a method is therapeutic and feasible option. The journal suggests that “One of the most frequently cited ethical dilemma is the PGD of late-onset monogenic inherited disorders with most of them are neurodegenerative diseases” (Journal of the Formosan Medical Association).

PGD is still under debate. Its acceptance by the clinical community will eventually evolve with a better understanding of human embryo development. This will happen with more data that arises from “better-designed, prospective randomized trials which further study the effect of biopsy timing, the limitations and comparisons between different genotyping methodologies”, as well as the defined targeted populations, like women with older age or women with recurrent pregnancy loss or miscarriage (Journal of the Formosan Medical Association).

According to the Ethics Committee of the American Society for Reproductive Medicine, a second source, the primary arguments against the use of PGD for non-medical sex selection are harmful to offspring, harm to women and also to men, misuse of medical resources for non-medical purposes, which should be used for important medical purposes, and risks of discrimination and perpetuation of social injustice and bias (Ethics Committee of the American Society for Reproductive Medicine).

Summary of Controversy and Perspectives on High-Tech Sex Selection

According to the sources of Darovsky, Robertson, the Journal of the Formosan Medical Association, and the Ethics Committee of the American Society for Reproductive Medicine, high-tech sex selection poses many ethical concerns and controversies. I agree with the ethical concerns and viewpoints of all of the sources, where sex selection and preimplantation genetic diagnosis can be very unethical and causing negative changes in society such as sexism, female and male bias, stereotyping, social justice and societal issues, as well as enforcing cultural notions and causes problems in the sex ratio in populations. It has become a market and commercialized, and parents have used it to satisfy their desires for their 'ideal' child. This fits in with stereotyping. It also eliminates the ability for a child to be expressive of oneself and leaves no room for originality. It depends solely on the preference of the parent, which ultimately I believe is unethical and unfair. Parents can definitely give their children options once they born to encourage certain traits like musical traits, athletic traits, but they may not always work for that child. For example, my mother had me take piano classes at a University of Music from the age of six. This greatly increased my musical ability, but once I reached adulthood I didn't necessarily want to continue. I would be seen as a 'commodity' like some do if my parents have chosen to use these methods before birth to instill these traits in me without me wanting them.

I believe the use of high-tech sex selection, including preimplantation genetic diagnosis is suitable and ethics for people with susceptibility of later onset diseases. In those cases, these methods are used for important medical purposes. I do not agree with, however, using this

method to recognize if your child will have Down syndrome, and then deciding you no longer want that child, and then terminate the pregnancy.

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