

Designer Babies

Eugenio Orona, Jr.

University of Mary

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Dr. Joan Doerner

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This paper will delve into designer babies and the ethical dilemmas associated with them. It will also explore genetic testing and the manipulation of mitochondria DNA (mtDNA) and how they are used to create designer babies. In making designer babies, embryos are selected from preimplantation genetic diagnosis (PGD), a technique used to detect inherent abnormalities or changed genetically to influence the unborn child's personalities (Pang & Ho, 2016). These embryos created by in-vitro fertilization, through mtDNA transfer, either have the presence or absence of a specific gene (Pang & Ho, 2016). Genetic testing is a procedure used to find these chromosomal defects in a gene.

Genetic Testing

Genetic testing grants healthcare providers the opportunity to locate biomarkers that can identify and confirm the predisposition or presence of specific diseases in a patient; therefore, allowing them to formulate a treatment plan to combat the syndrome (Macha & McDonough, 2012). Being able to discover genes that are high-risk for the development of a disease can be beneficial. Genetic testing can identify certain cancers and help couples who plan to start a family determine if they are predisposed to chromosomal mutations that would pass onto their unborn child.

Mitochondria DNA

Mitochondria are small circular chromosomes housed in the cytoplasm of a cell; furthermore, each cell can contain up to thousands of mitochondria. Females inherit mitochondria; thus, if she has mitochondrial dysfunction resulting from diseased mutations, future offspring will receive this illness (Dimond, 2015).

Scientists have created a technique to remove disease from the mtDNA called the maternal spindle. Essentially, a donated egg has healthy mitochondria, with the DNA from the donor removed, and the DNA of the intended mother is transferred into this donated egg. The intended mother's original egg with the unhealthy mitochondria is released and replaced with the new egg (Dimond, 2015). A different procedure named pro-nuclear transfer exists as well. Pro-nuclear is precisely like the maternal spindle technique; however, everything occurs after fertilization (Dimond, 2015).

Since genetic testing is now a possibility, scientists can detect genetic diseases in a gene; additionally, with the manipulation of mtDNA, families would be able to use this medical advancement to create designer babies in the future. Although designer babies could occur in the future, is this ethically and morally acceptable?

Ethics and Morales

The possible creation of designer babies brings up a lot of discussions surrounding ethical behavior. An ethical argument of not allowing designer babies is to manipulate mtDNA and be used not to treat diseases but genetic enhancements. Additionally, some couples find these genetic modifications to be dehumanizing; therefore, creating designer babies is unacceptable (Pang & Ho, 2016). Currently, picking the color of an unborn child's hair or eyes, intelligence level, or athletic capabilities is not possible (Ghose, 2014). However, as science and technology enhance, this will become a possibility, and the ethics and morals decisions surrounding it will be substantial, causing social tensions throughout the world.

An ethical concern with designer babies is parents trying to control the predetermined outcomes of their offspring. A designer baby parent would expect them to act or behave a specific; however, if this child does not live up to their expectations, then animosity and

resentment would occur (Ghose, 2014). The parents may even bring litigation toward the donor or healthcare providers for not manipulating the mtDNA correctly.

Morally parents need to consider the self-identity of their unborn child. When creating a designer baby, an unknown donor's egg is used; therefore, involving three "parents" in making this child. The child's character, personality, and mannerisms may differ from their nuclear family, questioning their own identity (Dimond, 2015). By creating the perfect baby, parents may inadvertently cause a lot of psychological damage to their child if this individual has a self-identity crisis.

Being able to manipulate mtDNA to create designer babies could change genetic culture permanently and, along with it, the whole human race. This issue is an ethical dilemma scientists and parents need to consider since genetic engineering could have irreversible adverse outcomes that affect all of humankind (Dimond, 2015).

Although many individuals believe designer babies are unethical, countless people feel differently. From an ethical viewpoint, it's unclear that there is anything different than parents trying to nurture particular traits through genetic engineering of the mtDNA, compared to teaching a child how to play a musical instrument, hiring a private coach, imparting discipline, or tutoring lessons (Ghose, 2014).

The donation of eggs is another ethical dilemma to consider in the creation of designer babies. Women in a financial bind can seek monetary relief by repeatedly donating their healthy eggs; therefore, raising concerns for exploitation and increasing the risk of ovarian hyperstimulation syndrome (Dimond, 2015). Ovarian hyperstimulation syndrome occurs in women injected with hormones to quicken the development of eggs within their ovaries (Mayo Clinic, 2019).

There are religious sectors that will not agree with parents and healthcare providers acting as God and going against his will of children's natural reproduction (Macha & McDonough, 2012). Religious family members and healthcare workers will struggle morally within if they see the benefits of genetic testing and the happiness that a designer baby could bring to those unable to conceive.

Insurance companies have an ethical obligation to those who undergo genetic testing to create a designer baby. Insurance companies may have access to a patient's genetic history and take advantage of this information. They may not provide coverage or could charge premiums if these businesses believe designer babies are immoral (Macha & McDonough, 2012).

Conclusion

Many advances have been made with genetic testing and manipulating mtDNA, but for now, creating designer babies does not exist. Additionally, there are still many unknowns such as risk factors to mothers, laws, regulations, hospital policies, success rates of implantation, and many others that need to be considered regarding designer babies. Addressing these hurdles needs to happen before designer babies become a reality.

If designing a baby does come into existence, it may not be very successful among the public. People may feel it is unethical and immoral and want nothing to do with it. Current evidence shows people will forego embryo selection technologies when they can conceive without assistance. Furthermore, for most women, reproduction's emotional significance outweighs creating a designer baby (Ball, 2017).

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