Embryo Donation/Adoption: Medical, Legal and Ethical Perspectives

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Citation

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Abstract

It is estimated that 2.1 million married couples or 5 million people in the United States are affected by infertility. Issues of human infertility are extremely complex physiologically, psychologically, financially, legally and ethically. Approximately 10-15% of infertile couples become candidates for various forms of Assisted Reproductive Technologies (ARTs) to assist them in having their own biological children. In-vitro fertilization (IVF) is one of the most utilized reproductive procedures that has allowed couples to have their own biological children. Because of the cost of IVF, numerous embryos have been frozen through a process called cryopreservation. It has been estimated that there are 500,000 spare embryos frozen with an additional 20,000 embryos added yearly. The issue is now what to do with the 500,000 frozen embryos that remain as "spares." Various alternatives have been suggested. The embryos could be thawed and then destroyed, continued to be cryopreserved indefinitely, used for embryonic stem cell research, or offered for donation/adoption. What to do with these spare embryos places the legal, medical and ethical focus on the issue of personhood. If embryos are persons then it would be a moral imperative to "rescue" these embryos from their current status of being in "frozen animation." Allowing for embryo donation/adoption is the only viable option that protects and preserves their human life. The other viable options are ethically unacceptable because they have the potential of harming or intentionally killing these embryos that deserve special respect. However, this cannot be done without medical, legal and ethical safeguards.

INTRODUCTION

It is estimated that 2.1 million married couples or 5 million people in the United States are affected by infertility.[1] Infertility is defined as failure to get pregnant after one year of unprotected intercourse. About 40% of infertility cases are due to a female factor and 40% due to a male factor. The remaining 20% are the result of a combination of male and female factors, or are of unknown causes.[2] Issues of human infertility are extremely complex physiologically, psychologically, financially, legally and ethically. It is estimated that 85-90% of infertile couples will receive conventional treatment and 10-15% may become candidates for various forms of Assisted Reproductive Technologies (ARTs) to assist them in having their own biological children. In-vitro fertilization (IVF) is one of the most utilized reproductive procedures that has allowed couples to have their own biological children. IVF accounts for 99% of ART. This procedure has been effective but it is still inefficient and expensive. One aspect of the inefficiency is that numerous embryos have been frozen through a process called cryopreservation. It has been estimated that there are 400,000 embryos frozen and stored since the late 1970s.[3] In reality, the actual number of frozen embryos is probably closer to 500,000 with an additional 20,000 embryos added yearly.[4] Freezing these embryos has allowed for a limitation on the number of embryos transferred to a woman's uterus which has decreased the number of multiple gestations. It also allows couples to use the frozen embryos in the future if the initial cycles are unsuccessful. This is not only more effective but also lowers the cost. The issue is now what to do with the 400,000 to 500,000 frozen embryos that remain as "spares." Various alternatives have been suggested. The embryos could be thawed and then destroyed, continued to be cryopreserved indefinitely, used for research, or offered for donation/adoption. All of these options present problems medically, legally and ethically.

Medically, the lifespan of a cryopreserved embryo is unknown. The effect of the freezing process is also unknown on the quality of the embryo if brought to term. "Studies have found that babies created through IVF are twice as likely to be born underweight and with major birth defects."[5] With the unknown effects of cryopreservation on embryo development the medical issues become even more

complex. Legally, only 2% of frozen embryos are specifically designated for donation/adoption and 5% are specifically designated for destruction or research.[6] The legal issues focus on the applicability of contract law versus family law because frozen embryos are technically considered "property" not "persons." Presently, the applicability of contract law or family law remains unclear. In addition, to date only three states—Florida, Louisiana and New Hampshire—have adopted legislation concerning the disposition or disposal of embryos. Legally and legislatively the issue of embryo donation/adoption is ambiguous at best. Ethically, depending on one's view of when personhood begins, frozen embryos may be considered human persons, which deserve dignity and respect, or they may have less than human status with no particular ethical rights. From an ethical perspective that views personhood beginning at fertilization, one could argue that the "rescue" of these embryos would not only be ethically acceptable but morally mandatory. To determine if frozen embryos should be donated/adopted all of these issues will have to be examined.

This article will focus on embryo donation/adoption as a viable option to address the 400,000 to 500,000 frozen embryos in the United States. The intended purpose of this article is fourfold: first, to examine the medical issues surrounding the cryopreservation of frozen embryos; second, to examine the legal issues that focus on the applicability of contract law and family law; third, to give an ethical analysis of the arguments for and against embryo donation/adoption; and fourth, to give recommendations on how to avoid the continuation of this problem in the future.

MEDICAL ASPECTS

Infertility is a major problem for many couples in the United States. "About one married couple in 12 cannot conceive a child after two years of trying. Infertility stems from many factors, including a woman's age at the first attempt to conceive, damage from pelvic inflammatory disease, previous abortions, uterine abnormalities, and a man's low sperm count or low sperm motility."[7] Individually, male and female factors each account for about 40% of infertility in the United States. Numerous technologies are available to couples from artificial insemination by a husband or a donor, to gamete intrafallopian transfer (GIFT), to zygote intrafallopian transfer (ZIFT), to in-vitro fertilization. Of these reproductive technologies IVF has become the ART of choice for many infertile couples. IVF is an assisted reproductive technology which had its first success in 1978 when Drs. Edwards and Steptoe in Oldham, England created the first "test tube baby" named Louise Brown. Since that first success, IVF technology has been refined and over 3 million babies have been born worldwide.[8]

There are five basic steps to IVF. 1) Harvesting the eggs from the woman's ovaries. The woman's ovaries are hyperstimulated using fertility drugs that produce numerous eggs. During this period the woman will have regular transvaginal ultrasounds to examine the ovaries and blood tests to check hormone levels. 2) Egg retrieval. The eggs are removed from the woman's body using follicular aspiration. Using ultrasound images as a guide the physician inserts a thin needle through the vagina and into the ovary and sacs containing the eggs. The needle is connected to a suction device, which pulls the eggs and fluid out of each follicle, one at a time. In rare cases, a pelvic laparoscopy may be used to remove the eggs. 3) Insemination and Fertilization. The man's sperm is placed with the best quality eggs in a petri dish and stored in an environmentally controlled chamber. The mixing of the sperm and egg is called insemination. The sperm usually enters an egg a few hours after insemination. If there is a low chance for fertilization, one single sperm can be injected into an egg in a procedure called Intracytoplasmic Sperm Injection (ICSI). 4) Embryo culture. The fertilized eggs remain in the petri dish for 48 to 72 hours to verify that the embryo is not defective and growing properly. If a couple is at high-risk for passing on genetic (hereditary) disorders to a child they may consider using Pre-implantation Genetic Diagnosis (PGD). The procedure is performed 3-4 days after fertilization. A single cell is removed from each embryo to screen it for specific genetic disorders. Those embryos with the genetic disorder are usually destroyed. 5) Embryo transfer. Anywhere from 1-4 embryos are placed in the woman's womb 3 to 4 days after fertilization. The physician inserts a thin catheter containing the embryos into the woman's vagina, through the cervix, and up into the womb. If the embryo implants in the woman's uterine wall pregnancy will result.[9]

The implantation rate is estimated at 10-25%.[10] The overall birth rate varies from 11% (women over 40) to about 35% (women under 35).[11] This clearly shows that a number of embryos transferred fail to survive, which is why multiple embryos are transferred per cycle and why numerous cycles are required. On average, 2.7 embryos per cycle are transferred in women under 35, with an average of 3 in older women. Depending on the embryo quality, up to 5-6 embryos can be transferred.[12] The average cost of IVF is $12,000-17,000 per cycle. It is estimated that 75% of

couples who have tried IVF and who spent from $10,000-100,000 still go home without a baby.[13] Risks include the possibility of ovarian hyperstimulation syndrome (OHSS), risks in the egg retrieval stage which include reactions to anesthesia, bleeding, infection and damage to structures surrounding the ovaries including the bowel and bladder, and finally there are the risks associated with multiple pregnancies. Since 1980 the rate of twins has climbed 70% to 3.2% of births in 2004. Multiple gestations raise the risk of preterm births; low-birth-weight babies, with the possibility of death in very premature infants; long-term health problems; and pregnancy complications, which include pre-eclampsia, gestational diabetes, and Caesarean section. Studies have shown that 56% of IVF twins born in 2004 weighed less than 5.5 pounds, and 65% were born prematurely, before 37 weeks of gestation.[14] Embryos not transferred in a fresh IVF cycle are usually cryopreserved. Freezing these embryos offers individuals the possibility of transferring the frozen embryos for later IVF cycles if the previous cycle does not result in a pregnancy. It is also cost effective and eliminates the need to undergo the steps needed for a fresh IVF cycle. In most cases the best quality embryos are transferred in the fresh cycle and those of a lesser quality are frozen for later transfer. It should be noted that some clinics have individual freezing and thawing to achieve the exact number of embryos desired for transfer. This procedure avoids embryo wastage.

The process of cryopreservation has become an integral part of the IVF procedure. “Cryopreservation is a process of freezing biological tissues for storage, while minimizing cellular damage from freezing and thawing.”[15] This technique entails freezing the embryo while simultaneously removing the intracellular water and replacing it with a cryoprotectant solution which help to protect the embryo during the freezing process. The embryos are then placed into cryopreservation straws or vials, which are labeled with the patient’s name, the patient’s IVF number, and the date of the freeze. Once the process is complete, the embryos are placed in a computer controlled freezing unit. After the freezing run is complete, the straws are stored in a special tank filled with liquid nitrogen at a temperature of minus 196 degrees centigrade.[16] Many storage facilities use a back-up system to minimize the risk of interruption in the freezing process. Liquid nitrogen containers are armed with an automatic alarm system to monitor nitrogen levels and prevent premature thawing.[17] These embryos are looked upon as being in a state of “suspended animation.” Cellular activity has ceased, but each embryo is still alive. When the remaining embryos are needed a procedure utilizing rapid thawing and removal of the cryopreservative solution with simultaneous rehydration is used. The embryos are first warmed in a 98.6 F degree solution and the cryoprotectant chemicals are removed.[18]

The embryo thawing process is quite complex. “Embryo survival is based on the number of viable cells in an embryo after thawing. An embryo has ‘survived’ if >50% of the cells are viable. An embryo is considered to ‘partially survive’ if <50% of its cells are viable and to be ‘atretic’ if all the cells are dead at thaw. Approximately, 65-70% of embryos survive thaw, 10% partially survive and 20-25% are atretic. Data suggests that embryos with 100% cell survival are almost as good as embryos never frozen but only about 30-35% survive this fashion. Embryos that are 2, 4 or 8 cells when frozen have about a 5-10% greater survival than embryos with an odd number of cells. Donor egg embryos have a 2-5% greater survival rate than embryos from infertile women when compared by morphology score”[19] The cost of cryopreservation is approximately $600-700 a year. The success rate or pregnancy rate depends on numerous factors: the number of surviving embryos transferred, the number of 100% surviving embryos transferred, and the morphology scores of the transferred embryos. The delivered pregnancy rates range from 5% (a single poor quality embryo) to 36% (4 high quality embryos) when the cycles from 1987 to 2001 were combined. It is estimated that embryo cryopreservation adds about 10-30% more pregnancies per retrieval cycle and the outcomes of the children are normal.[20] The reason for the wide range of costs and success rates is because the Assisted Reproductive Technologies industry in the United States is unregulated. The success rates and costs can vary from clinic to clinic and there is no government oversight examining the widespread differences.

The advantages of embryo freezing are numerous: reducing the risks of multiple gestations potentially increases pregnancy rates, decreasing the number of stimulated treatment cycles needed to achieve pregnancy, decreasing the costs of ARTs, etc. The main disadvantage according to the 2003 RAND/SART Working Group study centers on the approximately 400,000 frozen “spare” embryos stored since the 1970’s.[21] More recent numbers have the number of frozen embryos in excess of 500,000. The 500,000 number seems more realistic considering the increase in IVF procedures since 2003. The issue that is confronting parents and fertility clinics is what to do with these “spare” embryos

medically, legally and ethically.

The RAND/SART survey in 2003 found that of the 400,000 frozen spare embryos 88.2% were designated for family building and 2.8% (11,000) were designated for research. Those embryos designated for research could produce as many as 275 stem cell lines (cell cultures suitable for further development). However, the number would in reality be much lower. Of the remaining embryos, it is estimated that 2.3% (10,000) are awaiting donation, 2.2% are designated to be discarded, and 4.5% are held in storage for other reasons, including lost contact with a patient, patient death, abandonment, and divorce.[22] There are numerous issues concerning the "spare" frozen embryos. The ART clinics transfer the highest quality embryos (those that grow at a normal rate) to the patient during treatment cycles. The remaining embryos are usually designated as not of the highest quality. In addition, some of the frozen embryos have been in storage for many years, and when these embryos were created the laboratory cultures were not as conducive to preserving embryos as they are today. Some embryos would also die in the freeze-thaw process. Considering all these issues, the question is how many embryos actually are available for research and donation/adoption? The RAND/SART team estimated that 65% of the approximately 11,000 embryos designated for research would survive the freeze-thaw process, resulting in 7,334 embryos. Of those, about 25% (1,834 embryos) would likely be able to survive the initial stages of development to the blastocyst stage (a balstocyst is an embryo that has developed for at least 5 days). Even fewer could be converted into embryonic stem cell lines. Their estimate is about 275 embryonic stem cell lines could be converted from the total number of embryos designated for research. The RAND/SART team also estimates that 2.3% of the 400,000 frozen "spare" embryos designated for donation/adoption, only 23,000-100,000 embryos could be adopted, thawed and successfully born.[23] Having this many children potentially available for adoption would help meet the need of couples seeking adoption in the United States. The problem is that the adoption process for frozen embryos is quite ambiguous and very complex.

LEGAL ASPECTS

There are approximately 200,000 couples actively seeking to adopt in the United States. Having the potential of 23,000-100,000 embryos available to be adopted, thawed and successfully born would offer great hope to these couples. Organizations like Nightlight Christian Adoptions, licensed in California since 1959, arrange both domestic and international adoptions. Their Snowflake Embryo Adoption Program, which began in 1997, matches couples who have spare frozen embryos with other infertile couples trying to have babies. Their philosophy is that every embryo is a person from the minute it exists in a petri dish. Nightlight Christian Adoptions approached embryo adoption differently from other agencies. "Snowflake goes beyond the embryo donation provided by fertility clinics by offering safeguards and education available in traditional adoption. A home study is prepared on the adopting family that includes screening and education. The donating family is responsible for selecting a family to raise their genetic child (as opposed to a doctor in a clinic making the selection for the family), and they will know if the child (children) is born from the adopted embryos. Our program recognizes the importance of counseling all parties involved. Most importantly, at Nightlight we recognize the personhood of embryos and we treat them as precious preborn children."[24] There are no agency or program fees for the genetic parents who place their embryos for adoption. Any costs during the adoption process for medical records, blood work, etc., will be paid by the adopting parents. Fees differ for in-state California residents and out-of-state residents. If you live outside of California the Program Fee is $8000; fee for the agency performing the home study ranges from $1000-3000; and the Fertility Clinic's Fee for a Frozen Embryo Transfer (FET) ranges from $2000-7500. In-state residents pay a Program Fee of $10,600. A $2600 credit is applied if you already completed a home study with another agency. The Fertility Clinic's Fee for FET ranges from $2000-7500.[25] By contrast, the National Embryo Donation Center estimates the cost of embryo adoption to be $4,560-5,360. That includes the Application Fee $200 (international application fee is $300); Program Fee (to proceed to assessment for embryo transfer) $800; Embryo Transfer $650; Embryology Laboratory Fee $565; Monitoring Fee $250; Facility Fee $700; Home Study $1000-2000; Initial Consult Fee $200; and Trial Transfer Fee $85. The National Average for IVF is $7500-9000/ cycle and the National Average for IVF with Donor Egg is $22,127.[26] It is clear that the price differential is considerable. Recent statistics show that Snowflake has matched 289 placing families (with approximately 2,092 embryos) with 192 adopting families. 139 babies have been born and 14 adopting families are currently expecting 15 babies.[27]

The legal issues focus on the terminology surrounding adoption and donation. The term "adoption" raises

opposition with abortion-rights groups because it encourages people to view the frozen "spare" embryos as equivalent to children. These groups would prefer the term "embryo donation," or in more neutral, reductive terms, a term such as "transfer of genetic material" from one party to another.[28] The distinction between "embryo adoption" and "embryo donation" may seem trivial to many but from a legal perspective it raises numerous issues. The Supreme Court of Tennessee in Davis v. Davis recognized that, "semantical distinctions are significant in this context because language defines legal status and can limit legal rights."[29] The court in Davis v .Davis also concluded that pre-embryos are not, strictly speaking, either persons or property, but occupy an interim category that entitles them to special respect because of their potential for human life.[30] The American Society of Reproductive Medicine has echoed this conclusion: "The embryo deserves respect greater than that accorded to human tissue but not the respect accorded to actual persons. The embryo is due greater respect than human tissue because of its potential to become a person and because of its symbolic meaning for many people. Yet, it should not be treated as a person, because it has not yet developed the features of personhood, is not yet established as developmentally individual, and may never realize its biological potential."[31] The conclusion seems to indicate that neither contract law nor family law can directly interpret embryo donation/adoption agreements. Contract law governs the transfer of property, while family law governs lives of persons in familial relationships. If embryos are neither property nor persons, but an interim category, it follows that a hybrid approach must be considered.[32]

Parties involved with embryo donation/adoption need certainty concerning their contractual rights and obligations. "Unlike traditional adoption, which has multiple procedural requirements, embryo donation is largely unregulated. Some commentators warn that calling an embryo donation an "embryo adoption" may give the recipient parents a false sense of security regarding their parental rights and responsibilities since most states do not extend traditional adoption laws to the adoption of an embryo. Additionally, both state laws and the Uniform Adoption Act consistently state that children cannot be adopted until after they are born."[33] Because the law is so ambiguous on this topic it would appear that the state legislatures or the federal government would be the appropriate forum to address these issues. As one court noted:

[W]e must call on the Legislature to sort out the parental rights and responsibilities of those involved in artificial reproduction. No matter what one thinks of artificial insemination, traditional and gestational surrogacy (in all its permutations), and—as now appears in the not-too-distant future, cloning and even gene splicing—courts are still going to be faced with the problem of determining lawful parentage. A child cannot be ignored.[34]

A few states have begun to enact legislation regarding embryo donation/adoption, but in reality most states lack appropriate statutes. In Florida, a donated embryo is presumed to be a child of the intended parents if both the donor couple and the intended parents consent in writing. The statute effectively requires the donor couple to relinquish their parental rights, but the statute does not specify how this is to be accomplished.[35] In Oklahoma the statute requires that both the donor and the intended parents must be married and the physician performing the transfer must obtain written consent from both the donor and the intended parents. This consent form must be signed by both the physician and the judge of a court with adoption jurisdiction. The original consent form is then filed with the court by the physician. Any child resulting from the embryo donation is considered to be the child of the donee couple and the donee couple is relieved of all parental responsibilities.[36] Worldwide embryo adoption is performed in at least 19 countries (Canada, UK, France, Spain, Italy, Australia, Belgium, India, Greece, Singapore, Argentine, Colombia, Japan, Holland, Uruguay, Romania, Portugal, Venezuela and Finland). Embryo Adoption is illegal in 14 countries (Austria, China, Denmark, Germany, Israel, Italy, Latvia, Norway, Slovenia, Sweden, Switzerland, Taiwan, Tunisia and Turkey). In the United States all 50 states and the District of Columbia permit living embryo adoption and implantation.[37] The problem is that there is real uncertainty in the law and some might even say it is chaotic. It appears that legislation is needed to protect the rights of these embryos, their biological parents and their adopted parents. Issues concerning legislation range from disagreement about whether this legislation should be initiated from the states or from the federal government to ambiguities concerning personhood and how this will impact on current legal statutes. Legislation appears to be the only route available to overcome the ambiguity in the law. However, legislators are looking for guidance and one area that might offer such assistance is the realm of ethics.

ETHICAL ASPECTS

Ethically, embryo donation/adoption focuses on the issue of personhood. If embryos are persons then it would be a moral imperative to "rescue" these embryos from their current status of being in "frozen animation." Numerous ethicists, embryologists, legal professionals and specifically, the Roman Catholic Church, argue that personhood begins at conception or what is known as fertilization. Prior to fertilization we have two human gametes—sperm and egg, that are living but are not a living organism. When fertilization occurs, something human and living "in a different sense comes into being."[38] Embryologists argue that "human development begins at fertilization when a male gamete or sperm (spermatozoon) unites with a female gamete or oocyte (ovum) to form a single cell—zygote. This highly specialized, totipotent cell marked the beginning of each of us as a unique individual."[39] The Catholic Church teaches that "human life must be absolutely respected and protected from the moment of conception."[40] "Right from fertilization is begun the adventure of a human life, and each of its great capacities requires time. . .to find its place and to be in a position to act. This teaching remains valid and is further confirmed, if confirmation were needed, by recent findings of human biological science which recognize that in the zygote resulting from fertilization the biological identity of a new human individual is already constituted."[41] The Church argues that at fertilization there is a new genetic individual in its own right, one who is whole, bodily, self-organizing, and genetically distinct from his or her mother and father.[42] Those who argue that personhood begins at fertilization would also argue that there is a moral imperative to give these frozen embryos the opportunity to be born and to develop because they are persons. Ethicist Therese Lysaught believes that embryo donation/adoption is an act that can properly be described as "rescuing a child orphaned before birth."[43] Ethicists arguing for the "rescue" of these children would encourage women to implant these embryos in their wombs in order to bring them to term. Some would permit not only married women to do this but also single women and even lesbian couples. The moral principle of sanctity of human life would overcome any other moral considerations. However, not all, even in the Catholic Church, would agree to this ethical analysis. Opponents of this position argue that this would amount to material cooperation in an objective immoral action. Not only is the process of IVF considered an intrinsic moral evil by the Magisterium of the Catholic Church, but allowing for the adoption of these embryos might condone the objective immoral procedure and may even encourage the creation of additional embryos through the IVF process. Even though the Catholic Church has not taken an official position on embryo donation/adoption, one could argue that from previous teaching, it is the only means of survival for these persons. "In consequence of the fact that they have been produced in vitro, those embryos which are not transferred into the body of the mother and are called 'spares' are exposed to an absurd fate, with no possibility of their being offered safe means of survival which can be licitly pursued."[44] Embryo donation/adoption is the only safe means of survival for these persons so thus it would be ethical. This statement by the Magisterium was directed toward embryo experimentation but it could also be applicable to embryo donation/adoption. To determine if embryo donation/adoption is ethical and to address the ambiguities and unresolved issues surrounding this controversy, the traditional ethical principle of the lesser of two evils will be applied to this situation.

Society, in general, has always recognized that in our complex world there is the possibility that we may be faced with conflict situations that leave us with two options both of which are nonmoral evils.[45] The time-honored ethical principle that has been applied to these situations is called the principle of the lesser of the two evils. AWhen one is faced with two options, both of which involve unavoidable (nonmoral) evil, one ought to choose the lesser evil.@[46] Bioethicist Richard McCormick, S.J., argues that

The concomitant of either course of action is harm of some sort. Now in situations of this kind, the rule of Christian reason, if we are governed by the ordo bonorum, is to choose the lesser evil. This general statement is, it would seem, beyond debate; for the only alternative is that in conflict situations we should choose the greater evil, which is patently absurd. This means that all concrete rules and distinctions are subsidiary to this and hence valid to the extent that they actually convey to us what is factually the lesser evil. . . Now, if in a conflict situation one does what is, in balanced Christian judgment (and in this sense >objectively=), the lesser evil, his intentionality must be said to be integral. It is in this larger sense that I would attempt to read Thomas Aquinas=s statement that moral acts >recipiunt speciem secundum id quod intenditur.= Thus the basic category for conflict situations is the lesser evil, or avoidable/unavoidable evil, or proportionate reason.[47]

Therefore, in a conflict situation, an individual may directly

choose to do a nonmoral evil (violating the person=s autonomy, privacy, etc.) as a means to a truly proportionate good end (preservation and protection of human life).[48]

The principle of the lesser of two evils is applicable to the issue of embryo donation/adoption because one is faced with two options, both of which involve unavoidable nonmoral evils. On the one hand, failure to thaw, transfer and allow these embryos to be born would result in the death of thousands of persons. On the other hand, if the frozen embryos are not donated/adopted they will be discarded, destroyed for research purposes, abandoned, or left in "suspended animation" indefinitely, which would continue to jeopardize their life.

The direct intention of embryo donation/adoption is to protect and preserve human life by saving the lives of vulnerable at-risk embryos. It would also lessen significant hardship associated with ova harvesting, reduce the cost of infertility treatments, and would overcome the objections of couples who resist traditional adoption by allowing the mothers to bond with the child in pregnancy.[49] However, in the process of protecting and preserving human life and acting in the best interest of the frozen embryo, the autonomy of parents might be violated in that some may wish to discard the embryos, allow them to be destroyed to obtain embryonic stem cells, abandon them or allow them to stay in indefinite "suspended animation." The hope is that couples would voluntarily agree to embryo donation/adoption, but studies have shown that only 2% of couples with frozen embryos wish to allow them to be donated or adopted. About 5% are designated for destruction or research which leaves about 87% that are undecided about disposition of their remaining frozen embryos.[50] The linchpin for resolving which option is the lesser of two evils rests on whether or not there is a proportionate reason for allowing embryo donation/adoption.

Proportionate reason refers to a specific value and its relation to all elements (including nonmoral evils) in the action.[51] The specific value in allowing for embryo donation/adoption is to protect and preserve human life. The nonmoral evil, which is the result of trying to achieve this value, is the violation of the couple's right to privacy and autonomy to allow the frozen embryos to be discarded, destroyed for research, abandoned, or left in "suspended animation" indefinitely. The ethical question is whether the value of protecting and preserving human life outweighs the nonmoral evil of violating a couple=s right to privacy and autonomy? To determine if a proper relationship exists between the specific value and the other elements of the act, ethicist Richard McCormick, S.J. proposes three criteria for the establishment of proportionate reason:

1. The means used will not cause more harm than necessary to achieve the value.
2. No less harmful way exists to protect the value.
3. The means used to achieve the value will not undermine it.[52]

The application of McCormick=s criteria to embryo donation/adoption supports the argument that there is a proportionate reason for allowing these embryos to be thawed, transferred and brought to term. The bottom line is that these embryos already exist and therefore, the preservation of their lives takes moral precedence over any other consideration. First, it is estimated that the average couple who undergoes IVF has seven embryos in storage; the average storage period is four years; and 87% of IVF couples are 'undecided' as to the disposition of their remaining frozen embryos. It is estimated that 23,000 to 100,000 children could be adopted, thawed and successfully born from the 400,000 to 500,000 live human embryos stored at present.[53] Some opponents argue that these embryos are vital to embryonic stem cell research. Allowing for donation/adoption will have an adverse effect on our embryonic stem cell research program. The RAND/SART researches calculated that about 275 embryonic stem cell lines could be created from the total number of embryos available for research. However, they argue that even this number is probably an overestimate because it assumes that all the embryos designated for research in the United States would be used to create stem cell lines, which is highly unlikely.[54] Considering the new methods being proposed to obtain embryonic stem cells such as modified therapeutic cloning, reprogramming of skin cells to their embryonic stage, etc., and the condition of the frozen embryos after thawing, it appears that using these frozen embryos for research purposes would not be in the best interest of the scientific community. There are approximately 200,000 couples seeking to adopt children in the United States. The cost of infertility treatments place ART out of reach for many of these couples. Traditional adoption is also quite expensive and denies couples the chance to experience pregnancy, bonding and breastfreeding that makes the experience "theirs." Embryo donation/adoption allows

couples or single women to preserve the lives of already existing embryos which is acting in their best interest. This means gestation by a couple or a single woman who will assume full parental authority for the child. Clearly, this will bring about more good than harm, and will cause less harm than necessary to protect and save lives.

Second, at present, there does not appear to be an alternative that is as effective as embryo donation/adoption to protect and preserve the value of the human lives that are presently in "suspended animation." There are three alternatives to embryo donation/adoption: discarding of the embryos, destruction of the embryos for research purposes and allowing the embryos to stay in "suspended animation" indefinitely. None of these alternatives will protect and preserve the value of the life of the embryo. There is a concern that the length of time embryos are kept in frozen storage may have a detrimental effect on the outcome of embryo transfer and possibly increase fetal abnormalities. To date, no long-term studies have been carried out since the age of the oldest child born as a result of frozen embryo transfer 14 years ago.[55] In addition, according the Genetics and IVF Institute, "Approximately 65-70% of embryos survive thaw, 10% partially survive and 20-25% are atretic."[56] Subjecting embryos to the freeze-thaw process is placing them at significant risk of harm and possibly death. Intentionally or unintentionally, frozen embryos have the potential to be damaged and destroyed. Being in the category of having a special status, embryos deserve not to be harmed or killed. Embryo donation/adoption is the only alternative that protects and preserves the life of the already existing embryo. In the United States there seems to be a consensus that these embryos deserve special respect. This led the Ethics Committee of the American Fertility Society to conclude:

We find a widespread consensus that the pre-embryo is not a person but is to be treated with special respect because it is a genetically unique, living human entity that might become a person. In cases in which the transfer to a uterus is possible, special respect is necessary to protect the welfare of the potential offspring. In that case, the pre-embryo deserves respect because it might come into existence as a person. This viewpoint imposes the traditional duty of reasonable prenatal care when actions risk harm to prospective offspring. Research on or intervention with a pre-embryo, followed by transfer, thus creates obligations not to hurt or injure the offspring who might be born after transfer.[57]

Whether one believes the frozen embryo is a person or a potential person, it seems clear that this human entity deserves dignity and respect. The only option that would allow for this dignity and respect is to allow for the protection and preservation of the human embryo through embryo donation/adoption.

Third, embryo donation/adoption does not undermine the value of human life. One can argue convincingly that the intention of embryo donation/adoption is to protect and preserve the lives of already existing embryos that are currently in the state of "suspended animation." Those who adopt these embryos have the best interest of the embryos as their primary concern, because they wish to allow the embryos to resume their natural development and growth. The couples and individuals who bring these embryos to term are also willing to adopt these children and take full responsibility for their upbringing in the future. In many situations, couples allow for cryopreservation of embryos because it saves both time and money in the event that the previous cycle of IVF is unsuccessful. This undermines the basic value of human life, because it commodifies, objectifies and exploits these embryos. Allowing the frozen embryos to be discarded, destroyed for research purposes, abandoned or left in the state of "suspended animation" undermines the value of human life. The only possible consequence of this action is the potential destruction of human life.

The intention of embryo donation/adoption is to save lives and it has been proven through organizations such as the National Embryo Donation Center and Nightlight Christian Adoptions to be effective. This is a critical issue that must be addressed immediately because innocent lives are hanging in the balance. It seems clear that there is a proportionate reason for allowing embryo donation/adoption. It is estimated that 23,000-100,000 children could potentially be born as a result of embryo donation/adoption. Couples who are unable to afford ART would have a viable option of having a child that is within their financial means. Finally, safeguards could be put in place that would eliminate creating "spare" embryos in the future. Therefore, it is ethically justified under the principle of proportionate reason for allowing embryo donation/adoption. Embryo donation/adoption is the lesser of two evils because the greater good is promoted in spite of the potential for evil consequences.

CONCLUSION & SAFEGUARDS

Embryo donation/adoption is a complex issue that has medical, legal and ethical dimensions. Allowing for embryo donation/adoption is the only viable option that protects and preserves their human life. The other viable options: being discarded, destroyed for research, abandoned or kept in "suspended animation" indefinitely, are unacceptable because they have the potential of harming or intentionally killing these embryos that deserve special respect.

To make sure that this situation does not continue in the future, the following recommendations and safeguards are proposed:

1. Only the number of eggs to be placed in the uterus of the mother will be fertilized. Embryos must not be subjected to an intentional interruption of their natural growth and development. There will no longer be "spare" embryos subjected to cryopreservation. Only cryopreservation of gametes would be acceptable.

2. Laws and legislation must be enacted at the federal level that begins to regulate Assisted Reproductive Technologies. Having each state governed by differing sets of legislation could cause potential complications associated with the practice of donation/adoption. How each state defines jurisdiction and how each state interprets at what stage jurisdiction would begin (conception, transfer, or birth) could become highly complex. Specifically, guidelines and safeguards must be put in place that protects donors, parents, providers, and children born of ART.

3. Laws and legislation must be enacted that regulates the creation, destruction and exploitation of human embryos. Example would be the following: a) legislation established in New Mexico stating that human embryos can only be disposed of through implantation, not intentional destruction or through destructive human embryo research. b) Embryos must not be subjected to non-therapeutic experimentation.

4. Infertile couples and individuals willing to take full responsibility for the upbringing of these children should be encouraged to consider adoption of the presently existing frozen embryos.

5. Children who are adopted from frozen embryos have the right to know their genetic make-up. They should be given full access to documentation about their biological mothers and fathers so that if this information is needed in the future it is available. This does not mean they have the right to know the names of their biological parents. The right of privacy of the biological parents should be respected.

If we as a nation truly believe that human life deserves dignity and respect, then our failure to bring these embryos to term would be medically irresponsible and ethically objectionable.

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48. According to McCormick and Ramsey, (it can be argued that where a higher good is at stake and the only means to protect it is to choose to do a nonmoral evil, then the will remains properly disposed to the values constitutive of human good. The person(s attitude or intentionality is good because he is making the best of a destructive and tragic situation. This is to say that the intentionality is good even when the person, reluctantly and regretfully to be sure, intends the nonmoral evil if a truly proportionate reason for such a choice is present.((Emphasis in the original) McCormick and Ramsey, 39.
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