

Infertility and the Ethics of In Vitro Fertilization

Morgan Voulo

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Dr. Amanda Moras and Dr. Mark Jareb

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Cases of women struggling from the realities of infertility date back to the beginning of time. In the early days of human existence, a man was seen as the head of household and was responsible for performing manual labor, hunting, and providing for his family. On the other hand, the role of a woman was to bear children and take care of the homestead. Since these were the roles that became so engrained in society back then, the ability of a woman to bear a child became that much more important. The importance of having the capability of producing children took a major emotional toll on women who were infertile or unable to conceive. A lot of the times these women were viewed as worthless even though infertility of a man was just as likely. Thankfully, these structural roles have since lessened, but infertility still remains a reality for many people. Advancements in science have been made in which there are now options that can assist infertile couples in achieving pregnancies. One method in particular has gained much attention and popularity in the world of infertility known as in vitro fertilization (IVF). Thousands upon thousands of couples have sought out this treatment in desperation and a deep desire of having a child of their own. Although IVF techniques have helped women struggling with infertility achieve pregnancies for quite some time now, a more holistic approach to infertility, such as NaProTechnology, is gaining recognition in which the health of the couple is made a priority, chances of pregnancy are high, and beliefs of the Catholic church are not violated.

Reproductive rights play a fundamental role in this topic on whether IVF should be used as a viable method for treating couples with infertility. The United Nations has stated:

...reproductive rights embrace certain human rights that are already recognized in national laws, international human rights documents and other consensus documents. These rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health

in regard to their beliefs on reproductive rights of individuals (2014). In other words, the United Nations, along with other legal documents, have deemed that couples have a fundamental right to conceive children of their own and decide how many they would like to have. However, infertility stops many people from having the ability to conceive their own children. This is why scientists have developed ways that can allow for infertile couples to achieve pregnancy, such as IVF. Every single woman should be allowed the right to decide if she would like a child and should be given a fair chance at having a child if she chooses to do so. Therefore, if for some reason a woman is unable to get pregnant, there should be options available that will help her achieve a desired pregnancy. A supposed method of treatment should therefore be one whose purpose is to fix the issue that is prompting the infertility which would in theory then allow for a couple to achieve a pregnancy. Rather, IVF foregoes this route and instead bypasses the problem by placing a band aid on what can sometimes be a metaphorical gushing wound.

Infertility is more specifically defined as the inability to conceive a child after one full year of unprotected intercourse in which a couple has been actively trying to conceive (Stephens et al. 2013). The CDC has estimated that infertility affects about six percent of all married women between the ages of 15 and 44 years old (2019). This translates to be just over six million people in the United States alone that have difficulty achieving pregnancy or brining a pregnancy to full term (CDC 2019). In fact, male infertility contributes to failed pregnancies in about two thirds of these cases (Stephens et al. 2013). As mentioned, IVF has been developed by scientists as a method to help these women try to achieve viable pregnancies. However, that process is usually a long and enduring one needless to say.

Scientific Background:

A woman's reproductive system is quite complex, thereby making pregnancy a complicated process that involves many parts all needing to work together as a cohesive unit which results in the birth of a healthy baby brought to full term. The process begins with the shedding of the uterine endometrium on day one of a woman's menstrual cycle. Gonadotropin-releasing hormone (GNRH) is first released from the hypothalamus which stimulates the anterior pituitary to release two other hormones known as follicle stimulating hormone (FSH) and luteinizing hormone (LH). FSH causes a small group of follicles to develop in which one grows superior to the others and is called the Graafian follicle. The development of the Graafian follicle causes estrogen levels to rise which assists in the regeneration of the endometrium lining mid-cycle. Once estrogen reaches its peak, LH spikes in which the Graafian follicle ruptures and ovulation occurs (Roy 2019). This egg then travels slowly through the fallopian tubes where it waits to be penetrated by sperm, if any happen to be present (Planned Parenthood 2020). The cervix produces mucus that is sperm friendly and has very important functions, such as filtering, preparing, and releasing sperm prior to their arrival at the fallopian tubes (Katz 1991). Once a sperm successfully penetrates an egg, it has now become fertilized in which implantation to the uterine wall can finally occur. Infertility can therefore be the result of malfunctions occurring in any one of these steps.

IVF treatments are complex and involve a specific series of steps. The first part of the process consists of the stimulation of the woman's ovaries (Stephens et al. 2013). In other words, women are prescribed medications usually consisting of FSH and LH in order to encourage the ovaries to produce many follicles. These medications can be taken orally but are more commonly administered via injections once or twice per day for about 8-14 days, beginning on day one of

the cycle (Monash 2019). Regular blood tests and vaginal ultrasounds occur during this first phase of the process to monitor hormone levels and follicle development (Penn Medicine 2020). During IVF, the body's natural surge in LH is suppressed in order to prevent premature ovulation (Stephens et al. 2013). Instead, a trigger injection is given a couple of days prior to the egg retrieval in order to prepare the eggs for ovulation, thereby mimicking what the normal surge in LH would do (Monash 2019). Next, the eggs are retrieved via a surgical procedure more commonly known as needle aspiration which is said to be quite painful without anesthesia or pain medication (Stephens et al. 2013). This step in the process needs to be timed correctly or else immature follicles will be retrieved if the procedure is performed too prematurely or the follicles will have already reached ovulation if performed too late (Stephens et al. 2013).

The next stages of IVF include fertilization and implantation of the fertilized embryo. First, sperm must be collected from the male which are then evaluated by a scientist who collects the best ones (Monash 2019). Each egg is placed in a petri dish with upwards of 50,000 sperm in which fertilization can then occur (Stephens et al. 2013). If fertilization of the eggs is successful, the embryos can then be incubated and allowed to grow and develop over the course of a few days (Monash 2019). Lastly, if the embryos have developed as expected following fertilization, they are then considered ready to be transferred into the woman's uterus via a catheter. An embryologist will usually work alongside a reproductive endocrinologist to determine which embryo(s) should be transferred (Stephens et al. 2013). Couples can then choose to either donate their extra embryos to research, pay yearly fees to have them frozen, or discard them completely. Overall, the process of IVF is one that involves a strict and detailed use of an array of medications, constant hormone level checks, and invasive procedures (Kaliarnta et al. 2011).

If the process of undergoing IVF was not already complicated enough, the risk factors associated with this type of treatment are even more complicated and can arise in both the mother and the baby. For example, if more than one embryo is transferred to a woman's uterus during a single cycle in the hopes of increasing chance of pregnancy, multiple pregnancies can result when more than one successfully implants (Mayo Clinic 2020). This causes its own set of complications in which a woman's uterus is not meant to physiologically carry more than one fetus at a time. Of course, there are cases of natural twin pregnancies, however it is not all that common. There have been cases in the past of women undergoing IVF who have given birth to six or even eight babies at a time. Multiple pregnancies usually result in premature birth in which babies are born with low birth weights (LBW) and are therefore often times required to be placed in neonatal intensive care units to fight for their lives. For example, according to one study, "In the United States in 2004, more than 60% of IVF twins were delivered preterm and more than 50% were of LBW..." (Stephens et al. 2013). In addition, women can sometimes experience ovarian hyperstimulation syndrome (OHSS) due to the early hormone injections used to increase the number of follicles they produce (Stephens et al. 2013). This in turn causes very painful and swollen ovaries (Mayo Clinic 2020). OHSS and multiple pregnancies are the sole reason countries, such as the Netherlands, have an IVF maternal mortality rate that is higher than the general maternal mortality rate (Vélez 2012).

Ethical Concerns:

There are many reasons why a woman will choose to undergo IVF treatments. Failed attempts at pregnancy one month after the next, coupled with the deep desire of having a baby of her own, can leave many women in a very vulnerable emotional state. Out of sheer desperation and hopelessness that light does not exist at the end of this dark tunnel, these women are

sometimes quick to turn to IVF without them really knowing everything it entails or any of the risks that are involved. Often, IVF is glorified, and its success rates are highlighted to these women who are in this very emotional state. IVF lures in these vulnerable women who are quick to assume this method might be the answer they have been looking for. A study was conducted in which a group of women on an IVF waiting list were surveyed (de Zoeten et al. 1987). The purpose of this study was to gain a better understanding of the motivations and expectations these women had who were seeking out IVF. It appeared from the survey that most of the women were uninformed as to what IVF actually was and all the procedures that were involved (de Zoeten et al. 1987). The women also seemed to be overly optimistic that they would achieve a successful pregnancy even if their chances were in fact extremely low (de Zoeten et al. 1987). It became clear to the researchers that these women did not want to pass up any option available to them if it meant there was even a slight possibility they could potentially achieve a pregnancy of their own (de Zoeten et al. 1987).

Not only is IVF a complicated process, it often times takes a toll on a couple both physically and emotionally, especially for the woman. IVF has been said to be one of the most demanding options an infertile couple can choose to undergo (Kopitzke et al. 1991). A study was conducted that evaluated the emotional and physical distress women experienced during an IVF cycle compared to a normal cycle absent from IVF treatments (Boivin and Takefman 1996). Twenty married women, all in their 30s and married for around seven years, were evaluated in this study. The results of the study indicated that during the IVF cycle, women experienced a sharp rise in physical discomfort during the egg retrieval and transfer stages of the procedure (Boivin and Takefman 1996). A little less than a quarter of the women also reported that their physical symptoms were so severe that going about their normal daily activities was a challenge

for them. The women reported an increase in fatigue as well (Boivin and Takefman 1996). Emotionally, stress was heightened during the egg retrieval and transfer stages. Concurrently, there was a major decline in outreach for social support during this time in the IVF cycle (Boivin and Takefman 1996). In addition, the women seemed to experience an increase in optimism after a successful embryo transfer (Boivin and Takefman 1996). However, a successful transfer never guarantees a successful pregnancy will ensue. Therefore, one can only imagine how a woman must feel after finally feeling as if she had achieved pregnancy, only to find out a few days later or even a couple of months later that the pregnancy had failed. The emotional and physical roller coaster these women experience, especially during infertility treatments, is disheartening and usually unavoidable.

To continue, similar findings were found to be true in other studies in which IVF has been shown to negatively impact a person both physically and mentally. For example, women undergoing IVF reported feelings of intense irritability and anger as a result of the many hormone injections administered throughout the entire process (Kalinarta et al. 2011). In addition, one woman stated, “Emotionally I experienced mostly the breach of my privacy as annoying; constantly lying with your ‘lady bits’ exposed and getting all kinds of treatments down there is no fun, no matter how kind and sympathetic the doctors are” (Kalinarta et al. 2011). In other words, the constant poking and prodding by doctors in a woman’s most sensitive area can take quite the emotional toll on a person in it of itself. It is the part of the body that is meant to be shared between a woman and her partner but is now being exposed and exploited by undergoing these types of invasive treatments. Often times, these physical and emotional stressors felt by women can also unintentionally cause her relationship with her partner to deteriorate as well. Irritability, stress, anxiety, and physical pain can cause a woman to distance herself from her

partner in a negative way during a time that is supposed to be magical when bringing a new life into the world.

Women undergoing IVF treatment often times feel alienated and unable to find people they can relate to since IVF is not a normal process everyone has experienced. For example, a study was conducted to evaluate the reasons women often times turn to online forums while undergoing IVF treatments (Kaliarnta et al. 2011). The results of the study indicated that women join these online forums because they do not feel as if the support from their close social circle is adequate. Often times, friends and family are interested and try their best to be supportive, however they sometimes are hesitant by not always knowing how to approach the situation and can even lack understanding (Kaliarnta et al. 2011). The women reported that these online platforms give them a space where they can connect with other women and couples going through similar situations (Kaliarnta et al. 2011). It is not the norm for an average person to experience infertility. Most women are able to achieve pregnancy relatively easily and without complication. Therefore, for those women who do not, it is difficult for them to find people they can fully relate to. However, these online forums have been created out of necessity to provide women with a space where they can feel comfortable enough to open about all the good, the bad, and the ugly they have experienced from IVF. In turn, these women hope to gain support, hope, and encouragement from others who know exactly what it is like to endure this painstaking process (Kaliarnta et al. 2011). The findings from these studies all indicate there is a deep need for more emotional support and patient care these women undergoing treatment are not receiving (Kaliarnta et al. 2011).

Religious Concerns:

One of the main reason's an alternative, more holistic approach to infertility was developed was due to the beliefs of the Catholic Church and its stance against IVF. The main reason the Catholic Church bans IVF is due to the destruction and disposal of embryos (Mallia 2010). This includes both out right disposal of the embryos as well as donation of the embryos to research. The issue with this is that Catholics believe life begins at fertilization. So, once these embryos are created, they are immediately considered humans in which each deserves a chance at life. Although hard to imagine, embryos already contain the genetic material that codes for a person, for example a boy with blonde hair, blue eyes, who will grow to be taller than six feet (Korolczuk 2017). Church officials stand strong in their stance that "life from the moment of conception" must be protected (Korolczuk 2017). Another issue places its concerns on the freezing of embryos while they are not being used for any purpose (Mallia 2010). In other words, Catholics view the freezing of embryos as morally wrong since they are considered to be living children (Korolczuk 2017). In addition, the introduction of more than one embryo into a woman's uterus puts them at an increased risk right off the bat and already lowers the chances these pregnancies will in result in live births brought to full term (Mallia 2010). In other words, these embryos are not given a fair chance at life.

Couples who are not even Catholic have expressed their own struggles when it came to dealing with the uncertainty pertaining to the question of what to do with their left over embryos. For example, one woman who underwent IVF said, "Except that when I gave birth to my daughter, the three embryos that remained took on new meaning. Potential babies that might also have my nose" (Chawla 2016). In addition, a homosexual couple on an NPR podcast had said, "Every time we read the 'destroy' option on the form, my stomach does a somersault. It feels as

if our future children are showing up once a year to confront us” (2016). In other words, people do not have to be Catholic or follow teachings of the church to realize that the destruction of leftover embryos feels ethically and morally wrong.

An Alternative Approach:

In turn, as science continues to advance, more holistic options are becoming available to women battling infertility. One that stands out in particular was developed in the 1970s and is more commonly known as Natural Procreative Technology (NaProTechnology or NPT). NaProTechnology specializes in identifying the cause of infertility, whether that be in the female or the male, and looks to treat it in order to help a couple achieve a pregnancy naturally. This type of treatment is meant to help monitor and maintain a women’s normal menstrual cycle and restore it back to health when it is functioning incorrectly. For over 50 years, the oral contraceptive pill has been prescribed to thousands of girls and women for its “health benefits” in subsiding symptoms related to a wide array of different gynecological conditions (Hilgers 2011). The pill has been used as a way to cover up underlying reproductive problems rather than treating them. Often times, these underlying conditions covered up by the birth control pill is what is actually causing a woman’s infertility in the first place. These women then seek IVF treatment when they are unable to get pregnant in which they are just avoiding the problem altogether once again. However, NPT tries to break this cycle and instead fix the problem at hand so a woman can then in theory achieve a natural pregnancy. The ongoing avoidance of treating infertility points out a major flaw in the current approach towards infertility that has been and still is being taken within health care systems today (Infertility 2020).

NaProTechnology relies on information provided by the Creighton Model Fertility Care System (Hilgers 2011). The Creighton Model Fertility Care System is meant to identify a

woman's fertile period during her menstrual cycle. This is accomplished in which a specific chart is used to track different biomarkers of a woman's menstrual cycle each month (Hilgers 2011). For example, a woman is to track both her bleeding and dry days. In addition, it is most important that a woman is tracking her cervical mucus. Cervical mucus becomes stretchy, lubricative, or clear during a woman's fertile period which can last anywhere between one to six days depending on both the age and the fertility of the woman. During the infertile period, cervical mucus will become cloudy and non-stretchy or will be nonexistent altogether. Therefore, when a woman is able to properly track her mucus cycle, she in turn is able to determine the days she is most fertile. This allows the woman to know which days she should be having fertility focused intercourse in order to increase chances of achieving pregnancy (Infertility 2020). Typically, women are taught that they are most fertile on day fourteen of the cycle, however every woman's cycle is different in which the day ovulation occurs can vary, thereby making it difficult in knowing when to have fertility focused intercourse. Opponents will argue that tracking each cycle every day is a hassle and a nuisance, however a woman will in turn avoid painful procedures inflicted by IVF in return. In addition, couples who are motivated, as with any other fertility-based methods, will be able and willing to incorporate charting into their routine if it means their chances of pregnancy will increase (Vélez 2012).

When a woman, especially those struggling with infertility, first starts tracking her menstrual cycle, a doctor will often notice irregularities which cause reason to believe some underlying issue is present. Typically, women will notice they are having too few days of fertile mucus for their age or none at all. This thereby indicates that something is either wrong in which the woman cannot produce adequate mucus or that the woman is not ovulating. Both are serious concerns that must be addressed because pregnancy can only be achieved when an egg, sperm,

and mucus are all present. If there is no mucus, a woman cannot get pregnant. If there is no egg present, or if an egg is not released, a woman cannot get pregnant. The Creighton Model Fertility Care System is able to help point out an underlying issue is present in which NPT is then applied to try and fix the problem. For example, depending on the cause of infertility, women can be prescribed different supplements, such as B-12 vitamins, magnesium, Vitamin D₃, or calcium, all of which are important in maintaining a normal menstrual cycle (Hilgers 2011). Sometimes weight loss and abstaining from smoking are also recommended if either are applicable (Vélez 2012). In addition, vaginal ultrasounds might be prescribed in order to visualize the progression of follicle development. Surgery could also be advised if endometriosis is suspected. With this approach, NPT can be used to treat a wide array of conditions, including ovarian cysts, polycystic ovarian disease, hormonal abnormalities, and repetitive miscarriage (Infertility 2020).

NaProTechnology aligns in accordance with the Catholic Church as well. For example, the whole theory it is based upon is to restore the health and fertility of a woman, and even a man if needed, in order to help a couple achieve a natural pregnancy (Boyle and Stanford 2011). This therefore eliminates the possibility for there to be any leftover embryos and therefore does not raise the question of what to morally do in order to discard them (Korolczuk 2017). In addition, when conceiving a child naturally, the chances of multiple pregnancies is significantly lowered compared to the transfer of multiple embryos during IVF. This therefore gives the baby the greatest chance at survival. Proponents to IVF will argue that this can be avoided by only transferring one embryo into a woman's uterus at a time, however this is not a common practice since women do not want to be undergoing these procedures both physically and financially every month. Rather, these women and doctors would rather transfer multiple embryos at once to increase the chances of pregnancy in a single go around. In addition, NPT can help strengthen

the bond between a couple in which the final goal is to achieve a natural pregnancy. Infertility is an extremely stressful experience in which it can create animosity between partners and weaken a marriage since unnatural pregnancy can become emotionally taxing, as stated above. However, holistic methods look to heal the problem of infertility and increase a couple's chances at natural conception through intercourse, thereby strengthening relationships and marriages.

Artificial Versus Holistic Treatment:

A holistic approach considers infertility to be a chronic illness that requires treatment whereas IVF employs a more acute treatment strategy (Boyle and Stanford 2011).

NaProTechnology treats infertility while IVF works to achieve pregnancy in a woman as fast as possible (Boyle and Stanford 2011). NPT and its multifactorial approach to infertility has been very successful when it comes to helping couples achieve pregnancy. Although there are currently no studies that have been performed to directly compare the success rates of IVF versus NPT, NPT has helped over 70% of infertile couples achieve a natural pregnancy (Hilgers 2004). One retrospective case study evaluated three different situations in which NPT was successful in helping each infertile couple achieve a singleton birth (Boyle and Stanford 2011). The first woman had been through two failed attempts of IVF and both the second and third women had been through three failed attempts of IVF. All three women were able to achieve successful natural pregnancies resulting in live births through the use of NPT and curing their cause of infertility (Boyle and Stanford 2011).

Not to mention, the cost of IVF is astronomical compared to NPT. For example, one round of IVF can cost anywhere between \$10,000-\$15,000 depending on what insurance plans cover (Penn Medicine 2020). Typically, women will undergo multiple rounds of IVF before achieving a successful pregnancy, in which case, costs add up. In comparison, the Creighton

Model Fertility Care System along with instructor meetings only cost around a combined \$500 and then no cost thereafter once a woman knows how to properly chart her monthly cycles (FertilityCare Center of Kansas City 2020). Additional costs will vary depending on the specific treatments a woman (or man) might need in order to restore their normal health. However, investing in the restoration of fertility allows a couple to increase their chances of achieving more pregnancies, naturally, in the future at zero cost. In comparison, a couple undergoing IVF that would like more than one child would therefore need to keep undergoing these extremely costly rounds of treatment. The astronomical cost of IVF also leaves women of lower socioeconomic status at a disadvantage in which they cannot afford this method of treatment (Ombelet et al. 2008).

My personal views and beliefs cause me to align with the stance the Catholic Church has taken in this debate. After evaluating all the evidence presented, it seems obvious as to why couples should seek out a holistic based infertility treatment rather than rushing into what often times is a physically and emotionally painful process, such as IVF. Proponents of IVF would argue that IVF is necessary for women with certain medical conditions, such as tubal ligations or ovarian cancer, or for women who need surrogates. However, there are always going to be exceptions to any situation because nothing is ever black and white. In my opinion, if a couple does not suffer from these certain medical conditions and is healthy otherwise, I would strongly encourage that they look to treat the cause of their infertility in order to achieve a natural pregnancy, rather than avoiding the problem and undergoing IVF. It is much safer for both the mother and the baby and does not risk the destruction of leftover embryos, which in my opinion, are considered human lives. I strongly believe that if women had the option to achieve pregnancy

naturally or artificially, they would most likely choose naturally which is exactly what a holistic approach to infertility allows.

Last summer I shadowed a doctor at the Gianna Center, a facility that only practices NaProTechnology techniques, and was allowed to listen in on a phone call between a new patient and the doctor. What stood out to me the most and what continues to cross my mind every time this controversial topic is discussed are the words this woman said. When she got on the phone you could hear in her voice the desperation, the hopelessness, the anger, and the frustration; she said,

I felt like myself and the other women were like cattle being moved along in the IVF facility one after the next. I did not feel as if the nurses and doctors actually cared whether I were to get pregnant or not...After two years of failed IVF treatments the doctors suggested I try IUI (intrauterine insemination). I am supposed to start injections in two weeks, however something in my gut and my heart just doesn't feel right.

These women cannot continue to be treated like this or be made to feel this way. They are in their most vulnerable state and their hearts are breaking every day as they struggle and fight to have a baby of their own; something some women are able to achieve so easily. IVF has created a big gap in the field of women's reproductive health, and it is something that needs to be addressed immediately.

In conclusion, couples have been able to achieve pregnancies and have babies of their own by undergoing IVF treatments in the past. However, this method does not treat the cause of infertility, is painful, places the woman and baby at risk, causes great emotional and physical distress, and is extremely costly. A newer more holistic approach to infertility, NaProTechnology, aims to treat a couple's infertility, helps couples achieve pregnancy naturally, and strengthens unity in marriages. In the future, more research is still needed to test the exact success rate of NPT compared to other artificial infertility treatments like IVF, however it has

already proven to have great potential in becoming the next up and coming infertility treatment. All in all, women and couples all over the world struggle with the realities of infertility and it is time some serious changes are made in which other less invasive and more holistic infertility options are advocated for.

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