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Orthodox Perspectives on *In Vitro* Fertilization in Russia

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The views on in vitro *fertilization (IVF) within Russian Orthodox Christian society are diverse. One reason for that variation is the ambiguity found in "The Basis of the Social Concept," the document issued in 2000 by the Russian Orthodox Church and considered to be the primary guidelines for determining the Church's stance on bioethics. This essay explores how the treatment of infertility reconciles with the Orthodox Christian faith and what methods of medical assistance for infertility may be appropriate for Orthodox Christians. The focus here is on IVF because it is among the most widely used methods to overcome childlessness, and the permissibility of IVF is the object of disagreement among Orthodox. The article defines criteria that can help to discern what is absolutely wrong and must be avoided from what only falls short of the mark, but not very far, for Orthodox Christians. If treatment of the underlying causes of infertility has failed or promises no hope and a husband and a wife do not feel able to carry the Cross of infertility, then from pastoral dispensation they might be blessed to use ethically acceptable variants of IVF. IVF has many variants that are different in their spiritual influence on a person. Orthodox Christians pursuing IVF should seek spiritual guidance and a blessing to pursue IVF. They must not form more embryos than will be transferred in the same cycle. Freezing, discarding, or reduction of embryos is forbidden. Infertile couples ought to use only their reproductive cells. The use of donor gametes is unacceptable. Any embryo formed ought to be transferred into the wife's womb, and the use of surrogates is impermissible. Only a husband and wife who are able to maintain their marital union and where the wife is still of childbearing age should be blessed to use IVF.*

Keywords: *donor gametes, gestational carrier, in vitro fertilization, infertility, Orthodox Christian, reproductive ethics, surrogacy*

I. INTRODUCTION

Childlessness is a serious problem for families all over the world. Every seventh couple cannot conceive a child or carry a pregnancy to achieve a live birth (World Health Organization, 2004, xiii; Mascarenhas et al., 2012).[1] This inability compromises the wholeness of families: their happiness and well-being. Many infertile people yearn to have a biological child. Even Christians are often ready to use any means available, unconcerned about the implications of doing so for their vocation to unify their hearts with God. They neglect the risk of being misled into an affirmation of human self-sufficiency and omnipotence, a position that is incompatible with submission to the will of God and with trust in His Providence. Such passionate pursuits are ill-directed. Frequently, people suffering from infertility undergo extended yet unsuccessful medical treatment. From a Christian perspective, this should lead them to understand that not everything lies in the hands of man. Many infertile couples sincerely start praying and ask the Lord to give them a child, but sometimes still nothing changes. Realizing their failure in praying all by themselves, they often turn for help and guidance to the Church, a decision they should have made in the first place. From Her very origin, the Church was granted access to Divine support. But does that mean that infertile couples should limit the help they seek to spiritual means only? May Orthodox Christians also ask for medical help in order to achieve a pregnancy? If so, the question arises as to which of the medical methods of infertility treatment available today are appropriate for Christians. What in this field is sinful and what is permissible?

The present essay offers criteria to distinguish interventions that are absolutely wrong and must be avoided from interventions that only fall short of the mark, but not very far, and interventions that may be permissible under certain conditions. The Russian Orthodox Church issued a document, "The Basis of the Social Concept of Russian Orthodox Church" (2000), which reflects Her position on different social, economic, and political trends of contemporary life. Chapter XII deals with "Problems of Bioethics." Unfortunately, no clear guidance for the problem of infertility is provided. The authors encourage a certain—if limited—amount of trust in medical interventions:

> [T]he Church cannot regard as morally justified the ways to childbirth disagreeable with the design of the Creator of life. If a husband or a wife is sterile and the therapeutic and surgical methods of infertility treatment do not help the spouses, they should humbly accept childlessness as a special calling in life. (*Basis*, 2000, XIII.4.2)

The document seems to limit couples to pursuing medical or surgical interventions to treat the underlying cause of infertility rather than to bypass it with artificial reproductive technologies (ART)[2] such as artificial (or intrauterine) insemination (AI or IUI) and *in vitro* fertilization (IVF). At the same time, the document concedes that not every kind of artificial intervention is

sinful. First, it recognizes as legitimate procedures for artificial insemination by sperm from the husband, because "it does not violate the integrity of the marital union and does not differ basically from the natural conception and takes place in the context of marital relations" (*Basis,* 2000, XII.4.2). Second, they limit their opposition to methods that produce excess embryos: "Morally inadmissible from the Orthodox point of view are also all kinds of extracorporeal fertilization involving the production, conservation and purposeful destruction of spare embryos" (*Basis,* 2000, XII.4.2). This suggests that extracorporeal fertilization that does not result in the "production, conservation and purposeful destruction of 'spare embryos'" may be permissible.

Thus, the document as a whole remains unclear. On one hand, it rejects methods "being disagreeable with the design of the Creator" for facilitating conception and appears to allow only for interventions aimed at treating the causes of infertility themselves. On the other hand, it suggests that some artificial methods of fertilization may be permissible. Because of such unclarity, opinions about the acceptability of IVF vary broadly among Orthodox Christians in Russia. Some scholarly articles defend IVF under the conditions stipulated by the *Basis*, but many in Russia's Orthodox society altogether oppose IVF (Tarabrin, 2014a; 2014b). Authors on the subject range from rigorous secularists to Orthodox writers who, as a rule, have not analyzed the problem carefully, either altogether ignoring relevant medical research or using unreliable medical sources. These authors conclude that IVF should not be considered a treatment of infertility, that the involvement of third parties disrupts the intimacy of conception, and that the method should be unconditionally prohibited. For example, The Patriarchal Commission on Family Affairs, Protection of Motherhood, and Childhood (2017) issued a collection of essays by authors specializing in medicine, theology, and philosophy. The book claims to offer an important contribution to Russian Orthodox bioethics, but it fails to cite relevant medical evidence, to provide a solid conceptual analysis of the bioethical problems presented by IVF, and to integrate recent statements by the Holy Synod. Confronted by an increasingly fierce debate on this topic, The Supreme Church Council charged the Theological Committee of the Intercouncil Presence[3] with preparing a draft of a document that would clarify the position of the Church regarding IVF. In 2017, this author was appointed as a member of that Committee.

This article advances the analysis of reproductive technologies, especially IVF, to propose a properly Orthodox Christian view of their use and to offer guidance to priests and lay believers seeking permissible methods of treating infertility. It does so in two steps. First, it offers a general orientation of Orthodoxy's teaching on the family, medicine, the nature of ART (IVF in particular), and this author's conclusions about the conditions under which IVF might be considered licit for pastoral reasons. Second, it addresses ethical problems that arise in different uses or types of IVF to provide more detailed guidance for teaching and pastoral care.

II. ORTHODOX CHRISTIANITY: THE FAMILY, MEDICINE, AND IVF

The Christian Family

The Old Testament teaches that the vocation of couples is to "be fruitful and multiply" (Gen 1:28 SAAS)—to build a family. God established His covenant with Abraham in terms of promises pertaining to his offspring (Gen 17:7–9). For a Jew, the lack of offspring meant exclusion from God's covenant. Childlessness was regarded as a punishment (Gen 16:2, 20:18). Moreover, the Old Testament patriarchs were waiting for the promised Redeemer. They expressed this hope in their blessing of their sons (as Jacob's blessing of Judah in Gen 49:9–10).[4] The law of the Levirate can be understood not only as a means of saving the inheritance of the family but also as expressing the spiritual expectation of union with God, and thus also of the Redeemer. Every mother in the Old Testament hoped to become the mother of the Messiah (Walker, 1975, 479). This is why the Old Testament considers having many children as a virtue and as the norm.

The New Testament's position on marriage, first and foremost, reflects God's words, "It is not good for man to be alone" (Gen 2:18). Spouses have to open themselves toward each other, to avoid selfishness, to love one another, and in this way, by revealing the image of God in themselves, to become real persons. To do this, a spouse should keep peace in his family and so sacrifice his own interests, wishes, and goals. This is what the apostle St. Paul says: "[endeavor] to keep the unity of the Spirit within the bond of peace" (Eph 4:3 NKJV).

Therefore, the main goal of marriage is yearning for Christ and helping each other toward this goal. This is what building a small "church" means. St. Gregory the Theologian (A.D. 329–390) writes, "Composing one flesh, spouses have one soul. Marriage does not draw [the couple] away from God but brings [them] closer to Him" (St. Gregory of Nazianzus, 2001, 99). If a couple is infertile, then, in spite of the lack of a child, marriage still can fulfill its Divine purpose. Infertility does not hinder a couple's Divine vocation. For this reason, we could say that a marriage can realize its mission without children. However, infertility remains difficult to accept. All prayers of the Orthodox marriage rite envision rich progeny. At the rite we pray: "The wife shall be as a fruitful vine on the gables of thine house," and we ask, "That there may be vouchsafed unto them chastity, and fruit of the womb for their benefit, let us pray to the Lord" (Book of Needs, 1894, 61). The ceremony recognizes that children are a source of happiness and a great blessing: "That they may be rejoiced in the beholding of sons and daughters, let us pray to the Lord" (Book of Needs, 1894, 61). And finally, in the marriage rite we pray that God bless the family with children: "Remember, O Lord our God, thy servant and thine handmaid and bless them. Give them fruit of the womb, fair children . . ." (Book of Needs, 1894, 65). Thus, childlessness is a great burden for any Orthodox family.

Responding to Infertility

Given these considerations about marriage and children, what would be a properly Orthodox response to infertility? First, the Church offers Her traditional teaching designed to help Christians to accept their plight as their God-given Cross, and thereby to find peace in Christ. Such willing submission might even work its own miracle in enabling spouses eventually to conceive a child naturally. Second, even while offering such submission to the will of God, spouses are encouraged to use the spiritual means provided by the Church in support of their legitimate wish to have children. Infertility may be a consequence of previous sins. For instance, fornication may result in sexually transmitted infections and tubal obstruction, while an abortion may result in intrauterine adhesions, both of which hinder pregnancy. Childlessness might result from spouses having willfully delayed child-bearing because they had prioritized worldly goals, such as exclusive enjoyment of each other or building up professional careers. Given such serious sins, spouses should repent, confess, and mend their ways in order to be able to hope for healing of both their bodies and souls. Even when infertility is not the result of a life outside of God, spouses should intensify their participation in the mysteries of the Church. A more focused life in the Church will bring them closer to God, Who is the real healer of all human disorder. Moreover, it is He who blesses a family with children. Therefore, spiritual means such as prayer, Confession, Communion, Holy Unction, and Holy Matrimony, that is, coronation rites, for those who are married without the blessing of the Church, should be the first steps in treating infertility for Orthodox Christians.

Now, does that exhaust their options? Do they really just have to pray and wait, simply relying on God? Answering this question requires, first, attention to the more general matter of the role of medicine in the Christian life.

Orthodox perspective on medicine

Orthodoxy sees medicine as God's gift to man. As Scripture says: "And keep in touch with your physician, for the Lord created him" (Sirach 38:12). St. Basil the Great recalls this statement with even greater clarity in his Long Rules:

> In as much as our body is susceptible to various hurts, some attacking from without and some from within by reason of the food, and since it suffers affliction from both excess and deficiency, the medical art has been vouchsafed us by God. (1999, 331–332)

The holy father explains that God gave us medicine to help us because our bodies were defiled after the Great Fall: "We were united with the pain-ridden flesh doomed to destruction because of sin and, for the same reason, also subject to disease, the medical art was given us to relieve the sick, in some degree at least" (St. Basil the Great, 1999, 331). Adam's deviation from God deprived him of God's grace, which previously had supported the human

body. Disease presents one of the consequences of the disruption of man's relationship with God after the Fall. By invoking the therapy God imposed on Adam, "In the sweat of your face you shall eat bread" (Gen. 3:19), St. Basil develops the Orthodox view on medicine. If we were still living in Paradise, he explains, we would have no need of the farmer's labor and toil, but now we are obligated to work and to pursue different ways of earning our livelihood. The same holds for medicine. If we were still in the state of incorruption that marked our first creation, there would be no need for curing our bodies. After the Fall, we must ask for help from physicians, and we may do so because the herbs and minerals from which medicine is made have been given to us by God. So, if a person needs help in healing a disease, merely passive reliance on God's miraculous help is not acceptable, because Scripture says, "You shall not tempt the Lord your God" (Mat 4:7). This brought some honored elders to conclude that every human has a duty to go to physicians because otherwise they tempt the Lord (Krestiyankin, 2007). God has given us a treatment to alleviate our suffering in order to enable us, once again, to move closer to Him. We should avail ourselves of the gift God has offered us.

Such efforts of approaching God are necessary not only to heal the body but to develop our souls. Often, medical treatment takes time and involves hardships. In this way, we can be purified from passions and sins and can perfect the virtues. We need to learn how to love one another, to forgive one another's trespasses, and to pray to the Lord. In most cases, we know how far we are from perfection in these regards, and that we are not ready for Eternity. Pursuing medical help can provide us with another chance to learn about a real Christian life. St. Basil looks at medicine as a parallel for treating a soul: "We must take great care to employ this medical art, if it should be necessary, not as making it wholly accountable for our state of health or illness, but as redounding to the glory of God and as a parallel to the care given the soul" (1999, 331).

He claims two things. First, as a Christian treats his body with diligence, avoiding what is harmful (e.g., spicy meals in case of an ulcer) and accepting the discipline of what is useful (e.g., medications prescribed by a physician), in like manner he should choose what is right and useful for his soul to be developed. Even if sometimes a chronic disease takes a long time to overcome, people are encouraged to be patient, waiting also for progress in their spiritual development. The image of care for the soul encourages patience in accepting medical care for the body. Second, the real healer of our bodies is not a physician, but God. He gives medicine the power to cure. He indeed uses doctors' hands and actions to help people to recover. So, the One to Whom we have to offer thanks and to Whom we must direct our hearts and bodies is God, not our doctor.

Such fatherly advice is necessary because of an inherent risk. In some sense, diseases are unavoidable, but with Christ our death has become our gate toward life with God. All the saints yearned for death, because it would

liberate them from their fallen body and allow them to be totally united with Christ. St. Paul said, "having a desire to depart and be with Christ, which is far better" (Phil. 1:23). If we set our mind on nothing beyond curing our body and staying alive in this world, we may deprive our eventual death from opening up our union with Christ. In such an ill-directed pursuit of medical help, the physician, not God Himself, will be regarded as our healer, our hope, and finally our aim.

Reminding us that an exaggerated care for the body may mislead people, St. Basil holds that some medical interventions should be avoided by Christians because they distract them from their eternal goal: "Whatever requires an undue amount of thought or trouble or involves a large expenditure of effort and causes our whole life to revolve, as it were, around solicitude for the flesh must be avoided by Christians" (1999, 331). In order to achieve the eternal goal of union with God, a man suffering from sickness as a result of his own improper life may and even should use medicine so that with cure of his body he treats and develops his soul: "Who have contracted illness by living improperly should make use of the healing of their body as a type and exemplar, so to speak, for the cure of their soul; since abstention from that which is hurtful according to the rules of the medical art, the observance of prescriptions, are of advantage to us also [in the spiritual life]" (1999, 336). The art of medicine is a gift given us by God in order to relieve our body afflicted by the Fall and, when used properly, to help our soul to be developed.[5]

What does the Orthodox perspective on medicine imply for medical treatment of infertility? What conclusions can we draw from the teaching of St. Basil the Great for the use of medical interventions designed to facilitate conception?

Infertility as a Disease

The International Glossary on Infertility and Fertility Care defines infertility as a disease characterized by the failure to establish a clinical pregnancy after 12 months of regular, unprotected sexual intercourse or due to an impairment of a person's capacity to reproduce either as an individual or with his/her partner (Zegers-Hochschild et al., 2017). Fertility interventions may be initiated in less than one year based on medical, sexual, and reproductive history, age, physical findings, and diagnostic testing. Infertility is a disease, which generates disability as an impairment of function (Zegers-Hochschild et al., 2017).

Some conditions may hinder gametes from coming together: 45% of such cases arise from women's diseases (e.g., tubal obstruction, polycystic ovarian syndrome, uterine myoma, etc.); 30% are caused by men's diseases (e.g., prostatitis, infections, underdevelopment of testis, endocrine disorders); and approximately 25% of infertility cases proceed from undiscovered reasons (Blundell, 2007).

Variants of Infertility Treatment

Many medical procedures have been developed to cure the pathological causes of infertility so as to enable people to conceive naturally (Lindsay, 2015). In the case of men, obesity, alcohol abuse, and heavy smoking can affect semen quality and should be eliminated. In some cases of endocrinopathy, hormone-therapy is indicated. In the case of varicocele, surgery has shown positive effects (Jungwirth et al., 2012). Antioxidants have been shown to correlate with higher live-birth rate (Jungwirth et al., 2012). For women, in cases of polycystic ovarian syndrome, obese women may lose weight and use medicine for ovulation induction (such as Clomiphene citrate and Metformin) (Vause et al., 2010). Ovulation may be stimulated in an anovulatory woman with gonadotropin. The next step might be laparoscopic ovarian drilling (Vause et al., 2010). The goal of these interventions is to eliminate the underlying causes of infertility and allow for natural conception.

When such methods fail, a couple might be offered IUI. This procedure is an ART that facilitates conception by bypassing the underlying cause of infertility. Often, however, all such methods of infertility treatment fail and IVF, the most effective and widely used ART, is recommended. IVF is a method of helping a sperm-cell (spermatozoid) and an egg (oocyte) to meet outside the body. These cells are derived from the man and the woman, and then they are combined in a Petri dish ("*in vitro*"). An embryo, once formed, is then transferred into the woman's uterus, where a pregnancy might occur.

A critical question for evaluating IVF from an Orthodox Christian perspective is this: Is IVF a method of medical healing so that St. Basil's teaching on medicine can in fact be applied? There is no agreement among Orthodox bioethicists in Russia on that issue for three reasons.

Is IVF a medical intervention in the narrow therapeutic sense?

Some Russian bioethicists take IVF not as a treatment of infertility but as a means to overcome or bypass it. They conclude that IVF does not qualify as a therapeutic intervention to which Holy Scripture, "And keep in touch with your physician, for the Lord created him" (Sirach 38:12), applies. Indeed, IVF does not treat infertility as a disease because it does not cure or ameliorate the underlying source of the problem. It bypasses obstacles that hinder the fusion of a sperm cell and an oocyte. On the other hand, IVF might be considered to be therapeutic after all, since other widely accepted medical treatments also do not in fact target a disease but seek to overcome its causes or to alleviate its effects. We might think here of the implantation of cardiac pacemakers, the use of insulin injections for persons with diabetes, kidney transplantation and palliative care for people with life-limiting illnesses. Given these considerations, there are no good reasons to hold that

IVF is less therapeutic than other interventions that are already recognized as such and that also do not resolve the underlying medical condition.

Does IVF affect human beings' reproductive calling?

Sometimes, IVF has been accused of changing the way in which people are called by the Lord to pass on human life (Aksenov, 2017, 417). Some Russian bioethicists say that God's blessing in Paradise "to be fruitful and multiply" (Gen 1:28) implies that conception must occur only through intercourse. They rely on the Roman Catholic view that conception must express the interaction between two persons—husband and wife—in intercourse only (Sgreccia et al., 2002, 241). If conception is not naturally achieved but is a result of technical means such as IVF, then a child formed might be created out of God's blessing and so might have his ontological status changed (Sgreccia et al., 2002, 417–418). On this view, the human being formed after IVF might not have the "image of *God*" and thus might be deprived of his path to salvation. In addition, they compare IVF with cloning, holding these techniques to be unnatural and without the parent's interaction, rendering the human being formed after either IVF or cloning as not a real human. Thus, both these techniques have to be forbidden. Correlating IVF with cloning shows that many in Russian Orthodox society see IVF as an unnatural act, "disagreeable with the design of the Creator of life" (*Basis,* 2000, XII.4.2). This argument can be contested. Although IVF is unnatural, in IVF conception itself occurs in the same way as it does with parents who conceive naturally, namely, through the fusion of oocyte and spermatozoid. In cloning, the formation of a new human is totally different. IVF and cloning are not equivalent.

Here, we can recall other modes of human appearance. Naturally, a human being can spring up not only in conception. A zygote formed can split into two or more parts early in development, giving rise to monozygotic twins (or triplets and so on). The additional persons form not directly as a result of conception. Nevertheless, monozygotic twins are persons each bearing his own image of God, as recognized in patristic writings. St. Gregory of Nyssa (1892) and Pseudo-Basil (1992) discussed how the first people (Adam, Eve, and Abel) came into existence. They showed that Adam had no birth, Abel was born like every human being after the Fall, but Eve was split off from Adam. In particular, St. Gregory of Nyssa writes "the idea of humanity in Adam and Abel does not vary with the difference of their origin, neither the order nor the manner of their coming into existence making any difference in their nature" (1892, I§35, 81). IVF and natural conception are not different ways of human beings coming into existence since both involve gamete fusion.

Does IVF interfere with the mystery of the origin of new life?

Many Russian Orthodox bioethicists worry about interfering in a mysterious process—the origin of a new life (Aksenov, 2017, 417). They refer to Scripture:

"My bone You made in secret was not hidden from You" (Ps 138:15). Here, the mystery of human procreation is highlighted in a way that motivates their rejection of IVF. It would be better if the mysterious process of conception were not interfered with at all. According to St. Basil's words, fallen human beings need help. Surely, we should use only treatments that interfere with God's created order as little as possible. For example, IUI is preferable to IVF because in IUI a physician only inserts the husband's sperm into the wife's uterus and conception itself occurs in the fallopian tubes as it ordinarily would.

In some cases, however, IVF may be the only alternative that can lead to pregnancy. Women with severe tubal-peritoneal factor infertility may have a complete blockage of the fallopian tubes or the tubes may be completely absent. Sometimes male infertility results from low sperm count. In all such cases, IVF offers the only opportunity for pregnancy. In such cases, conception *in vitro* might be regarded as ethically permissible, provided that it does not disrupt marital intimacy. Presupposed, of course, is that egg and sperm come from the married couple exclusively (see below). In spite of being involved in the process of conception, the physician's role does not amount to a third party compromising the intimacy of marriage. He merely helps to bypass obstacles hindering the meeting and fusing of gametes. In IVF, a physician facilitates rather than disrupts the intimacy of husband and wife.

To sum up our answers to the three questions, we can regard ART as medical treatment, and therefore we can apply here St. Basil's advice on medicine. In principle, infertile couples may use not only surgical or medical interventions aimed at addressing the underlying causes of infertility, but also IVF. Through "healing of their body" in ART, spouses become parents. Outside a monastic life, nothing brings us closer to God than the pleasures and difficulties of raising children. Nothing so humiliates us as parenthood. In such a way, even those who benefit from IVF on their way to parenthood receive "a type and exemplar . . . for the cure of their soul" (Basil, 1999, 336).

Still, while IVF may be in principle permissible, it raises ethical concerns that are discussed in detail below. These include the possibility of embryo damage, third-party involvement in conception, and the fact that the development of IVF involved the killing of many embryos. Some variants of IVF can involve production of excess embryos, gamete donation, or gestational surrogacy, all of which distort spouses' path to God and His Realm. As noted below, some IVF protocols are more dangerous than others. Husbands and wives need to discern, with their spiritual father, which ethical concerns would hinder their union with God and are forbidden, and which of them fall short, but not far from it. Couples should use IVF only with their spiritual father's blessing.

The need to preserve our pious awe in view of the mystery of human procreation reminds us of the fact that it is better not to intervene into God's created process of the origin of a new human life. But the question

immediately arises: better than what? Surely, pious awe is a virtue that should be nurtured. For a pastor of souls, however, love for suffering people is more important. Here, we turn to the issue of pastoral responsibility for human souls. How should an Orthodox Christian priest respond to childless couples who come for his advice? Following Christian love for the couple that suffers from infertility, are there some cases when a pastoral dispensation allowing the use of IVF is required?

Infertility as Family Burden

Infertility presents a burden for many infertile families. To decide whether ART is permissible for an infertile couple in a given case, we have to distinguish among different types of infertility. The first one is caused by disease that leads to reproductive disability as the result of an impairment of functions needed for conception. In such cases, infertility can be regarded as a disease and be treated. The second type of infertility, social infertility, is very different. For example, consider a woman in her 50s who cannot become pregnant. She may be in her postmenopausal period; her ovaries having stopped functioning naturally. There is no medical problem in such a case, and ART would not be considered medical treatment of disease. Similar cases concern homosexual relationships as well as single persons. Here, childlessness is not pathologically caused but a consequence of social choices. It would be ethically impermissible to seek medical help to treat that which is not a medical problem.

Nevertheless, even in the case of pathological infertility, some Russian Orthodox bioethicists oppose the use of IVF because they look at childlessness as a Cross given to spouses by Our Lord Himself (Filimonov and Toropkova, 2017; Lyaush, 2017, 438). Invoking the "Basis of Social Concept of the Russian Orthodox Church," they argue that if standard medical or surgical therapies to treat the underlying causes of infertility do not help, infertile couples should accept God's Will and carry their Cross. They quote the guidance offered by Holy Elder Paisios the Athonite (2002, II.1) and of Archimandrite Ioann (Krestiyankin, 2007), both very famous and honored in Russia.[6] Yet, in parishes in Russia today, few of those whom priests care for are able and willing to accept the Cross of childlessness. In addition, even independently of childlessness, the institution of marriage is in deep crisis. Spouses can no longer endure sustained problems. Even Christians get divorced because of disagreements or temptations. Within this already compromised environment, infertility becomes even more difficult to bear. A priest charged with guiding such couples bears a higher responsibility. His task of helping people toward getting closer to Christ and save their family requires great discernment.

What should we do as pastors when we encounter couples who are unable to conceive a child for a long time and are not spiritually mature enough to

accept that Cross? How far can we as pastors go with our demands, without driving weak believers into desperation, divorce, or turning away from the Church? Here, we have to weigh the importance of the pious awe with which we should regard procreation against our pastoral duties. A pastor faces people who were sent to him by Christ Himself. He will have to account for every soul entrusted to him on the Day of Judgement. He must direct them toward God, and this can be achieved only in the Church's way in accordance with the Scripture's words: "take heed to yourselves and to all the flock, among which the Holy Spirit has made you overseers, to shepherd the church of God which He purchased with His own blood" (Acts 20:28). Any soul that abandons the Church will be lost. Even pious awe can become wrong if it loses the soul of a brother.

Thus, if (1) a conservative medical treatment of a disease that led to infertility has failed or promises no hope; (2) the question of assisted reproduction technology has been posed; and (3) a husband and a wife do not feel able to carry their Cross of infertility during their whole life, then from pastoral dispensation, from *oikonomia,* they might be blessed to use *ethically acceptable* reproductive technologies. An additional word of caution is in order. Pastoral responsibility also imposes the need to keep infertile spouses from a much greater desperation. A pastor blessing them to use IVF should warn them that IVF often fails. Even if they start using it, they ought to be ready to cope with the risk that God might not bless them with a child and that all their attempts might fail. The danger is that, being weak in faith before using IVF, spouses might fall into great depression and separate from God entirely if IVF fails. This is why the pastor must prepare them to entrust themselves to God whole-heartedly and rely on His Providence regardless of using IVF. Here he can remind them of St. Paisios' words, "Human wishes and God's will aren't the same" (2002, II.1). Such consideration might become especially necessary when not one but several attempts of conception with IVF have failed. In such a case, the pastor ought to support infertile couples with even greater care. When all technology fails, he must help the family to stop their efforts and look for God's real Providence in this situation.

The use of IVF in response to secondary infertility is more complicated. On the one hand, such spouses have already had a child or children. Their inability to achieve an additional pregnancy should be comprehended as God's Providence to stop reproduction. On the other hand, banning IVF in every case of secondary infertility does not seem to be the right solution. There may be some cases where IVF might be permitted, even for second and subsequent children, such as in the case of spouses who have had children in previous marriages and have no common one. Or, in the case of complete tubal obstruction, IVF is the only way to get pregnant. Just as such a couple had to conceive their first child with IVF, so too may a priest bless their use of IVF to have more children. When secondary infertility is something new for the couple, however, having had a child previously without IVF, it should

be regarded as God's Providence to stop reproduction. In such cases, IVF might not be permitted to achieve additional pregnancies. Secondary infertility should be discussed with the priest to try to discern what dangers are waiting for spouses in their spiritual way.

Working with couples seeking pregnancy is demanding. It should not be undertaken by a careless priest. The best solution would be to resort to a spiritually experienced elder who can discern God's Providence in concrete situations. Unfortunately, we have very few spiritually experienced priests and far fewer real elders. In order to solve their problem, infertile spouses can and even ought to appeal to their spiritual father or, if he is unreachable, to a priest they can rely on and who prays for them. Regular spiritual and personal communication with the priest will help infertile families to overcome every difficulty concerned with the use of IVF and keep their hearts directed toward God and His Kingdom in the Church.

Having thus secured a general orientation in view of infertility, medicine, and IVF for Christians, we must now turn to the more particular ethical problems involved in some kinds of IVF.

III. A MORE DETAILED ACCOUNT OF ETHICAL PROBLEMS INVOLVED IN DIFFERENT KINDS OF IVF

IVF as Infertility Treatment

IVF generally is seen as the most successful treatment for infertility. As mentioned already, many Russian Orthodox regard it with suspicion because of the ethical problems it presents. IVF comprises many different techniques and can be used in different ways by different people. Some of these techniques and uses present more serious ethical problems than others. This section distinguishes the techniques and uses that may be permissible with pastoral dispensation from those that must be avoided completely from an Orthodox perspective.

A List of Ethical Problems With IVF

Objections to IVF from an Orthodox perspective can be grouped into six categories. Those problems are described here, and they are examined critically in the next section to evaluate the permissibility of IVF.

First, IVF was developed through a great number of experiments with embryos. To get a clear picture of the number of experiments needed, we can recall that the first child, Louise Brown, was conceived by IVF and born after almost 10 years of embryo experimentation. Thus, many embryos died in the process of developing IVF.[7]

Orthodox anthropology recognizes any human being to be a person from the moment of conception, that is, from the fusing of a spermatozoa and an oocyte. Embryos are persons. Although they do not yet have hands, legs, a

heart, or a brain, they carry the image of God. The image of God cannot be reduced either to any human feature or any human capacity. A person as an image of God transcends nature; he is placed above nature, even while yet unable to fully use all human capacities. This is why experiments that destroy embryos constitute murder. The good results of IVF today were achieved through murder. Does that make the procedure itself unacceptable?

Second, today, IVF almost always involves the use of hormones to stimulate superovulation, allowing a woman to develop many oocytes in a single cycle. There are two reasons for the practice of deriving many more eggs than necessary. The first regards the woman, who should not unnecessarily be burdened by repeated oocyte retrieval procedures, which are both expensive and risky. The second reason is to increase the chance of achieving a pregnancy. The total probability of pregnancy in several attempts of embryo transfer, called the cumulative pregnancy rate, is always higher than the rate per single transfer. Thus, there is a desire to have numerous embryos available to transfer over time to increase the likelihood of achieving one pregnancy. Usually all of the oocytes retrieved after superovulation are fertilized so that a great number of embryos are formed. Most of these embryos will be frozen or even discarded. Typically, only one or two of them are likely to result in a pregnancy and eventually to be born (SOGC-CFAS, 2008).

Regardless of recent increased success with cryopreservation techniques, freezing remains deeply troubling. As a randomized-controlled trial showed, the postwarming embryo survival rate is only 89% (Fasano, 2014). The best result of survival after the freezing procedure, approaching 95%, is reported in another trial (Cobo et al., 2012). Even a mere 5% loss of embryos implicates cryopreservation in a sort of homicide. Freezing seems to be wrong even when no embryos die in any given case, because the procedure itself influences embryos and undermines their quality (Fasano, 2014). Embryo quality affects the likelihood of implantation and so the likelihood of an embryo's survival (Gallardo et al., 2016). Freezing unnecessarily threatens embryos with injuries, so it is morally wrong to use this procedure, even if no embryo will die after it is thawed. The risk of harm or death to which freezing exposes embryos is unacceptable.

Someone defending cryopreservation, on the other hand, might argue that the nonsurviving embryos might die not because of having been frozen, but because of defects that are incompatible with life. Such deficient embryos would fail to develop even if successfully transferred into a uterus. A conscious human intervention differs from a natural process. Moreover, in selecting prospective embryos for transfer based on which ones are thought to be of the best quality, physicians practice a kind of eugenics, that is, they attribute value to the life of some embryos over and against others. This is especially true when such selection is informed by characteristics of the embryo, as is done in pre-implantation genetic diagnosis. Such selection is unethical.

Freezing raises one more ethical concern: the increasing number of embryos stored in cryo-banks. We could hope that stored embryos would be used during subsequent IVF cycles and that parents would decide to have additional children. However, studies show that 70% of parents with frozen embryos postpone making decisions about their fate for 5 years or more (McMahon et al., 2003), only 54% are ready to use them for the next pregnancy (Lyerly et al., 2010), and only about 4% of all frozen embryos undergo further thawing (Camus, 2004, 24–26). As a result, the number of frozen embryos is constantly increasing. The total number of frozen embryos is difficult to estimate. According to available data, in the United States alone in 2002 about 400,000 frozen embryos were stored (Hoffman et al., 2003). By 2018, the United States estimate was 1 million (Gleicher and Caplan, 2018, 139–141). What should be done with frozen embryos? How long can they be kept? What should we do if parents stop paying for the storage of embryos, or if they simply disappear?

Third, IVF involves a third party in the process of conception. Orthodox Christians know from Scripture that the purity of the marriage bed (Heb. 13:4) must not be defiled. What does "marriage bed" imply? It refers to every aspect of the way in which the marital companionship is expressed corporally: intercourse, acceptance of the semen by the wife, and the bearing of a child by the wife. The sexual encounter is thus not the only relevant component of "marriage bed." Spouses, once they are united by the marriage rite, might abstain from such encounters entirely, yet still form a family, mysteriously combined in one flesh. IVF is taken to risk defiling the marriage bed because it disrupts the intimacy and unified wholeness of conception.

Third-party involvement in IVF can occur on several levels: the involvement of a physician in medical procedures, gamete donation, and surrogacy. Should every such involvement be regarded as a grave distortion of marriage and its role for the spouses' path to salvation? The proper Orthodox perspective offered in the next section will address the differences among these potential third-party involvements.

Fourth, the method of obtaining semen for use in IVF raises ethical concerns. Usually, semen is obtained through masturbation. The Orthodox Church recognizes this as a sin. That is why some bishops of the Russian Orthodox Church consider IVF to be inherently wrong, even outside of excess production and destruction of excess embryos.

Fifth, IVF allows for reproduction outside of a union of husband and wife, such as by a homosexual couple or single persons. Before IVF, single persons and homosexual couples were limited to adoption. Now, IVF allows homosexual couples to have some semblance of natural reproduction. Lesbian couples can have normal pregnancy with the use of a sperm donor, although the child will be the genetic child of only one of the women. Gay men can use a gestational surrogate and an egg donor to create "their own" baby, though again the child will be genetically related to only one of them. Single

women may use donor sperm to become pregnant, and single men may use an egg donor and surrogate to have a child. The possibility of reproduction outside of the union of a married man and woman disrupts the traditional understanding of the family. In this way, IVF can weaken the traditional family model within society.

Sixth, IVF may negatively affect the health of the mother or children conceived by IVF. For women, the main complication of IVF is ovarian hyperstimulation syndrome (OHSS). This is an iatrogenic complication of the controlled ovarian stimulation required for retrieving additional oocytes. Although OHSS may occasionally happen spontaneously (Di Carlo et al., 2012), the great majority of cases of OHSS likely are due to controlled ovarian stimulation (Nastri et al., 2015). It is reported that "the moderate and severe forms may occur in 3% to 10% of all ART cycles, and the incidence may reach 20% among high-risk women undergoing ART" (Nastri et al., 2015).

The next no less important but remote complication is a risk of different types of cancer connected with hormone stimulation. At first, it was suggested that the use of drugs for ovarian stimulation might increase women's risk of cancer (Whittmore, Harris, and Itnyre, 1992; Rossing et al., 1994). Further extensive surveys offered no clear evidence in this regard. For example, extensive Israeli research found "no significant relationships of IVF exposures to the risks of breast, endometrial or ovarian cancers" (Brinton et al., 2013). Still, a whole-population cohort study of women seeking infertility treatment in Western Australia between 1982 and 2002 showed that women "undergoing IVF treatment are at increased risk of being diagnosed with borderline ovarian tumors" (Stewart, Holman, and Finn, 2013, 372–376). Another recent trial revealed no statistically significant relationship between infertility and ovulation induction drugs with the risk of breast cancer but noted "significant increases in the risk of breast cancer among patients who had used fertility drugs for >6 months" (Teheripanah et al., 2018).

Some studies have found that children conceived through IVF may be more vulnerable to inherited diseases. For example, in 2012, a meta-analysis of 46 surveys assessed birth defects in 124,468 children who had been conceived by IVF or ICSI. The pooled risk of birth defects in assisted reproduction conceptions increased 1.39 times in comparison with spontaneously conceived children. The highest increase of birth defects concerned the nervous system, which occurred twice as frequently as among naturally conceived children (Wen et al., 2012). May we use medical interventions that could undermine someone's health, especially the health of a future child?

The ethical problems identified are important and serious. They can distract spouses from their path toward the Divine grace, hindering their communication with God. Nevertheless, are such arguments sufficient to render IVF illegitimate for an Orthodox in all cases?

A Properly Orthodox Answer to the Ethical Issues Raised by IVF

The objections raised above to IVF are examined here to assess whether they render IVF always impermissible from an Orthodox perspective or whether, as I argue, some careful uses of IVF are permissible.

Historical argument

In response to the historical argument against IVF, that is, that the development of the method involved many embryo deaths, notice that IVF does not use any parts of previously killed embryos nor does IVF necessarily involve killing embryos. It is not altogether illicit to use for a good purpose something even if that something was developed by illicit means. If someone develops a medical technique by improper means, this does not necessarily make it illegitimate for another to use that same technique in a proper way. However, we must be careful with this. As H. Tristram Engelhardt, Jr. argued:

> There is no bar in principle against using for a good end something that has been acquired by heinous means, as long as one has not been involved in (1) employing these evil means, (2) encouraging their use, (3) avoiding their condemnation, or (4) giving scandal through their use. One can drink water from a well that was dug by unjustly forced labor. However, one must be very careful neither to endorse nor to encourage any illicit circumstances or means. Great spiritual discernment will be needed, and any use of such materials must at the very least be approached penitentially as a concession to human weakness. After all, the postponement of death and the pursuit of health should never become all-consuming obsessions. (Engelhardt, 2000, 261–262)

Killing embryos

No doubt, any killing of embryos during the application of IVF today remains a problem. Such killing may result from:

I. Superovulation and the fertilization of more oocytes than will be transferred for gestation in a cycle. The excess embryos are discarded (homicide) or frozen. Those that are frozen may be left in storage indefinitely or die during re-warming, risking homicide.
II. Unintentional exposure to death during or after transfer.
III. Reduction (i.e., murder by abortion) of "redundant" transferred and implanted embryos.

Let us go through each of these cases.

Superovulation and the production of excess embryos. Superovulation should be avoided in order to avoid the temptation to create surplus embryos. Wherever it is unavoidable, for example, a woman having problems with oocyte maturation, only as many eggs should be fertilized

as will be transferred,[8] and all the other eggs can be frozen. The freezing of nonfertilized oocytes is ethically very different from freezing fertilized oocytes (embryos). Since the pregnancy rate of one cycle of IVF is quite low, additional attempts of IVF might be necessary. Repeated hormone stimulation for oocyte retrieval is risky for women's health. Obtaining many oocytes in one cycle of IVF can help avoid such risks. In such cases, only one or two eggs should be fertilized, so that all embryos can be transferred. The other oocytes can be frozen and used for future IVF attempts. There are some trials showing the same pregnancy rate for cryopreserved oocytes and fresh ones (although they studied ova of healthy donors, so the real results of frozen oocytes of women with infertility can be different) (Cobo et al., 2011; Cobo and Diaz, 2011).

When excess embryos are created, some may be discarded (and thus killed) because they are considered to be of poor quality. Others might be frozen. They may deteriorate, that is, be damaged by freezing. Even though cryopreservation of embryos is in general ethically wrong, some situations can arise that justify the procedure. There are rare cases in which embryos already have been created and, due to an unforeseeable emergency, they cannot be transferred as scheduled. An inflammation of the endometrium (the inner layer of a uterus where implantation has to occur) is an example. The inflammation would bar implantation and an embryo already formed would be threatened with death. In such very limited cases, after fertilization, the embryo transfer should be postponed. In order to save the embryo, it should be cryopreserved, but this exception should never be seen as justifying the creation of more embryos than one will transfer in a given cycle.

Embryo transfer. When an embryo is formed, it needs to be transferred into the uterus for implantation. During that process, embryo loss can occur. Some commentators regard such risk of death during implantation as sufficient for establishing the illegitimacy of all IVF. After transfer, only about 40% of the embryos survive and result in pregnancy. Since already a 95% success rate in freezing embryos was not considered sufficient to repudiate its illegitimacy (as pointed out above), how could one consider the much lower success rate of IVF in fresh cycles as a basis for accepting the procedure? The death of embryos after their transfer into the uterus differs significantly from the loss of embryos during freezing or thawing. First of all, the act of transferring them places embryos in their natural environment where they have the possibility of continuing to develop, whereas freezing puts them into a freezer where they may be damaged, left indefinitely, or destroyed later. Second, after transfer, natural processes kick in. These processes may lead either to a pregnancy or else to the death of the embryo. Here, death occurs naturally, often because an embryo's genotype is unable to express features needed to continue its life. Nagaoka, Hassold, and Hunt (2012) studied the mechanisms of human

aneuploidy—the presence of abnormal numbers of chromosomes.[9] He showed that the rate of different types of aneuploidy decreases over time of pregnancy. More complex genetic defects result in embryo deaths earlier in development. This explains the high level of pregnancy loss during both the implantation period and the first weeks of gestation for naturally conceived embryos. Although such deaths occur naturally and a pregnant woman is not responsible for causing her child's death, the Orthodox Church has long held that even involuntary involvement or proximity to the death of another can harm the soul and requires repentance (Engelhardt, 2000, 275–83).

Although fresh embryos transferred into a uterus may die, the purpose of the transfer is to allow them to continue to grow, not to kill them. The natural selective processes are independent of the medical intervention. Cryopreservation, on the other hand, risks harming embryos. Or, to put it another way, transferring embryos puts them where they belong, whereas freezing them puts them where they do not belong. Thus, freezing might lead to a homicide and so should be avoided, but transfer of embryos to the womb, even though some might not survive, does not risk a homicide.

Reduction (abortion). Reduction is a medical procedure offered to a pregnant woman to reduce the number of embryos in her womb through abortion. For example, a woman pregnant with triplets might reduce the pregnancy to twins or to a singleton, and a woman pregnant with twins might reduce to a singleton. Reduction sometimes is applied in order to increase opportunities for the child left alive to develop and be born without complications. In other cases, a couple does not want to have all the children being carried in the womb and aborts one or more of them. Reduction is abortion, which is murder, and is therefore unacceptable.

Third-party involvement

The argument against IVF from third-party involvement concerns three aspects as mentioned above: gamete donation, surrogacy, and medical help.

Gamete donation. Gamete donation presents an essential disruption of the intimacy of marriage. When spouses join in one flesh, the crucial moment of their unification, the best expression of their becoming one flesh, is their child. Here, both spouses' genes, delivered by their gametes, are combined and form one flesh from two. Gamete donation connects the wife with a man other than her husband, or the husband with a woman other than his wife. Even if this happens only on the cellular level, such fleshly uniting with another man or woman constitutes a subtle form of reproductive adultery. It is invisible but real in view of the spiritual dimension of human beings' bodily existence. Gamete donation should therefore be regarded as adultery and is impermissible in every case. Any acceptable IVF must be homological.

To be regarded as homological in the Orthodox sense, only the gametes of a man and woman who are married and joined in one flesh through a marriage blessed by God may be used. Such homology requires both marriage and an ongoing married companionship.

It is wrong to say that IVF is homological if a man and a woman got divorced or cannot have intercourse because the husband is in a coma. Equally excluded are cases in which a husband has passed away, but his semen had been obtained previously and frozen or is obtained after his death. Here, IVF must be forbidden as well. To be the expression of the spouses' marriage relationship, IVF may be conducted only when spouses share the marital bed and can have intercourse with each other.

Surrogacy. Surrogacy breaks the wholeness of the marriage union by involving another person—the surrogate mother—to bear the fruit of marriage, a child. Thus, surrogacy should be avoided in all cases of IVF treatment of infertility, even if a wife is incapable of bearing her child because her womb is absent or rudimentary.

Medical help. During IVF, a physician manages the process of conception. This act does not involve any third-party intervention in the marital bed itself. The physician, after all, does not interfere in the process of joining two spouses into one flesh itself. On the contrary, he facilitates such joining by helping both spouses' gametes to unite. He only helps to bypass obstacles hindering such unification. If applied properly, his intervention occurs on the basis of a continued marital intimacy and the ability of both spouses to produce gametes.[10]

To sum up, conception *in vitro* can be regarded as acceptable if it preserves marital intimacy and proceeds in the context of the spouses' ongoing companionship.

Semen derivation

The problem of semen derivation (i.e., the sin of masturbation) can be avoided if semen is obtained during the marital encounter, using a condom that is nontoxic for the spermatozoon. Yet, admittedly, this might not work well in practice. Semen derived with a condom may be infected by bacteria and so lead to the later embryo's death. Only masturbation might guarantee semen that is free of infection. Is there a way to defend such a method?

One might argue that the intention one has in masturbation makes the needed difference: satisfying one's lust cannot be compared with an act that primarily pursues a medical necessity, such as the treatment of infertility. In the latter case, although masturbation remains sinful and should be mourned in confession, it has a quite different goal and can somehow be excused.

Reproduction outside of marriage and compromising the traditional family

IVF may be misused for reproduction outside of the marriage of a man and a woman. The fact that the technology may be misused by some people does not mean that it is wrong for husbands and wives to use it appropriately. Many medical interventions are subject to misuse and that does not render them universally impermissible. For example, surgery can be used not to treat appendicitis but for so-called gender re-assignment. Such abuse of surgery does not make all surgical interventions illegitimate. Here, we should remember that St. Basil welcomes medicine as a good, even though some use it improperly: "Nor because some sinners do not make good use of the art of medicine, should we repudiate all the advantages to be derived from it" (1999, Q55). Adverse consequences for the traditional family model can be avoided if the method is made available only to properly married husbands and wives. Thus, from an Orthodox perspective, IVF may only be blessed when it is used to help a married man and woman conceive.

Influence on the infant's health

Some surveys show that the increased rate of birth defects in IVF is connected not so much with the method itself, but to a much greater extent with diseases of parents that contributed to their infertility in the first place, as well as with drugs used for treating such diseases (Lambert, 2003). An additional reason for higher complications is that pregnancies that result from IVF are more likely to involve multiple babies, which raises the risk of complications (Heino et al., 2016). One study compared birth defects in (1) artificial insemination (AI) + ovarian stimulation (OS), (2) IVF + OS, and (3) the control population of natural conception (Nuojua-Huttunen et al., 1999). The rates of birth defects showed no difference between the two groups using OS, but they were higher than in the control group. The researchers concluded that the factor causing increased risks is either infertility itself or the drugs used in the course of OS. Another study looked at birth defects in children conceived with IVF and in children conceived spontaneously after use of OS. There were no differences in the rates of birth defects. This study also suggests that infertility itself or OS increases the rate of birth defects (Draper et al., 1999).

Even though the evidence that reproductive technologies adversely affect the health of children is not as clear as opponents of the procedure like to believe,[11] such problems do occur. As noted above,[12] the prevalence of birth defects increases in cases of IVF. However, such risks are not sufficient to render the procedure absolutely illegitimate. Parents should be informed of the possibility of increased risks to future children. They must evaluate that risk against the hoped-for benefits. Only after such evaluation should they decide whether or not to use IVF. Parents asking for a blessing to use IVF must be sure that they are able to accept a baby with serious health problems. From the Orthodox perspective, they may reject God's providence

in view of their childlessness, thus betraying their spiritual weakness. But, in opting for IVF they are obliged not to allow such weakness to render them unresponsive to God's providence if they are blessed with a child with a disability. They must recognize that it is God Himself Who determines the path for their salvation. Could they accept such a new Cross—bringing up a child if it is born with, for example, Down syndrome? A child with a disability is a person who bears the same image of God as we have in ourselves. The fact of having been brought into life, even as a sick child, is always better for him than never having existed at all. Here, the nonidentity argument is helpful: Nobody should argue that one's child should rather be born through another method so that he would be healthy, because the child born through another method would have another chromosome set and would be a different child. The choice is not between the same child being born with or without a disability but rather different persons coming into existence. If parents asking for a blessing to use IVF cannot reconcile themselves to such insights, they should not opt for IVF. Putting their hope in God's mercy can help them in making their decision. In answer to their prayers, God may even give them a healthy child.

Influence on the mother's health

Some critics of IVF, with whom this author has come into personal contact, tend to present the risk to mothers' health in much more dire terms than is justified. As pointed out above, there is no significant evidence that IVF greatly increases the risk of breast, endometrial, or ovarian cancers in women. Still, ovarian stimulation commonly used in IVF may lead to OHSS and even to a potential mother's death (Nastri et al., 2015). A medical examination undertaken before IVF can warn women of these risks and can give physicians the information necessary to choose the appropriate protocol to minimize such risks. For example, the safest approaches to prevent severe OHSS are reported to be the replacement of human chorionic gonadotropin by gonadotropin-releasing hormone agonists in antagonist cycles and the performance of *in vitro* maturation of oocytes retrieved (Nastri et al., 2010). The risk of complications after each IVF treatment cycle was low, but in sum the repeated attempts led to hospital care for many women (Klemetti et al., 2005).

Serious complications for women's health occur quite rarely, and even when they happen, there is no firm evidence that most of them result from IVF.[13] Such risks should therefore not be invoked to ground any conclusive objection to all cases of IVF. Still, the question of the influence of IVF on women's health remains. Before starting an IVF protocol, a woman must consider whether she is ready to possibly sacrifice her own health for her future baby. If not, she should not opt for IVF.

IV. CONCLUSION

Childlessness might be one of the God-given Crosses that are offered us to help us toward attaining holiness. As Christians, we are called to bear such Crosses in order to become followers after Christ (Mat 10:38). If we start choosing which Cross would be more comfortable for us, we might reject God's Providence for us and thus miss our most direct way toward God and His Kingdom. God helps us in this direction and blesses the means we use to facilitate our movement. In the case of childlessness, the best way He offers is the adoption of a child already born, but not every family can accept another child in their home, nor is it always possible to adopt children. In such cases, ARTs are an option. Having in mind that childlessness is one of the toughest plights people may endure, it can be understood why God allowed ARTs to be developed. This does not mean that every ART is blessed by Him. Among the many medical ways of supporting reproduction, we must determine which of those ways will hinder our movement to the Lord completely and always are forbidden, and which of those merely fall short of the mark, but not very far, and may therefore be permissible in some circumstances of pastoral emergency.

We should use only those ARTs that interfere with God's created order as little as possible. It would be better if all couples could use IUI only, where conception occurs in the place created for the purpose. Some diseases, however, may require the use of IVF. This procedure has multiple variants that are very different in their spiritual influence on a person. Here are the lines that must not be crossed in using IVF from an Orthodox Christian perspective:

I. Spouses planning to use IVF must not form embryos exceeding the number that can and will be transferred in the same cycle. In other words, freezing, discarding, or reduction of embryos is forbidden. (Freezing is permissible only in very rare emergency cases as described above.)
II. Infertile couples may use only their own reproductive cells. The use of donor gametes is unacceptable.
III. Any embryo formed ought to be transferred into the wife's womb and not into a surrogate's one. The use of gestational carriers is impermissible.
IV. IVF may be blessed only for the husband and wife who are able to maintain their marital union and where the wife is still of childbearing age.

IVF interferes with the intimate process of spouses. It should not be used without careful thought and prayerful guidance. Every case of infertility should be considered with the spiritual father who knows the family well and may help them to discern possible spiritual harms associated with various choices. The most important task of the priest, who blesses the couple for IVF, is to help them to realize their dependence on God and the necessity to trust Him completely even when using IVF. He should help them to

define when they will stop attempting to conceive and to imagine what they will do if they are given a blessing to pursue IVF and it fails. Couples using ART without spiritual guidance are in danger of stubbornness against God's Will. Therefore, priests and people must be very careful in making decisions about the use of IVF or any ART.

NOTES

1. Mascarenhas et al. (2012) shows that in 2010 among women 20–44 years of age who were exposed to the risk of pregnancy, 1.9% were unable to attain a live birth (primary infertility). Out of women who had had at least one live birth and were exposed to the risk of pregnancy, 10.5% were unable to have another child (secondary infertility). In other research conducted in developing countries, the WHO (2004, xiii) reveals the prevalence of infertility on the level of one-fourth of ever-married women. The study estimates that in 2002, more than 186 million ever-married women of reproductive age (15–49) in the developing countries (excluding China) were infertile because of primary or secondary infertility. This number represents more than one-fourth of the ever-married women of reproductive age in these countries.

2. Following "The Basis of the Social Concept" (2000), artificial reproductive technologies do not treat or cure the underlying causes of infertility. They just bypass the causes, and this is why the document does not name them as therapeutic or surgical.

3. The Intercouncil Presence is the organization in the Russian Church that is supposed to prepare foundational documents forming the position of the Church on the most acute topics of contemporary life. Then, every document is presented for a broad discussion within all the Russian Church by reviews of every eparchy and by internet discussion of lay parishioners. After review and consideration of all comments and corrections, the final document is presented to the Bishops' Assembly. If the Assembly approves the document, it becomes the official position of the Russian Church. The same procedure is followed for the draft IVF document.

4. Similar expectations had been entertained from the very beginning. For example, Eve named her first son Cain (which means "redeemer"), because of God's promise about her offspring. When her expectations failed, she understood that the redeemer would come only later. She expressed this insight by naming the second child Abel, which means breath, nothingness, vanity, and, after Abel's death, her next son she named Seth, which is "another offspring in place of Abel" (Gen. 4:1–2, 25).

5. To be sure, the decision to reject medical help can result from a decision to deliver oneself into God's Providence. This, after all, is what we ask in Church praying: "Let us entrust ourselves and one another and our whole life unto Christ our God." Such whole self-delivery unto God's hands requires a spiritual maturity that enables us to go the way what God will show us. Such spiritual maturity may in extreme cases lead us to deliver ourselves into His hands completely, even if this means leaving behind our earthly life. Not everyone possesses such maturity. Here we can recall our Lord's words: "Whoever is able to grasp this, let him grasp it" (Mat 19:12). It is known that some people, particularly monks, reject all health care, entrusting themselves to God's Providence. We do not perceive that as a mandatory rule for everyone, but rather as the top of spiritual struggle.

6. Still, neither St. Paisios nor Archimandrite John declared IVF to be altogether unacceptable. They both taught that infertile couples ought to put their hope on God's Will and His Providence, but not to reject medical help. St. Paisios said in one place that an infertile couple ready to adopt a child should not persist in their desire to give birth to their own child but instead adopt a child. This should be regarded as advice to a specific couple and not as an instruction for every childless family. Even while giving such advice, he did not suggest shunning medical help but merely encouraged an existing readiness to adopt. In another place, St. Paisios said that infertility is given so that a childless couple might offer their love to many other children. Unfortunately, in Russia, such words by St. Paisios are often used in support of opposition to all assisted reproductive technology.

7. The problem of fertilizing human eggs *in vitro* was solved in 1969 by Edwards, Bavister, and Steptoe (1969a; Johnson, 2011). They then published a paper with evidence of the fertilization of 18 human eggs. Then their next article reported that about 34 inseminated oocytes matured *in vitro*

(Edwards, Bavister, and Steptoe, 1969b). Then Edwards and Steptoe wrote that "many more eggs" were fertilized (1980, 82–83). After the first IVF childbirth, Edwards and Steptoe wrote "Twelve women whose ovaries had to be removed [presumably laparoscopically] for serious medical conditions provided us with the necessary eggs over the next few months. We fertilized many more eggs and were able to make detailed examinations of the successive stages of fertilization" (1980, 82–3).

8. IVF without superovulation is called (1) IVF in natural cycle or (2) IVF in a modified natural cycle (the differences between them depend on using additional drugs for getting eggs). If a woman produces too few eggs to be matured, superovulation may be acceptable, but one should try to use less drugs so as to stimulate the production of just the right number of eggs. The last case is called (3) IVF with minimal stimulation.

9. An extra or missing chromosome is a common cause of genetic disorders of human beings.

10. If a wife, for example, is in her postmenopausal period in her fifties and her ovaries cannot mature eggs, the doctor's attempt to do IVF should be regarded as ethically wrong.

11. In Russia, very conservative Orthodox like to refer to different claims of a very qualified doctor or a higher-up in health care but with no support from evidence of well-organized medical research. An example of one of these claims may be like "75% of IVF children have an illness so IVF should be forbidden."

12. See Wen et al. (2012).

13. As mentioned above, researchers think that the great majority of cases of OHSS are due to controlled ovarian stimulation but not IVF itself (Nastri et al., 2015).

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