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Providing infertility treatment in resource-poor countries†

ESHRE Task Force on Ethics and Law including G. Pennings[1], G. de Wert, F. Shenfield, J. Cohen, B. Tarlatzis, and P. Devroey

Bioethics Institute Ghent, Ghent University, Blandijnberg 2, B-9000 Ghent, Belgium

[1]Correspondence address. E-mail: guido.pennings@ugent.be

Recently, several initiatives were started to introduce medically assisted reproduction in developing countries. Infertility is a major problem in these countries and causes extensive social and psychological suffering. This article analyses the main ethical arguments pro and contra the provision of infertility treatment in resource-poor countries. It is concluded that infertility treatment should be part of an integrated reproductive care programme including family planning and motherhood care. Education, empowerment of women and economic prosperity are the most effective solutions to most problems related to both population growth and infertility. Simultaneously, investments in low-cost interventions are justified.

Key words: developing countries / justice / low-cost IVF / overpopulation / prevention

Introduction

Contrary to popular belief, primary and secondary infertility are a major health problem in developing countries, both quantitatively and qualitatively. While worldwide between 8 and 12% of the couples suffer from infertility, the rates in sub-Saharan Africa go up to 30% and more. The main causes of infertility are sexually transmitted, infectious and parasitic diseases, cultural practices such as female genital mutilation and substandard health care interventions such as unhygienic obstetric practices and unsafe abortions.

Infertility in resource-poor countries causes extensive suffering. Women may be disinherited, ostracized as they are perceived as a source of evil, subjected to physical and psychological violence and even killed. In addition to the psychological and social suffering associated with infertility, there are considerable economic consequences of childlessness in developing countries. In the absence of social security systems, many people, especially in old age, are completely dependent on their children for basic goods and support.

General ethical principles

Reproductive autonomy

Autonomy is the right and the capacity to make decisions about one's own life. Reproductive autonomy is the right to make decisions about whether, when, how many and with whom to have children. This is an individual capacity that is protected as a negative right in most countries and as a positive right in some countries. Personal decisions may, however, come in conflict with societal interests. Governments can and do take initiatives and measures (incentives or punishments) to steer the behaviour of their citizens in the desired direction. In western countries, advantages are offered to people in order to encourage them to have (more) children. Likewise, countries that are struggling with overpopulation and hyperfertility may take steps to diminish population growth. However, such steps should respect individual autonomy as much as possible. Coercion should not be applied unless there is a real threat to public health (proportionality) and when other measures fail.

The relationship between the individual and the society is important for the present topic because one of the main arguments against the provision of infertility treatment to people in developing countries is that overpopulation is one of the most important problems these countries are facing. However, denying infertility treatment to people who cannot have children is not the right solution for two reasons. First, there are ways of promoting a reduction of population growth more effectively and without violating anyone's right. Think for instance of the provision of contraceptives and safe abortions. Second, denying access to treatment to infertile people infringes the principle of justice. The burden of contributing to the reduction of population growth should be divided equally between fertile and infertile couples. If fertile people gave birth to fewer children, the infertile could have one child (or more) without aggravating the population problem. Moreover, medically assisted reproduction is unlikely to have a significant effect on the population growth in these countries given the highly limited access.

†The expert consulted for this paper was Willem Ombelet.

An important goal of all measures in the field of reproductive health care is to increase people's reproductive autonomy. Although the provision of contraceptives, safe abortions and so on contributes to the control and reduction of the population growth, its main justification lies in the fact that it allows people to decide about planning their family. No person or couple should have more children than they desire. Likewise, every person or couple should have the number of children (within reasonable limits) he/she desires. If a couple turns out to be infertile, they should, as far as reasonably possible, have access to infertility treatment. Infertility treatment should therefore be incorporated into the programmes managing family planning, mother care and reproductive health.

Justice

The general living conditions of people in developing countries demonstrate a massive violation of the principle of justice when looked at from a global perspective. But also within one country, there are enormous differences in wealth between citizens. In resource-poor countries, one of the biggest problems is the inequity of access to basic products and services like health care and clean drinking water. Access to infertility treatment, which is not considered as part of the basic health care package in these countries, is reserved for higher middle and upper classes. The few infertility clinics are private and located in the larger cities.

Given the relatively high cost of infertility treatment, this will not become available for everyone unless the global economic situation changes. However, (partial) public funding of infertility treatment would already considerably improve access. Still, the use of public funds cannot be justified unless the costs of infertility treatment can be reduced considerably. This is the responsibility of the practitioners, the professional medical organizations and the drug companies. There are strong indications that treatment can be provided at a drastically reduced price. Low-cost IVF will make treatment more accessible and thus reduce injustice. The fact that it is very unlikely to be within everyone's reach is no valid argument for not offering it at all.

Moreover, the reasoning presented above starts from a fixed amount of the national budget attributed to health care. The distribution problem, however, also applies to the money attributed to other activities. Most developing countries spent $<5\%$ of their gross national product on health care. The comparison with developed countries shows that a much larger budget is needed to satisfy the basic health care needs of all citizens, especially when diseases like malaria and AIDS are taken into account.

Welfare of mother and child

The standard to decide whether procreation, and assistance to procreation, is ethically justified is whether the future child has a fair chance of having a reasonably good life. In other words, there should not be a high risk of serious harm. This standard not only applies in case of diseases or health problems, but also in terms of general living conditions. Therefore, the capacity of parents to look after the child and the economic circumstances should be taken into account when considering treatment. One should not help the conception of a child when there is a high risk that it will die in the first years of its life due to malnutrition or abandonment.

The issue of the welfare of the child is especially important in case of HIV-positive parents. If the precautionary measures cannot be provided to the HIV-positive mother before, during and after delivery, the risk of vertical transmission of HIV is $\sim$25%. In many resource-poor countries, effective drugs are not available to patients. As a consequence, the effects of the disease on the health and the life expectancy of the parents are much more negative than in developed countries. The enormous increase of AIDS orphans in Asia and Africa demonstrates this point. Given the risk of mother-to-child transmission and the impact on the child's life, no assistance to reproduction should be provided unless the vertical transmission rate can be brought down to an acceptable level and unless at least one of the parents can expect to live as long as the child is dependent on him or her (ESHRE Ethics and Law Task Force, 2004).

Ovarian stimulation syndrome and multiple pregnancies may have serious health consequences for women and resulting offspring. These complications should be avoided by all means in resource-poor countries since the adverse effects would be much greater due to limited medical means of treatment. Single-embryo transfer in combination with simplified and mild stimulation procedures should aim at a high cumulative pregnancy rate without multiple pregnancies and complications.

Maximizing well-being

The utilitarian principle states that the available resources (money and personnel) should be directed at those interventions where they will do the most good. This principle can be found in three forms within the debate on infertility treatment in developing countries: (i) the resources should be spent on prevention rather than treatment; (ii) the resources should be directed at the most serious diseases; and (iii) the main efforts should be focused on societal changes that reduce the burden of infertility.

(i) Given the highly limited resources, it is argued that the resources would be much better spent on prevention rather than on treatment of infertility. There are good arguments for this priority. First, prevention avoids the harm of infertility even if people later have access to treatment. Moreover, it is well known that the available techniques are not able to help all infertile persons. Second, measures to prevent infertility can be performed at a relatively low cost and with a long-term impact. They concern many different aspects: general conditions like improving roads and water supply have been shown to be essential in the care of pregnant women and the prevention of secondary infertility. Specific conditions related to reproductive health include promoting the use of condoms, counselling persons at high risk of transmitting or catching sexually transmitted diseases, training birth attendants to prevent postpartum infections, increasing access to safe abortions and decent maternity units, informing couples of the negative effects of smoking and obesity, providing early treatment to people with sexually transmitted infections and so on. Moreover, these measures simultaneously increase respect for other rights and interests of people, especially women. For these reasons, prevention should have priority. However, the prevention/treatment debate is not an all or nothing matter. The focus on prevention does not exclude limited applications of infertility treatment. Regardless of the preventive measures, some people will become infertile and will need help. Every country should decide, on the basis of its economic situation, to what extent it can offer specific types of infertility treatment.

(ii) According to some, there are more pressing needs in resource-poor countries than the treatment of infertility. When infertility is compared with diseases like malaria, tuberculosis and AIDS, it drops down in the burden of disease ranking because it is not life-threatening. However, when diseases are ranked according to the burden that they impose as expressed by the loss of quality of life, it can be argued that infertility should receive high priority. Not being able to realize an important goal in life such as family building has a large adverse impact on a person's quality of life (ESHRE Ethics and Law Task Force, 2008). This is even more so in most developing countries, where a very high value is placed on reproduction. Infertility has dramatic implications for the social situation of a person, especially for a woman. Child bearing is often the only basis on which a woman can acquire social and moral status. Infertility may lead to economic deprivation, social isolation, domestic violence, divorce and even death. Surveys in developing countries show that people (men as well as women) attribute a very high value to fertility and even consider a life without children as not worth living. In other words, when the quality of life is taken as the main criterion for ranking diseases, infertility may move up considerably compared with its present position.

(iii) The impact of infertility in resource-poor countries is related to the pro-natalist attitude in these countries. Pro-natalism states that the moral status of a person, especially a woman, depends on whether or not he or she does reproduce. Since the woman is generally seen as the cause of infertility, she suffers the social consequences of childlessness. In order to reduce the negative impact of infertility, several actions should be taken: people can be educated about the causes of infertility (including the contribution of the man), and educational programmes aimed at girls can be reinforced so that women can adopt meaningful life plans besides procreation. In addition, social structures like unemployment benefits and pensions to support vulnerable categories of people like single women and older retired persons will alleviate the consequences of childlessness and social isolation. In other words, social and economic measures, besides medical interventions, can contribute to the improvement of the well-being of the infertile.

Specific considerations

Research is needed to develop simplified, safe and low-cost clinical and laboratory techniques like intravaginal culturing of the embryo and minimal stimulation protocols. All procedures should be adapted at different levels: simplification of diagnostic procedures, simplification of assisted reproductive techniques themselves and minimization of complication rates.

The development of simpler and cheaper procedures may have implications for the practice of medically assisted reproduction in developed countries too. If much cheaper treatment can be offered in resource-poor countries, the same procedure can be adopted in developed countries with a stretched health care budget. If this evolution does not take place, clinics in resource-poor countries will become attractive to poorer people in developed countries, thus leading to cross-border travelling by people seeking affordable techniques. This phenomenon may indirectly have negative effects on the patients in resource-poor countries, as it may aggravate the already existing brain drain of health care professionals to private hospitals.

The presence of *in vitro* fertilization clinics in developing countries increases the possibility that women from these countries are recruited as oocyte donors for recipients from rich countries. This may increase the risk of exploitation of vulnerable (poor, illiterate) women.

Traditional healers play an important role in health care in most resource-poor countries. They are easily accessible and appeal to local cultural beliefs. Patients' lay knowledge about infertility is frequently influenced by local beliefs. The traditional healers can contribute positively to the management of infertility when they are educated about causes, diagnosis and possible remedies of infertility. However, the physicians should warn against treatments and cultural practices that may cause infertility or aggravate subfertility. It is their professional responsibility to steer the patients and the traditional healers away from these practices.

The highly limited resources will exacerbate the problem of equitable allocation of treatment resources. Additional criteria may have to be introduced to select candidates for treatment. One possibility is that, at least in case of great scarcity of access and provision, treatment should be reserved for primary infertility or for childless persons. Another option is to restrict treatment initially to low-tech and low-cost procedures.

The application of medically assisted reproduction demands minimal political stability as well as a basic level of economic welfare and medical infrastructure (including qualified personnel). It would be highly inappropriate to create islands of high-tech infertility treatment in a sea of generalized poverty and medical neglect.

In some areas, special programmes may be needed to increase awareness in the population of the health dangers of certain cultural practices like female genital cutting.

Recommendations

Infertility treatment should be part of an integrated reproductive care programme including family planning, motherhood care and reproductive health. Infertility treatment should be seen as an intervention to increase people's reproductive autonomy by allowing them to have the children they desire.

Investments by governments, non-governmental organizations and international organizations in resource-poor countries should be targeted mainly at the prevention of infertility. The clinics and health care centres must be provided with the means to diagnose possible causes of infertility like infections and avoid many aggravating infertility-causing factors, for example by securing safe deliveries and abortions.

National investments should prioritize the education of the population regarding the general function of the reproductive organs, the reproductive cycle and sexuality. In addition, both the population and the physicians should be informed about infertility-causing factors, appropriate behaviour to prevent infertility and the available medical techniques to treat infertility. Education, empowerment of women and economic prosperity are the most effective solutions to most problems related to both population growth and infertility. Education may also reduce social exclusion and stigmatization of infertile persons.

At the same time, some types of treatment, especially low-cost interventions like the treatment of sexually transmitted diseases, should be offered. Reimbursement and public funding of high-tech

treatments should be considered only when the direct cost of these treatments is brought down considerably.

Research to improve the cost-effectiveness of infertility management and to adapt the technology to local conditions and financial possibilities should be encouraged. International professional organizations can contribute by funding research and organizing training courses.

Extra caution should be displayed to avoid the occurrence of ovarian stimulation syndrome and multiple pregnancies when medical techniques are applied.

In order to prevent abuses, the government should introduce measures to regulate the practice by licensing providers, monitoring clinical activities and verifying success rates.

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