THE IMPACT OF INFERTILITY ON WOMEN'S SOCIAL LIFE AND THE ROLE OF ASSISTED REPRODUCTIVE TECHNOLOGY (ART)

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Abstract. Infertility shall be defined as failure to conceive naturally after one year of unprotected sexual relations with the same partner. Worldwide, average births per woman have been falling for at least two generations, and for the first time in more than a hundred years, the total world population growth is slowing. Europe has the lowest total fertility rate. Since 1950, the average births per woman in Europe has fallen from more than 3 to only 1.6
There are multiple factors that affect a couple's chances of conceiving. Apart from changes in attitudes, affordability of child and healthcare, it is partially down to infertility.
Western countries have undergone variable economic expansion, marriage is no longer essential to family life, fewer people adhere to religions that encourage large families, tertiary education is available for both men and women and women are now more likely to be employed outside their home.

Keywords: infertility, pregnancy, IVF, Europe

GENERAL FINDINGS

Infertility generally refers to the failure of becoming pregnant after one year of regular, unprotected intercourse. The clinical definition of "regular" intercourse is every two to three days.

The World Health Organization (WHO) has classified infertility as a disease affecting approximately 15% of the reproductive-aged couples. This disease is not characterized by mortality but rather by the morbidity which it inflicts in individuals and couples. Morbidity includes social, economic and psychological aspects but is not confined to them. Women especially may be caught in a spiral of

attempts to achieve their social and evolutionary need namely to have a child (Polit, 2006).

After one year of regular sex, approximately 84% of couples will have conceived naturally, with this figure rising to 92% after two years and to 93% after three years. After three years of not conceiving, the likelihood of a couple to achieve pregnancy in the following year falls to 25% or less. One in seven couples in the UK has difficulty in conceiving, which translates as 3.5 million people (Gannon 2004, 59).

The socioeconomic consequences of infertility are not easily overcome by the availability of care. The cost of ART is an indicator of the underlying costliness of the countries health system. Consequently, it differs between countries, as does the out-of-pocket payment per individual couple. The cost to the consumer is a function of the underlying cost of treatment, the level of subsidization or third-party cost coverage and the available income of the consumer (Cousineau 2007, 21).

Infertility has many potential causes, which may involve the man, the woman or both partners. Sometimes, no cause of the problem can be determined, in which case the infertility is described as "unexplained". Among the causes that are known, the most common are irregular ovulation, endometriosis and blockage of the fallopian tubes. Among men, the most common one is sperm disorder.

Infertility represents a major crisis for most couples, with both partners experiencing loss in ways that affect them as individuals, as family members and as members of society as a whole. Examples of such losses include: loss of the experience of pregnancy and birth, loss of opportunity to pass on family genetics, loss of chance to contribute to the next generation, loss of chance to parent or become a grandparent, low self-worth and self-esteem, loss of family stability, loss of sense of control over destiny, loss of sense of hope for the future and loss of work productivity (Feldman-Svelsberg 1994, 39).

Infertility can have a highly negative impact on self-esteem, with individuals who previously had successful and well-planned lives, suddenly feeling they have lost control of their destiny (Dyer 2013, 28). A combination of the body failing to respond as expected, a sense that life has been put on hold and having to face the disappointment of failure to conceive month after month, can leave both partners at an increased risk of depression.

Worldwide, around 70 to 80 million couples are currently experiencing infertility. For most individuals having a child is an important part of their life plan and being unable to conceive represents a major life problem. There are also many men and women with children from a previous relationship who are desperate to conceive with their current partner.

EPIDEMIOLOGY

Some countries like Israel and Australia have state-funded programmes that enable certain state-imposed restrictions to be placed on these cycles. Examples of these include age limits and the requirement for single embryo transfer thereby decreasing the downstream indirect cost of multiple pregnancies and prematurity associated with this Dhont 2011, 26).

However, developing countries do not have the authority to standardize costs. (Lechner 2007, 22). This leaves women vulnerable to exploitation by both western and traditional medical practitioners (Sundby 1997, 31). Efforts to make Assisted Reproductive Technology (ART) affordable in developing countries have been undertaken by non-profit organizations.

Studies showed that involuntary childlessness in the Western world has various psychological and psychosomatic effects, especially among women. The most common are distress, depression, anxiety, reduced self-esteem, somatic complaints, reduced libido and a sense of blame and guilt.

Data from Africa and Asia have highlighted the many important roles of children which collectively allow their parents, especially their mothers, to become more esteemed members of the family and community. Children are a reliable source of manpower in many rural and developing areas (Okonofua 1997, 7) and provide economic security at old age; infertility often leads to instability in a marriage and the possibility of divorce or abandonment with consequent loss of financial security. Certain customary laws and cultural traditions lead to negative attitudes to infertile women and may potentiate the scourge of gender inequality.

When the social and cultural consequences of involuntary childlessness are considered, they are often related to studies of elderly individuals with no children. Studies have shown that elderly, frail people with no children receive less social support and a less substantial framework for independent living compared with those of the same age who do have children.

Some studies also report on how childlessness can impact on a couple's communication with friends and family who have children. (Chambers 2013, 100). Childless couples can perceive well-meant remarks made at social gatherings or birthday parties, for example, as negative. However, couples can also find those close to them supportive, with relatives or good friends giving the couple the opportunity to participate in the "world of children" by sometimes taking care of their own children or taking them to school, sports activities or music lessons (Nahar 2012, 4). 10% of couples adopt this type of strategy as a way of coping with never having their own children.

INFERTILITY IN THE WORLD

Many studies have also been carried out into the effects of childlessness in the developing world. Unlike in the Western world, although psychological effects are found, the main concerns for

childless couples in developing countries are the social and cultural effects.

A number of international decisions have placed infertility care in the context of reproductive health as a health priority. For many affected couples improvement or restoration of infertility-related reproductive health requires Assisted Reproductive Technology (ART). According to the latest reports, more than 1.6 million ART cycles were undertaken in 2006 (Wiersema 2006, 54). The availability and accessibility of ART differ greatly between regions and countries. An important factor influencing accessibility is the cost of treatment and how these costs are covered. In many countries and especially in low resource settings, ART requires out-of-pocket payments by the consumer and while these may be affordable to some they may be impoverishing expensive to others (Domar 2011, 95). The latter raises the question of why couples would be willing to pay for treatment that they are unable to afford (Gerrits 1997, 39).

Infertility may lead to abandonment and more economic hardship if women have to pay back their bridewealth or pay bridewealth for husbands to enter into new unions (Gerrits 1997, 39). These social inequalities are reinforced when infertile women are treated as social servants by tending to the sick and infirm (Hollos 2009, 68) or caring for the children of others (Okonofua 1997, 205). Women may not be allowed to inherit or continue living in their household compound after he dies. Sons are seen to strengthen the lineage and the inheriting capacity of a family (Nahar 2012, 149) – consequently, girl-children are seen as less important thereby reinforcing gender inequality.

DISCUSSIONS

Methods to reduce the cost of ART exist and must be pursued wherever possible. The introduction of third-party funding usually

requires the imposition of some restrictions or regulations. Restrictions may apply as to who is given access to ART while regulations may apply regarding the number of embryos transferred with the view of reducing the biggest risk of ART, and its resultant downstream costs, namely that of multiple pregnancies. (Dyer 2013, 2755). Additional cost-reducing strategies include less aggressive stimulation cycles with less monitoring, novel use of incubation techniques, earlier embryo transfers and effective use of cryopreservation. There should be also specific start and end points to treatment modalities with age-appropriate and cause-appropriate interventions. Clinics may offer risk sharing, package pricing for multiple cycles or cross-subsidization (Dhont 2011, 623).

Not only does the cost and funding models of treatment provide an important explanation for the differences in the utilization of available treatment, but they also help to explain clinical practices especially relating to embryo transfer.

In a study on infertile couples in an infertility treatment centre, participants experienced emotions like deep grief, guilt, loneliness and fear of the future insecurity (Lechner 2007, 288). However, many healthcare providers and mental health clinics still give little value to the negative psychological effects of infertility. These feelings were also experienced by participants in this study on the cognitive and emotional-affective reactions due to infertility. In a qualitative study, Khodakarami *et al* reported two sub-themes of guilt and an unclear future (Spannagel, 1-17). According to their study, a person's guilt is rooted in her infertility which is consistent with our study. Another sub-theme is the unclear future which resulted in frustration, worry and fear in infertile women. The fear of disclosure and the unclear future of the present was consistent with the results of the qualitative study by Shavazi *et al* (Wiersema 2006, 54).

According to the existing studies, the use of therapies is one of the factors affecting the psychological problems of infertility (Ruganga 2001, 315; Sundby 1997, 29). As a systematic review by

Gameiro *et al* revealed, in 453 infertile individuals from eight countries, the mental burden stemmed from the treatment has been one of the main reasons for the discontinuation of the infertility treatment (Inhorn 2008, 96). Fortunately, there are some studies in the literature that only discuss the psychological consequences of the treatment including IVF.

Although it is assumed that the lower cost of treatment will improve access, this is not always the case. Some studies have indicated that lower socio-economic and certain ethnic groups may still be disadvantaged (Lechner 2007, 288). Care must also be taken that more affordable treatment does not lead to the inappropriate perpetuation of ART the couples caught in an unrelenting pursuit for a child (Khodakarami 2010, 287).

The benefits of ART are difficult to quantify but important. They centre on the quality of life and happiness. The majority of people consider parenthood as part of the fulfilment of life goals. Cost-utility analysis is the main method that governments use to guide allocations of public resources to specific health outcomes. This is usually measured in quality-adjusted life years, which captures improvement in health among living patients (Domar 2011, 95). It is very difficult to quantify this for fertility treatment as the creation of new life cannot be captured in the indicator. However, United Kingdom National Institute of Clinical Excellence fertility guideline incorporated concluded that under most clinically appropriate circumstances, access to ART treatment and single embryo transfer represented good value for money from a societal perspective (Hollos 2009, 68).

A Take-Home Message

Improving access to infertility care requires a two-faceted approach. Infertile couples must be able to access quality care at affordable cost; however, this is attained. In addition, efforts to prevent

infertility should be escalated, according to the WHO, up to 45% of adult conditions develop during adolescence and this is the target group for education regarding preventative strategies (Abbasi-Shavazi 2011, 95).

Many women from these countries consider their lives as hopeless if they cannot conceive. In many cultures, childless women face discrimination, ostracism and stigma if they fail to become pregnant or carry a baby to term. They may even be regarded as non-human or described as "cursed". Furthermore, in most of these countries, there is poor availability of infertility services and in vitro fertilization procedures are unaffordable.

The situation is further worsened by the fact that women in these countries face a lack of support, both emotionally and financially. In Africa, women are not encouraged by their male partners to seek modern technical treatments. This, combined with the unavailability of fertility services, means the path for women seeking fertility care because they wish to conceive is often a lonely one.

References

Abbasi-Shavazi M.J., Asgari-Khanghah A., Razeghi-Nasrabad H.B. "Women and the Infertility Experience: A Case Study in Tehran." *Woman in Development and Politics*. 2005, 3: 91–113.

Barden-O'Fallon J. "Unmet Fertility Expectations and the Perception of Fertility Problems in a Malawian Village." *Afr. J. Reprod Health*. 2005, 9: 14–25. [PubMed].

Chambers G.M., Adamson D., Eijkermans M.J.C. "Acceptable Cost for the Patient and Society." *Fertil Steril*. 2013, 100: 319–327. [PubMed].

Cousineau T.M., Domar A.D. "Psychological Impact of Infertility." *Best Pract. Resh. Clin. Obstet. Gynaecol.* 2007, 21: 293–308. [PubMed].

Dhont N., van der Wijgert J., Coene G., et al. "'Mama and Papa Nothing': Living with Infertility Among an Urban Population in Kigali, Rwanda." *Hum. Reprod.* 2011, 26: 623–629. [PubMed].

Domar A.D., Gordon K. "The Psychological Impact of Infertility: Results of a National Survey of Men and Women." *Fertil Steril.* 2011, 95: S17.

Dyer S.J, Abrahams N., Mokoena N.E., Lombard C.J., Van der Spuy Z.M. "Psychological Distress Among Women Suffering from Couple Infertility in South Africa: A Quantitative Assessment." *Hum. Reprod.* 2005, 20: 1938–1943. [PubMed].

Dyer S.J., Patel M. "The Economic Impact of Infertility on Women in Developing Countries - A Systematic Review." *Facts Views Vis Obgyn.* 2012, 4: 102–109. [PMC free article] [PubMed].

Dyer S.J., Sherwood K., Mcintyre D., et al. "Catastrophic Payment for Assisted Reproduction Techniques with Conventional Ovarian Stimulation in the Public Health Sector of South Africa: Frequency and Coping Strategies." *Hum. Reprod.* 2013, 28: 2755–2764. [PubMed].

Feldman-Svelsberg P. "Plundered Kitchens and Empty Wombs: Fear of Infertility from the Cameroonian Grassfields." *Soc. Sci. Med.* 1994, 39: 463–474. [PubMed].

Gameiro S., Boivin J., Peronace L., Verhaak C.M. "Why do Patients Discontinue Fertility Treatment? A Systematic Review of Reasons and Predictors of Discontinuation in Fertility Treatment." *Hum. Reprod Update*. 2012, 18: 652–669. [PMC free article] [PubMed].

Gannon K., Glover L., Abel P. "Masculinity, Infertility, Stigma and Media Reports." *Soc. Sci. Med.* 2004, 59: 1169–1175. [PubMed].

Gerrits T. "Social and Cultural Aspects of Infertility in Mozambique." *Patient Educ. Couns*. 1997, 31: 39–48. [PubMed].

Guerra D., Llobera A., Veiga A., Barri P.N. "Psychiatric Morbidity in Couples Attending a Fertility Service." *Hum. Reprod.* 1998, 13: 1733–1736. [PubMed].

Hollos M. "Profiles of Infertility in Southern Nigeria: Women's Voices from the Amakiri." *Afr. J. Reprod. Health.* 2003, 7: 46–56. [PubMed].

Hollos M., Larsen U., Obono O., et al. "The Problem of Infertility in High Fertility Populations: Meanings, Consequences and Coping Mechanisms in two Nigerian Communities." *Soc. Sci. Med.* 2009, 68: 2061–2068. [PMC free article] [PubMed].

Inhorn M.C., Birenbaum-Carmeli D. "Assisted Reproductive Technologies and Culture Change." *Ann. Rev. Anthropol.* 2008, 37: 96–177.

Khodakarami N., Hashemi S., Seddigh S., Hamdiyeh M., Taheripanah R. "Life Experience with Infertility. A Phenomenological Study." *J. Reprod Infertil.* 2010, 10: 287–297.

Latifnejad R. *How Religious Faiths and Spiritual Beliefs Affect the Experiences of Infertile Women Seeking Infertility Treatments: A Feminist Grounded Theory Approach.* Guildford: University of Surrey; 2008 (Doctoral Dissertation).

Lechner L., Bolman C., van Dalen A. "Definite Involuntary Childlessness: Associations between Coping, Social Support and Psychological Distress." *Hum. Reprod.* 2007, 22: 288–294. [PubMed].

Nahar P. "Invisible Women in Bangladesh: Stakeholders Views on Infertility Services." *Facts. Views Vis Obgyn.* 2012, 4: 149–156. [PMC free article] [PubMed].

Nahar P., Richters A. "Suffering of Childless Women in Bangladesh: The Intersection of Social Identities of Gender and Class." *Anthropol. Med.* 2011, 18: 327–328. [PubMed].

National Collaborating Centre for Women's and Children's Health, Fertility: Assessment and Management (update); Commissioned by the National Institute of Clinical Excellence (NICE). Available at http://guidanceniceorguk/CG/Wave R/90.

Noorbala A., Ramezanzadeh F., Abedi-Nia N., Naghizadeh M.M., Haghollahi F. "Prevalence of Psychiatric Disorders and Types of Personality in Fertile and Infertile Women." *J. Reprod. Infertil.* 2009, 9: 350–360.

Okonofua F.E., Harris D., Odebiyi et al. "The Social Meaning of Infertility in Southwest Nigeria." *Health. Transit. Rev.* 1997, 7: 205–220.

Polit D.F., Beck C.T. *Essentials of Nursing Research Methods, Appraisal and Utilization.* 6th ed., Philadelphia: Lippincott Williams Wilkins, 2006.

Ruganga A.O., Sundby J., Aggleton P. "Culture, Identity and Reproductive Failure in Zimbabwe." *Sexualities.* 2001, 4: 315–332.

Sami N., Tazeen S.A. "Perceptions and Experiences of Women in Karachi, Pakistan Regarding Secondary Infertility: Results from a Community-Based Qualitative Study." 1–7. http://www.hindawi.com/journals/ogi/

Spannagel C., Gläser-Zikuda M., Schroeder U. "Application of Qualitative Content Analysis in User-Program Interaction Research." 1–17. Available at http://www.qualitative-research.net/index.php/fqs/article/view/469.

Sundby J. "Infertility in the Gambia. Traditional and Modern Healthcare." *Patient Educ. Couns.* 1997, 31: 29–37. [PubMed].

Wiersema N.J., Drukker A.J., Dung M.T., Nhu G.H., Nhu N.T., Lambalk C.B. "Consequences of Infertility in Developing Countries: Results of a Questionnaire and Interview. Survey in the South of Vietnam." *J. Transl. Med.* 2006, 4: 54. [PMC free article] [PubMed].

Wischmann T. "Psychosocial Aspects of Infertile Couples." *Psychosocial Gynakol Geburts med Gynakol Endokrinol.* 2008, 4: 194–209.