Literature Review

Infertility Treatment Financing in Nigeria

Adewumi EA

Kinectic Health Consulting, Department of Research and Development, Abuja, Nigeria

ABSTRACT

Background: In Nigeria, infertility treatment using assisted reproductive technology (ART) is perceived as an inconsequential health issue not demanding any public health intervention. ART is largely carried out by private health-care providers in city centres at an unaffordable cost.
Objective: The objective is to determine ways to reduce the cost of *in vitro* fertilisation (IVF) to increase access to treatment.
Materials and Methods: Google, Google Scholar and PubMed searches identified scholarly papers published between 1997 and 2013. The keywords used were combinations of ART, infertility treatment in developing countries, family planning and infertility, increasing ART success rate, male factor in infertility, fertility care financing, health insurance and cost of fertility treatment.
Results: Infertility is not perceived as a disease the way malaria or typhoid is treated as such by most Nigerian men, and ART is expensive. Most African culture blame infertility on women who have restricted financial access. The current focus of family planning is female gender centric and favours contraception alone. The Nigerian National Health Insurance Scheme (NHIS) has excluded any ART treatment completely.
Conclusion: The high cost of IVF is the greatest barrier to ART access both in the developed and underdeveloped world. This is also the most critical factor in accessing IVF care worldwide. This financial barrier is worse in low-resource settings like Nigeria. Low-cost technological innovation is still far from the country.
Recommendations: Renewed advocacy with focus on men to understand that infertility is a disease deserving of utmost attention. Increase in the number of public-funded fertility clinics and partial inclusion of IVF into the Nigerian National Health Insurance Scheme (NHIS) needs to be implemented to bring down cost. Other innovations such as public–private partnerships, where financial institutions like banks can finance IVF treatment by giving loans whose repayment is spread over time to make it convenient, should also be considered.

Key words: Advocacy, ART, financial institution, *in vitro* fertilisation, infertility financing, Nigeria

How to cite this article: Adewumi EA. Infertility treatment financing in Nigeria. Niger J Health Sci 2017;17:38-42.

INTRODUCTION

In vitro fertilisation (IVF) treatment is gaining more acceptability in Nigeria, with the private sector taking the lead. They render services with technical expertise comparable to that in developed countries. They also share comparable success rates. The private centres that render such services are located in limited major city centres. The attendant implication is that it is only the rich that can afford access to this service.[1]

According to Soyibo *et al*.,[2] the total government health expenditure as a proportion of total health expenditure (THE) was estimated as 26.02% in 2005. On the other hand, household health expenditure as a proportion of THE was 74.02% in 2003, falling to 65.73% in 2004 and rising to 67.22% in 2006.[2]

Submission: 13-December-2016 **Revised:** 06-June-2019 **Accepted:** 13-August-2019
Published: 26-November-2019

Access this article online

Quick Response Code:

Website: www.chs-journal.com

DOI: 10.4103/njhs.njhs_28_16

Out-of-pocket (OOP) expenditure of households was the most important means through which healthcare services are paid for. It accounts for 70% of the total expenditure.

The inclusion of health insurance in the health sector in the past 14 years has done very little to solve the problem of healthcare financing, which has put people perpetually in the circle of poverty, disease and ignorance. Fertility treatment has been excluded from coverage in various health insurance packages. Artificial inseminations, IVF, etc., are listed under the total exclusion list of the National Health Insurance Scheme according to the latest guideline[3] in 2013.

Excluding the cost of IVF treatment from insurance coverage means people will have to do OOP payment for a long time to come. This is a huge problem as 'excessive reliance on OOP payment reduces healthcare consumption, exacerbates the already

Address for correspondence: Dr. Adewumi EA, Plot 877, Ahoada Close, Off Emeka Anyaoku Street, Area 11, Abuja, Nigeria.
E-mail: eddywumi@yahoo.com

inequitable access to quality care and exposes households to the financial risk'. The high incidence of OOP payment has been associated with a poor health outcome.[4] Hence, there is a serious need to innovate to solve the challenge of financing fertility care.

MATERIALS AND METHODS

Search criteria

The search sought to get all relevant information on the issue of financing infertility treatment using Assisted Reproductive Technology (ART). Papers searched were from 1997 to 2013 spanning 17years. The choice of 1997 reflects the beginning of IVF by Wada in Nigeria. The focus however was in favour of more recent works of the last 10years from 2004 to 2013. This focus allows for emphasis on the current trends in financing ART. Comparative analysis means expanding geographical spread to works from Asia, Australia, Europe and America. The websites of other bodies such as WHO, European Society of Human Reproduction and Embryology and International Federation of Fertility Societies (IFFS) were also searched.

The keywords used were combinations of *in vitro* fertilisation (IVF) in Nigeria, ART, infertility treatment in developing countries, family planning and infertility, increasing IVF success rate, male factor in infertility in Nigeria, fertility care financing, health insurance and cost of fertility treatment. The search engines used included Google, Google Scholar, PubMed and MEDLINE; abstracts of papers with relevant themes were selected and the full papers were thoroughly studied. The reference lists of all cited papers were also searched for relevant papers, and textbooks relevant to the subject matter were studied. Anecdotal reports and monographs were excluded.

RESULTS AND DISCUSSION

Infertility is not seen as a common disease, and Assisted reproductive technique (ART) is expensive.

There is paucity of papers on fertility care financing.

Most papers available recognize the financial barrier in accessing ART care even where such facilities are available especially in developing countries.[5-12] The health challenges of the developing countries have been closely tied to their increasing population. The health system is already overburdened, and hence, the attention given to infertility as a disease does not compare with other health issues. The system seems to congratulate the infertile couple for not contributing to population explosion. In reproductive health issues, maternal and child mortality is usually on the front burner.

Interestingly, other scholars,[13] however, have reached a different significant conclusion on the relationship between population increase and fertility care. Artificial reproductive technique does not contribute to population increase. Contribution to population increase has been majorly that of increased life expectancy and infertility treatment using ART still accounts <1% of all deliveries.[13]

The cost-effectiveness and efficiency of treating infertility is based on facts and figures.

It costs about 1.5–3 million euros to set up a standard IVF facility. Is this health issue important enough for such an investment? Is this resource better channelled to diseases such as malaria, tuberculosis and HIV/AIDS among others? In answering these questions from the public health finance perspective, there is a need to look at the economic burden of infertility. In doing this, the prevalence of infertility is the starting point. According to the WHO (2004) [14], women aged 25–49 years account for ≥30% of secondary infertility found in sub-Saharan Africa. In Nigeria, a study revealed that 'Among currently married women aged 40–44 and 25–49 years who have been married for at least 5 years, the percentage of couples who have no living children and the percentage of couples who have had no pregnancies' were 9.4 and 5.2, respectively'.[14]

Infertility among these women sometimes leads to divorce, polygamy, social isolation, loss of self-esteem and mental health issues. All these contribute to loss of productivity and economic loss. In this scenario, ART treatment itself becomes a preventive health intervention that is worth every amount spent on it. Cohen and Chehimi reported that 'for every $1 invested in community-based prevention, the return amounts to $5.60 in the 5th year'.[15] This represents at least a 100% return on investment on a yearly basis.

Dr Richard Kennedy, Secretary General of the IFFS said, 'Those who want children and can't have them undergo great heartache. Infertility is a disease, and should be treated in the same way as any other disease by health services and insurance plans. Yes, it can often be expensive in the short term, but many studies show that the payback to society from successful infertility treatment more than justifies the initial outlay'.[16]

The male factor matters!

In sub-Saharan Africa, the burden of infertility is majorly borne by women. As reflected in the statistics above, men cannot be bothered even when they alone account for an average of 25% of infertility in couples in Nigeria. A study done locally reveals that 'male factor alone was responsible for infertility in 25% of cases in Nnewi, which compares well with 28.8% in Maiduguri, 27% in Ibadan and 22% in Adelaide, Australia. Both partners were responsible in 20% of cases and unexplained in 10% of cases.'[17]

If the additional contribution of the male factor in cases involving both male and female factors is filtered out and added to the male factor alone, the total male factor contribution is as high as 40%!

Men who usually have the purchasing power may not be willing to spend for what they consider the woman's problem. The high cost of IVF treatment makes it difficult for men to allocate money to care for a challenge that culture, social norms and men's ego have placed at the feet of women. Owolabi *et al.*[18] put it point-blank in their words, 'there is urgent need for advocacy for men to accept responsibility for their contribution to infertility and to reduce stigmatisation and ostracising of women for infertility'.

Restricted financial access

This male attitude usually leads to delay in seeking appropriate help. This has the implication of reducing the rate of success of the fertility treatment and increasing the number of treatment cycles and spiral effect in cost. A study conducted in Brazil, among 5000 infertile couples undergoing treatment, revealed that 82.6% picked out financial concerns as their major cause of anxiety among the following other factors: 'financial, multiple gestation, malformation of the offspring, social prejudice and religion or supernumerary embryos'. The boomerang effects of this restricted financial access to fertility treatment lead to the attendant less utilisation of the available facilities and the untapped potential value chain that could have accrued from employment opportunities and other economic benefits thereof.

Emerging solutions

Enhancing the role of family planning

The major tool used in the prevention of maternal child health mortality is family planning. Family planning as a tool is skewed. Emphasis is solely channelled at population control; hence, family planning is restricted to contraceptive commodity supply and workforce training with no room to accommodate the infertile couple. The concept of family planning which includes the ability to have a child when desired is omitted.[19]

Inhorn[5] canvassed assisted reproductive technology as a right saying 'the silence surrounding infertility in low-resource countries may also reflect a tacit eugenic view that the infertile poor are unworthy of treatment; thus, overcoming their infertility problems, including through provision of ARTs, contradicts Western interests in global population control'. This view is myopic and contradicts the principle of social justice which has at its basis 'equity and access.'[6]

Ombelet *et al*.[13] suggest that including infertility treatment in reproductive health intervention may increase political support for family planning where the focus is 'on reproductive autonomy and not primarily on fertility reduction'. The need for giving global attention to infertility as a disease has been emphasised by various scholars.[7]

As far back as 1997, the role of family planning in infertility treatment has been well delineated. According to the PATH, 'Education about infertility and fertility awareness gives couples the knowledge they need either to conceive more quickly or to prevent another birth. It can help dispel local beliefs that infertility is always the 'woman's fault' and teach the importance of preventing and seeking early treatment for sexually transmitted diseases. In addition, education may encourage infertile couples to seek help early before their problems become untreatable'.[8]

The extent to which donor agencies and governments will have this change in orientation along the lines of inclusive family planning where infertility is addressed remains doubtful.

Reengineering *in vitro* fertilisation to cut down cost

There are moves at solving this challenge. Hammarberg and Kirkman[7] identified infertility as a public health need and outlined the case to make assisted reproductive techniques available in resource-poor countries, while Ombelet *et al*.[9] called for strategies aimed at reducing the cost of the procedure.

Central to the solution is lowering the cost of the critical steps of IVF by reengineering the process using low-cost materials and technology. Belgian doctors have been able to achieve this technology, and its deployment targets resource-poor settings.[10] Time will tell how soon this will become available in the targeted areas.

Flexible payment options

Efforts are being made locally too by different centres to increase financial access by offering various terms of payment. Most fertility treatment centres have organised flexible payment options in different ratios of instalments. Others have added reduction in cost subsidised by one foundation or the other. Patients under these payment plans only have the opportunity of a single cycle. If this fails, then there is usually no hope of a second cycle to increase the chance of success.

CONCLUSION

The literature review highlights the challenges and already-outlined innovative solutions in making ART accessible in resource-poor settings. However, none of the methods are sustainable. Any solution must integrate the use of available resources and engage men as the focal point in rallying support for ART accessibility. Family planning clinics are available in most public health facilities. There should also be a deliberate provision for fertility clinics where such clinics are not in existence in the public health facility. This will eventually lead to some cost reduction, allowing more women to benefit from IVF.

Recommendations

Concept of advocacy 'With Empowerment for Targeted Action' (WEfTA)

Owolabi *et al*.[18] mentioned advocacy as part of the solution. It is this concept of advocacy that should be stretched to include financing infertility treatment using financial institutions as an enabler. Already, experts are of the opinion that 'cooperative public and private partnerships have the potential to make infertility care affordable and to make access more just'.[11] Hence, financial institution products and health insurance companies can innovate products to provide long-term loan facility and schedule repayment over time to infertile couple to access treatment. This increases financial access which eventually increases the utilisation of the available fertility centres in the country.

Financial institutions can play the role of credible information channel targeting men who are the decision makers and whose support is needed to ensure success in the fertility treatment. That men will readily go for financial transaction than to a hospital is taken for granted. This is an avenue that can be 'exploited' for not just advocacy in the traditional sense but also advocacy 'With Empowerment for Targeted Action' (WEfTA).

When cost is removed as a barrier and the financial institutions are involved in working with the healthcare facility providers, a synergy develops.

Linking advocacy wefta with *in vitro* fertilization success rate

Closely attached to the issue of financing treatment is the success rate of fertility treatment. The choice of attempting an IVF cycle and failing is usually a double tragedy. First, the baseline trauma of being infertile is further heightened by the failure of treatment and second, the financial burden that will now be a recurring decimal for whatever length of time reinforces the failure. These two can crush any zeal for a second trial at treatment which may be needed in order to increase success rate.

A real-life example that brings this in sharp focus is that of an IVF patient in Uganda that had to sell off her inheritance (a plot of land) to undergo one IVF cycle for $4900 which was unsuccessful. She lost her land, did not get the child sought for and it will take 9 years for her to save up for another cycle by which time age will further reduce the chances of success.[12]

Hence, any intervention will have to take into consideration factors that will increase the success of the procedure. Recent researches have shown that increasing success rate especially for ages 35 years and below and 40–44 years requires increasing the number of cycles up to a maximum of five cycles. In fact, a study in Western Australia indicated a 47% success rate in women who received an average of three cycles and concluded that the IVF success rate could be improved, especially if women over 35 years are given more cycles.[20]

Reducing financial burden and increasing chances of success

The financial arrangement thus should be given in such a way that allows for a maximum of three cycles of IVF and Intracytoplasmic Sperm Injection (ICSI) treatment as the need arises. The duration of repayment should be long enough to make the periodic repayment as small as possible in order to remove the burden of monthly periodic repayment. The loan arrangement should be made in such a way that the funds will be made available directly to the healthcare providers.

Benefits of advocacy Wefta

This synergy can attract other factors that will drive the cost down for infertile couples, which will be a positive feedback for greater financial inclusion of yet others (infertile patients). This solution will eventually lead to a faster technology transfer from Europe where reengineering IVF process for greater cost-effectiveness has been achieved. The increase in the utilisation of IVF centres will lead to improvement in capacity building, more training and research, all geared towards better clinical outcomes in infertility treatments.

The health system also benefits as the lessons learnt in the IVF treatment history can be replicated to other high-end

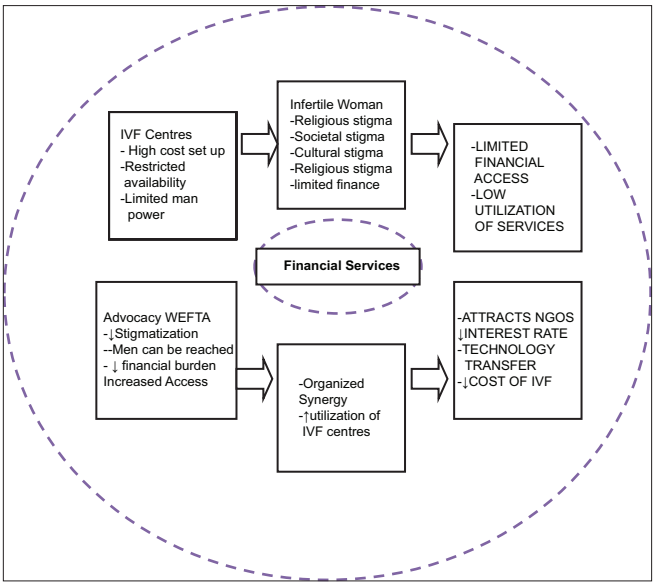

Figure 1: Diagrammatic summary of the role of financial institution services in infertility treatment options. ↓: Reduced, ↑: Increased , IVF: In vitro fertilisation, NGOs: Non-governmental organisations, WEFTA: With Empowerment for Targeted Action

treatment modalities. Cardiovascular surgeries, neurological surgeries and transplant technologies can start evolving in the country, reversing decades of capital flight in foreign exchange due to medical tourism. Nigeria can be a West African hub for medical treatment, contributing to the foreign exchange earnings and national economic growth. The perception of healthcare as a drain pipe can thus be erased.

The renewed interest in health as an economic enabler will lead to robust investment in the rest of the health sector. As can be seen in figure 1, Consequently, the entire health system can be lifted out of the ashes of the 18th century to the modern age. This has been recently emphasised by Obansa and Orimisan[21] that 'the health sector in any country has been recognised as the primary engine of growth and development'. Figure 1 puts this in perspective.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Ola TM. Assisted reproductive technology in Nigeria: Flawed or favored? Int J Soc Sci Humanit 2013;2:331-34.
2. Lawanson A, Olaniyan O, Soyibo A. National Health Accounts estimation: Lessons from the Nigerian experience. Afr J Med Med Sci 2012;41:357-64.
3. Operational Guidelines. National Health Insurance Scheme Revised; 2012.
4. Hodo BR, Emmanuel SA. Healthcare financing and health outcomes in Nigeria: A state level study using multivariate analysis. Int J Humanit Soc Sci 2012;2:296-309.

5. Inhorn MC. Right to assisted reproductive technology: Overcoming infertility in low-resource countries. Int J Gynaecol Obstet 2009;106:172-4.
6. Pennings G. Ethical issues of infertility treatment in developing countries. Oxf J ESHRE Monogr 2008;2008:15-20.
7. Hammarberg K, Kirkman M. Infertility in resource-constrained settings: Moving towards amelioration. Reprod Biomed Online 2013;26:189-95.
8. PATH. Infertility in developing countries. Outlook 1997;15:1-3.
9. Ombelet W. Reproductive healthcare systems should include accessible infertility diagnosis and treatment: An important challenge for resource-poor countries. Int J Gynaecol Obstet 2009;106:168-71.
10. European Society of Human Reproduction and Embryology (ESHRE), IVF for 200 Euro Per Cycle; 2013. Available from: https://www.eurekalert.org/pub_releases/2013-07/esoh-if2070213.php. [Last accessed on 2013 Dec 15].
11. Akande EO. Affordable assisted reproductive technologies in developing countries: Pros and cons. Oxf J ESHRE Monogr 2008;2008:12-4.
12. WHO. Mother or nothing: The agony of infertility. Bulletin 2010;88:877-953.
13. Ombelet W, Cooke I, Dyer S, Serour G, Devroey P. Infertility and the provision of infertility medical services in developing countries. Hum Reprod Update 2008;14:605-21.
14. Shea OR, Shah IH. Infecundity, Infertility, and Childlessness in Developing Countries. DHS Comparative Reports No. 9. Calverton, Maryland, USA: ORC Macro and the World Health Organization; 2004.
15. Cohen L, Chehimi S. The imperative for primary prevention. In: Cohen L, Chavez V, Chehimi S, editors. Prevention is Primary-Strategy for Community Well-Being. 2nd ed. San Francisco: Prevention Institute; 2010. p. 14.
16. International Federation of Fertility Societies (IFFS). Cost Biggest Anxiety for IVF Patients. ScienceDaily; 2013. Available from: http://www.sciencedaily.com/releases/2013/10/131015191134.htm. [Last accessed on 2015 Dec 15].
17. Nwajiaku LA, Mbachu II, Ikeako L. Prevalence, clinical pattern and major causes of male infertility in Nnewi, South East Nigeria. Afrimedic J 2012. Available from: Available from https://www.ajol.info/index.php/afrij/article/view/86575. [Last assessed on 2015 Dec 16].
18. Owolabi AT, Fasubaa OB, Ogunniyi SO. Semen quality of male partners of infertile couples in Ile-Ife, Nigeria. Niger J Clin Pract 2013;16:37-40.
19. Fathalla MF. Current challenges in assisted reproduction. In: Vayena E, Rowe PJ, Griffin PD, editors. Current Practices and Controversies in Assisted Reproduction. Geneva: World Health Organization; 2002. p. 5.
20. Stewart LM, Holman CD, Hart R, Finn J, Mai Q, Preen DB, *et al.* How effective is *in vitro* fertilization, and how can it be improved? Fertil Steril 2011;95:1677-83.
21. Obansa SA, Orimisan A. Health care financing in Nigeria: Prospects and challenges. Mediterr J Soc Sci 2013;4:221-36.