

# Global access to infertility care: The Walking Egg Project

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## Abstract

The consequences of involuntary childlessness in developing countries (DC) create more wide-ranging societal problems compared to Western societies, particularly for women. Negative psychosocial and economical consequences for childless couples are often severe and underestimated by the local and international society.

In the Walking Egg Project we strive to raise awareness surrounding childlessness in resource-poor countries and to make infertility care in all its aspects, including assisted reproductive technologies, available and accessible for a much larger part of the world population.

As part of the project we recently developed a simplified ‘WE lab IVF culture system with excellent results (see paper of Klerkx et al.).

We also realize that universal access to infertility care can only be achieved when good quality but affordable infertility care is linked to effective family planning and safe motherhood programmes. Only a global project with respect to socio-cultural, ethical, economical and political differences can be successful.

**Key words:** Assisted reproduction, developing countries, infertility care, IVF, resource-poor countries, sociocultural factors.

## Introduction

Infertility is a global reproductive health problem: a silent population of more than 180 million couples worldwide is facing the consequences of childlessness day by day (Rutstein & Iqbal, 2004; Boivin et al., 2007).

Consequences of infertility are numerous: stress, depression, low-self esteem, guilt, marital problems, and sexual problems. This may result in physical and psychological violence and polygamy (Daar and Merali 2002, Dyer 2004 2005; Ombelet et al. 2008). In the last two decades the manifold consequences of infertility, most significant within DC, at personal, conjugal, family and community levels, and financially, are well documented (Inhorn, 2003; Van Balen and Bos, 2009). These studies have also shown that the way people experience, explain and deal with infertility is strongly related with their socio-cultural and economic life circumstances as well with the availability or non-availability of health care options.

The most important reasons for infertility in DC are (1) the high incidence of sexually transmitted diseases (STDs) – which affects both men and women – and (2) pregnancy-related infections, due to unsafe abortions and home deliveries in unhygienic circumstances, mainly in rural areas.

Despite the severe economical consequences of childlessness in DC, infertility care remains a low priority area for local health care providers (Fathalla et al., 2006; Ombelet, 2011).

## The Walking Egg non-profit organization

The Walking Egg npo has opted for a multi-disciplinary and global approach towards the problem of infertility (Dhont, 2011). The main goal of the Walking Egg Project is to raise global awareness surrounding childlessness, and to make infertility care in all its aspects universally available and accessible. Therefore we need to change and optimise the whole set-up of infertility care in terms

of availability, affordability and effectiveness (Ombelet and Campo, 2007).

To realize our objective we have (1) to raise awareness surrounding the problem of childlessness within (a) the donor community, politicians, funding agencies and research organisations through lobbying and publishing, (b) the general population through information, education and counselling on infertility and its consequences, (2) to study the ethical, socio-cultural and economical aspects surrounding the issue of childlessness and infertility care in resource-poor countries, (3) to develop new methods to make infertility diagnosis and infertility treatment including ART accessible for a much larger part of the population, by (a) simplifying the diagnostic procedures and (b) simplifying the IVF laboratory procedures and (c) modifying the ovarian stimulation protocols for IVF and (4) to work together with other organisations and societies working in the field of reproductive health.

### **Simplified infertility treatment and non-IVF assisted reproduction**

If tubal patency is demonstrated in ovulatory women and if severe male factor subfertility has been excluded, fertility awareness programmes are an inexpensive and efficient first line approach to infertility management (Gnoth et al., 2002, 2003). Fertility awareness counselling to couples about the meaning and detection of cervical mucus secretion can be given by nurses and paramedical staff working in existing reproductive health care centres.

For ovulatory dysfunction, representing almost 20% of female infertility, clomiphene citrate (CC) is a very cheap and rewarding option. In case of resistance to CC, a low dose ovarian stimulation regimen with gonadotrophins aimed at mono-follicular growth is advisable, although this medication is more expensive.

In case of unexplained and moderate male factor infertility and provided tubal patency has been documented, intrauterine insemination (IUI) with husband's semen in natural cycles or after mild stimulation is an excellent first-line treatment without major costs and without expensive infrastructure (Ombelet et al., 2003;2014; Verhulst et al., 2006). IUI programmes can be runned by well-trained paramedical staff, another advantage for developing countries.

### **Simplified IVF laboratory procedures**

Another major challenge is to reduce costs of laboratory procedures, namely fertilization and culture of eggs and embryos for IVF. Different

options and approaches have been developed or are presently being field- tested with promising results. As part of the Walking Egg Project and based on previous findings and experience (Van Blerkom and Manes, 1974; Swain, 2011) we developed a new simplified method of IVF culturing, called the 'WE lab method (see Klerkx et al. paper). With this new system, specifically designed for low resource settings, we can avoid the high costs of medical gases, complex incubation equipment and infrastructure typical of IVF laboratories in high resource settings.

### **Low-cost ovarian stimulation protocols for IVF**

Effective, cheap and safe stimulation schemes for intrauterine insemination (IUI) and IVF need to be established. A review of the literature clearly shows the value and effectiveness of mild ovarian stimulation protocols in ART settings. The use of clomiphene citrate (CC), a very cheap oral drug, has been proven in many studies to be an optimal alternative with acceptable results, minimal side effects and a very low complication rate (Ingerslev et al. 2001; Nargund et al. 2007; Verberg et al. 2009; Kato et al. 2012).

### **The implementation of 'WE pilot-centres in DC**

The ultimate goal of the Walking Egg npo is the implementation of good quality but low-cost infertility centres in DC, if possible and preferable integrated into existing reproductive health care programmes.

The selection of countries where the first pilot centres are implemented will be based on (1) available data on the resources, needs and resource gaps for infertility services on a national level, (2) the availability of endoscopic surgery facilities in the neighbourhood, (3) a good quality family planning unit, (4) good quality mother care facilities and (5) the availability of at least one experienced and dedicated gynaecologist and biologist.

### **Conclusion**

The magnitude of childlessness in developing countries has dimensions beyond its prevalence. Although reproductive health education and prevention of infertility are number one priorities, the need for accessible diagnostic procedures and new reproductive technologies is very high. The success and sustainability of ART in resource-poor settings will depend to a large extent on our ability to optimise these techniques in terms of availability,

affordability and effectiveness. By simplifying the diagnostic and IVF laboratory procedures and by modifying the ovarian stimulation protocols for IVF assisted reproductive techniques can be offered at affordable prices.

We believe that infertility care will be one of the more predominant components of future reproductive health care practice in developing countries.

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