Infertility: the hidden tragedy within family planning

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Are we viewing the infertile population as part of the solution to overpopulation?

- "In the context of the overpopulation problem being accredited to growth in fertility rates, some believe that the infertile couple should be encouraged to courageously accept their condition of childlessness rather than be offered intervention."
  van Balen et al, 2004

- "As a result, the infertile, have become the "Cinderella" of reproductive health. The infertile are not perceived as a problem…” requiring care and support from public health systems.

Silke Dyer "Barrenness among plenty," 2007
...focus not only on fertility reduction.

- "Because family planning professionals devote much of their careers to trying to help clients avoid unintended pregnancies, they may neglect the issue of **unintended infertility.**"
  
  Williard Cates, FHI website

- Although family planning and educational programmes have resulted in a substantial fertility decline in developed and in some developing countries, there is still a need to support and optimize these programmes as fertility numbers stall or reverse. Nonetheless, with holistic sexual and reproductive health programmes and family planning programmes, "a clear focus needs to be placed upon reproductive autonomy and not primarily on fertility reduction."

  Ombelet et al, 2008, ESHRE Special Task Force on "Infertility in the Developing World"
Socio-cultural aspects of infertility

"For a successful family planning program and adoption of small family norms, the issue of involuntary infertility becomes more pressing.

Couples who are urged to postpone, delay or widely space pregnancies should be reassured that they will be helped to achieve pregnancy should they decide to do so.”

M. Fathalla, 2002

The WHO global reproductive health strategy
Guiding principle: human rights
- 2. Providing high-quality services for family planning, including infertility services

adopted by WHO's 191 Member States in May 2004, one abstaining (MDG 5b, 5.6 Unmet need for Family planning)
From a population and public health perspective, how are we incorporating access to care for the infertile as part of the FP solution to best practice?
Global Unmet Need

- "Countries carrying the burden of the highest total fertility rates also carry the burden of the highest infertility rates.
- Women in many countries are expected to bear a greater number of children than 2, often times due to high child mortality rates, family or community economic sustainability or social/religious pressures."

Macklin R, 1995
Desired "ideal" family size is still greater in sub-Saharan Africa

Mean ideal number of children

(Source: Measure DHS, StatCompiler; September 2007)

World Health Organization
Reproductive Health and Research
Loss of children can be a driver for increased fertility and also perceived as an unmet need for fertility support.

Probably of dying aged <5 years per 1,000 live births (under 5 mortality rate)

(Source: WHO World Health Statistics; 2008)
Infertility, infecundity and childlessness in developing countries captured from DHS household surveys

This DHS Comparative report (9) captured data from 47 countries. It was estimated that over 186 million couples in developing countries (excluding China) suffer from infertility, with an estimate of as many as 1 in every 4 couples unable to have children.

Shah and Rutstein, 2004
Infertility: Burden of the Disease

Infertility is an ability to conceive and carry a pregnancy to term. Infertility categorized as either
- primary (infertility in the absence of a prior history of pregnancy) or
- secondary (infertility following a prior pregnancy)

Primary infertility prevalence rates have been shown to be higher in developed countries, 3.5-16.7%,
(Boivin et al, 2007)

Secondary infertility is highest in developing countries, averaging 24%.
(Shah & Rutstein, 2004).
The magnitude of the involuntary infertile, demographic perspective in developing countries (minus China)

- Primary infertile: 18 millions
- Secondary infertile: 168 millions

An inability to conceive, no children despite a child wish
An inability to conceive but maintaining a child wish after having at least one living child

(Source: Rutstein and Shah, *DHS Comparative Reports*, no. 9, 2004)
Preliminary update on primary and secondary infertility captured from DHS household surveys

<table>
<thead>
<tr>
<th>DHS Comparative Reports, No. 9</th>
<th>Update (snapshot presented)</th>
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<tbody>
<tr>
<td>47 countries</td>
<td>72 countries</td>
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<tr>
<td>Sexually active women, age 15-49</td>
<td>Sexually active women who are married or in a union, age 15-49</td>
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<td>Contraceptive was not excluded in generating all data. (S. Rutstein, personal communication)</td>
<td>Captures and excludes contraceptive use</td>
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Secondary infertility remains high in Africa

Percentage of sexually active women in a single union, unsuccessful at having another child, after two years, having had at least one prior birth.

(Source: WHO based upon DHS data, unpublished data, still in DRAFT)
Developing countries and secondary infertility

Although secondary infertility can also be a result of life style and environmental factors:

- in women, bilateral tubal occlusion has been found to be the major cause of secondary infertility in the developing world, specifically in Sub-Saharan Africa, as well as in South Asia and Latin America, often as a result of sexually transmitted infections (STIs), but also due to reproductive tract infections (RTIs), post-partum and post-abortion infections.

Cates, Farley and Rowe/WHO 1979-1984
Developing countries and secondary infertility

Although secondary infertility can also be a result of lifestyle and environmental factors:

-in men, secondary infertility is difficult to not only diagnosis but also to manage and treat, however a low fertility status can often be due to previous or underlying STIs, other infectious diseases, or as a result of physical injury.
Unsafe abortion, infection and infertility

• The WHO estimates that about 20-30% of unsafe abortions result in reproductive tract infections and that about 20-40% of these result in upper genital-tract infection and secondary infertility.

• An estimated 2% of women of reproductive age are secondarily infertile as a result of unsafe abortion and 5% have chronic infections which may lead to secondary infertility in themselves and/or infertility/low fertility in their male partners.

(Source: WHO, Lancet, 2006)
Secondary infertility – trends in infertility
(per cent of sexually active women, married or in union, prior birth, not on contraception)

(Source: WHO based upon DHS data, unpublished data, still in DRAFT)
Secondary Infertility, Regional trends over time

(per cent of sexually active women, married or in union, not on contraception, with a prior birth)

(Source: WHO based upon DHS data, unpublished data, still in DRAFT)
The epidemic of low fertility, and thus primary infertility, in developed countries is also transitioning to urban centres in developing countries.

In countries and urban areas (or urban subsections) experiencing low fertility, primary infertility in women, is often due to delayed age at childbearing*, and thus a result of decreased ovarian reserve and egg quality decline associated with aging,

uniquely, female genital cutting can result in vaginal narrowing which could be a barrier to sexual activity, or could present with vaginal stenosis, which when untreated can result in primary infertility;

* Often linked to increased education, higher socioeconomic status, higher cost of living and child care access.
The epidemic of low fertility, and thus primary infertility, in developed countries is also transitioning to urban centres in developing countries. And in both men and women, primary infertility can be attributed to complications due to STIs, genetic or other lifestyle factors as well as environmental factors affecting industrializing or post-industrialized spaces.
Primary infertility prevalence reflects a global prevalence

- CAR
- Senegal
- Mali
- Côte d'Ivoire
- Mozambique
- Sudan
- Niger
- Cameroon
- Nigeria
- Madagascar
- Ghana
- Haiti
- Pakistan
- India
- Yemen
- Moldova
- Ukraine
- Morocco
- Thailand
- Jordan
- Egypt
- Dominican Republic
- Nepal
- Tunisia
- Indonesia

Percentage of sexually active women in a single union, unsuccessful at having a child, after two years.

(Source: WHO based upon DHS data, unpublished data, still in DRAFT)
Regional differences, developing and transitional countries

- Sub-Saharan and Western Africa (33 Countries)
- North Africa/ Eastern Mediterranean Region (6 Countries)
- Central, South and Southeast Asia (17 Countries)
- Latin America/ South America (13 Countries)

Primary Infertility
Secondary Infertility

(Source: WHO based upon DHS data, unpublished data, still in DRAFT)
The paradox for developing countries

- Although women are usually stigmatized and blamed for a couples inability to have a child, most significantly from a social and socioeconomic context, male factor infertility has been cited as representing 20-50% contribution to a couple's failure to conceive.
- Men in some countries will divorce or may partake in polygamous relationships in order to bear children, and women may also attempt multiple partnerships.
Vulnerability of childless women to contract sexually transmitted infections, including HIV

"One of the few means a childless woman may have to regain respect, recognition and value is to prove her fertility. To achieve this she may need to have unprotected sexual intercourse with several partners. In a society in which syphilis, gonorrhoea, chlamydia and HIV infection are prevalent, the risk of acquiring these disease may be substantial."

Bergstrom and Samucidine, 2000

as reported in Proceedings: Social Science Research on Childlessness in a Global Perspective, van Balen, Gerrits and Inhorn, 2000
Single versus multiple unions; difference in risk of infertility

Primary infertility  Secondary infertility

Decrease in infertility           Increase in infertility

(Source: WHO, unpublished data)
Difference in infertility rates for women in a single union between those who have had more than one union.

- **Primary infertility**
  - When compared to the percentage of women with infertility problems who remain in a single union, women who have had multiple unions showed either no change in infertility status, or a difference of an increase of infertility 0.1 to 0.6%. In some countries there a 0.1 -0.2% limited decrease in infertility within a multiple union.

- **Secondary infertility**
  - Consistently, when compared to the percentage of women with infertility problems who remain in a single union, women who have had multiple unions showed a difference in infertility status with an increase from 0.1 to 5.0%. 
Primary infertility: Multiple unions as a reproductive strategy?

For women presenting with primary infertility embarking on a reproductive strategy of a second union, will make either no difference at all, a slight chance of increasing and only a very slight chance of decreasing her infertile status.

A women will self report her primary infertility as her own, but the infertility may be due to a male factor, and thus changing partners could potentially resolve her infertility status.
Primary infertility:
Multiple unions as a reproductive strategy

For women presenting with primary infertility embarking on a reproductive strategy of a second union...

- However, primary infertility usually represents a status of a disease unable to be changed, (genetic/structural) and it is more likely that there will be no difference in her fertility rates, and potential for a limited increase as a new partner may also have a fertility problem or introduce an STI which may negatively effect the woman's fertility.
Secondary infertility: Multiple unions as a reproductive strategy

Based upon this data analysis, for a woman, recorded as secondarily infertility embarking on a reproductive strategy of a second union would more likely prove unsuccessful and can lead to a significant increase in infertility status.

- As with primary infertility, the women will self-report her secondary infertility as her own. As secondary infertility often presents as a result of tubal occlusion, or as a result of an existing STIs, when embarking on another or multiple unions, an increase in infertility is likely due to spread of infection.
Secondary infertility: Multiple unions as a reproductive strategy

Based upon this data analysis, for a women, recorded as secondarily infertility….

- As the parties within additional unions are of unknown risk of infertility, there is a risk the women reporting secondary infertility is a result of her partner. Therefore, with multiple unions she risks increasing her chance of contracting a STI.
Vulnerability of childless women to contract sexually transmitted infections, including HIV

- "A markedly elevated prevalence of syphilis seropositivity among infertile women may express either a life-style associated increased risk of the acquisition of STIs (with ensuing risk of infertility) or a consequence of infertility with multiple exposures to unprotected sexual intercourses with multiple partners in order to achieve a much desired pregnancy, or both these mechanisms in combination.

- In Tanzania (Mwanza), it was found that the overall HIV prevalence was remarkably higher in infertile women (18.2%) than among fertile women (6.6%)

Fayot et al, 1997; Bergstrom and Samucidine, 2000 as reported in Proceedings: Social Science Research on Childlessness in a Global Perspective, van Balen, Gerrits and Inhorn, 2000
Vulnerability of childless women (contraception-adverse) to sexually transmitted infections, including HIV

"Women suffering from infertility should be considered:
- Firstly an important group of often desperate patients with reproductive ill-health deserving more attention and care in their own right; and,
- Secondly an important potential category of transmission of both curable and non-curable STIs.

"Infertile women may constitute an important potential reservoir of HIV infection. Their possible role as victims and transmitters of HIV infection should be noted. The public health problem of childlessness should be addressed more vigorously in its own right but also in order to prevent HIV transmission."

Bergstrom and Samucidine, 2000
as reported in Proceedings: Social Science Research on Childlessness in a Global Perspective, van Balen, Gerrits and Inhorn, 2000
"Infertile women and men may constitute an important potential reservoir of HIV infection."

- This statement should be viewed, **not** with increased stigmatization of an already stigmatized population, but rather from the point of view that **if we do not address the problems of the infertile,**
  - we are leaving a **gaping hole** in our attack on HIV/AIDS.
  - we are not **holistically** attacking the problem of HIV/AIDS transmission.
"Infertile women and men may constitute an important potential reservoir of TB infection."

- "Of equal concern, is the rise of extrapulmonary TB residing within the genital tract, which has been linked to infertility in regions endemic with pulmonary TB. This infection can often be silent, and may not cause any symptoms or signs at all.
  - In the man it causes tuberculous epididymo-orchitis, blocking the passage, as a result of which the man becomes azoospermic (no sperm enter the semen because the tract is blocked).
  - In the woman, it cause tuberculous endomteritis (infection of the uterus) and salpingitis (infection of the tubes) and subsequent destruction of these tissues."

  (Sharma et al, 2009)

- Again, if we do not address the problems of the infertile,
  - we are leaving a gaping hole in our attack on TB
  - we are not holistically attacking the problem of TB.
Why does contraceptive messaging sometimes fail?
Do issues of fertility/fear of infertility play a role?

- Is it because there is the perceived burden to prove fertility and a **fear of losing that fertility through contraception**?
Why does contraceptive messaging sometimes fail? Do issues of fertility/fear of infertility play a role?

- Proving virility is as important for men as it is for women in some societies, and is often cited as one of the reasons for refusing use of contraceptives or barrier methods, or fear of safe abortion for an unwanted pregnancy.
  - Misconception: Abortion as a form of contraception "causes infertility."
  - Misconception: Fear of permanent infertility from contraceptive use, due to the suspension of fertility during its use, generates fear that after use, fertility may not return.

"We are shooting ourselves in the foot" by stressing the long-term effect of contraceptives"

Quote from Anna Glasier, BBC news media, 2009.
If men and women know that inventions for infertility care are in place...

- would this have a positive effect on contraceptive uptake? Could misconceptions be mitigated? Could contraception-adverse behaviour be decreased?
If men and women know that inventions for infertility care are in place...

- In developed countries, it is felt that men and women assume that any future fertility problems can be solved through the latest technology, and is country specific on cost-access. However:
  - does known access to fertility care, if and when required, enhance decision-making to delay age in childbearing? Possibly.
  - would known access to future fertility care, if and when required, enhance comfort in using contraception?
...and, with known and proven access to fertility care...

- could the male peer pressure of proving virility be less of a 'need' if access to fertility care is assured. Could the peer pressure of "proof of fertility" become immaterial?
- could the power of access to fertility care be enough to relax the concern and desperation for proving fertility? Could the peer pressure of proof of being able to become pregnancy turn immaterial?
Successful fertility outcome – healthy child and mother

The infertile patient within a family planning clinic requires a slightly different approach from contraception. The ultimate success of any "fertility" care results in pregnancy and ultimately a live birth, healthy child and mother.
Successful fertility outcome – healthy child and mother

- Pre-natal nutrition, perinatal and maternity care, and other interventions normally linked to maternal and perinatal health programmes must be adopted to address a successful outcome when providing care to an infertile couple.
Lack of access = coercion?

- "Parenthetically, in our view, the absence of access to contraception should also be considered a form of coercion, because it frequently condemns women to bearing children they do not wish to have."
  Bongaarts J & Sinding SW, 2009

- Similarly, the absence of access to infertility diagnosis and care, should be considered a form of coercion, because it frequently condemns men and women to remaining childless when they wish to have a child.

- "The majority of patients in low-resource settings have virtually no access to any form of infertility care or service."
  Nachtigall, R.D. 2006
Barriers and opportunities

- There are known barriers to access to affordable care for consistent use and range of contraceptive options, and there are known barriers to affordable and diversity of options for infertility care.

- There are known ethical and social/moral issues concerning access to contraceptive care, and there are known issues which are debated over various forms of infertility interventions.
"Perceived research priorities in SRH for low- and middle-income countries"

"What would be a basic infertility package to offer in primary care, and is it possible to implement this in relatively poor settings?"

(Global Forum for Health Research, WHO/HRP)

Lessons learnt from successful contraceptive family planning programmes could significantly inform development of infertility care programmes.
Tossing the family planning coin, infertility exposed:
Perhaps an evenly-weighted coin will prove best practice?

Thank you for listening.