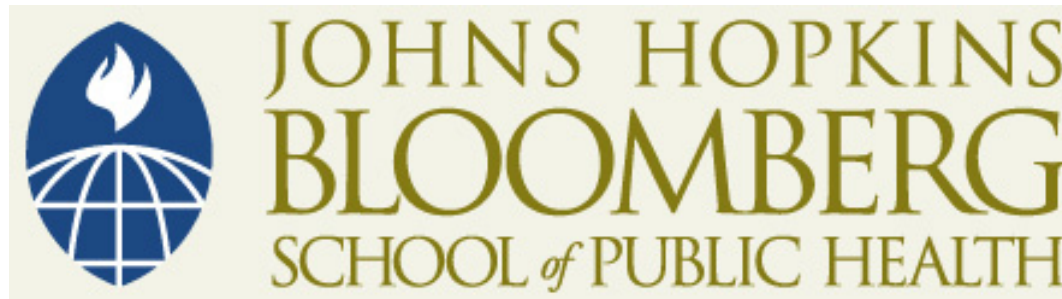


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# Infertility

## Causes, Prevention and Programmatic strategies

Module 12

# Learning objectives

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After the completion of this module, the student will be able to

- ◆ Define different types of infertility
- ◆ List different sources of data to measure infertility
- ◆ Describe different causes of infertility
- ◆ Describe different programmatic strategies to deal with infertility

# I. Definitions

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- ◆ **Fecundity** = Physiological capacity to conceive
- ◆ **Infecundity** (sterility) = Inability of a woman to conceive
  - **Primary sterility** = Never able to conceive
  - **Secondary sterility** = Inability to conceive, having conceived in the past

- ◆ **Fecundability** = Probability that a woman will conceive during a menstrual cycle
- ◆ **Fertility** = Manifestation of fecundity = having a live birth
- ◆ **Infertility** = Inability to bear a live birth

# Infertility : Definitions

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- ◆ **Infertility:** Failure to achieve a live birth over a 12-month period of unprotected intercourse
- ◆ **Primary infertility:** Never having had a live birth
- ◆ **Secondary infertility:** Failure to achieve a live birth after having had a live birth previously

# Measuring infertility: Sources of data

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- ◆ Censuses
- ◆ Large scale population surveys; World Fertility Survey and Demographic Health Survey
- ◆ Vital statistics
- ◆ Epidemiological surveys
- ◆ Facility based studies
- ◆ Clinical studies

# Prevalence

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- ◆ 8 to 12% of couples around the world have difficulty conceiving at some point of time
- ◆ Levels vary widely within and between countries
- ◆ 11 to 20% in Sub-Saharan Africa, rates vary from 14 to 32%
- ◆ Primary infertility is the most common type world-wide, SSA being exception with 52% infertile couples suffer from secondary infertility.



# National Infertility Prevalence, SSA

Nation	Survey (year)	Infertility rates ( Range %)
Uganda	DHS (1988)	9.9-13.5
Ghana	DHS (1988)	10.1-13.5
Tanzania	DHS (1991-92)	10.7-12.0
Sudan	DHS (1989-90)	10.6-14.0
Nigeria	DHS (1990)	10.5-14.6
Malawi	DHS(1992)	12.2-15.0
Cameroon	DHS (1991)	12.7-15.2
Kenya	DHS (1989)	13.7-16.7
Madagascar	DHS(1992-93)	16.2-20.4
Zimbabwe	DHS (1988)	16.8-22.4
Namibia	DHS (1992)	16.2 –20.8
Sub-Saharan average		12.5- 16.0
Source: Soc Sci Med 1996, vol 42, p212		

# Infertility belt in Africa

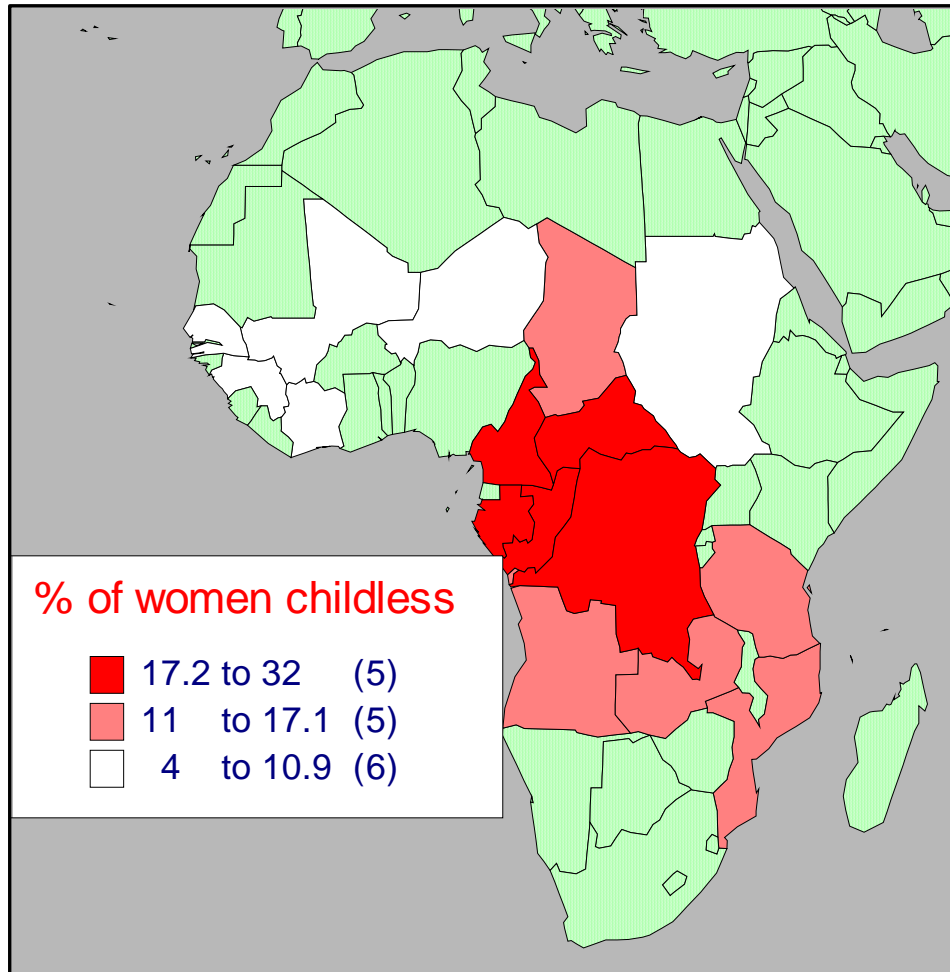
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The African infertility belt stretches across Central Africa from Tanzania in the east to Gabon in the West.

# Childlessness Among Women Aged 45-49

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- ◆ A good indicator of overall infertility in the population



**Level of childlessness among women aged 45-49 in 17 countries of sub-Saharan Africa, various years**

# Trends in Infertility Prevalence

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- ◆ Declining trends?
- ◆ Could be assessed only for few countries with DHS/WFS data available at two points in time
- ◆ Available DHS/WFS data in Nigeria, Tanzania, and Cameroon suggest declining trends
- ◆ Reason for decline: hard to assess? Wider availability of antibiotics against STD might have contributed to the observed decline

# Infertility: Causes

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- ◆ **Non-preventable:** Anatomical, genetic, hormonal or immunological problems;
  - Do not vary much across countries/ within countries
  - Account for a core of 5% of infertile couples
- ◆ **Preventable:** Responsible for observed variations across/ within countries

# Preventable causes

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- ◆ Infections

- Sexually transmitted diseases:

Chlamydia, Gonorrhoea, syphilis etc.

(the infertility belt in Sub-Saharan Africa is induced by high prevalence of STDs in these areas)

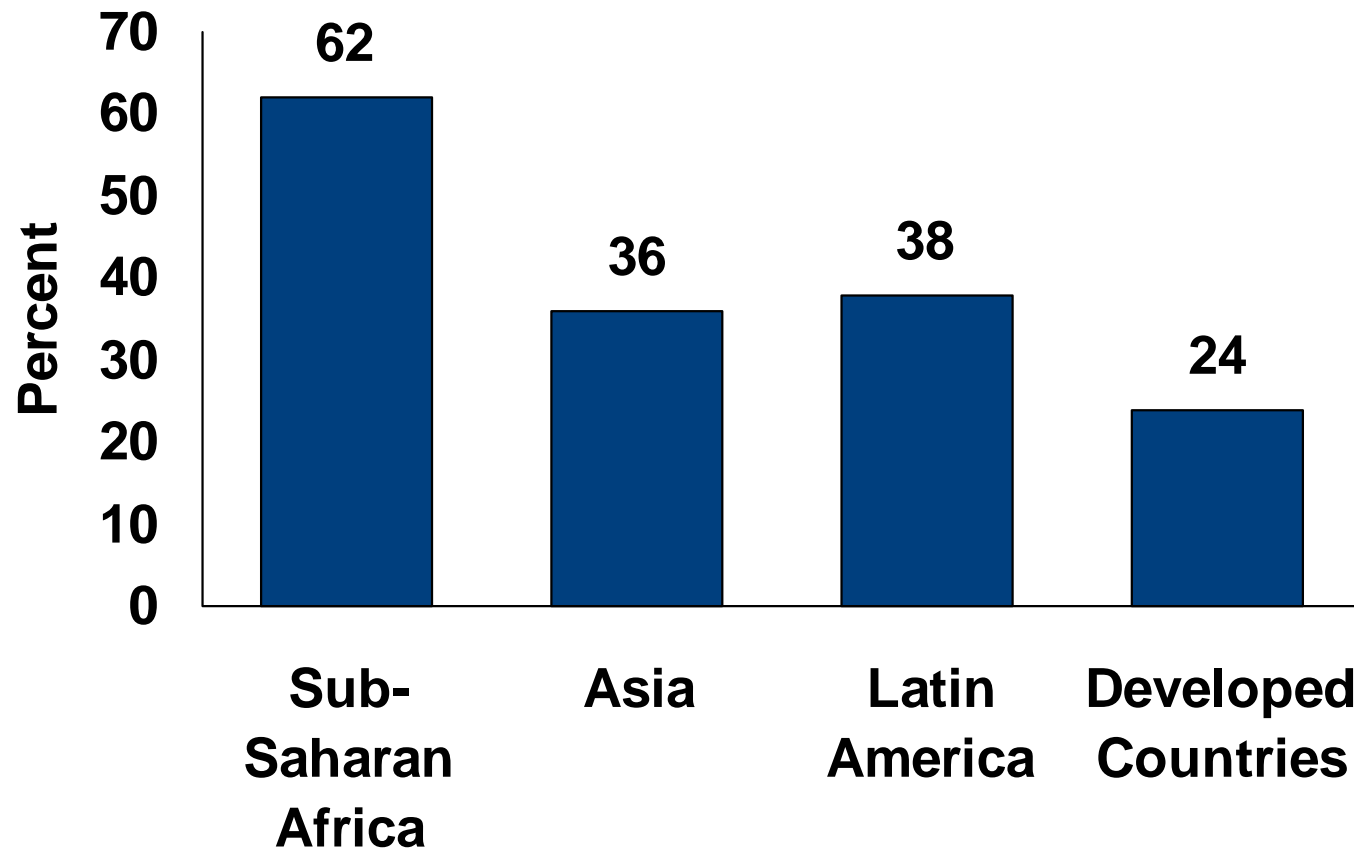
- Infectious and parasitic diseases:

Tuberculosis, schistosomiasis,

Malaria, sickle cell disease

*Continued*

# Percent of Infertile Women with Infection Related Diagnoses, by Region



Source: Outlook 1997, Vol15(3)

# Preventable causes

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- ◆ Health care practices and policies
  - Unhygienic obstetric practices
  - Septic abortion and their complications
  - Postpartum and postabortal complications

*Continued*



# Preventable Causes

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- ◆ Exposure to potentially toxic substances in:
  - Environment: Arsenic, aflatoxins, pesticides
  - Diet: Caffeine, tobacco, alcohol

*Continued*

# Cultural and social factors

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- ◆ Female genital Mutilation
- ◆ Early age at marriage or sexual intercourse
- ◆ Multiple sexual partners



Risk of  
genital  
infection

# Indigenous customs and Infertility

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- ◆ Endogamy: Marrying within one's ethnic groups- ethnic distribution is a significant aspect for the analysis of infertility in Africa
- ◆ Polygamy
- ◆ Postpartum abstinence : Increases the likelihood of husband having extramarital sex and getting infected

# Pelvic inflammatory disease (PID) and infertility

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- ◆ PID: Infection of the pelvic organs that cause severe illness and may lead to tubal blockage and pelvic adhesions leading to infertility
- ◆ A common sequela to STDs, post-partum and post-abortal infections and some systematic infections e.g. tuberculosis, schistosomiasis

# Percent of women with tubal factor infertility following PID, by number of episodes

PID Episodes	Percent
0	1%
1	8%
2	22%
3+	41%

The risk of tubal factor infertility increases with each successive episode of PID

Source: *Sexually Transmitted diseases 1994, Vol 2(Suppl.)*

# The gender Dimension of infertility

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- ◆ Men are responsible for 50% cases
- ◆ Women may bear the sole blame and lowers their social status
- ◆ A socially acceptable basis for divorce in most of the societies

# Male and female causes of infertility, by region

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- ◆ Female causes : 25-37% world wide (larger proportions in SSA)
- ◆ Male causes: 8-22%
- ◆ Both male and female causes: 21-38%

# Cultural Interpretation of Infertility

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- ◆ Punishment by gods or the ancestors (East Africa)
- ◆ Punishment for adultery
- ◆ Conceptions take place almost automatically as souls seek reincarnation, it is the subsequent destruction of future child that explains infertility



# Depressing effect of infertility on fertility: Evidence from SSA

Country	% of women childless at the end of childbearing	Shortfall in total fertility due to infertility (births per woman)
Cameroon	17.2	1.6
Central African Republic	17.3	1.6
Congo	20.5	1.9
Gabon	32.0	3.2
Ivory Coast	9.9	0.8
Mali	7.7	0.5
Mozambique	13.8	1.2
Sudan	8.7	0.6
Tanzania	11.4	0.9
Zaire	20.5	1.9
Zambia	14.0	1.2

*Source: Population and Development Review, 1983, vol9(1), p142*

# Infertility and Fertility

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- ◆ High rates of infertility ↑ general reluctance among women to initiate contraception for fear of jeopardizing future fertility
- ◆ Appropriate programs can help to reduce both infertility and fertility
- ◆ Reduction in infertility ↑ increase in population growth rates in short term, stabilization and decline in long term

# Infertility: Reproductive health importance

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- ◆ Affects women status: the social stigma of infertility weighs especially heavily on women, and many women face divorce as a result
- ◆ Burden on limited health care resources as infertile couples repeatedly seek help for often insoluble problems

# Infertility : Treatment and Management

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- ◆ Treatment : A costly and less effective process
- ◆ Prevention- More effective, less expensive

# Reducing the burden of infertility: Programmatic strategies

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- ◆ Controlling Reproductive Tract Infections:
  - Educating people about links between RTI and infertility
  - Promoting use of condom
  - Counseling high risk individuals
  - Promptly treating infected individuals and partner notification
  - Increasing access to RTI services

# Reducing the burden of infertility: Programmatic strategies(cont.)

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- ◆ Preventing postpartum and post-abortion infections
  - Safer birth practices
  - Promote family planning
  - Access to safe abortion services
- ◆ Controlling endemic diseases- Malaria, Schistosomiasis, Tuberculosis

# Treating infertility: Programmatic strategies for developing countries

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- ◆ Insist men be evaluated as well as women
- ◆ Sensitive counseling to avoid inappropriate treatment and to discourage from seeking help at multiple clinics

# Treating infertility: Programmatic strategies for developing countries

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- ◆ Advising about timing of intercourse and other behaviors - smoking and alcohol
- ◆ Helping couples to cope with social and psychological burdens of infertility
- ◆ Helping couples to consider non-medical options such as adoption



# Treating infertility: Other options

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- ◆ **Surgical techniques** : Repairing tubal scarring, correcting other abnormalities of reproductive organs
- ◆ **Artificial insemination**: Using husband's or donor's semen
- ◆ **In vitro fertilization techniques**: Recovering mature ova, fertilizing them in lab, and then reimplanting in uterus

# Infertility and Role Of FP Clinics

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- ◆ Reassuring clients that FP methods do not cause infertility
- ◆ Dispelling local beliefs blaming infertility solely on women
- ◆ Persuading individuals to seek early treatment of STDs
- ◆ Offering basic infertility evaluations and treatment

# Summary Slide

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- ◆ High prevalence rates of infertility in many of SSA countries
- ◆ Sexually transmitted infections and poor maternal health services are major contributing factors
- ◆ Has important demographic implications for total fertility rates and for the success of family planning programs