

# THE PREVALENCE OF INFERTILITY AND ITS PREVENTIVE MEASURES IN SUB-SAHARAN AFRICA

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## PRESENTATION AT THE W.H.O, AFRO AND EMRO REGIONAL MANAGEMENT OF INFERTILITY WORKSHOP

### PLAN:

- ✿ Introduction
- ✿ Types of infertility
- ✿ Aetiological factors of infertility
- ✿ Socio-economic and cultural factors influencing fertility
- ✿ The prevalence of infertility in sub-Saharan Africa
- ✿ The diagnosis of infertility
- ✿ Principles of treatment of infertility: Preventive measures

# DEFINITION OF INFERTILITY

(1)

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Infertility applies to couples who fail to achieve a pregnancy after 1 year of regular coitus without any contraception.

# COUNTRIES WITHIN THE AFRICAN LOW FERTILITY BELT

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- ◆ Cameroon
- ◆ Central African Republic
- ◆ Gabon
- ◆ Zaire
- ◆ Togo
- ◆ Tanzania
- ◆ Sudan
- ◆ Kenya

## FERTILITY AND DURATION OF MARRIAGE FOR COUPLES WITHOUT CONTRACEPTION (3)

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- ★ 25% of pregnancies occur within 1 month
- ★ >60% of pregnancies occur within 6 months
- ★ 75% of pregnancies occur within 9 months
- ★ 80% of pregnancies occur within 12 months
- ★ 90% of pregnancies occur within 18 months

## AGE OF WOMAN AND PERCENTAGE OF INFERTILITY AND CHILDLESSNESS (3b)

% Infertile Age	% Childless**		
	Mosher* (1985)	Menken-Larsen (1986)	Trusell-Wilson (1985)
20-24	7.0	5.7	4.6
25-29	8.9	9.3	9.1
30-34	14.6	15.5	16.6
35-39	21.9	29.6	25.4
40-44	28.9	63.6	62.2

\* An average calculated from three national surveys in 1965, 1976 and 1982

\*\* Percent childless at age **50** among those marrying in various five-year age groups; data drawn from healthy historical populations with little or no practice of fertility limitation and in which late marriage was common and usually not preceded by premarital conceptions.

## TYPES OF INFERTILITY IN CAMEROON (4)

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- 1) Primary Infertility 40%
- 2) Secondary Infertility 60%

# PREVALENCE DE L'INFERTILITE (4a)

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- Infertilité est un problème mondial
- Incidence globale est environ 10%
- Incidence en Afrique sub saharienne est d'environ 15%
- Infertilité secondaire constitue 60% et infertilité primaire environ 40% en Afrique

# REQUIREMENTS FOR FERTILITY

## (4b)

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### **The properties of the fecund male include:**

- 1) Normal spermatogenesis and ductal system (normal count, motility, and biologic structure/function)
  
- 2) Ability to transmit the spermatozoa to the female vagina, through :
  - Adequate sexual drive
  - Ability to maintain an erection
  - Ability to achieve a normal ejaculation
  - Placement of ejaculate in the vaginal vault



# REQUIREMENTS FOR FERTILITY (4c)

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## **The properties of the fecund female include:**

- 1) Adequate sexual drive and sexual function to permit coitus
- 2) Functioning reproductive anatomy and physiology which includes:
  - A vagina capable of receiving spermatozoa
  - Normal cervical mucus to allow passage of spermatozoa to the upper genital tract
  - Ovulatory cycles
  - Fallopian tubes which will function to permit the sperm and ovum to meet and allow migration of the conceptus to the uterus
  - A uterus capable of developing and sustaining the conceptus to maturity
  - Adequate hormonal status to maintain pregnancy
- 3) Normal immunologic responses to accommodate sperm, conceptus, and fetal survival.
- 4) Adequate nutritional, chemical, and health status to maintain nutrition and oxygenation of placenta and fetus

## REQUIREMENTS FOR FERTILITY (4d)

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- ♃ Male must produce and mature satisfactory numbers of normal motile spermatozoa
- ♃ He must have patent ducts and enough potency to ejaculate spermatozoa from urethra into the vagina
- ♃ Spermatozoa must reach the cervix, pass through the cervical mucus and ascend through uterus and oviduct at an appropriate time to meet the ovum
- ♃ Spermatozoa must be capable of penetrating and fertilising the ovum
- ♃ The female must ovulate an ovum which has access to a patent oviduct
- ♃ The fertilised ovum must enter into the uterus, find well prepared endometrium for implantation

**NB:** Complex series of events requiring integrity of several structures and organs, if not then infertility

# CONDITIONS NECESSAIRES POUR LA GROSSESSE (4d)

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- ✧ Le male doit produire et maturer un nombre satisfaisant des spermatozoides normaux et mobiles
- ✧ Il doit posséder les canaux normaux et la puissance d'éjaculation des spermatozoides de l'urètre au vagin
- ✧ Les spermatozoides doivent atteindre le col, traverser la muqueuse cervicale et monter dans l'endometre et atteindre le trompes
- ✧ Les spermatozoides doivent pénétrer et fertiliser l'ovule
- ✧ La femelle doit ovuler et l'ovule doit accéder le tier externe de la trompe perméable
- ✧ L'ovule fecondé doit atteindre l'utérus et nider dans un endomètre préparé pour la nidation

**NB:** Système complexe exigeant l'intégrité de plusieurs structures et organes si non alors infertilité

# TYPES OF STUDIES IN INFERTILITY (5)

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- ❁ Clinical studies
- ❁ Epidemiological studies
- ❁ Infertility surveys
- ❁ Demographic surveys

# FACTORS AFFECTING PREVALENCE OF INFERTILITY (6)

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- ⌘ Socio-cultural factors ex. Taboos, cultural practices
- ⌘ Ethnic and Regional Variations
- ⌘ Sexually Transmitted Infections (STI)
- ⌘ Post partum and post abortal infections
- ⌘ Age of the partners
- ⌘ Technological advances in reproductive health
- ⌘ Frequency of sexual intercourse
- ⌘ Duration of cohabitation without contraception
- ⌘ Abnormal genital organs

# CAUSES OF MALE INFERTILITY

## (7)

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- ✧ Abnormal spermatogenesis
- ✧ Testicular Disease
- ✧ Tumours / Varicoceles
- ✧ Medication
- ✧ Cryptorchidism
- ✧ Blocked canals
- ✧ Pubertal Mumps
- ✧ Filariasis

# CAUSES OF INFERTILITY IN MEN (NIGERIA)

## (8)

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No	Percentage (%)	
Hypoplastic Testis	26	58
Cysts of the epididymis	6	13
Cryptorchidia	4	9
Varicocele	3	7
Hydrocele	3	7
Inguinal Operations	3	7
Total	45	100%

# GENERAL CATEGORIES OF INFERTILITY: GLOBAL PATTERNS (9)

Category	Developed Nations	Africa	India
Type of infertility			
Primary	71	48	72
Secondary	29	52	28
No cause found in either	14	5	26
Female causes only	31	37	45
Male causes only	22	8	13
Causes found in both	21	35	15
Became pregnant	12	15	36

Source: WHO (1986) <sup>40</sup>



## PREVALENCE RATES OF INFERTILITY: (CAMEROUN) (10)

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☹ North & Extreme North Provinces:	28.4%
☹ Centre Province:	28.1%
☹ Eastern Province:	18.6%
☹ North West Province:	13%
☹ South West Province:	15%

# INFERTILITY IN TWO DISTRICTS IN UGANDA (11)

Characteristics studied	Tes 0 District (Low fertility) %	Anlcole District (High fertility) %
<b><u>FEMALE</u></b>		
Married more than once	32.7	9.6
Never pregnant before	19.7	2.2
Lower abdominal pain	25	8.9
Cervicitis	30.5	12.5
Identified gonorrhoea	18.3	2.4
VDRL positive	25.3	12.6
<b><u>MALE</u></b>		
Married	85.5	82.6
Polygamous men	25.5	23.3
Never had a child	24.8	3.7
Already had urethral discharge	55.6	10.8
Has urethral discharge	9.3	1.8
Epididymis thickening	27.9	4.3
VDRL positive	38.8	15.5
Six children or more	20.2	50

## PROPORTIONAL DISTRIBUTION OF CAUSES OF MALE AND FEMALE INFERTILITY IN THE USA AND NIGERIA (12)

Male infertility	US Data %	Female Infertility	US Data %	Nigeria Data %
Varicocele	25	Tubal/Peritoneal	30	66
Vas deferens obstr.	7	Ovarian	20	10
Other causes		Cervical	15	7
		Uterine	10	10
		Other factors	25	7

# JUSTIFICATION FOR PREVENTIVE MEASURES AS A PRIORITY APPROACH (13)

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- † Treatment very expensive and inaccessible to most couples in need
- † Absence of specific objectives, priorities and strategies for infertility care
- † Absence of reliable data and good follow up
- † Lack of integration of infertility services into reproductive health services
- † Lack of coordination of health care system
- † Lack of accurate targeting of the risk groups for infertility
- † Insufficient training and research in infertility

## PREVENTION OF INFERTILITY (14)

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- ❖ Up to date knowledge of treatment of all STI and PID
- ❖ Contraception choice influences the risk of PID and infertility
- ❖ Education on treatment and control of STI especially in young people
- ❖ Education of the community to ensure that all individuals have access to treatment of STIs
- ❖ Encouragement of abstinence or condom use for sexually active young people. Avoid IUD in these cases of youth.

# PREVENTION OF INFERTILITY THROUGH STI CONTROL (15)

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## **OBJECTIVES OF STI CONTROL**

- \* Interrupt transmission of the infection
- \* Prevent development of complications and sequelae

## **SPECIFIC OBJECTIVES:**

- \* Reduce exposure to infections by education of risk persons
- \* Prevent transmission of infection through use of condoms / other barriers
- \* Ensure adequate diagnostic and treatment facilities
- \* Limit complications and subsequent transmission by early treatment and control and by counselling

# TEN IMPORTANT FACTS TO PROTECT FERTILITY (16)

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- Avoid having multiple sexual partners
- Avoid pre marital sex leading to unwanted pregnancy and abortion
- Avoid poorly treated sexually transmitted infections
- Avoid intra uterine device in adolescents and youth
- Correct undescended testes of male infants
- Vaccinate children with mumps, measles and rubella vaccine
- Avoid unhealthy habits (smoking and drugs)
- Prepare pregnancy by improving pregnancy knowledge and regular prenatal checks
- Be aware that female fertility declines sharply after 35 years of age

# CONSTRAINTS TO PREVENTION OF INFERTILITY

## (17)

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- ❖ Lack of understanding on the magnitude, causes, distribution and impact of infertility
- ❖ Poor planning and organisation with respect to goals, priorities and prevention strategies in infertility
- ❖ Lack of political will, commitment and support
- ❖ Lack of understanding of community attitudes, beliefs and practices regarding infertility
- ❖ Lack of an integrated approach to infertility care
- ❖ Lack of training of health staff for infertility prevention and management
- ❖ Lack of functional referral system with well defined responsibility of each level of health care
- ❖ Lack of norms and protocols for prevention and management of infertility