بسم الله الرحمن الرحيم

Family Planning
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PROF. DR. WAQAR AL-KUBAISY

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Demographic Transition Model (in 1650) demographic cycle of 5 stages through which a nation passes (BR and DR):

(1)FIRST STAGE (High stationary): This stage is characterized by a high BR and a high DR

(2) SECOND STAGE (Early expanding): The DR begins to decline, while the BR remains unchanged.

(3) THIRD STAGE (Late expanding) :The BR declines still further, and BR tends to fall.

(4) **FOURTH STAGE (Low stationary):** There is a low BR and low DR so the population becomes stationary. Zero population growth

(5) FIFTH STAGE: (Declining) :The population begins to decline because BR is lower than the DR

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- In most of the world the **decline** reflected **falling birth rates** and a **global trend towards smaller families**

In all these countries, key factors

fertility decline included

- changes in government attitudes towards growth,
- Spread of education,
- increased availability of **contraception** and the
- extension of **service**s offered through family planning programmes,
- Marked change in **marriage** patterns.

- **Death rates have also declined WW over the last decades**
- **With improvement in MCH services,**
- **successful of the:**
- Immunization expanded program on,
- Control of diarrheal disease and acute respiratory infection and other infectious diseases,
- So marked reduction in infant and child mortality rates, which are reflected in the DR

❑ Family size

Refers to the **total number of persons** in a family, in demography, family size means the total number of children a woman has borne at a point in time

- ❖ The completed family size indicates the total number of children borne by a woman during her child-bearing age, which is between **15 - 45 years**.
- ❖ The family size depends upon numerous factors;

- **Duration** of marriage,
- **Education** of the couple,
- Number of live births and living children,
- Preference of male children,
- **Desired F**amily size, etc.
- The question of family size is undoubtedly important from the demographic point of view

FERTILITY

By fertility or natality is meant the **actual bearing of children**.

A woman's **reproductive period** is roughly from **15-45 years** - a period of 30 years.

- **Fertility depends upon several factors**.,
  - lower age at marriage,
  - low level of literacy,
  - poor level of living,
  - limited use of contraceptives and·
  - traditional ways of life.

Some of the factors which have engaged attention of demographers

1. Age at marriage

2. Duration of married life :It was found, 10-25%of all births occur within **1-5 years** of married life; 50-55%of all births within **5-15 years** of married life, while births **after 25** years of married life are **very few**

This suggests that family planning efforts should be

This suggests that family planning efforts should be concentrated in the first few years of married life in order to achieve tangible results.

3. Spacing of children: when all births are postponed by one year in each age group, there was a **decline in total fertility. SO spacing of children** may have a **significant impact on the general reduction in the fertility rates.**

4. Education: An inverse association between fertility and educational status. As; **Education provides knowledge; increased exposure to information and media; builds skill for gainful employment; increases female participation in family decision making; and raises the opportunity costs of women's time.**

5. Economic status :It has an inverse relationship with fertility. Number of children born declines with an increase in per capita expenditure of the household. The World Population Conference at Bucharest in fact stressed that economic development is the best contraceptive.

6. Religion

7. Nutrition; They found that **all well-fed societies have low fertility**, and poorly-fed societies high fertility.

8. Family planning:

Family planning is another important factor **in fertility reduction**. In a number of developing countries, family planning has been a key factor in declining fertility. Family planning programs can be initiated rapidly and require only limited resources, as compared to other factors.

9. Other factors : Fertility is affected by a number of physical, biological, social and cultural factors such as place of women in society, value of children in society, widow remarriage, breastfeeding, customs and beliefs, industrialization and urbanization, better health conditions, housing, opportunities for women and local community involvement.

FAMILY PLANNING (FP)

Definition:

There are several definitions of family planning.

An Expert Committee (1971) of the WHO defined family planning as "a **way of thinking and living** that is **adopted voluntarily**, upon the basis of **knowledge**, **attitudes** and **responsible decisions** by **individuals and couples**, **in order to promote** the **health and welfare of the family group** and thus **contribute effectively to the social development of a country"**

Another Expert Committee defined and described family planning (FP)as follows :

"**Family planning** refers to practices that **help individuals or couples** to **attain certain objectives** : ·

(a) to avoid unwanted births

(b) to **bring about** wanted births

{c) to regulate the intervals between pregnancies

{d) to **control the time** at which births occur in relation to the ages of the parent; and

{e) to determine the **number of children** in the family.

Since 1968 up to 1975 several meeting of Human Rights and International Women's conferences, declared that "**all couples and individuals have the basic human right to decide freely and responsibly the number and spacing of their children** and **to have the information, education, and means to do so**".

- Thus **FP has emerged and focus as international concern as a basic human right, and a component of family health and social welfare**

Scope of family planning(FP) services

Family planning is **not synonymous** with birth control; it is more than mere birth control.

A WHO Expert Committee { 1970) has stated that family planning includes in its purview:-

(1) the proper spacing and limitation of births,

{2) advice on sterility,

{3) education for parenthood,

(4) sex education,

(5) Screening for pathological conditions of reproductive system (e.g., cervical cancer)

(6) genetic counseling

{8) carrying out pregnancy tests

(9) marriage counseling

(7) premarital consultation and examination

(10) preparation of couples for the arrival of their first child

12) teaching home economics and nutrition

Health aspects of family planning

FP and health have a two-way relationship. The **principal health outcomes** of FP. can be summarized as **following headings.**

Women's health: maternal mortality, morbidity of women of childbearing age, nutritional status (weight changes, Hb level.. etc) preventable complications of pregnancy and abortion.

Foetal health : foetal mortality;abnormal development. Infant and child health neonatal, infant and pre-school mortality, health of the infant at birth {birth weight), vulnerability to diseases.

(a)WOMEN'S HEALTH :

The risk increases as the mother grows older and after she has had 3 or 4 children.

FP helps her to control the number, interval and timing of pregnancies and births, and thereby reduces maternal mortality and morbidity and improves health.

The health impact of family planning occurs primarily through

The health impact of family planning occurs primarily through :

(i) the avoidance **of unwanted** pregnancies;

{ii) limiting the **number of births** and **proper spacing**, and

(iii) **timing the births**, particularly the **first** and **last,** in relation to the age of the mother. It is estimated that guaranteeing access to FP. alone could reduce the number of maternal deaths by **25%,** and child mortality by 20%

(i) Unwanted pregnancies : may lead to an induced abortion (criminal abortion).Also higher incidence of mental disturbances among mothers who have had unwanted pregnancies.

ii) Limiting the number of births and proper spacing : Repeated pregnancies increase the risk of maternal mortality and morbidity. With increase parity there is increases in incidence of rupture of the uterus and uterine atony, toxaemia, eclampsia and placenta previa, anaemia and the rate of stillbirths so as the incidence of cancer of the cervix.

FP is the only way to limit the size and control the interval between births for improving the health of the mother.

(iii) Timing of births : Complications of pregnancy and delivery show a pattern of risk, where, the highest rate below 20 and over 35 years of age. So Mothers face greater risk of death below the age of 20 and above the age of 30-35.

(b) Foetal Health :

A number of congenital anomalies **(e.g., Down's syndrome)** are associated with **advancing maternal** age. Such congenital anomalies can be avoided by timing the births in relation to the mother's age. Further, the "quality" of population can be improved only by avoiding completely unwanted births.

(C) Child Health :

FP is highly relevant to pediatrics' health . It would seem that **family size and birth spacing, if practiced by all, will yield substantial child health benefits. These are :**

(a) Child mortality

b) Child growth, development and nutrition

(c) Infectious diseases

(a)Child mortality: Child mortality increases when pregnancies occur in rapid succession. A birth interval of 2 to 3 years is considered desirable to reduce child mortality. **FP is,** therefore, an important means of ensuring the survival of all children in a family.

(b) Child growth, development and nutrition : Birth spacing and family size are important factors in child growth and development. The child is likely to **receive** his full share of love and care, including **nutrition** he needs, when the family size is small and births are properly spaced. **FP, in other words, is effective prevention against malnutrition.**

(c) Infectious diseases: Children living in large-sized families have an **increase in infection,** especially infectious gastroenteritis, respiratory and skin infections.

Eligible couples:

Refers to a currently married couple wherein the wife is in the reproductive age, (15 and 45 Ys). **These couples are in need of family planning services** The "Eligible Couple Register" is a basic document for **organizing FP work**. It is regularly updated by each functionary of the family planning programme

", **the term "target couple** was applied to couples who have **had 2-3 living children, and FP was largely directed to such couples.**

The definition of a target couple has been gradually enlarged to include families with **one child or even newly married** couples with a **view to develop acceptance of the idea of** FP from the earliest possible stage.

Contraceptive Methods (Fertility Regulating Methods)

By definition; they are preventive methods to help women avoid unwanted pregnancies. They include

- **all temporary and permanent measures prevent pregnancy**
- **Generally there can never be an ideal contraceptive ,that is,** ***safe, effective, acceptable, inexpensive, reversible, simple to administer, independent of coitus, long-lasting enough to obviate frequent administration and requiring little or no medical supervision***.
- Further, **a method which may be quite suitable for one group may be unsuitable for another because of different cultural patterns, religious beliefs and socio-economic milieu.**
- **Thus, the search for an "ideal contraceptive" has been given up.**
- **The FP programes** is to offer all methods from which an individual can choose according to his needs and wishes.
- Each contraceptive method has its unique advantages and disadvantages

The contraceptive methods may be broadly grouped into two classes spacing methods and terminal methods, as shown

A. Spacing methods

1. Barrier methods
(a) Physical methods
(b) Chemical methods
(c) Combined methods

2. Intra-uterine devices
3. Hormonal methods
4. Post-conceptional methods
5. Miscellaneous.

B. Terminal methods

1 Male sterilization
2 Female sterilization

I. Spacing methods
1. Barrier methods
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(b) Chemical metho
(c) Combined metho
2. Intra-uterine devi
3. Hormonal metho
4. Post-conceptiona
methods
5. Miscellaneous.

Barrier Methods or "occlusive"

The aim of these methods is to prevent live sperm from meeting the ovum. A variety of barrier methods **suitable for both men and women are available.** It's have increased in popularity, because of certain **contraceptive** and non-contraceptive advantages.

- **The main contraceptive advantage: is the absence of side-effects associated with the "pill" and IUD.**
- **The non-contraceptive advantages: include some protection from sexually transmitted diseases, a reduction in the incidence of pelvic inflammatory disease and possibly some protection from the risk of cervical cancer**
- **Barrier methods require a high degree of motivation on the part of the user. In general they are less effective than either the pill or the loop. They are only effective if they are used consistently and carefully.**

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a. PHYSICAL METHODS

1. Condom

Condom is the most widely known and used barrier device by the males around the world as an effective, simple "spacing" method of contraception, without side effects.

In addition, condom protects both men and women from sexually transmitted diseases.. Condom prevents the semen from being deposited in vagina. **Therefor** must be held carefully when **withdrawing** it from the **vagina** to **avoid spilling seminal fluid** into the vagina after intercourse.

- **A new condom should be used for each sexual act.**
- **condom effectiveness may be increased by using it in conjunction with a spermicidal jelly inserted into the vagina before intercourse. as additional protection.**

Failure rates for the condom vary enormously**.** Reported pregnancy rates 2-3%100 women years .Most failures are due to incorrect us

The Advantages of Condom are :

(a) they are easily available

(b) safe and inexpensive

(c) easy to use; do not require medical supervision

(d) no side effects

(e) light, compact and disposable, and

(f) provides protection in addition to pregnancy against STD also

The DISADVANTAGES are :

(a) it may slip off or tear during coitus due to incorrect use,

(b) interferes with sex sensation locally about which some complain while others get used to it.

The female condom is a pouch made of polyurethane, which lines the vagina.It is prelubricated with silicon, and a spermicide need not be used. It is an effective barrier to STD infection. However, high cost and acceptability are major problems.

2. Diaphragm

It is a vaginal barrier a shallow cup made of synthetic rubber or plastic material. It ranges in diameter from 5-10 cm

- ❖ The woman should be fitted with a proper size diaphragm
- ❖ Diaphragm is inserted before sexual intercourse and must remain in place for not less than 6 hours after sexual intercourse.
- ❖ A spermicidal jelly is always used along with the diaphragm.
- ❑ Side-effects are practically **nil**. Failure rate for the diaphragm with spermicide vary between 6 -12/ 100 women-years

Disadvantages :

*Needed to demonstrate the technique of inserting the diaphragm by physician or other trained person

*After delivery, used only after complete. involution of the uterus

*If left in the vagina for an extended period, there is a possibility of a toxic shock syndrome, which is requiring resuscitation

Advantages :

The primary advantage of the diaphragm is the **almost total absence of risks and medical contraindications**.

3. Vaginal sponge

It is a **sponge soaked in vinegar or olive oil**,

It is a small **polyurethane foam sponge** measuring **5 cm x 2.5 cm** saturated with the **spermicide,**

❖**The sponge is far less effective than the diaphragm, but it is better than nothing**

b. CHEMICAL METHODS

Since the 1960s **spermicides (vaginal chemical contraceptives)** were used widely. **They comprise four categories :**

a) Foams : foam tablets, foam aerosols

b) **Creams** jellies and pastes squeezed from a tube

c) **Suppositories inserted** manually,

d) Soluble films - C-film inserted manually.

The commonly used modern spermicides are "surface-active agents" which attach themselves to spermatozoa and inhibit oxygen uptake and kill sperms

I. Spacing methods
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The main drawbacks of spermicides are :

(a) Have a high failure rate

(b) Must be used almost immediately before intercourse and repeated before each sex act

(c) Must be introduced into regions of the vagina where sperms are likely to be deposited

(d) they may cause mild burning or irritation

The spermicide should be free from potential systemic toxicity. It should not have an inflammatory or carcinogenic effect on the vagina or cervix.

- Till now there is no spermicide which is safe to use and really effective in preventing pregnancy when used alone .
- **Therefore, spermicides are not recommended by professional advisers.**
- They are best used in conjunction with barrier methods.

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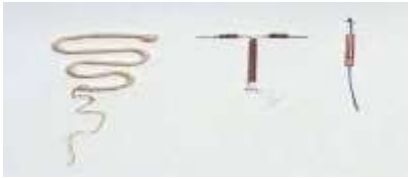
INTRA-UTERINE DEVICES

There are **two basic types** of IUD :
non-medicated and medicated.

- Both are usually made of **polyethylene** or other **polymers;**
- inaddition, **the medicated or bioactive IUDs release either**
- **metal ions (copper) or hormones** (progestin, a synthetic version of the hormone progesterone.).



- **The non-medicated or inert IUDs are often referred to as**
- **first generation IUDs.**
- **The copper IUDs comprise the second and**
- **the hormone-releasing IUDs the third generation IUDs.**

- **Medicated IUDs were developed to reduce the incidence of side-effects and to increase the contraceptive effectiveness.**

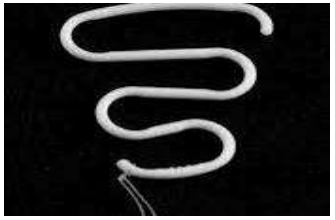
However, **they are more expensive and must be changed after a certain time to maintain their effectiveness**

- **IUD Types of IUDs**

IUD Types of IUDs

FIRST GENERATION IUDs

- It is comprise the inert or non medicated devices, usually made of polyethylene, or other polymers.



- **They appeared in different shapes and sizes loops, spirals, coils, rings, and bows** الأقواس .
- **Of all the models, the Lippes Loop is the best known and commonly used device in the developing countries.**
  - **Lippes Loop is double-S shaped device made of polyethylene,**
  - **a plastic material that is non-toxic, non-tissue reactive and extremely durable** متينة .
- **contains a small amount of barium sulphate to allow X-ray observation,** has attached threads or "**tail" made** of fine nylon, which project **into the vagina after insertion**. The tail can be easily felt and is a reassurance to the user that the Loop is in its place.

The tail **also makes it easy to remove** the Loop when desired.

Second Generation IUDs

- **By adding copper to the IUD**.
- **Copper had a strong anti-fertility effect. The addition of copper has made it possible to develop smaller devices which are easier to fit, even in nulliparous women**.
- **The newer copper** devices are significantly more effective in **preventing pregnancy** than the earlier copper ones or the inert IUDs.
- **Having an effective life of at least 5 years**.
- **They can** be left in place safely for the time, **unless specific medical or personal reasons call for earlier removal**.

Advantages of copper devices:

- **Low expulsion rate and incidence of side-effects**, e.g., pain and bleeding
- **easier to fit even in nulliparous women increased contraceptive effectiveness** –
- effective as post-coital contraceptives, **if inserted within 3-5 days of unprotected intercourse**

Third Generation IUDs

- **IUDs ·release of a hormone. It is the most widely used device which is a T -shaped device filled with 38 mg of progesterone, the natural hormone. The hormone is released slowly in the uterus at the rate of 65 mcg daily.**
- **It has a direct local effect on the uterine lining, on the cervical mucus and possibly on the sperms.**
- **Because the hormone supply is gradually depleted, regular replacement of the device is necessary.**

Another hormonal device **is a T-shaped IUD releasing 20 mcg of levonorgestrel**

The levonorgestrel releasing IUD **has an effective life of 10 years it has a low pregnancy rate (0.2/ 100 women) and less number of ectopic pregnancies lower menstrual blood loss and fewer days of bleeding than the copper devices.**

- **The progesterone-**releasing IUD must be replaced
- **every year** because the reservoir of progesterone is
- depleted in 12-18 months.

Mechanism of action of IUDs;

- **IUD causes a foreign-body reaction in the uterus causing**
- **changes in the endometrium and uterine fluids,** and **these**
- **changes impair the viability of the gamete and thus**
- **reduce its chances of fertilization,**
- **copper ions may affect sperm motility, capacitation and survival**
- **Hormone-releasing devices increase the viscosity of the cervical mucus and thereby prevent sperm from entering the cervix.**

They also· maintain high levels of progesterone in the endometrium and thus, relatively low levels of oestrogen, thereby sustaining an endometrium unfavourable to implantation

- **Inert IUDs** such as Lippes Loop may **be left in place as long** as required, if there are no side-effects.
- **Copper devices cannot be used indefinitely** because release of copper ions. They have to be replaced periodically.
- The same applies to the hormone-releasing

Advantages : IUD has many advantages :

(a) simplicity, i.e.,no complex procedures are involved in insertion; no hospitalization is required

(b) insertion takes only a few minutes

(c) once inserted IUD stays in place as long as required

(d) inexpensive

(e) contraceptive effect is **reversible** by removal of IUD

(f) virtually **free of systemic metabolic side-effects** associated with hormonal pills

(g) highest continuation rate, and

(h) there is no need for the continual motivation required to take a pill daily or to use a barrier method consistently; only a single act of motivation is required.

However, as with most contraceptive methods, the IUD can produce side-effects such as heavy menstruation and/or pain.

Contraindications of IUDs

ABSOLUTE :

(a) suspected pregnancy

(b) pelvic inflammatory disease

(c) vaginal bleeding of undiagnosed aetiology

(d) cancer of the cervix, uterus other pelvic tumours

(e) previous ectopic pregnancy

RELATIVE :

(a) anaemia

(b) menorrhagia

(c) history of PID since last pregnancy

(d) purulent cervical discharge

(e) distortions of the uterine cavity due to congenital malformations, fibroids

(f) unmotivated person


Thank
you!

Side-effects and Complications of IUDs

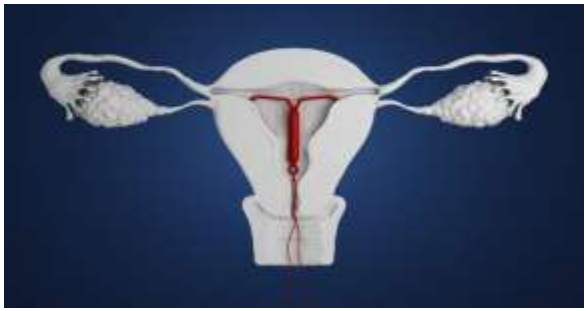
1.Bleeding; The commonest complaint ,accounts as 10-20 %of all IUD removals. Where, greater blood loss during menstruation, longer menstrual periods or mid-cycle bleeding

If the bleeding is heavy or persistent the IUD should be removed. change of IUD

2. Pain :is second major side-effect leading to IUD removal. WHO estimates that **15-40 %of IUD removals due to pain only, as: low backache, cramps in the lower abdomen and occasionally pain down the thighs. Severe pain can also indicate a uterine perforation** (

3. **Pelvic infection** (PID): that includes **acute, sub acute and chronic conditions of the ovaries, tubes, uterus, connective tissue and pelvic peritoneum and is usually the result of infection.**

5. Pregnancy Considering: An actual use failure rate in the first year is approximately 3% About 50%of uterine pregnancies occurring with the device in situ end in a spontaneous abortion



6. Ectopic pregnancy: The ectopic pregnancy rate is about 0.2 /1000 women year in IUD as compared to non contraceptive users,

7. Expulsion: Expulsion rates vary between 12-20 %Expulsion can be partial or complete.

8. Fertility: Fertility impairment does not seem .Over 70 %of previous IUD users conceive within one year of stopping use

9. Cancer and teratogenesis

There is no evidence to date that IUD use increases cancer risks. Nor offspring developmental abnormality or congenital malformations among the users of IUDs

10. Mortality: Mortality associated with IUD use **is extremely rare**