

[TOPIC 1] Reproductive Health Problems and Strategies

Reproductive Health simply refers to healthy reproductive organs with normal functions. According to the **World Health Organisation** (WHO), reproductive health means a total well-being in all aspects of reproduction, i.e. physical, emotional, behavioural and social.

The improved reproductive health of society requires following factors:

- (i) Better awareness about sex-related matters.
- (ii) Increased number of medically assisted deliveries and better postnatal care so as decreased to maternal and infant mortality rates.

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- (iii) Increased number of couples with small families.
- (iv) Better detection and cure of STDs.
- (v) Overall increased medical facilities for all sex-related problems.

Awareness of Reproductive Health

Some of the measures taken for awareness of reproductive health are as follows:

- (i) The family planning programmes were initiated in India in 1951 and were periodically assessed over the past decades. The programmes were improved and covered reproduction-related areas under the popular name **Reproductive and Child Healthcare (RCH)** programmes. It was launched in 1997.

Major tasks of RCH programme are:

- (a) Creating awareness among the people about reproduction related aspects.
- (b) Providing facilities and support for building up a reproductively healthy society. Governmental and non-governmental agencies have taken various important steps to create awareness among people about reproduction-related aspects.
- (ii) In schools, introducing sex education is a good step to provide right information for adolescents to discourage them from believing in myths and misconceptions about sex-related issues. Adolescents should be informed about reproductive organs, adolescence and related changes, safe and hygienic sexual practices, sex abuse, **Sexually Transmitted Diseases (STDs), AIDS**, etc.
- (iii) Married couple or those in marriageable age group should be educated about available birth control options, care of pregnant mothers, postnatal care of the mother and child, importance of breast feeding, equal opportunities for the male and female child, etc. This will lead to the formation of socially conscious healthy families of desired size.

- (iv) Successful implementation of action plans like providing medical assistance and care to reproduction-related problems, pregnancy, delivery, STDs, abortions, contraception, menstrual problems, infertility, etc. needs strong support and infrastructural facilities.

- (v) **Statutory ban on amniocentesis** It is a prenatal diagnostic technique based on chromosomal pattern in which a sample of amniotic fluid is taken from the uterus of a pregnant woman to detect the early development of foetus. The benefits of amniocentesis are the diagnosis of chromosomal abnormalities and developmental disorders of foetus. However, it is being misused for sex-determination of foetus that leads to female foeticides. Therefore, statutory ban on amniocentesis for sex-determination keeps check on female foeticides.

Population Explosion

The tremendous increase in the size and growth rate of population is called population explosion. It occurs due to increased health facilities and better living conditions.

- (i) Reasons of population explosion includes:
 - (a) Decreased death rate
 - (b) Declined **Maternal Mortality Rate [MMR]**
 - (c) Decreased **Infant Mortality Rate [IMR]**
 - (d) Increase in the number of people in reproductive age
- (ii) According to the 2001 census report, the population growth rate was around 1.7%, i.e. 17/1000/year. By this rate, our population could double in 33 years.

Methods to prevent population explosion includes:

- (i) Raising the marriageable age to **18 years** for females and **21 years** for males.
- (ii) Couples with small families should be given some incentives.
- (iii) **Birth control** is an important step to control the population growth by motivating smaller families to use contraceptive methods.

Birth Control (Contraception) Methods

Contraceptive methods are ideal if they are user friendly, easily available, effective, reversible with no side effects and non-interfering with the sexual drive, desire and the sexual act.

There are several methods of birth control.

These are categorised mainly as follows:

Natural Methods

Natural method of birth control involves avoiding chances of sperm and ovum meeting. It can be achieved by:

- (i) **Periodic abstinence** in which couples avoid coitus from day 10-17 (Fertile period) of the menstrual cycle. In this period, ovulation is expected to occur and chances of fertilisation are very high. Also called **rhythm method** or **natural family planning**.
- (ii) **Coitus interruptus** also called 'rejected sexual intercourse' or 'pull-out'/withdrawal method. In this method the penis is withdrawn from the vagina just before ejaculation, so that semen is not deposited in the vagina.
- (iii) **Lactational amenorrhoea** is the absence of menstruation during the period of intense lactation following parturition. Because ovulation does not occur in this period, the chances of conception are nil. This method is reliable for a maximum period of six months after delivery.

Main advantage of these methods is that, they don't cause any type of side effect. But main disadvantage is that, these methods are not 100% reliable as these depends on chance.

Barrier Methods

Barrier methods are based on the prevention of ovum and sperm from physically meeting with the help of barriers. Barriers may be mechanical, chemical and used by both males and females.

Mechanical Barriers

Mechanical Barriers (Condoms) made of thin rubber or latex sheath to cover the penis in male or vagina and cervix in females (femdom) which prevent meeting of sperm and ova. Condoms provide protection from sexually transmitted diseases. They are disposable and can be self-inserted and thereby gives privacy to the user.

Diaphragms, Cervical caps and Vaults

Diaphragms, Cervical caps and Vaults are made up of rubber that are inserted into the female reproductive tract to cover the cervix during coitus. They are reusable.

Chemical Barriers

Chemical barriers include spermicidal creams, jellies and foams. They are usually used along with the barriers to increase their contraceptive efficiency.

Intra Uterine Devices (IUDs)

IUDs are the devices introduced in the uterus through vagina by doctors or expert nurses. These are of following types:

- (i) Non-medicated IUDs, e.g. lippes loop.
- (ii) Copper-releasing IUDs, e.g. Cu-T, Cu-7, multiload 375.
- (iii) Hormone-releasing IUDs, e.g. progestasert, LNG 20.

IUDs prevent contraception in the following ways:

- (i) Increase phagocytosis of sperms within the uterus.
- (ii) Some IUDs suppress sperm motility and fertilising ability of sperm by releasing copper ions.
- (iii) The hormone releasing IUDs make uterus unsuitable for implantation and make the cervix hostile to sperms.

IUDs are ideal contraceptives for females who want to delay pregnancy. It is one of the most widely accepted contraception method in India.

Oral Contraceptives

Oral contraceptives are hormonal preparations in the form of pills. Their major features include:

- (i) Pills are of two types: Combined pills and mini pills. **Combined pills** (Mala-D and Mala-N) contain synthetic progesterone and oestrogen whereas **mini pills** contain progestin (progesterone like synthetic hormone) only.
- (ii) Oral pills inhibit ovulation and modify the quality of cervical mucus to prevent/retard the entry of sperm. They also modify the uterine endometrium making it unsuitable for implantation.
- (iii) Oral pills have to be taken daily for a period of 21 days starting within the first five days of the menstrual cycle.
- (iv) **Saheli**, an example of oral contraceptive developed by scientists at **Central Drug Research Institute (CDRI)** Lucknow, contains a non-steroid called **centchroman**. It is a once-a-week pill, with very few side effects.

Implants or Injections

Implants are effective for a longer period, although their mode of action is similar to that of oral contraceptives. Progesterone alone or in combination with oestrogen are used by females as injections (Depo Provera) or implants under the skin.

Emergency Contraceptives

Emergency contraceptives include administration of a high dose of progesterone or progestogen-oestrogen combinations within 72 hours of coitus. It has been found to be very effective to avoid possible pregnancy due to rape or casual unprotected intercourse.

Sterilisation or Surgical Methods

Sterilisation is used by male/female partner as a terminal/permanent/stable method to prevent any more pregnancies. These methods block the transport of gametes and prevent conception.

- (i) **Vasectomy** is applied in the case of males. In this method, a small portion of the vas deferens is removed or tied up through an incision on the scrotum to prevent the passage of sperm.
- (ii) **Tubectomy** is applied in females, where a small part of the Fallopian tube is removed or tied up through a small incision in the abdomen or through the vagina to prevent the passage of ova. Both of these techniques are highly effective, but poorly reversible.

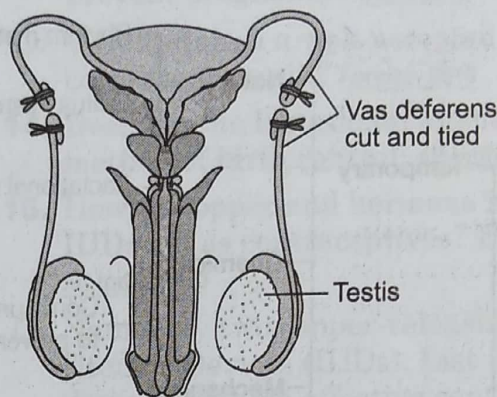


Figure 4.1 Vasectomy in male

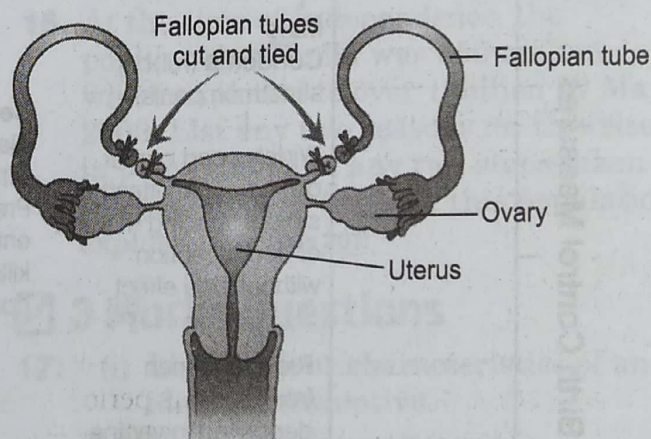


Figure 4.2 Tubectomy in female

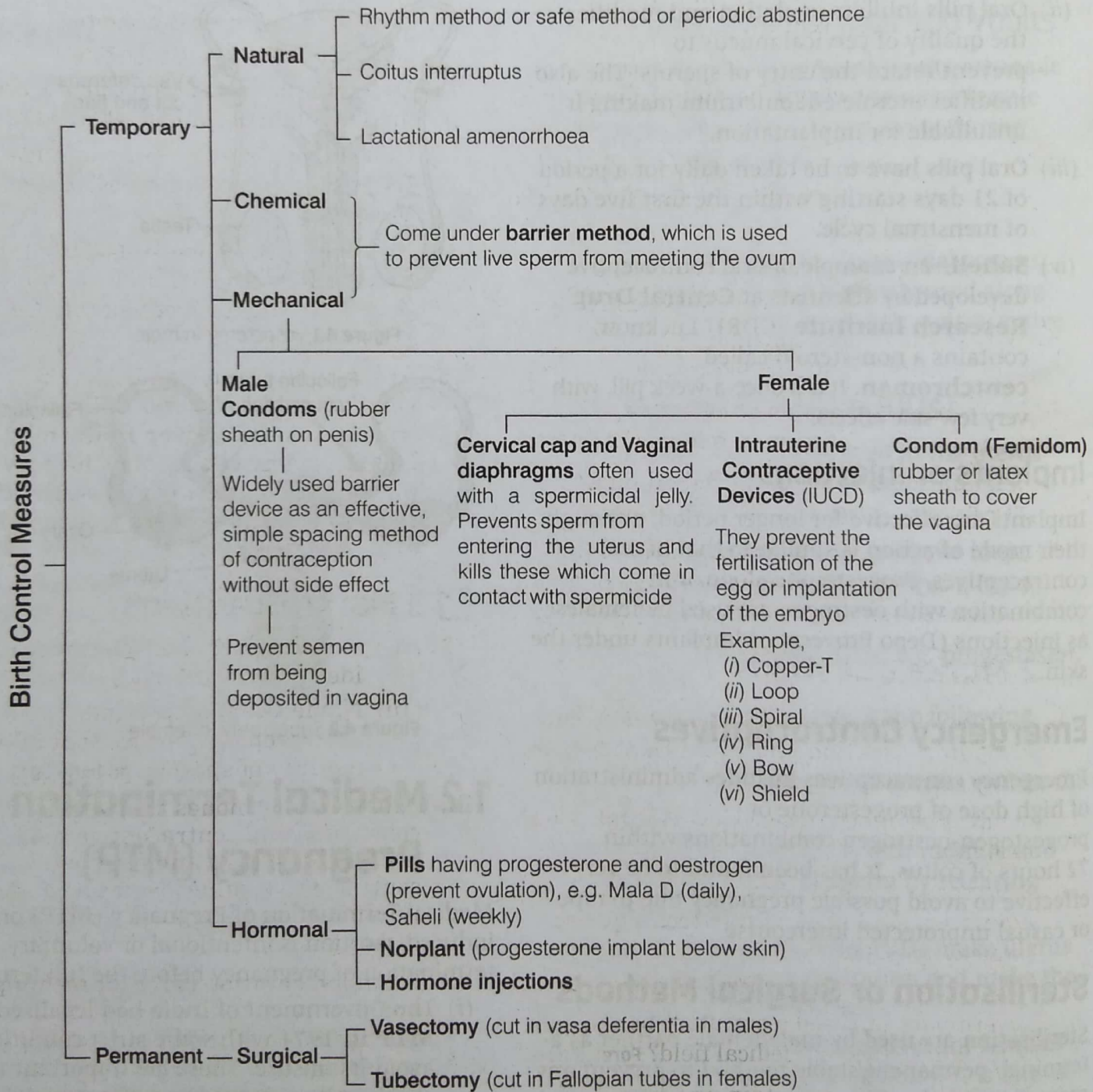
1.2 Medical Termination of Pregnancy (MTP)

Medical Termination of Pregnancy (MTP) or induced abortion is intentional or voluntary termination of pregnancy before the full term.

- (i) The Government of India had legalised **MTP in 1971** with some strict conditions to avoid its misuse. These are important to check indiscriminate and illegal female foeticides, which are reported to be high in India.

- (ii) MTPs are done in certain cases where pregnancy can be harmful and even fatal either to the mother or the foetus or both, or due to failure of contraceptive used during coitus or rapes.
- (iii) MTPs are considered relatively safe during the first trimester (upto 12 weeks) of pregnancy.
- (iv) During second trimester, MTPs are unsafe and could be fatal too.
- (v) About 45-50 million MTPs are carried out in a year all over the world. It has significant role in decreasing population though it is not meant for that purpose.
- (vi) Drawback of MTP includes that it is being misused to abort the normal female foetuses and has raised many emotional, ethical and social issues too.

The birth control measures can be summarised as follows:



[TOPIC 2] Sexually Transmitted Diseases (STDs) and Infertility

Sexually Transmitted Diseases or (STDs) Venereal Diseases (VD) or Reproductive Tract Infections (RTI)

Sexually transmitted diseases are those diseases or infections, which are transmitted through sexual intercourse. Some common STDs are gonorrhoea, syphilis, genital herpes, trichomoniasis, hepatitis-B, AIDS, etc. Among the above mentioned STDs, three viral infections AIDS, genital herpes and hepatitis-B are not curable, while others are curable.

The early general symptoms of STDs are :

- (i) itching
- (ii) fluid discharge
- (iii) slight pain
- (iv) swellings in the genital region

The patients remain undetected and untreated due to:

- (i) absence or less significant symptoms in the early stages of infection.
- (ii) social stigma attached to the STDs.

The **late detection** leads to the complications like **Pelvic Inflammatory Diseases (PID)**, abortions, still births, ectopic pregnancies, infertility and the cancer of the reproductive tract.

The incidence of these diseases is high in the persons of age group 15-24 years.

These infections can be avoided or prevented by the following ways :

- (i) Avoid sexual practices with unknown partners/multiple partners.
- (ii) Use of condoms during coitus.
- (iii) In case of any doubt, visit a doctor immediately for detection and treatment.

2.1 Infertility

Infertility is also one of the major aspect of reproductive health.

- (i) The inability to produce children inspite of unprotected sexual practices is called **infertility**.
- (ii) The reasons of infertility can be physical, congenital diseases, drugs, immunological or even psychological. There are several infertility clinics which can diagnose and provide treatment to the infertile couple enabling them to have children.

Assisted Reproductive Technologies

Sometimes, corrective treatments do not lead to the treatment of infertility. In such cases, **Assisted Reproductive Technologies (ARTs)** are used.

Some of the Assisted Reproductive Technologies (ARTs) are:

IVF (*In Vitro* Fertilisation) or Test-Tube Baby Programme.

- (i) Ova from wife/donor (female) sperms from the husband/donor male is made to fertilised with to form zygote in the laboratory under same conditions as in body. This is called *in vitro* fertilisation (or fertilisation outside the body).
- (ii) Zygote or early embryo is transferred into Fallopian tube or uterus for further development. This is called **Embryo Transfer** (ET). It can be :
 - ZIFT** (Zygote Intra Fallopian Transfer), in which embryos upto 8 blastomeres are transferred into the Fallopian tubes.
 - IUT** (Intra Uterine Transfer), in which embryos of more than 8 blastomeres are transferred into the uterus.

GIFT (Gamete Intra Fallopian Transfer)

GIFT (Gamete Intra Fallopian Transfer) is done by the transfer of an ovum collected from a donor female into the Fallopian tube of another female, who is unable to produce ova, but can provide suitable conditions for fertilisation and further development of the foetus.

ICSI (Intra Cytoplasmic Sperm Injection)

ICSI (Intra Cytoplasmic Sperm Injection) is carried out by directly injecting the sperm into the ovum to form an embryo in the laboratory. Embryo transfer is done later on by IUT in woman.

AI (Artificial Insemination)

AI (Artificial Insemination) is performed by collecting semen from the husband or a healthy donor and artificially introducing it either into the vagina or the uterus (intra uterine insemination). AI is used in cases where male partners are unable to inseminate the female or due to very low sperm counts in the ejaculate.

***In vivo* fertilisation**

In vivo fertilisation is performed by the fusion of gametes within the female and then this zygote can be used for ZIFT or IUT.