FAMILY PLANNNG

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

- to avoid unwanted births;
- to bring about wanted births;
- to regulate the intervals between pregnancies;
- to control the time at which births occur in relation to the ages of the parent; and
- to determine the number of children in the family

ELIGIBLE COUPLES

- An "eligible couple" refers to a currently married couple wherein the wife is in the reproductive age, which is generally assumed to lie between the ages of 15 and 45.
- There will be at least 150 to 180 such couples per 1000 population in India.
- These couples are in need of family planning services.

TARGET COUPLES

- Target couple are couples who have had 2-3 living children, and family planning 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.

COUPLE PROTECTION RATE (CPR) [4 mark]

- Couple protection rate (CPR) is defined as the per cent of eligible couples effectively protected against childbirth by one or the other approved methods of family planning, viz. sterilization, IUD, condom or oral pills.
- CPR indicates the prevalence of the contraceptive practice in the community.
- Sterilization accounts for over 60 per cent of effectively protected couples.

- If the CPR exceeds 60 per cent it is possible to achieve a demographic goal of NRR=1 i.e. a new born girl child will bear only one daughter during her life time assuming age specific fertility and mortality rate.
- Thus, attaining a 60 per cent CPR will be equivalent to cutting off almost all third or higher order births, leaving 2 or less surviving children per couple.
- In short CPR is a dominant factor in the reduction of net reproduction rate.

CAFATERIA APPROACH

Cafeteria approach in family planning is a client-centred strategy that provides individuals and couples with a range of contraceptive options and services, allowing them to choose the method that best suits their needs and preferences.

CONTRACEPTIVE METHODS

Spacing methods

1. **Barrier methods**

- Physical methods: Condoms, Diaphragm, Vaginal sponge
- Chemical methods: Foams, creams, jellies, paste, suppositories
- Combined methods

2. **Intra-uterine devices**

- First generation IUD/non-medicated
- Second generation/ Cu releasing IUD
- Third generation/hormone releasing IUD

3. **Hormonal methods**

(a) Oral pills

- Combined pill
- Progestogen only pill (POP)
- Post-coital pill
- Once-a-month (long-acting) pill

- Male pill

(b)Depot (slow release) formulations

- Injectables
- Subcutaneous implants
- Vaginal rings

4. **Post-conceptional methods**

- Mensural regulation
- Mensural induction
- Oral abortifacient

5. **Miscellaneous**

- Abstinence
- Coitus interrupts
- Safe period
- Natural methods of family planning
- Lactational amenorrhea

Terminal methods

- Male sterilization
- Female sterilization

MALE CONDOM

Mechanism of action: Prevents the semen from being deposited in the vagina

Failure Rate: 2-3/HWY to 14/HWY

Popular trade name in India: Nirodh

Effectiveness increased by spermicidal jellies.

Advantages

- Easily available
- Safe and inexpensive
- Easy to use, no medical supervision required

- No side-effects
- Light, compact and disposable
- Provides protection against STI, HIV

Disadvantages

- May slip off or tear during coitus due to incorrect use
- Interferes with sex sensation

Instructions

- Fit on the erect penis before intercourse
- Air must be expelled from the teat end
- Held carefully while withdrawing from vagina to avoiding slipping seminal fluid into the vagina
- New condom should be used for each sexual act

FEMALE CONDOM

Mechanism of action: Prevents the sperm from entering the uterine cavity.

An internal ring covers the cervix and external ring remains outside the vagina.

Failure Rate: 5-21/HWY

Advantages: Decision to use lies with the women, Provides protection against STI, HIV**,** Safe**,** No side-effects

Disadvantages: High cost, acceptability, difficult to use i.e. Requires training on how to insert.

INTRA-UTERINE DEVICES

Ideal candidate for IUD insertion

- Has given birth to at least one child
- No history of pelvic disease

- Has normal menstrual period
- Is willing to check IUD tail
- Access to follow up and treatment
- Is in a monogamous relationship

Type of IUD

First generation IUDs

- Inert or non-medicated usually made of polyethylene available in different shapes (loops, spirals, coils, rings etc.) and sizes (A, B, C & D). Larger sized device has greater anti-fertility and low expulsion rate.
- e.g. Lippes loop double S shaped device non-toxic, non-tissue reactive and durable with a tail of fine nylon project into the vagina which can be easily felt.

Second generation/ Cu releasing IUD

- Adding copper to IUD, it had a strong anti-fertility effect as well as developed smaller devices easier to fit, even in nulliparous women.

E.g. earlier devices: Copper-7, Copper T-200

New devices: Cu-T 380A, Nova T, multiload devices like ML-Cu-375

Mechanism of Action

- Foreign body reaction causing cellular and biochemical changes in the endometrium and uterine fluids, which impairs the viability of the gamete.
- Affects sperm motility, capacitation and survival by altering the biochemical composition of the cervical mucus.

Failure Rate of Copper T: 0.5 to 3/HWY

Advantages of copper devices

- Low expulsion rate
- Lower incidence of side-effects
- Easier to fit even in nulliparous women
- Better tolerated in nullipara
- No hormonal side effects
- Effective as post coital contraceptive if inserted within 3-5 days of unprotected intercourse

Third generation IUDs

Hormone releasing IUD

E.g. progestasert,

LNG 20 (Mirena)

- T shape IUD releasing 20 mcg of levonorgestrel
- Low pregnancy rate and lesser number of ectopic pregnancies.
- Lowers menstrual blood loss and fewer days of bleeding
- Effective for 10 years but expensive.

Mechanism of action

- Increases viscosity of cervical mucous and thereby prevents sperm from entering the cervix.
- Prevent implantation by making the endometrium unfavourable due to high levels of progesterone relatively low levels of oestrogen.

Time of insertion

- Loop insertion during menstruation or within 10 days of the beginning of menstrual period.
- Immediate postpartum insertion: during the first week after delivery.
- Post-puerperal insertion: loop insertion after 6-8 weeks after delivery.

Instructions to user of IUCD

- She must check her pads after her menstrual periods to rule out expulsion.
- Check the thread or tail regularly if she fails to locate the threads, she must consult the doctor.
- Inform her about the side effect and complications as well as the failure rate
- Should visit the clinic whenever experience side effect like fever, pelvic pain and bleeding.
- If she missed a period, she must consult a doctor.
- Follow up is necessary to provide motivation and emotional support, to confirm the presence of IUD and diagnose and treat side effect and complications, after her first menstrual period, then after three months, six months and then one year.

Advantages

- Simplicity, no complex procedure and hospitalisation required
- Insertion takes only a few minutes
- Once inserted stays in place as long as required
- Inexpensive
- Contraceptive effect is reversible
- Free of systemic metabolic side effects
- Single act of motivation

Disadvantages

- Common side effects - menstrual changes excessive bleeding
- Uncommon side effects - perforation, ectopic pregnancy, expulsion
- No protection against STIs, HIV, PID
- Medical procedure requiring trained personnel

Side effects and Complications

- ***Bleeding*** - increased volume of blood loss, longer duration of menstrual periods or mid cycle bleeding
- ***Pain***: During insertion and for a few days thereafter, during menstruation manifest as low backache, cramps pain down thighs.
- ***Pelvic inflammatory diseases***: Acute, subacute and chronic conditions of ovaries, tubes, uterus, connective tissue and pelvic peritoneum.
- ***Uterine perforations***
- ***Pregnancy:*** Failure rate in the first year is approximately 3%.
- ***Expulsion***: can be partial or complete usually during the first few weeks of insertion or during menstrual period.
- ***Ectopic pregnancy***
- ***Cancer and teratogenesis***
- ***Fertility after removal***
- ***Mortality***

Contraindications

- ***Absolute contraindications***: Vaginal bleeding of undiagnosed aetiology, Pelvic inflammatory disease (PID), Puerperal sepsis or post abortal sepsis, suspected pregnancy, Previous ectopic pregnancy, Cancer of cervix, uterus or adnexa and other pelvic tumours.
- ***Relative contraindications***: Anaemia, Menorrhagia, History of PID, Purulent cervical discharge, Distortion of uterine cavity due to malformation, fibroids, Wilson's disease.

COMBINED ORAL CONTRACEPTIVE PILL

- Temporary, hormonal methods of contraception containing oestrogen and progestogen.
- New formulations contain 30-35 mcg of synthetic oestrogen (ethinyl oestradiol) and 0.5 to 1 mg of Progestogen.

Mechanism of Action

- It prevents ovulation by blocking pituitary release of gonadotropins.
- Progesterone only pills render the cervical mucus thick and scanty.
- Also inhibit tubal motility.
- Endometrial atrophy

Instructions for patients

- A pack of OCP contains 21 hormonal pills and 7 iron pills.
- First pill is started within 5 days of starting menses and continued daily for 21 days.
- The next 7 days is a break period when iron pills are taken. If started more than 5 days after menstrual bleeding starts, then use additional contraceptive measures for 7 days.
- Pill has to be taken daily at a fixed time, preferably at bed time.
- If one hormonal pill is missed, then take the pill as soon as you remember and take the pill for that day at the regular time.
- If 2-4 hormonal pills are missed, in the first 7 pills, then use additional contraceptive measures and continue using the OCP as scheduled till the cycle is completed.
- If more than 5 hormonal pills are missed in a row, then use additional methods of contraception and continue taking the hormonal pills as scheduled till all 21 hormonal pills have been taken. Skip iron tablets and start a new pack
- Patients should regularly undergo an annual check-up.

Failure Rate: Less than 1%

Advantages of Oral Contraceptive Pills

- 100% effective against pregnancy if taken properly
- Non contraceptive health benefits of using OCP
- ***Mensural benefits***: Regularises menses, reduces menstrual blood loss, reduce iron deficiency anaemia, Reduces dysmenorrhoea

- ***Other gynaecological benefits***: Reduce benign breast disorders like fibroid, reduces PID, reduce risk of ectopic, treatment of AUB, beneficial in endometriosis
- ***Non gynaecological benefits***: increase bone mass, reduces benign breast disease, reduce acne, reduce rheumatoid arthritis
- ***Cancer protection***: reduce endometrial, ovarian cyst and colorectal cancer

Disadvantages of Oral Contraceptive Pills

- Has to take pill daily
- Delay in return of fertility

Side-effects of Oral Contraceptive Pills

- Breast tenderness, fullness and discomfort
- Weight gain
- Headache and Migraine
- Bleeding disturbances - breakthrough bleeding/spotting, oligomenorrhea, amenorrhoea
- Cardiovascular effects increased risk of myocardial infractions, cerebral thrombosis and venous thrombosis
- Metabolic effects like hypertension, alteration in serum lipids, insulin resistance and accelerates atherosclerosis
- Liver disorder like hepatocellular adenoma and gall bladder disease.
- Lactation composition varies and volume decreases.

Contraindications of Oral Contraceptive Pills

Absolute contraindications:

- Cancer of the breasts and genitals,
- Liver disease,
- Previous/present history of thromboembolism, Deep Vein Thrombosis, Pulmonary Thrombosis
- Cardiac abnormalities, Ischaemic Heart Disease, Hypertension, Vascular Disease

- Congenital hyperlipidaemia
- Undiagnosed abnormal uterine bleeding

Relative contraindications: Age > 40 years, Smoking (> 15 cigarettes/day) and age > 35 years, Mild hypertension, Chronic renal disease, Epilepsy, Migraine, Diabetes mellitus, Gall bladder disease

EMERGENCY CONTRACEPTIVE

Emergency or postcoital contraception is also called as 'morning after' contraception. It is also referred to as 'casualty in family planning'

Circumstances

- Unprotected intercourse
- Rape, sexual assault, incest
- Failure of contraceptive methods such as rupture of condom, displacement of IUD, missing two or more oral pills
- Premature ejaculation among couples practicing coitus interruptus

Timing of use: It is recommended to use the pills within 48 to 72 hours of unprotected intercourse.

Mechanism of action: similar to pills

Methods

i) ***Mechanical method***:

This consist of insertion of copper IUD within 3-5 days of unprotected intercourse.

ii) ***Hormonal method***

Levonorgestrel 0.75 mg within 72 hours and the second tablet after 12 hours of 1st dose.

OR

Two oral contraceptive pills containing 50 mcg of ethinyl oestradiol within 72 hours after intercourse and same dose after 12 hours.

OR

Mifepristone 10 mg once within 72 hours

Failure rate-1%

INJECTABLE CONTRACEPTIVE

- DMPA (Depot medroxyprogesterone acetate) 150mg one IM injection every three months.
- NET EN (Norethisterone enanthate) 200 mg one IM injection every 2 months.

SUBDERMAL IMPLANT

- Norplant consist of 6 silastic capsules containing 35 mg levonorgestrel.
- Norplant (R)-2 contain 2 small rod easier to remove and insert.

POST-CONCEPTIONAL METHODS

Menstrual regulation

- Aspiration of the uterine contents 6 to 14 days of a missed period.
- Cervical dilatation is indicated only in nullipara or in apprehensive subjects.
- No after-care is necessary as a rule.
- Immediate complications are uterine perforation and trauma.
- Late complications (after 6 weeks) include a tendency to abortion or premature labour, infertility, menstrual disorders, increase in ectopic pregnancies and Rh-immunization.

Menstrual induction

- Based on disturbing the normal progesterone- prostaglandin balance.
- Done by intrauterine application of 1-5 mg solution of prostaglandin F2.

- Within a few minutes of the prostaglandin impact, uterus responds with a sustained contraction continuing for 3-4 hours.
- The bleeding starts and continues for 7-8 days.

Oral abortifacient

- Mifepristone in combination with misoprostol is used.
- The commonly used regimen is mifepristone 200 mg orally on day 1, followed by misoprostol 800 mcg vaginally either immediately or within 6-8 hours.
- The other regimen is a dose of mifepristone 600 mg on day one, followed by 400 mcg orally of misoprostol on day three.
- The patient should return for a follow-up visit approximately 14 days after the administration for confirmation of complete termination of pregnancy.
  C/I: History of allergy to mifepristone, misoprostol or other prostaglandin, IUD in place, Chronic adrenal failure, Haemorrhagic disorder.

MEDICAL TERMINATION OF PREGNANCY ACT

Act was passed to liberalise and legalise abortions and reduce the mortality and morbidity rate in pregnant women due to complications of abortions by untrained persons and in unhygienic conditions

Conditions under which pregnancy can be terminated/indications

Applied to married women under following indications

- **Medical** - where continuation of the pregnancy might endanger the mother's life or cause grave injury to her physical or mental health.
- **Eugenic** - where there is substantial risk of the child being born with serious handicaps due to physical or mental abnormalities.
- **Humanitarian** - where pregnancy is the result of rape.
- **Socio-economic**- when economic and social environment is not suitable for continuation of pregnancy.
- **Failure of contraceptive devices**

The written consent of the guardian is necessary before performing abortion in women under 18 years of age, and in lunatics even if they are older than 18 years.

The person or persons who can perform abortion

A registered medical practitioner who has

- Experience of doing pregnancy by assisting at least 25 cases in which 5 cases done independently
- Done 6 months of house surgency in obstetrics and gynaecology
- Post graduate training in obstetrics and gynaecology.

By MTP Act 1971

- ***A Registered Medical Practitioner*** having experience in gynaecology and obstetrics can perform abortion where the ***length of pregnancy does not exceed 12 weeks***.
- However, where the pregnancy ***exceeds 12 weeks and is not more than 20 weeks***, the opinion of ***two Registered Medical Practitioners*** is necessary to terminate the pregnancy

MTP act amendment 2021

- If the duration of pregnancy is **less than 20 weeks** the termination can be done by **one registered medical practitioner**.
- It the period of gestation **exceeds 20 weeks but less than 24 weeks,** advice of **two registered medical practitioner** should be obtained.
- If **more than 24 weeks** advice of **medical board** is required.

Where abortion can be done

- A hospital established and maintained by government.
- A hospital/centre for the time being approved by the government for the purpose of this act

Punishment

- Any cases not falling under MTP act is an offence punishable with imprisonment for a term which shall be not less than 2 years and up to a maximum of 7 years.
- If confidentiality is lost imprisonment up to 1 year or fine or both.

NATURAL METHODS OF FAMILY PLANNING

- The principle is the same as in the calendar method, but here the woman employs self-recognition of certain physiological signs and symptoms associated with ovulation as an aid to ascertain when the fertile period begins.
- For avoiding pregnancy, couples abstain from sexual intercourse during the fertile phase of the menstrual cycle; they stop using drugs and contraceptive devices. This is the essence of natural family planning.

Basal body temperature method (BBT)

- The BBT method depends on the rise of BBT at the time of ovulation, as a result of an increase in the production of progesterone.
- The rise of temperature is very small, 0.3-to-0.5-degree C.
- When no ovulation occurs the body temperature does not rise.
- The BBT method is reliable if intercourse is restricted to the post-ovulatory infertile period, commencing 3 days after the ovulatory temperature rise and continuing up to the beginning of menstruation.
- The major drawback of this method is that abstinence is necessary for the entire pre-ovulatory period.

Cervical mucus method

- This is also known as "billings method" or "ovulation method".
- This method is based on the observation of changes in the characteristics of cervical mucus.
- At the time of ovulation, cervical mucus becomes watery clear resembling raw egg white, smooth, slippery and profuse.

- After ovulation, under the influence of progesterone, the mucus thickens and lessens in quantity.
- To practice this method the woman should be able to distinguish between different types of mucus and requires a high degree of motivation.

Symptothermic method

- This method combines the temperature, cervical mucus and calendar techniques for identifying the fertile period.
- If the woman cannot clearly interpret one sign, she can "double check" her interpretation with another.

MALE STERILISATION

Mechanism of action - The sperms fail to reach the seminal vesicle and therefore the semen does not contain the sperms

Technique used

- A small incision is made on the scrotum, either on both the sides or just in the middle raphe. The vas deference on both the sides is cut and ligated at both the ends. The incisions are closed with a suture in case of traditional vasectomy.
- In non-scalpel vasectomy, instead of incision a small puncture is made through which the vas deferens is picked up. The puncture is closed with a small dressing.

Instructions for patient

- The patient is not immediately sterile after the operation and has to use barrier contraceptive or other family planning methods for 45 days or till 30 ejaculations are over.
- Avoid cycling, lifting heavy weights for 15 days.
- To follow up after 5 days for removal of stitch.
- Avoid taking bath for at least 24 hours after operation.
- Wear T bandage or scrotal support for 15 days.

Failure Rate: Very low failure rate 0.15/100 persons year

Advantages

- Simple and less expensive procedure
- Very effective
- Risk of complication is small
- Permanent method
- Ideal for those desiring to limit family size

Disadvantage

- Irreversible
- No protection against STI/HIV
- Not immediately effective, has to use additional contraceptive methods till aspermia is established
- Post-operative complications like pain, scrotal haematoma and local infection - 3% of patients

Complications

- Sperm granules
- Spontaneous recanalization - zero to 6%
- Autoimmune response seen in 54% cases
- Psychological - Diminution of sexual vigour, impotence, headache, fatigue

EVALUATION OF CONTRACEPTIVE METHODS

The efficacy of family planning methods is assessed by measuring the number of unplanned pregnancies that occur during a specified period of exposure while using a contraceptive method.

Methods of evaluation

PEARL INDEX

- Defined as failure per 100 women-years of exposure.
- Failure rate per HWY = $\frac{\text{Total accidental pregnancies} \times 1200}{\text{Total month of exposure}}$

- Number of accidental pregnancies include each and every pregnancy irrespective of outcome.
- 1200 is the number of months in 100 years.
- Number of months of exposure deduct 10 months for full term and 4 months for an abortion from total month of review period.

Interpretation: failure rate of 10 HWY means 10 accidental pregnancies will occur in 100 women if followed for full one year or one fourth or 2.5 accidental pregnancies would occur, since average fertile period of a women is about 25 years.

Disadvantage: Failure rate is calculated for lengthy period of exposure therefore fails to accurately compare methods of various duration of exposure.

LIFE TABLE ANALYSIS

- Calculate failure rate for each month of use
- Cumulative failure rate can compare the method for any specific length of exposure.
- Gives reliable and consistent results.

UNMET NEED FOR FAMILY PLANNING

- Unmet need for family planning means the gap observed between the use of contraceptive method and the women's intention or preference to avoid becoming pregnant.
- Many women who are sexually active would prefer to avoid becoming pregnant, but nevertheless are not using any method of contraception (including use by their partner). These women are considered to have an "unmet need" for family planning.
- Unmet need is defined on the basis of women's response to survey questions.
- Unmet need can be a powerful concept for family planning as it possesses challenge to family planning programme.

Reason for unmet need

- Inconvenient or unsatisfactory services

- lack of information
- fears about contraceptive side-effects
- opposition from husband or relatives

Factors influencing unmet need

- Residence: Higher in rural areas
- Age- between 15-24 years of age, need is more for spacing births and above 30 it is more for limiting births.
- Religion: Hindu and Christian women have a lower unmet need than Muslim women
- Lower socio-economic group and illiteracy