Chapter 3: Reproductive Health

Exercises — Chapter-end Exercises

Q1 What do you think is the significance of reproductive health in a society?

SOLUTION

Reproductive health is of immense significance to a society because it encompasses the total well-being of individuals in all aspects of reproduction — physical, emotional, behavioural, and social.

Key significance areas:

• It ensures that individuals have physically and functionally normal reproductive organs and healthy emotional and behavioural interactions related to sex and reproduction.

• Awareness of reproductive health (STIs, safe sexual practices, contraception, adolescence) empowers people — especially adolescents — to make informed choices and avoid myths and misconceptions.

• It leads to a reduction in maternal mortality rate (MMR) and infant mortality rate (IMR) through better care of pregnant mothers, medically assisted deliveries, and post-natal care.

• Controlling population growth through family planning improves the overall quality of life by preventing absolute scarcity of food, shelter, and clothing.

• Early detection and treatment of STIs, assistance to infertile couples, and legal checks on practices like female foeticide all contribute to a just and healthy society.

• It helps build socially responsible families and reduces social evils such as sex abuse and sex-related crimes.

Answer: Reproductive health ensures total physical, emotional, behavioural, and social well-being in all aspects of reproduction, leading to reduced MMR/IMR, controlled population growth, prevention of STIs, and a socially responsible and healthy society.

Q2 Suggest the aspects of reproductive health which need to be given special attention in the present scenario.

SOLUTION

In the present scenario, the following aspects of reproductive health require special attention:

1. Sex education in schools: Providing right information to young people about reproductive organs, adolescence, safe sexual practices, STIs, and AIDS to dispel myths and misconceptions.

2. Population stabilisation: Spreading awareness and access to contraceptive methods to control the rapid growth of population.

3. Prevention and control of STIs: Early detection and treatment of sexually transmitted infections, especially among the 15–24 age group which is most vulnerable.

4. Medical Termination of Pregnancy (MTP): Ensuring safe, legal, and medically supervised

MTPs and preventing illegal abortions by unqualified practitioners.

5. Prevention of female foeticide: Strict enforcement of the ban on amniocentesis for sex determination to check the misuse leading to female foeticides.

6. Assistance to infertile couples: Expanding access to Assisted Reproductive Technologies (ART) such as IVF, GIFT, ICSI, and AI to help infertile couples.

7. Maternal and child health care: Better post-natal care, breast-feeding promotion, child immunisation, and equal opportunities for the girl child.

8. Awareness about contraception: Educating couples, especially in rural areas, about available contraceptive options and encouraging small family norms.

Answer: Key aspects needing attention: sex education, population control, STI prevention, safe MTP practices, ban on sex-determination misuse, assistance for infertile couples, maternal and child health care, and contraceptive awareness.

Q3 Is sex education necessary in schools? Why?

SOLUTION

Yes, sex education is absolutely necessary in schools.

Reasons:

• Adolescents often lack accurate information about reproduction, puberty, and sex, and tend to rely on myths and misconceptions. Proper sex education in schools provides them with correct, factual information.

• It helps young people understand reproductive organs, adolescence-related physical and emotional changes, and safe and hygienic sexual practices.

• It raises awareness about sexually transmitted infections (STIs) and AIDS, enabling adolescents to protect themselves.

• It informs students about available birth control options and the consequences of unprotected sex, thereby reducing unintended pregnancies.

• It helps prevent social evils such as sex abuse, sexual harassment, and sex-related crimes by promoting respectful and responsible behaviour.

• With the right information, young people are better equipped to lead a reproductively healthy life and contribute to a reproductively healthy society.

• Schools are the most systematic and widespread platform to reach young people before they become sexually active.

Answer: Yes, sex education is necessary in schools to provide accurate information about reproductive health, adolescence, STIs, and safe practices, thereby dispelling myths and enabling young people to make responsible and informed choices.

Q4 Do you think that reproductive health in our country has improved in the past 50 years? If yes, mention some such areas of improvement.

SOLUTION

Yes, reproductive health in India has improved significantly over the past 50 years.

Areas of improvement:

1. Reduced maternal mortality rate (MMR): Better obstetric care, medically assisted deliveries, and post-natal care have led to a significant decline in deaths during childbirth.

2. Reduced infant mortality rate (IMR): Mass immunisation programmes and better neonatal care have brought down infant deaths considerably.

3. Better detection and treatment of STIs: Early diagnosis facilities and effective treatment have improved outcomes for patients with sexually transmitted infections.

4. Increased adoption of family planning: There is a greater acceptance of contraceptive methods and the small family norm ('Hum Do Hamare Do') among couples.

5. Legalisation of MTP: The legalisation of Medical Termination of Pregnancy (MTP) in 1971 has reduced the incidence of unsafe illegal abortions and maternal deaths associated with them.

6. Assistance to infertile couples: Establishment of infertility clinics and the availability of Assisted Reproductive Technologies (ART) have helped many infertile couples have children.

7. Statutory ban on amniocentesis for sex determination: This has helped in checking female foeticide.

8. Reproductive and Child Health Care (RCH) programmes: These expanded government programmes have improved access to reproductive health services across the country.

9. Awareness campaigns: Audio-visual and print media campaigns have created widespread awareness about reproductive health.

Answer: Yes, reproductive health has improved significantly over 50 years: reduced MMR and IMR, better STI detection and treatment, wider contraceptive use, legalisation of MTP, ART for infertile couples, and statutory bans on sex-determination misuse.

Q5 What are the suggested reasons for population explosion?

SOLUTION

Population explosion refers to the rapid and uncontrolled increase in human population. The following are the suggested reasons:

1. Rapid decline in death rate: Improvements in medical care, sanitation, and nutrition have drastically reduced the number of deaths, particularly from infectious diseases.

2. Decline in maternal mortality rate (MMR): Better obstetric care and safe delivery practices have reduced deaths during childbirth.

3. Decline in infant mortality rate (IMR): Mass immunisation, better nutrition, and neonatal care have sharply reduced infant deaths.

4. Increase in the number of people in the reproductive age group: As more people survive into adulthood, the proportion of individuals capable of reproduction increases, further boosting birth rates.

5. Improved quality of life: Better living conditions and increased food security have allowed larger numbers of people to survive and reproduce.

Note: The world population was around 2 billion in 1900 and rocketed to about 6 billion by 2000 and 7.2 billion in 2011. India's population crossed 1.2 billion in May 2011 from about 350 million at independence.

Answer: Population explosion is caused by: rapid decline in death rate, reduced MMR and IMR due to better healthcare, an increase in the number of people in the reproductive age group, and improved living conditions.

Q6 Is the use of contraceptives justified? Give reasons.

SOLUTION

Yes, the use of contraceptives is justified, though it must be noted that contraceptives are not regular requirements for reproductive health.

Justifications:

1. Population control: The rapid growth of population can lead to scarcity of basic requirements like food, shelter, and clothing. Contraceptives help control population size.

2. Spacing of children: Contraceptives allow couples to plan and space pregnancies, enabling better care for each child and better maternal health.

3. Prevention of unwanted pregnancies: They help prevent pregnancies due to casual or unprotected intercourse, thus reducing the need for Medical Termination of Pregnancy (MTP) and its associated risks.

4. Protection against STIs: Methods like condoms protect users from sexually transmitted infections including HIV/AIDS.

5. Emergency contraception: IUDs or progestogen-based pills within 72 hours of coitus can prevent pregnancy after rape or unprotected intercourse.

6. Medical reasons: In cases where pregnancy would be harmful or fatal to the mother or foetus, contraceptives are medically justified.

However, the choice of contraceptive method should always be made in consultation with qualified medical professionals, and the possible side effects (nausea, irregular menstrual bleeding, etc.) should be considered.

Answer: Yes, contraceptive use is justified to control population growth, space pregnancies, prevent unwanted pregnancies, protect against STIs, and manage emergency or medically unsafe situations — always in consultation with a medical professional.

Q7 Removal of gonads cannot be considered as a contraceptive option. Why?

SOLUTION

Removal of gonads (castration/gonadectomy) cannot be considered a contraceptive option because:

1. A contraceptive method should be reversible: Contraceptives are used to temporarily prevent or delay pregnancy. Removal of gonads is permanent and irreversible — the person permanently loses the ability to produce gametes (sperms or ova).

2. Hormonal consequences: The gonads (testes in males, ovaries in females) are also endocrine glands that secrete essential sex hormones (testosterone, oestrogen, progesterone). Their removal leads to serious hormonal imbalances with wide-ranging physical and psychological consequences, such as loss of libido, osteoporosis, mood disorders, and other metabolic effects.

3. An ideal contraceptive should not interfere with sexual drive or desire: Gonad removal severely suppresses sexual drive by eliminating the source of sex hormones, which violates a fundamental criterion for contraceptives.

4. Surgical sterilisation (vasectomy/tubectomy) blocks gamete transport without removing the gonads — the gonads remain intact and continue producing hormones. This is the accepted surgical contraceptive approach.

In summary, gonad removal causes permanent loss of fertility plus serious hormonal disruption, making it medically, ethically, and practically unacceptable as a contraceptive measure.

Answer: Removal of gonads is irreversible, causes severe hormonal imbalances (loss of sex hormones), and permanently destroys fertility — violating the criteria of reversibility and non-interference with sexual drive that define an acceptable contraceptive.

Q8 Amniocentesis for sex determination is banned in our country. Is this ban necessary? Comment.

SOLUTION

Yes, the ban on amniocentesis for sex determination is absolutely necessary.

What is amniocentesis?
Amniocentesis is a prenatal diagnostic procedure in which a sample of amniotic fluid is collected from the amniotic sac surrounding the developing foetus. The foetal cells and dissolved substances in the fluid are analysed. It is used legitimately to test for genetic disorders such as Down syndrome, haemophilia, sickle-cell anaemia, and to determine the viability of the foetus.

Why the ban is necessary:

1. Misuse for sex determination: In India, amniocentesis was being widely misused to determine the sex of the unborn child. Frequently, if the foetus was found to be female, it was followed by Medical Termination of Pregnancy (MTP) — i.e., female foeticide. This is illegal, unethical, and dangerous.

2. Gender bias: Such practices reflect and reinforce deep-rooted gender bias against the girl child, leading to a highly skewed sex ratio.

3. Health risk to the mother: Misuse leads to unnecessary, often illegal, abortions that are risky to the mother's health and life.

4. Social consequences: Widespread female foeticide disrupts the social fabric and leads to gender imbalances with serious societal consequences.

Amniocentesis, when legitimately used for detecting genetic abnormalities, remains a valuable medical tool. The ban applies specifically to its use for sex determination, and this restriction is legally justified and socially essential to protect the girl child and the reproductive rights of women.

Answer: Yes, the ban is necessary. Amniocentesis was being misused in India for sex determination, frequently followed by female foeticide. The ban protects the girl child, prevents gender-biased abortions, and safeguards the health of the mother.

Q9 Suggest some methods to assist infertile couples to have children.

SOLUTION

Several Assisted Reproductive Technologies (ART) are available to help infertile couples have children:

1. In Vitro Fertilisation (IVF) followed by Embryo Transfer (ET) — 'Test Tube Baby' Programme: Ova from the wife/donor and sperms from the husband/donor are collected and fertilised under simulated conditions in the laboratory. The resulting zygote or early embryo is then transferred into the female reproductive tract.

2. Zygote Intra Fallopian Transfer (ZIFT):
The zygote or early embryo (up to 8 blastomeres) formed by IVF is transferred into the fallopian tube.

3. Intra Uterine Transfer (IUT):
Embryos with more than 8 blastomeres formed by IVF are transferred into the uterus to complete development.

4. Gamete Intra Fallopian Transfer (GIFT):
An ovum collected from a donor is transferred into the fallopian tube of a female who cannot produce ova but can provide a suitable environment for fertilisation and development.

5. Intra Cytoplasmic Sperm Injection (ICSI):

A sperm is directly injected into the ovum in the laboratory to form an embryo. Used in cases of severe male infertility.

6. Artificial Insemination (AI) / Intra-Uterine Insemination (IUI):
Semen collected from the husband or a healthy donor is artificially introduced into the vagina or uterus of the female. Used when the male cannot inseminate the female or has very low sperm count.

7. Legal Adoption:
Where medical techniques are not feasible or successful, legal adoption of orphaned or destitute children is a meaningful and socially valuable option.

Answer: Assisted Reproductive Technologies (ART) include IVF+ET (test tube baby), ZIFT, IUT, GIFT, ICSI, and Artificial Insemination (AI/IUI). Legal adoption is also a recommended option for couples for whom medical techniques are not feasible.

Q10 What are the measures one has to take to prevent from contracting STDs?

SOLUTION

Sexually Transmitted Infections (STIs), also called STDs or Venereal Diseases (VD), can be prevented by following these measures:

1. Avoid sex with unknown or multiple partners: Restricting sexual activity to a single, faithful, uninfected partner greatly reduces the risk of contracting STIs.

2. Use condoms: Always use condoms during coitus. Condoms act as a barrier and protect against STIs including HIV/AIDS, gonorrhoea, syphilis, genital herpes, chlamydiasis, genital warts, and trichomoniasis.

3. Early diagnosis and treatment: In case of doubt or symptoms (itching, fluid discharge, slight pain, swellings in the genital region), consult a qualified doctor immediately for early detection and complete treatment.

4. Avoid sharing needles and syringes: Some STIs like HIV and hepatitis-B can be transmitted through sharing of injection needles or surgical instruments — avoid this.

5. Safe blood transfusion: Ensure blood is screened for STIs before transfusion.

6. Awareness and education: Knowing about STIs — their transmission, symptoms, and consequences — is the first step towards prevention, especially for the 15–24 age group which is most vulnerable.

Note: Except for hepatitis-B, genital herpes, and HIV infections, most other STIs are completely curable if detected early and treated properly.

Answer: Prevent STDs by: avoiding sex with unknown/multiple partners, consistently using condoms, seeking early medical diagnosis and complete treatment if infected, avoiding sharing needles, and ensuring safe blood transfusion practices.

Q11 State True/False with explanation

(a) Abortions could happen spontaneously too. (True/False)

(b) Infertility is defined as the inability to produce a viable offspring and is always due to abnormalities/defects in the female partner. (True/False)

(c) Complete lactation could help as a natural method of contraception. (True/False)

(d) Creating awareness about sex related aspects is an effective method to improve reproductive health of the people. (True/False)

SOLUTION

(a) TRUE

Abortions can occur spontaneously (called spontaneous abortion or miscarriage) without any deliberate medical intervention. These happen due to chromosomal abnormalities, hormonal imbalances, uterine defects, infections, or other factors. Medical Termination of Pregnancy (MTP), which is induced or intentional, is different from spontaneous abortion.

(b) FALSE

Infertility is the inability of a couple to conceive or produce children despite unprotected sexual cohabitation. It is NOT always due to defects in the female partner. In many cases, the problem lies with the male partner (e.g., low sperm count, poor sperm motility, inability to inseminate). The reasons for infertility can be physical, congenital, diseases, drugs, immunological, or psychological, and may lie in either partner.

(c) TRUE

Lactational amenorrhea is a natural contraceptive method based on the fact that during intense and complete lactation (breastfeeding) following parturition (childbirth), ovulation and the menstrual cycle do not occur. Therefore, as long as the mother breastfeeds the child fully, chances of conception are almost nil. However, this method is effective only for a maximum period of six months following parturition.

(d) TRUE

Creating awareness about sex-related aspects — including reproductive organs, adolescence, safe sexual practices, STIs, AIDS, contraception, and population control — is a primary and highly effective strategy for improving reproductive health. Awareness empowers people to make informed decisions, seek timely medical help, adopt contraceptive methods, and avoid risky behaviours, all of which contribute to a reproductively healthy society.

Answer: (a) True — spontaneous abortions (miscarriages) occur naturally. (b) False — infertility can be due to defects in either partner, often the male. (c) True — complete lactation (lactational amenorrhea) is an effective natural contraceptive for up to 6 months post-parturition. (d) True — awareness is a primary strategy for reproductive health improvement.

Q12 Correct the following statements :
(a) Surgical methods of contraception prevent gamete formation.
(b) All sexually transmitted diseases are completely curable.
(c) Oral pills are very popular contraceptives among the rural women.
(d) In E. T. techniques, embryos are always transferred into the uterus.

SOLUTION

(a) Incorrect statement: Surgical methods of contraception prevent gamete formation.
Corrected: Surgical methods of contraception (vasectomy in males and tubectomy in females) prevent gamete transport, not gamete formation. In vasectomy, a small part of the vas deferens is removed or tied up, preventing the transport of sperms. In tubectomy, a small part of the fallopian tube is removed or tied up, preventing the transport of ova. The gonads continue to produce gametes normally.

(b) Incorrect statement: All sexually transmitted diseases are completely curable.
Corrected: Not all sexually transmitted infections (STIs) are completely curable. Except for hepatitis-B, genital herpes, and HIV infections, other STIs are completely curable if detected early and treated properly. HIV (leading to AIDS), genital herpes, and hepatitis-B are NOT completely curable.

(c) Incorrect statement: Oral pills are very popular contraceptives among the rural women.
Corrected: Oral pills are popular contraceptives primarily among urban women. Intra Uterine Devices (IUDs) are one of the most widely accepted methods of contraception in India, particularly because they require no daily attention after insertion, making them more practical in a variety of settings. Oral pills require daily intake for 21 days and are generally more popular among educated, urban women.

(d) Incorrect statement: In E.T. techniques, embryos are always transferred into the uterus.
Corrected: In embryo transfer (ET) techniques, the site of transfer depends on the developmental stage of the embryo. Early embryos (zygote or up to 8 blastomeres) are transferred into the fallopian tube — this is called ZIFT (Zygote Intra Fallopian Transfer). Embryos with more than 8 blastomeres are transferred into the uterus — this is called IUT (Intra Uterine Transfer). So embryos are NOT always transferred into the uterus.

Answer: (a) Surgical methods prevent gamete transport (not formation). (b) HIV, genital herpes, and hepatitis-B are NOT curable — only other STIs are curable if detected early. (c) IUDs (not oral pills) are the most widely accepted contraceptive in India, especially in rural areas. (d) Early embryos (≤8 blastomeres) are transferred to the fallopian tube (ZIFT); only later-stage embryos go into the uterus (IUT).