

MATERNAL HEALTH NURSING

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At the end of this chapter, the student will be able to

- * discuss in detail menstrual cycle, fertilization
- * describe the embryonic and foetal development
- implement antenatal and postnatal care
- educate the mother about antenatal care
- participate national family welfare programme and educate about the family planning methods

திருக்குறள்:

குழல்இனிது யாழ்இனிது என்பதம் மக்கள் மழலைச்சொல் கேளா தவர்.

விளக்கம்:

பெற்ற பிள்ளைகள் பேசும் பொருளற்ற மழலைச் சொல்லைக் கேட்காதவர்தாம், குழலும் யாழும் கேட்க இனியவை என்பர்.

Explanation:

"The pipe is sweet, the lute is sweet," say those who have not heard the prattle of their own children.



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5.1 INTRODUCTION

Women are the eyes of country -told by Bharthiyar. Women are the God of giving life to new one in this word. If women are healthy, the life which comes from them will be healthy. If children are healthy the family, society, nation then the whole world will be healthy. When the child is born as a female the care starts from there to have a healthy child in future.

So the essential and preventable maternal care is needed for all the women. In this chapter we are going to see how the women are to be protected in terms of maternal health. It includes care of women during pregnancy, and the postpartum period. It also encompasses the health care dimensions of family planning, to ensure a positive and fulfilling experience to reduce maternal morbidity and mortality.

Before entering into this chapter look at the picture and reflect the Anatomy and physiology of female Reproductive system. (Refer Chapter 2 std XI vocational book)



Structure of Uterus

5.2 MENSTRUAL CYCLE

Definition: Menstruation is a visible manifestation of cyclic, physiologic uterine bleeding due to shedding of the endometrial wall following invisible interplay of hormones mainly through Hypothalamus-Pituitary-Ovarian axis.

Normal limits:

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Frequency: 24-38 days Regularity: +/- 2-20 days Duration: 4-8 days Volume: 5-80 ml

Physiology of Menstruation: The menstrual cycle is the scientific term for the



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physiological changes that occur in fertile women for the purpose of sexual reproduction. The menstrual cycle is controlled by the endocrine system.

The hormones involved in the menstrual cycle

The mechanism is controlled by the hypothalamus.

- 1. Gonodotrophin releasing hormone.
- 2. FSH-Folicular Stimulating Hormone.
- 3. LH - Luteinizing Hormone.
- 4. Progesterone and
- 5. Estrogen.

Menstrual cycle can be explained in two cycles which occur concurrently

- 1. The ovarian cycle and
- 2. The uterine cycle



Female literacy is only 54%, and women lack the empowerment to take decisions, including decision to use reproductive health services.

- The World Health Organization (WHO) estimates that, of 536,000 maternal deaths occurring globally each year, 136,000 take place in India, despite the safe motherhood policies and programmatic initiatives at the national level.
- In 2015, it is estimated that about 800 \geq girls and women died every day as a result of pregnancy and child birth-related complications though there is a decline in worldwide mortality rates.

- The Ovarian Cycle consists of
 - a. The follicular phase, ovulation and
 - b. The luteal phase
- The Uterine Cycle consists of
 - a. menstrual phase
 - b. The proliferative phase and
 - The secretory phase

1. Ovarian cycle

- Follicular phase: The hypothalamus released gonadotrophin releasing hormone, which stimulates anterior pituitary gland and secrets follicle stimulating hormone (FSH). All the follicles degenerated except one to mature into a large graffian follicle. The follicle ruptures and releases an ovum into the peritoneal cavity.
- b. The luteal phase: Begins with ovulation. The body temperature drops of then rises by 0.5 to 1 around the time of ovulation. Corpus luteum is formed from follicle cells that remain in the ovary following ovulation. Corpus luteum secretes oestrogen and progesterone during the remaining 14 days of cycle. Corpus luteum degenerates, if the ovum is not fertilized.

2. Uterine or Menstrual cycle

- Menstrual phase: It is characterized by vaginal bleeding and lasts for 4-6 days. Physiologically this is the terminal phase of the menstrual cycle. The endometrium sheds up to the basal layer along with the blood from capillaries and the unfertilized ovum. Bleeding occurs when the coiled arteries return to a state of construction.
- b. Proliferative phase: This phase follows menstruation and lasts until ovulation. The

first few days the endometrium is reforming and it is termed as "Regenerative phase.". Estrogen stimulates proliferation and growth of endometrium. Under the control of oestrogen re-growth and thickening of endometrium begins. Ovulation occurs between day 12 and day 16.

c. Secretary phase: It lasts about 12 days. This phase is initiated response to increase in luteinizing hormone. Progesterone prepares the endometrium for pregnancy. The functional layer thickens to 3.5 mm and become spongy in appearance. The endometrium is vascular and richingly cogen, spiral or coiled arteries develop. On day 27 and 28 oestrogen and progesterone levels fall because the corpus luteum is no longer producing them. Without these hormones, the uterine lining becomes ischemic. The lining starts to slough, the women has come to full cycle and it is once again at day first of the menstrual cycle.

Abnormalities in Menstruation

- Premenstrual Syndrome (PMS).
- PMS is any unpleasant or uncomfortable symptom during menstrual cycle that may temporarily disturb normal functioning. These symptoms may last from a few hours to many days.
- Premenstrual Dysphoric Disorder (PMDD) is a much more severe form of PMS which affects approximately 3%-8% of women of reproductive age. PMDD requires treatment by a physician.



FEMALE REPRODUCTIVE CYCLE

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- Amenorrhea: It is absence of menstruation.
- Primary amenorrhea: Menstruation does not begin at puberty.
- Secondary amenorrhea: Normal and regular menstrual periods which become increasingly abnormal and irregular or absent.
- Dysmenorrhea: It is characterized by severe and frequent menstrual cramps and pain associated with menstruation.
- Primary Dysmenorrhea: Women experience abnormal uterine contractions resulting from a chemical imbalance in the body. Mostly in adolescents
- Secondary Dysmenorrhea: It is caused by other medical conditions, most often endometriosis.
- Menorrhagia: It is the medical term for excessive menstrual bleeding. In a normal menstrual cycle, women on average lose about 30 ml of blood for about 7 days of menstruation. If bleeding exceeds 7 days or too heavy (over 80 ml), then it is called as menorrhagia. The main cause of menorrhagia is an imbalance of estrogen and progesterone in the body.
- Abnormal Bleeding: Abnormal vaginal bleeding (excluding menses)
 - Bleeding between menstrual periods
 - Bleeding after sex
 - Bleeding after menopause
- Metrorrhagia: It refers to menstrual bleeding that is normal in amount but occurs of irregular intervals, between the menstrual periods hemorrhage from the uterus, independent of menstruation.

Menopause: It is the process through which a woman ceases to be fertile.

5.3 FERTILIZATION AND FETAL DEVELOPMENT

Definition: It is the process during which a haploid male gamete (sperm) unites with a haploid female gamete (oocyte) to form a single cell (ZYGOTE). Is called fertilization.

The development of fetus divided in to 3 periods.

- 1. Pre-embryonic period (0 to 2 weeks)
- 2. Embryonic period (3-8 weeks)
- 3. Fetal period (9th week to birth of the baby)

1. Pre- embryonic period (0-2 Weeks)

- During coitus, sperm is released by male partner into the vagina of the female partner is called as insemination.
- The motile sperms swim and pass the cervix to enter into the uterus and finally to reach the ovum released by the ovary in the ampullary isthmic junction.
- Fertilization takes place in the ampulla-isthmic junction. Chemical signals from oocyte attract the sperms.
- The sperm after reaching the ovary in the ampullary isthmic junction comes in contact with the zona-pellucida layer of the ovum and block the entry of the additional sperms thus only one sperm fertilizes the ovum.
- The secretions of acrosome help the sperm to enter into the ovum through zonapellucida and the plasma membrane and thus secondary oocyte completes meiosis II and results in the formation of a second polar body and haploid ovum.
- The haploid nucleus of the sperm and ovum fuse together to form a zygote which develops into new individual.

Proces of Fusion of Gametes

Definition: The process of union of sperm and ovum is called as fertilisation.

Fertilisation FertilisationFertil

Process of Fertilization to Implantation

Zygote is genetically unique, a diploid cell (46 chromosomes) resulting from the fusion of two haploid gametes; a fertilized ovum.

- Male has two sex chromosomes X and Y hence male produces 50% of sperms carrying X and 50% carrying Y, while female has two X chromosomes.
- After fusion of the male and female gametes the zygote would carry either XX or XY depending on whether the sperm carrying X or Y fertilized the ovum.
- The zygote carrying XX would develop into a female baby and XY would form a male.
- So, it is the father whose gamete decides the sex.



FETAL DEVELOPMENT FROM OVULATION TO IMPLANTATION

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> The cells which have the potency to give rise to any types of cells in the body are called stem cells.

Embryo cells act as stem cells upto the age of 6 days and have the ability to form any part of the body.



Structure of Blastocyst

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- After fertilization cleavage of zygote takes place. It consists of repeated mitotic divisions of the zygot which results in rapid increase in the number of the cells. These smaller embryonic cells are called blastomeres. This normally occurs in the uterine tube.
- The embryo with 8 to 16 blastomeres is called a morula. The Morula reaches the uterine cavity at this stage. Spherical Morula is formed about 3 days after fertilization.
- The morula divides further as it moves further into the uterus and transforms into blastocyst.
- The blastomeres in the blastocyst are arranged into an outer layer called trophoblast and inner mass of cells attached to trophoblast is called as inner cell mass.
- By 7th day, Trophoblast is differentiated into 2 layers: Cytotrophoblast, inner layer, mononucleated mitotically active cells. Syncytiotrophoblast (outer multinucleated mass, with indistinct cell boundary).
- By 8th day the blastocyst is superficially embedded in the compact layer of the endometrium.
- By the 10th day the blastocyst is completely buried in the uterine lining, known as "Implantation" or "embedding" "some

XII_Nursing_Vocational_Unit 5.indd 147

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Implantation of fertilized ovum in uterus

women have small amount of bleeding" during the time of implantation which is known as "Implantation Bleeding".

The implantation of the fertilized ovum of embedding is known as "Nidation or Nesting".

- Uteroplacental circulation is established by 11th or 12th day. implantation is completed by the 11th or 12th day. Implantation it can be detected by:
 - Ultrasonography.
 - HCG (human chorionic gonadotrophin which is secreted by the syncytiotrophoblast) at about the end of 2nd week
- By the 13th day Proliferation of Cytotrophoblast cells produce extension inside the Syncytiotrophoblast to form primary chorionic villi.
- The chorionic villi and uterine tissue together form a structural and functional organic structure between developing embryo and tissues of the mother called as placenta.



Placenta and Umbilical Cord

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Embryonic development from 3 layers

- After implantation, the inner cell mass is differentiated into outer layer called ectoderm and an inner layer called endoderm with a middlelayer is mesoderm
- Three layers give rise to all organs in adults. As shown in the picture above the cells are responsible for those organs.
- If the implantation occur outside it is called as Ectopic pregnancy. 95 to 97% of ectopic pregnancies occurs in the uterine tube. Most are in the ampulla & isthmus. (see the figure for types of ectopic pregnancy)



 Placenta previa: placenta attach to the lower uterine segment.

2.Embryonic period (3-8 weeks)

3rd week



- Heart Tube fuses
- Cardiac muscle contraction begins
- Eye & ear cells are present
- Neural tube starts closing

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4th week



- Optic vesicle appears, two pharyngeal arches appear.
- A primitive S-shaped tubal heart is beating and peristalsis.
- The rhythmic flow propelling fluids throughout the body begins at this stage,
- The neural tube determines the form of the embryo.

5th Week

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- ✤ Valve & septa appear in the heart.
- The digestive epithelium layer begins to differentiate into the future locations of the liver, lung, stomach and pancreas.
- ✤ Liver cells form in the digestive system.
- Forebrain, midbrain and hindbrain forms.
- Lymphatic & thyroid start to develop.
- Limb buds.

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- ✤ First thin layer of skin.
- The baby yawns.

6th Week



- Further development of nervous system, heart.
- Innervation, the distribution of nerves, begins in the lower limb buds.

7th Week



- ✤ A four chambered heart and a sense of smell.
- Primitive germ cells arrive at the genital area and will respond to genetic instructions to develop into either female or male genitals.

8th Week



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- Spontaneous Involuntary Movement.
- Brain is connected to tiny muscles and nerves and enables the embryo to make spontaneous movements.
- Testes or ovaries are distinguishable.

3. Fetal Period (9th week to birth of the baby)

9-12 Weeks



- Brain continues to develop, liver enlarges, blood cell formation begins.
- Sex can be determined by genitals.
- \bigstar 10th week.
- ✤ The fetus passes urine.
- The Fetal Heart Rate can be heared by Doppler.

13-16 Weeks (Month 4)

- Sucking starts
- ✤ Hard palate is fused
- Kidney structure developed
- Bones are distinct joint cavities are apparent
- Meconium is present in gut





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The development of a child's brain depends on three factors. 60% of the development is

determined by genes, 10% by the diet of the mother and 30% by the environment inside the uterus.

17-20 weeks (Month 5)



- ✤ Eyeballs and eyebrows present.
- ✤ Lanugo(Silk like hair)present.

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- Quickening occurs (first fetal movement).
- Approximate crown rump length at the end of 20 weeks is 19 cm.



It is only during the fifth month that the baby can cover its ears with its hands in presence of a strong

external sound stimuli.

21-30 weeks



- ✤ Eyes are opened.
- Finger and toe nails are complete.
- Skin is wrinkled and red. Fatty layer under the skin is formed.
- lanugo prominent.
- Testes descent in the scrotum for male babies.
- Approximate crown rump length at the end of 30 weeks is 28 cm.
- ✤ Vernix (white creamy substance) present.



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By 6th month the unborn baby is a complete human being. By this time, the baby

develops complete awareness, remembering, feeling and sensing. .Body size and weight increase.

Permanent teeth buds of the babies are formed during the 6th month of pregnancy. These buds are formed behind milk teeth and high in the gums.

30-38 weeks



- Constant weight gain.
- Lanugo disappears from face.
- Fat accumulates under the skin (hypodermis).
- Plantar creases visible.
- Ear cartilage soft.
- Approximate crown rump length at the end of 38 weeks is 36 cm.
- ✤ At birth, weight 2.5-3.5 kg.

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5.5 PLACENTA AND MEMBRANES

- This is a feto maternal organ. It has two components:
 - Fetal part develops from the chorionic sac
 - Maternal part derived from the endometrium

The placenta and the umbilical cord are a transport system for substances between the mother and the fetus.

Structure of placenta: It is a flat, round mass, about 15 to 20 cm in diameter, 2.5-3 cm thickness, 15-20 lobes, weighs 1/6th of baby's weight or 500 – 600gms at birth. It has two surfaces maternal surface and fetal Surface

Maternal surface

It is irregular, and divided into convex areas (cotyledons)

- Cotyledons –about 15 to 20 slightly bulging villous areas. Their surface is covered by shreds of decidua basalis from the uterine wall.
- After birth, the placenta is always carefully inspected for missing cotyledons. Cotyledons remaining attached to the uterine wall after birth may cause severe bleeding.



Maternal surface of placenta

Fetal surface:

- This side is smooth and shiny. It is covered by amnion.
- The umbilical cord is attached close to the center of the placenta.
- The umbilical vessels radiate from the umbilical cord.
- They branch on the fetal surface to form chorionic vessels.
- They enter the chorionic villi to form arteriocapillary-venous system.



Fetal surface of placenta

Placental Membranes

The placental membrane separates maternal blood from fetal blood. The fetal part of the placenta is known as the chorion. The maternal component of the placenta is known as the decidua basalis.

Fetal membranes: It consists of two layers.

- Chorion: It is the outer layer of fetal membranes. it is thick friable and shaggy.
- Amnion: It is the inner layer of fetal membrane. It is smooth, shiny, and transparent
- Placental Circulation Fetal from Umbilical Arteries to chorionic plate to branches to stem villi to capillaries in terminal villi and return via umbilical vein.
- Placental circulation Maternal Free-flowing with Spiral arteries open into intervillous space and bath the villi with 150 ml of maternal

5 Maternal Health Nursing

blood Exchanged - 3-4 times/minute Reduced blood pressure in intervillous space helps the Oxygenated blood to the chorionic plate, return back to the villi. 6

Functions of Placenta

- 1. Respiratory: Placenta act as lungs to the fetus taking in oxygen from the mother's haemoglobin and giving of CO_2 into the maternal blood.
- 2. Nutritive: The fetus selects from the mother blood protein for tissue building, glucose for energy and growth. Calcium and phosphorus for bones and teeth, vitamins, iron and other minerals for blood formation.
- **3. Storage:** The liver is not sufficiently developed. Placenta stores glucose is the form of glycogen and reconverts it into glucose as required by the fetus.
- **4. Excretory:** The waste products are given off and taken away by the ovarian and uterine veins.
- **5. Protective:** To protect the fetus, the placenta prevents a number of organisms from passing through into the fetal blood.
- 6. Endocrine: The placenta also has an endocrine action producing hormones like follicular stimulating and leutinizing hormones of the gonadotrophic hormone and oestrogen and progestetone.

5.6 UMBILICAL CORD (FUNIS)

- Usually it is attached near the center of the fetal surface of placenta. The cord extends from the umbilicus of the fetus to the fetal surface of the placenta.
- ✤ Length: About 40- 50 cm and 20 cm wide.

- Contains two arteries and one vein, surrounded by clear gelatinous substances and gives support to the cord and prevent compression of the cord is called (Wharton jelly).
- Two arteries that bring waste products and deoxygenated blood from the fetus to the placenta and the vein carries oxygenated and nourished blood from the placenta to the fetus. The blood flow through the cord is around 400 ml/mt. At birth when the lungs start to work the function of the placenta ceases.
- The vessels are longer than the cord and may have loops (false knots).

5.7 AMINIOTIC FLUID

- It is a fluid in the uterus surrounding the fetus.
- It consists of fetus urine, maternal serum fetal cells, near birth – amnionic volume will be 500-1000 ml. If the fluid is excess (>2000 ml) it is called as Hydraminos. If less it is called as Oligohydramnios.

Functions of Amniotic Fluid

- It allows for growth and free movement of fetus.
- It protects the fetus, acting as shock absorber.
- ✤ It maintains an even temperature for fetus.
- It prevents pressure on the cord.
- It acts as cushion around the fetus, because it protects the fetus from injury, if mother is bumped or falls.
- It is a fluid source that the fetus drinks and then urinates.

Maternal Health Nursing

5.8 FETAL CIRCULATION

Definition: The circulation of oxygenated blood, de-oxygenated blood, nutritive material etc, in the foetus is termed as foetal circulation. The blood vessels responsible for foetal circulation are 6

- 1. **One Umblical Vein:** It carries the oxygenated blood from the placenta to the growing fetus.
- 2. **Two Umblical Arteries:** Both arteries carries all the de-oxygenated blood out of the fetus and carries de-oxygenated blood from the fetus to the placenta.

The shunts involved in foetal circulation

There are three shunts present in a fetus, they are:

- 1. **Ductus Venosus:** The Ductus Venosus shunts the portion of left umblical vein blood flow directly to the inferior vena cava
- 2. **Ductus Arteriosus:** It allows most of the blood from the right-ventricle to bypass the



fetus' fluid-filled non-functioning lungs. Connects the pulmonary artery to the proximal descending aorta.

3. Foramen Ovale: It allows the blood to enter the left atrium from the right atrium It is an opening in the intra-atrial septum.

Step 1: The placenta accepts the blood without oxygen from the fetus through blood vessels that leave the fetus through the Umbilical Cord (Umblical Arteries).

Step 2: When blood goes through the placenta it picks up oxygen

Step 3: The oxygenated blood then returns to the fetus via the umbilical cord (umbilical vein).

Step 4: The oxygenated blood that enters the fetus passes through the fetal liver and enters the right atrium of the heart.

Step 5: Foramen Ovale allows the oxygenated blood to go from the right atrium to left atrium and then to the left ventricle and out the aorta. As a result the blood with the more oxygen gets in to the brain.

Step 6: Blood coming back from the fetus's body also enters the right atrium, but the fetus is able to send this deoxygenated blood from the right atrium to the right ventricle (the chamber that normally pumps blood to the lungs). Most of the blood that leaves the right ventricle in the fetus bypasses the lungs through the ductus arteriosus.

Step 7: The ductus arteriosus sends the deoxygenated blood to the organs in the lower half of the fetal body. This also allows for the deoxygenated blood to leave the fetus through the umbilical arteries and get back to the placenta to pick up oxygen.

⁵ Maternal Health Nursing

The Circulatory Changes After Birth:

- The Placenta is replaced by the Lungs as the organ of respiratory exchange.
- The lungs and pulmonary vessels expand thereby significantly lowering the resistance to blood flow. Subsequently the pressure in the pulmonary artery and the right side of the heart is decreased.
- The pressure of the left side of the heart increases.
- The increasing pressure of blood in the left side of the heart decreases the vascular resistance of the lungs, therefore, the blood now enters the lungs for a respiratory exchange.
- Closure of the Ductus Venosus functional closure occurs within few minutes of birth and becomes as ligamentum venosum.
- Closure of ductus arteriosus is by smooth muscle contraction and it is further replaced by fibrous tissue, called ligamentum arteriosum.

Closure of the Foramen Ovale – closes at birth due to decreased flow from placenta and Inferior Vena Cava to hold open foramen. It become as fossa ovalis

5.9 ANTENATAL CARE

Every pregnancy needs special care. All pregnant women should be registered and encouraged for institutional delivery. Causes of maternal mortality are preventable by the good antenatal care



Causes of Maternal Mortality in India

On first antenatal visit				
1- Confirm Pregnancy	Confirm pregnancy by pregnancy test or Ultra Sound.			
2-History collection	Ask Personal history which includes Name, Age, husband name, marital			
	status, family income, Address etc			
	Menstrual history includes ;			
	 1-Last menstrual period (LMP). 			
	 2-Regularity and frequency of menstrual cycle. 			
	- 3-Contraception method used.			
	 4-Calculate expected date of delivery 			
	(EDD) as = first day of LMP + 9 months +7 days			
Student activity:	Example of calculation of EDD			
Calculate EDD for	Mrs. Radha 22 yrs pregnant with 16 weeks (4 months). Her Last Menstrual			
following LMP	Period (LMP) is may 5th 2018. Then The EDD will be Feb 12th 2019.			
1.Oct 12th 2018				
2.Nov 7th 2018				
3.Dec 20th 2018				

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156

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⁵ Maternal Health Nursing

In Obstetric history ask for
Gravidity (no of times the women gets her pregnancy)
Parity (no of times given birth)
Abortion, (loss of fetus before its viability) and
Living children.
Calculate the obstetrical score (e.g if the mother is pregnant at first
time she is primi gravidae. If she is pregnant for more than one time it is
multigravida.the symbols used for obstetrical score is G- gravida
P-Parity
A - Abortion
L - Living children
D - Dead (the child dies after the birth
SB - Still Birth (the mother deliver a dead child)
Example of calculation of obstetrical score
Mrs. Radha 22 yrs pregnant with 16 weeks (4 months). She has one baby
with 3yr s old. She had one abortion last year.
Her obstetrical score is $=G_3 P_1 L_1 A_1$
If multiple pregnancy ask following questions.
Weight of infant at birth & length of gestation.
Type of delivery, location of birth, and type of anaesthesia.
Maternal or infant complications
Medical and surgical history
1-Chronic conditions : as diabetes mellitus, hypertension, and renal
disease ,cardiac disease.
2-Prior operation: as caesarean section, genital repair, and cervical cerclage.
3-Allergies, and medications.
4-Accidents involving injury of the bony pelvis.
History of present pregnancy
> History suggesting e.g. Diabetes, hypertension and ante partum
hemorrhage.
Ask about episodes of fever or chills.
Ask about pain or burning sensation on urination.
Abnormal vaginal discharge, itching at the vulva or if partner has
a urinary problem.

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3-Physical	Maternal height and weight measurements to determine body				
examination	mass index(BMI).				
	Maternal weight should be measured at each antenatal visit				
	1. Look for palmar pallor.				
	2. Look for conjunctival pallor				
	pale conjunctiva				
	3. Count respiratory rate in one minute.				
	4. Blood pressure measurement				
	Measure BP in sitting position.				
	If diastolic BP is 90 mm Hg or higher repeat measurement				
	after 6 nour rest.				
	If diastolic BP is still 90 mm Hg or higher ask the woman if she has				
	Severe headache				
	Blurred vision				
	 Epigastric pain 				
	Check urine for protein				
5.Investigations	Haemoglobin, blood type				
-	Blood and urine sugar				
	Urine analysis				
	VDRL or RPR to screen for syphilis				
	HBsAg testing				
	> HIV				
	Ultra sound to confirm the pregnancy				



BLOOD PRESSURE

5 Maternal Health Nursing

PEDAL EDEMA

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Definition of Antenatal Care

- Antenatal care refers to the care that is given to an expected mother from time of conception is confirmed until the beginning of labor
- Antenatal care is systemic supervision of a woman during pregnancy at regular intervals to monitor:
 - Maternal wellbeing
 - Fetal wellbeing
 - Progress of fetal growth

Goals of Antenatal Care

- 1. Ensure mother health
- 2. Ensure delivery of a healthy infant
- 3. Anticipate problem
- 4. Diagnose problem early

Objectives of Antenatal Care

- 1. Early detection and if possible, prevention of complications of pregnancy.
- 2. Educate women on danger and emergency signs & symptoms.
- 3. Prepare the woman and her family for childbirth.
- 4. Give education & counseling on family planning.

Schedule of Antenatal Care

- Medical checkup every four weeks up to 28 weeks gestation
- Every 2 weeks until 36 weeks of gestation.
- Every week until delivery
- ✤ An average 7-12 antenatal visits/pregnancy
- More frequent visits may be required if complications arise

Importance of Abdominal Examination

Monitor progress of pregnancy and fetal growth

5 Maternal Health Nursing

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- Check for fetal lie and presentation
- ✤ Auscultate fetal heart sounds

What does it include?

- Measurement of fundal height
- ✤ Assessment of fetal lie and presentation
- ✤ Assessment of fetal movement
- Auscultation of fetal heart sounds
- Inspection for scars

Methods of Abdominal Examination

- ✤ Inspection
- Palpation
- Auscultation

Preparation for Abdominal Examination

- Ensure privacy
- Examination room should be well lighted and airy
- ✤ Woman is asked to empty her bladder
- Explain the women about the procedure/ process
- To make her comfortable, keep talking to her
- She lies supine with legs partially flexed
- Stand on her right side

First start with Inspection

- Shape Check whether the uterine shape is ovoid or longitudinal or transverse or oblique
- Size Appropriate to the weeks of pregnancy or not?
- Skin Changes look for

Striae Gravidarum - (The brown and silvery lines all over the abdomen and)

Linea Niagra - (the pigmented line from the symphysis pubis to umblicus)

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- Cullen's Sign Bruishing discoloration around the umblicus
- Scars Any incision scars present or not
- Contour of the abdomen- The general contour of the entire abdominal wall is observed. The contour should be checked carefully for distention and note must be made as to whether any distention is generalized or localized to a portion of the abdomen. Similarly, the flanks should be checked for any bulging
- Check for visible foetal movements if not visible, confirm with the mother about the foetal movement



Striae Gravidarum



Linea Niagra

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- 2. Palpation: Palpate the Uterus with warm hands
- Step 1: Measure the fundal height keep the ulnar border of curved left hand on woman's abdomen parallel to symphysis pubis
- Start from xiphisternum and gradually proceed towards symphysis pubis lifting the hand between each step till a bulge / resistance of uterine fundus is felt
- Mark the level of fundus





Measurement of fundal height

Measure the fundal height by finger or inch tape it is measured by the inch tape each cm is week. If it is 35 cms then it is considered as 35 weeks up to umbilicus it is 24 weeks. Then each finger is 1 cm measure from the umbilicus till the fundus of the uterus.



Step 2: Leopold's maneuvers -It includes four grips

✤ Fundal grip

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- Lateral grip
- Pelvic Grip I /Superficial pelvic grip and
- Pelvic Grip II / Deep Pelvic Grip
- **1. Fundal Palpation / Fundal Grip -** Helps to determine lie and presentation of fetus



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2. Lateral Palpation / Lateral Grip (both Right and left lateral) - Helps to locate fetal back and limbs



3. Pelvic Grip I / Superficial Pelvic Grip -Helps to determine whether head or breech is presenting at pelvic brim. Whether the presenting part is engaged / fixed / free.



4. Pelvic Grip II / Deep Pelvic Grip - Helps to know the degree of flexion of head.



- Check or ask for Foetal Movements
- Fetal movement are reliable sign of foetal well - being.

- These are felt around 18-22 wks of pregnancy (felt earlier in multigravida than primigravida).
- Normally 10-12 foetal movements should be felt by the pregnant woman in a day.
- Decreased foetal movements may be an indication of foetal distress.
- Pattern of foetal movement may change prior to labour due to reduced space.
- If Foetal Movements are absent or not felt, consult ANM or doctor.

3. Auscultation

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- Use a fetoscope or stethoscope.
- Best heard on the side of the back of the fetus.
- In vertex presentation FHS is best heard midway between the line joining the umbilicus and the anterior superior iliac spine on the side of the back.
- In breech presentation FHS is heard above the umbilicus (Fetal Heart Sound).
- Count the FHS for one full minute FHR (Fetal Heart Rate).



- FHS is heard over the abdomen by stethoscope / fetoscope after 24 weeks of pregnancy.
- ✤ Normal FHR is 120 160 beats per min.

5 Maternal Health Nursing

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- FHR < 120 beats per min or > 160 beats per minute, indicates fetal distress.
- Confirm that you are listening to the FHS and not maternal pulse.

DIET in Pregnancy

- Total caloric intake should be increased to 300 kcal /day due to 15% increase in BMR.
- Diet should contain 20% Protein (better from animal source), 30% fat, and 50% carbohydrates.
- Sufficient fluids should be taken. (10 glasses for a day).
- Absorption of iron is interfered if taken with tea, coffee or foods rich in fluoride.
- Enhanced if taken with lemon water or orange juice.
- Encourage mother to take plenty of fruits and vegetables like mango, guava, orange, amla etc containing vitamin C.
- Emphasize the importance of high protein diet like black gram, ground nuts, whole grains, milk, eggs etc.

Supplementation - Iron, folic acid and calcium as prescribed

WEIGHT gain in Pregnancy

- ✤ Total weight gain approximately 12 Kgs.
- Weight gain of 2 kgs in first trimester. 5 kgs in second and 5 kgs in third trimester.
- Monitoring of weight gain should be done in conjunction with close monitoring of BP.
- Overweight or sudden increase of weight is to be notified immediately.

Oral Care

 It is easy to have an increase in dental decay cavities due to pregnancy. Heartburn, increased snacking, morning sickness can all increase chances of developing tooth decay or gum disease. Good oral care is an important during pregnancy as it is the most important time of life.

CARE OF BREAST

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- Breast engorgement may cause discomfort during late pregnancy. A well-fitting brassiere can give relief.
- Travelling during pregnancy is not prohibited but some precautions must be taken.
- Avoid long trips if possible. Always check with care provider before travelling. Wear seatbelt, the shoulder belt should go between the breasts and the lap belt should go under the tummy. Plan for frequent stops. Get out and walk as much as possible. This will prevent swelling of the foot.
- When travelling by air, need to drink extra fluids. Walk around whenever possible. Do isometric exercises of legs and foot to help prevent swelling and blood clots. Do not plan to travel after 34 weeks of pregnancy.

5.10 ANTENATAL EXERCISES

Uses of Antenatal Exercise

- 1. Good muscle tone is maintained during labour and postnatal period.
- 2. Helps to reduce the backache.
- 3. Assist in effective pushing during labour.
- **Types of Antenatal Exercise**
 - Deep breathing exercise.

STUDENT'S ACTIVITY

Ask the students to demonstrate the Antenatal exercises to each other.

Breathing techniques is for pain relief during labour. Exhale before inhale is suggested.



- Abdominal breathing
- Lower coastal breathing
- > Apical breathing

Back and Abdominal Exercise

Sit on a chair with your back against the seat back. Breathe normally, tightens the abdomen and then press the pelvis downwards to flattens your low back against the seat back. Hold for 5 seconds and relax.

This exercise helps mother by correcting the low back and pelvic posture. It strengthens your abdominal muscles and prevents back pain.

Pelvic floor exercises

Kegels exercise is a special exercise squeeze the pubococcygeal muscle or 3 seconds relax for 3 seconds and squeeze again. It can be done 100 times twice daily for keeping the vagina toned and increase the strength of perineum to avoid birth injuries.

Sit on chair with your back against seat back.

Tightens the vaginal, urethral and anal muscles as if trying to withhold urination or defecation. Should do this exercise in a standing position. Pelvic floor exercise enhances the pelvic floor muscles. It helps in preparation for child birth and prevents uterine prolapsed, urinary incontinence and hemorrhoids.

Lower Limb Relaxation Exercises

- This exercise enhance the flexibility and strength of inner thighs and pelvic muscles. It helps to accustoms to the delivery position and prevent thigh spasm during delivery.
- Sit on table, low chair against a wall and spread your thighs sideways. Hold for 5 seconds and relax.

Lower limb relaxation exercise is suitable for pregnant women with tight thighs and not suitable for those with the pain over the pubic bones.

Foot and Ankle Exercises

- Sit on chair with your back against your seatback with one ankle and turn foot upwards and downwards. Each up and down is as one time, repeat 10 times.
- Repeat the ankle to draw inward and outward circle circular movement counted as one time.
- Repeat the same step at the other ankle.
- Ankle exercise helps to reduce leg swelling and varicose vein thus alleviating the problems of leg cramps.

Exercises and Activities to be avoided during Pregnancy

- Activities that require extensive jumping, hopping, skipping, bouncing.
- Double leg raises, deep knee bends.
- Trunk rotation while standing.
- Exercises in hot and humid weather.
- Bouncing while stretching.

Medications during Pregnancy

- Avoid over the counter medications
- ✤ Inj. T.T. (Tetanus Toxoid) For preventing maternal and neonatal tetanus
- Dosage schedule: Two doses 0.5 ml I/M in upper arm
- First dose As soon as woman registers for ANC
- Second dose 4 weeks after the first dose even if it is after delivery
- Inform that there may be slight swelling, stiffness or pain at the injection site
- Iron and folic acid supplementation
- 1 tablet / of IFA (100 mg elemental iron+0.5 mg of folic acid)
- Duration: At least 100 days during pregnancy
- Continue for 3-6 months in postpartum period
- Folic acid supplementation (400 µg) upto 12 weeks of pregnancy to prevent Neural tube defects
- Regular consumption of iodized salt
- Calcium supplementation (500mg-1g / day)
 - Iron Tablets to be taken DO regularly

preferably early morning on an empty stomach If nausea or pain

abdomen, it may be taken after meals or at night

- Stools will be dark in colour while on tablets
- May have constipation, relieved by taking plenty of fluids and roughage

Hazards during Pregnancy

Hazards affect the normal functions of the mother and unborn baby's body.

They can cause birth defects in the unborn child. Hazards include physical factors, germs, tobacco, alcohol, health conditions of the mother, chemicals, and drugs.

Warning signs of Pregnancy

- Vaginal bleeding
- Persistent vomiting *
- Chills and fever
- Sudden escape of clear fluid from vagina
- Abdominal or chest pain
- Increase or decrease in fetal movement *

The nurse must educate the women that if above symptoms are present they must come to the hospital immediately.

STUDENT'S ACTIVITY

Prepare health education plan for Primi Antenatal mother

Minor disorders in pregnancy

- Morning sickness *
- ** Heartburns
- Varicose veins
- Backache
- Breathlessness **
- Palpitations *
- Vaginal discharge *
- Constipation



Nearly 4 million newborns die {40% of under 5 deaths} within 28 days of birth

- Three quarters of neonatal deaths occur during first 7 days
- For every newborn death, 20% from birth injury, complications of preterm birth or other neonatal conditions
- A child born in a least developed country is 14 times more likely to die within first 28 days of life as compared to industrialized country

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XII_Nursing_Vocational_Unit 5.indd 165

These symptoms are common during pregnancy. There is no need for any special treatment, it will subside. But any of the above symptoms interferes in normal routine life then they need to contact the care provider.

Advice the antenatal mother in the above components to follow up till the next visit to the hospital.

Preparation for Birth

During the last few months of pregnancy the mother will be taught about the following

- Recognizing signs of true versus false labor
- When to go to the hospital
- Approaches to pain control
- Things to bring for labor and after
- Planning for children at home
- Care of the newborn

5.11 POST NATAL CARE

Introduction

More than 60% of maternal deaths take place during postpartum period. The first 48 hours are most crucial because Most maternal and neonatal complications are occur during this period. The puerperium is the period beginning after delivery and ending when the woman's body has returned as closely as possible to its prepregnant state.

The period lasts approximately 6 weeks. The postnatal care starts after the childbirth to 6 weeks

Aims of Postnatal Care

- Prevention of sepsis at placental site
- Newborn care

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Initiation of breast feeding

Nursing Assessment

Immediate Postpartum Assessment. The first 1 hour after delivery of the placenta (fourth stage of labor) is the critical period; post partum hemorrhage is most likely to occur at this time.

Components of Postnatal Care

- Postnatal check up includes Pulse, BP, RR. Temp and Pallor. Monitor vital signs every 4 hours during the first 24 hours, then every 8 to 12 hours
- 2. BUBBLE-HE is a acronym used to denote the components of the postpartum maternal nursing assessment.
 - B: Breast
 - ➤ U: Uterus
 - B: Bladder
 - B: Bowels
 - L: Lochia
 - E: Episiotomy and perineum
 - \succ H: Homan's
 - E: Emotional status

B- Breast: Assess for breast engorgement and condition of nipples if breast-feeding.

- Size, Shape, Firmness, Redness, Symmetry
- Check the Breasts for nodules, lumps
- Check the Nipples assess for eversion, flat, inverted, cracking, bleeding, pain, blisters

- Individualize teaching for breasts for breastfeeding
- Check the breasts for signs of engorgement (swollen, tender, tense, shiny breast tissue). If breasts are engorged and the woman is breast-feeding:
 - Allow warm to hot wet towel to cover the breasts and massage to improve comfort.
 - Express some milk manually or by breast pump to improve comport and make nipple more available for infant feeding.
 - Feeding the infant.
 - A mild analgesic may be used to enhance comfort

U: Uterine Assessment

Abdomen : Monitoring of involution process

- Check firmness of the fundus at regular intervals.
- Palpating the uterine fundus Firm or "Boggy" – not palpable by 10 days.
- Ask for "afterpains" (the pain occurs due to uterine contraction towards involution after delivery).

B: Bladder

- Observe for the woman's first void within 6 to 8 hours after delivery.
- Palpate the abdomen for bladder distention if the woman is unable to void or complains of fullness after voiding. a. Uterine displacement from the midline suggests bladder distention

Instruct the woman to void every several hours and after meals to keep her bladder empty.

B: Bowels

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Bowels in shock just moved into some strange positions. So plenty of fiber , fluids and Take a stool softener- to avoid harm to the episiotomy or trauma to the C-section incision

L: Lochia

Inspect the perineum regularly for frank bleeding.

- Note color, amount, and odor of the lochia.
- Count the number of perineal pads that are saturated in each 8 hour period.
- Calculate the amount of bleeding
- Check for lochia (vaginal discharge after delivery)

The Characteristics of Lochia

LOCHIA			
TYPE	COLOR	DURATION	COMPOSITION
Lochia Rubra	Red	1-3 days	Blood, fragments of decidus mucus
Lochia Serosa	Pink	3-10 days	Blood, mucus and leukocytes
Lochia Alba	White	10-14 days	Largely mucus

E: Episiotomy and Perineum

Assess perineal incisions (episiotomy wound) for signs of infection and healing by REEDA Assessment

- R: Redness
- ➢ E: Edema
- ➢ E: Ecchymosis
- D: Discharge
- ➢ A: Approximation

Maternal Health Nursing

XII_Nursing_Vocational_Unit 5.indd 167

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- Assess for lacerations/edema/hemorrhoids
- ✤ Assess for complications/hematoma

Nursing Intervention Sitz Bath: A rotating fluid that moves the water, may fit over the commode or one can be performed with no special equipment using the bathtub other than a bathing ring. Turn tub on and allow drain to open and use a ring for circulating water. It's very shallow and only bathes the perineal area.

H: Homan's Sign

- Assess for Signs of DVT by the Homan's Sign (Deep Vein Thrombosis)
- Inspect legs for signs of thromboembolism, and assess Homan's sign A
- Positive Homan's sign is indicative of DVT, although it's not the most reliable indicator

Performing the Homan's Test

- Most commonly performed with the supine position while laying in bed
- The calf is flexed at a 90° angle
- The nurse manipulates the foot in a dorsiflexion movement
- If pain is felt in the calf, the Homan's Sign is said to be positive

E: Emotional Status

- Fluctuations in estrogen levels are blamed for the emotional roller-coaster that many moms experience after birth
- High levels of stress, increased responsibility, and sleep deprivation exacerbate the emotion
- Bonding refers to the interactions between the mother and baby

 Caregiving of self and baby is an indicator of emotional status.

Preventing Infection

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- Observe for elevated temperature above 38°C.
- Evaluate episiotomy/perineum for redness, ecchymosis, edema, discharge (colour, amount, odour) and approximation of the skin.
- Assess for pain, burning sensation, and frequency of urination.
- ✤ Administer antibiotics as ordered.

Reducing Fatigue

- 1. Provide a quiet and minimally disturbed environment.
- 2. Organize nursing care to keep interruptions to a minimum.
- 3. Encourage the woman to minimize visitors and phone calls.
- 4. Encourage the woman sleep while the baby is sleeping. (8-10 hours sleep).
- 5. Early ambulation.
- 6. Avoid strenuous activities for 6 weeks.

Minimizing Pain

- Instruct the woman to apply ice packs to the perineal area for the first 24 hours for perineal trauma or edema.
- Initiate the Sitz bath for perineal discomfort after the first 24 hours. Educate to do three times a day for 15 to 20 minutes.
- Instruct the woman to contract her buttocks before sitting to reduce perineal discomfort.

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168

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- Assist the woman in the use of positioning cushions and pillows while sitting or lying.
- ✤ Administer pain medication as indicated.

Minor Ailments in Postnatal Period

- ✤ After pains
- Retention of urine
- Pain at site of perineum
- Engorgement of breast
- Treatment of Anaemia

Postnatal Exercise

- Pelvic floor exercise
- Abdominal tightening
- Pelvic tilting or rocking
- Hip hitching
- Foot and Leg Exercise

Immediate postpartum exercises can be performed in bed.

- Toe Stretch (tightens calf muscles)- While lying on your back, keep your legs straight and point your toes away from you, then pull your legs toward you and point your toes toward your chest. Repeat 10 times.
- Pelvic floor exercise (tightens perineal muscles)-Contract your buttocks for the count of 5 and relax. Contract your buttocks and press thighs together for the count of 7 and relax. Contract buttocks, press thighs together, and draw in anus for the count of 10 and relax.

Care of New Born

Keeping baby warm

- Maintain Hygiene
- Cord care
- Breast feeding
- Immunization



• Average lifetime risk of maternal death for a woman in least developed country is >300 times than in

industrialized country

- In developing world a woman has 1 in 76 lifetime risk of maternal death as compared to 1 in 8000 in industrialized countries
- Global MMR stood at 430/lakh live births in 1990, and at 400/lakh in 2005

Health Education

Postpartum Care and Hygiene

Advise the mother to wash perineum daily and after passing urine and stools. Change perineal pads every 4 - 6 hours. Wash hands frequently and take bath daily.

Nutritional Advice

Increase intake of fluid and food especially iron and protein rich foods like green leafy vegetables, jaggery, lentils, eggs and meat. Increase intake of milk and milk products like curd, cheese etc. Calorie need per day 2200+700 =2900 Kcal Advise adequate rest.

IFA Supplementation

Women with normal Hb are advised to take 1 IFA tablet daily for 3 months. If Hb below 11 gm/dl, advise her to take 2 IFA tabs daily and repeat Hb after 1 month.

Family planning advise

Counsel couple regarding contraception.

Breastfeeding

Advise the mother for exclusive breast feeding on demand, atleast 6 to 8 times during day & 2-3 times during night. Educate that breast feeding is best and Pre-Lacteal feeds must be avoided.

Breast feeding Problems

- Cracked /sore nipples -Advise the mother to apply hind milk for soothing effect, ensure correct positioning and attachment of baby.
- Engorged breasts Advise the mother to continue breast feeding and to put warm compresses.

Registration of Birth

- Emphasize the importance of registration of birth with local panchayat.
- It is a legal document and it is required for many purposes.

Warning Signs of Puerperium

Advise the mother to report if following symptoms occur

- Fever, Convulsions
- ➢ Excessive bleeding
- Severe abdominal pain
- Difficulty in breathing
- Foul smelling lochia
- Educate about the Immunization for the child
- Advise about the importance of postnatal exercises

At 6 weeks following delivery - Ask the

5 Maternal Health Nursing

mother for the following

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- Has vaginal bleeding stopped?
- Has menstrual cycle returned?
- Is there any foul smelling vaginal discharge?
- Any problems regarding breast feeding?
- Any other complaints?

Give relevant advice & refer to doctor if needed.

5.12 FAMILY PLANNING METHODS

"DELAY THE FIRST, POSTPONE THE SECOND AND PREVENT THE THIRD"

Definition

An Expert committee (1971) of the WHO defined family planning as: "A way of thinking and living that is adopted voluntarily upon the basic of knowledge, attitudes and responsible decision by individuals and couples, in-order to promote the health and welfare of the family and thus contributes effectively to the social development of the country".

Natural Methods

- a. Abstinence
- b. Coitus interruptus or withdrawal method
- c. Lactational amenorrhea

Biological Methods

- a. Calender (rhythm) method
- b. Basal body temperature method
- c. Cervical mucus method (billings method)

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Family Planning Methods



Chemical Method

- a. Foams
- b. Creams, jellies and pastes
- c. Soluble films

I. Mechanical Family Planning Method

- a. Male condoms
- b. Female condoms
- c. Diaphragms
- d. Cervical cap
- e. Intrauterine devices (IUD)
- f. Sponge

Hormonal Contraceptive Method

- a. Contraceptive skin patch
- b. Vaginal ring
- c. Pills (Combined and Minipill)
- d. Injection
- e. Implant
- f. Emergency Pill
- g. Intrauterine device

COPPER T:

Copper T is a small T-shaped, bariumsulphate incorporated, polythene device that is placed inside uterus to obtain birth control. The placement is done with a plastic syringe called the IUD inserter. A fine copper wire weighing 120 mg, with a surface area of 208 mm², is wound round the upright limb of T. Two fine filaments are attached to the lower tip of the vertical limb. Copper T along with its inserter is supplied in a pre-sterilized packet. Copper T is inserted on the 6th day following the menstrual period. The ideal time for postpartum insertion of Copper T is immediately after delivery .Copper T is introduced 12 weeks after abortion, a doctor or a trained paramedical person carries out the insertion.



Use of copper-T may lead to irregular bleeding, more cramps and pain during menstrual cycle. It is a widely preferred method

of contraception. Complication may lead to miscarriage, preterm or infection rarely.

Types of IUDS

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There are two types of IUDs:

- Nonmedicated Intrauterine Devices
- Medicated intrauterine devices

Nonmedicated intrauterine devices or first generation IUDs

These are made out of polyethylene or other polymers they actually entered market in different shapes and sizes they are Loops, Spirals, Coils, Rings, Bows. The lippes loop is the popularly known and commonly used device in the developing countries.

Medicated IUDs

The copper IUDs are named as second generation IUDs there are several forms of copper devices available now

Newer Devices

Variants of the T device

- ➤ Cu-T-220C
- Cu-T-380 A or Ag
- ≻ Nova T
- Multiload devices ML-Cu-250, ML- Cu -375

Advantages of Intra Uterine Devices (IUDs)

- This is the most cost-effective method
- Easy to use
- > There is no interruption of intercourse
- It can be removed immediately incase of any problems or not required
- Fertility returns with the first ovulation cycle following IUD removal

Disadvantages

- IUDs do not protect against STDs
- Needs clinician for insertion and removal
- It may lead to side effect in some women

Maternal Health Nursing

II Permanent Methods of Family Planning

a. Female Sterilization

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Laparoscopic Sterilization

Female sterilization is performed through abdomen using a laparoscope, the laparoscopic tubal ligation is a surgical sterilization method in which female's fallopian tubes are clamped or cut.



Mini-lap (Mini Laparotomy) Operation

A small abdominal incision measuring 2.5-3 cm is performed under local anaesthesia through the small incision, by following the fundus of the uterus fallopian tubes are reached and hooked up, knots are applied in two places this procedure is repeated for both the tubes.



Advantages

- It is a permanent method to prevent unintended pregnancies
- It is effective immediately
- Does not need any daily attention

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- Cost-effective in the long term
- Does not affect sexual pleasure

Disadvantages

- Need to face surgery and its consequences
- More complicated than male sterilization
- Does not protect against sexuallytransmitted infections
- Lifting heavy weights not permitted for at least 6 months to avoid the occurrence of incisional hernia

b. Male Sterilization

Vasectomy is a surgical procedure for permanent male sterilization. During the procedure the male vas deference are cut and then tied or sealed in a way to prevent sperm from entering into the seminal stream and thereby prevent fertilization.



Advantages

- Permanent method of contraceptive
- Highly effective method
- Very safe surgical procedure

Disadvantages

- ➤ Usually irreversible
- It does not provide protection against sexually transmitted disease and infections including HIV
- Need skilled medical personnel to perform the procedure



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National Family Welfare Services

The national family welfare services includes primary, secondary, and tertiary care. The care is provided at different levels including District, Taluk, PHC, and PHU level.

Family Welfare Schemes

- 1. National family welfare programme
- 2. National population policy
- 3. National Rural health mission
- 4. Urban family welfare schemes
- 5. sterilization schemes
- 6. Child survival and safe mother hood programmes
- 7. Reproductive and child health programmes
- 8. Implementation machinery
- 9. Social marketing of contraceptives
- 10. Medical termination of pregnancy
- 11. Prevention of prenatal sex determination

Benefits for the Pregnant Women

Maternity Benefit (Amendment) Act 2017

The maternity benefit amendment act has increased the duration paid maternity leave available for women employees from the existing 12 weeks to 36 weeks.

Modi Government Maternity Benefits

Pregnant women and lactating mothers will receive ₹6000, ₹5000 of which will be given in three instalments, provided that certain conditions related to completion of registration of pregnancy and birth, antenatal care and immunisation are met. The scheme is also restricted to the first live birth.

Janani Suraksha Yojana

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The aim of JSY Scheme is to encourage poor pregnant women to give birth in registered health institutions. Mothers receive ₹1600 when they arrive and register at the health institution to give birth. The ASHA receives ₹600 when accompanying a women to a health institution for delivery.

Dr. Muthulakshmi Reddy Maternity Benefit

Dr. Muthulakshmi Reddy Maternity benefit scheme fund is enhanced with ₹12000. the cash assistance will be given in three instalment. ₹4000 who avails all required antenatal services during pregnancy in PHC, ₹4000 is given to the mothers who deliver in the government institution, ₹4000 at the completion of immunization for the child upto three doses.

Dikri Yojana

Financial assistance for those families without male child and those adopted permanent family planning measures with one or two female children.

Varumun Kappom Scheme

The aim of the scheme is to reduce maternal mortality and morbidity of the pregnant and expected mothers and utilising the vast resources of health care providers with the involvement of federation of obstetrics and gynaecological society of India.

BPL Desi Ghee Scheme

Below poverty line pregnant women in Rajasthan are entitled to receive five litres of desi ghee after their first institutional delivery. Three litres to be given after the first ANC test (between 4 to 6 month of pregnancy) and the other two litres at the time of discharge after the delivery.

Kalewa Yojna (KY)

Kalewayojna is funded by NHRM and implemented by DWCD where in free warm and

nutritious food is provided for two days to women who have delivered in health facility especially at Community health centre level. This food is cooked by self-help groups.

Janani Express Yojana

Providing benefit of transportation to expectant mothers for institutional deliveries to deal with emergency circumstances during the pre and post delivery period.

CONCLUSION

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This chapter dealt with Maternal health which includes physiology of menstruation and it's abnormalities. This chapter also has the process of fertilization, embryonic and fetal development discussed. It will help the students to do the antenatal and postnatal assessment to give proper care. This maternal health also discussed about family planning and insist upon the health education aspects during perinatal periods.

YOU	Population burden in Tamilnadu			
KNOW?	POPULATION IN			
		2001	2011	
	Chennai	6,560,242	8,696,010	
	Coimbatore	1,461,139	2,151,466	
	Madurai	1,203,095	1,462,420	
	Tiruchirapalli	866,354	1,021,717	
	Tirupur	550,826	962,982	

So as Future Nurses, you have a major role in educating the importance of family planning methods to the community

A-Z GLOSSARY

Menstruation (மாதவிடாய்)	-	It is a visible manifestation of cyclic physiologic uterine bleeding due to shedding of the endometrial following invisible interplay of hormones mainly through Hypothalamus-Pitutary-Ovarian axis.
Premenstrual Syndrome (PMS) (மாதவிலக்குக்கு முந்தைய அறிகுறி)		PMS is any unpleasant or uncomfortable symptom during menstrual cycle that may temporarily disturb normal functioning.
Amenorrhea (மாதவிலக்கின்மை)	-	It is absence of menstruation.
Dysmenorrhea (வலிமிகுவிடாய்)	-	It is characterized by severe and frequent menstrual cramps and pain associated with menstruation.
Menorrhagia (மாதவிடாய் மிகைப்பு)	-	It is the medical term for excessive menstrual bleeding.

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Metrorrhagia (வழங்கற்ற மாகவிலக்கு)		Refers to menstrual bleeding that is normal in
THETOTTTAL (Self a sub a su	-	amount but occurs of irregular intervals.
Menopause (மாதவிடாய் முடிவு)	-	In human beings, menstrual cycles ceases around 50 years of age and known as menopause.
Fertilization (<i>கருத்தரித்த</i> ல்)	-	It is the process during which a haploid male gamete (sperm) unites with a haploid female gamete (oocyte) to form a single cell (ZYGOTE). Is called fertilization.
Placenta Previa (நஞ்சுக்கொடி முந்தி அமைதல்)	-	Placenta attach to the lower uterine segment.
Ectopic Pregnancy (இடம்மாறிய கர்ப்பம்)	-	If the implantation occur outside the uterus it is called as Ectopic pregnancy.
Nidation or Nesting (பதிய)	-	The implantation of the fertilized ovum of embedding is known as "Nidation or Nesting.
Implantation (கருபதித்தல்)	-	Is the process by which the blastocyst penetrates the superficial (compact) layer of the endometrium of the uterus.
Zygote (கருமுட்டை)	-	Is genetically unique. a diploid cell (46 chromosomes) resulting from the fusion of two haploid gametes; a fertilized ovum.
Placenta (நஞ்சுக்கொடி)	-	The chorionic villi and uterine tissue together form a structural and functional organic structure between developing embryo and tissues of the mother called as placenta.
Blastomere (சிறுகருமுட்டை செல்)	-	The smaller embryonic cells are called blastomere.
Antenatal Care (கர்பகால கவனிப்பு)	-	It refers to the care that is given to an expected mother from time of conception is confirmed until the beginning of labor.
Aminiotic fluid (கருப்பையில் உள்ள திரவம்)	-	It is a fluid in the uterus surrounding the fetus.
Lochia (ஈன்றபின் இறுதி குருதி)	-	Vaginal discharge after delivery.
Gravidity (தாய்மை நிலை)	-	Number of times the women gets her pregnancy.
Parity (குழந்தை ஈன்ற நிலை)	-	Number of times given birth.
Abortion (கருக்கலைப்பு)	-	Loss of fetus before its viability.
Abstinence (தவிர்ப்பு)	-	It means no sexual activity.
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5 Maternal Health Nursing





I Choose the correct answer:

- 1. Which of the following statements about hormone regulation of the female reproductive cycle is false?
 - a. LH and FSH are produced in the pituitary, and estradiol and progesterone are produced in the ovaries.
 - b. Estradiol and progesterone secreted from the corpus luteum cause the endometrium to thicken.
 - c. Both progesterone and estradiol are produced by the follicles.
 - d. Secretion of GnRH by the hypothalamus is inhibited by low levels of estradiol but stimulated by high levels of estradiol.
- 2. Which of the following statements about the menstrual cycle is false?
 - a. Progesterone levels rise during the luteal phase of the ovarian cycle and the secretory phase of the uterine cycle.
 - b. Menstruation occurs just after LH and FSH levels peak.
 - c. Menstruation occurs after progesterone levels drop.
 - d. Estrogen levels rise before ovulation, while progesterone levels rise after.

- 3. The amniotic cavity develops:
 - a. on the tenth day
 - b. Within the outer cell mass
 - c. Within the inner cell mass near the cytotrophoblast
 - d. in extra embryonic mesoderm
- 4. The following organs are derived from mesoderm EXCEPT:
 - a. Skeletal musculature
 - b. Cardiac musculature
 - c. Suprarenal cortex
 - d. Suprarenal medulla
- 5. The part of the sperm containing proteolytic enzymes to digest the zona pellucida is the:
 - a. capacitor b. head
 - c. corona d. acrosome
- 6. During the second week of development, the trophoblast differentiates into:
 - a. syncytiotrophoblast
 - b. ectoderm
 - c. intraembryonic mesoderm
 - d. yolk sac (secondary)
- What is the 'baby' called between 0-8 weeks pregnancy
 - a. Peter b. Embryo
 - c. Fetus d. Alien

8. For an uncomplicated pregnancy, nulliparous women should have how many antenatal appointments?

a.12 b. 7 c. 10 d. 5

- 9. G2P2 could mean...
 - a) A woman has had 2 children and is expecting twins
 - b) A woman has been pregnant 2 times and has 2 children
 - c) A woman has already had one child and has just had an abortion
 - d) A woman has been pregnant 2 times and miscarried once (before 24 weeks)
- 10. When is the routine anomaly scan usually carried out
 - a) 22-24 weeks b) 12-14 weeks
 - c) 18-20 weeks d) 10-12 weeks
- 11. at 38 weeks, symphsysis-fundal height should be about

a)	40cm	b)	36cm
c)	38cm	d)	30cm

- 12.Which of the following factors does NOT put a woman at increased risk of obstetric complications?
 - a) Both extremes of maternal age
 - b) One previous caesarean section
 - c) A history of subfertility, with use of fertility drugs or assisted conception.
 - d) Family history of diabetes in a second-degree relative

- 13. The amniotic fluid of a client has a greenish tint. The nurse interprets this to be the result of which of the following?
 - a) Lanugo b) Hydramnio
 - c) Meconium d) Vernix

II. Write short answer for the following questions:

- 1. Define fertilization
- 2. What is zygote?
- 3. Define pre-embryonic period
- 4. What is nesting?
- 5. What is meant by abortion?
- 6. Describe the antenatal period
- 7. What is morula?
- 8. Define Gravida
- 9. What is parity?
- 10. What is the postnatal period?

III. Write short notes for the following questions:

- 1. Explain the process of implantation
- 2. What are the placental functions?
- 3. List the investigations done at first antenatal visit?
- 4. Write the goals of antenatal care
- 5. List out the temporary family planning methods
- 6. How do you assess the episiotomy wound ?
- 7. How do you assess the Homan sign?

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- 8. What are the vessels and shunts involved in fetal circulation?
- 9. What are the hormones involved in menstrual cycle?
- 10. Describe the ovarian cycle

IV. Answer the following questions in detail:

- 1. Explain the physiology of menstruation
- 2. Describe the fetal circulation.
- 3. Write the characteristics of lochia
- 4. Explain the foetal development between 0-8wks
- 5. Write about the permanent family planning method in female
- 6. Write about the permanent family planning method in Male
- 7. Describe BUBBLE-HE
- 8. What are the functions of amniotic fluid?
- 9. Describe about the umbilical cord
- 10. What are components of health education in antenatal period?
- 11. What are components of health education in antenatal period?

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