**TRIBHUWAN UNIVERSITY**

**INSTITUTE OF MEDICINE**

**POKHARA NURSING CAMPUS**

**RAMGHAT-12, POKHARA**

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**Lesson Plan on: Sub-fertility**

**Submitted to: Submitted by:**

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TU IOM TU IOM

Date of subission: 2080/11/15

Lesson plan on Sub-fertility

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| --- |
| Area of Practicum: Teaching Learning practicum  Subject: Adult Health Nursing I  Unit: 4 (Common Health Problems of young adult )  Topic: Physical problem( sub-fertility)  Level of learners: BNS 1st Year  No of learners: 36  Place: BNS 1st Year classroom  Date: 2080/11/15  Time: 12-1 pm  Duration: 60 minutes  Name of student teacher: Himali Thapa, BNS 2nd year  Name of supervisor: Respected Ma’am  Bishnu Gurung  lecturer  Pokhara Nursing Campus  TU IOM |

**General Objective:**

At the end of teaching session, BNS 1st year student will be able to explain about Sub-fertility

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| **SN** | **Specific objectives** | **content** | **Time** | **Teaching/learning method** | **Teaching /Learning media** | **Evaluation** |
| 1.  2.  3.  4.  5.  6. | At the end of teaching session, BNS 1st year students will be able to:  introduce subfertility and infertility  state the types of infertility  explain the causes of sub-fertility in both male and female.  enlist the diagnostic test done in sub-fertility in both male and female.  discuss about management of sub-fertility  explain about different assisted reproductive technology | Greetings  Review of previous class  Introduction  -self  -topic  -objectives  -pre-test  Introduction of sub-fertility and infertility  Types of types of infertility  Causes of sub-fertility in both male and female  Diagnostic test done in sub-fertility in both male and female.  Management of sub-fertility  Different assisted reproductive technology | 3 min  4 min  3 min  8 min  10 min  10 min  10 min | Brainstorming  Question answer  Interactive lecture  Interactive lecture  Interactive lecture  Interactive lecture  Interactive lecture  Interactive lecture | PowerPoint  PowerPoint  Metacards+whiteboard and marker  PowerPoint  PowerPoint  Metacard  PowerPoint | What do you know about sub-fertility?  What is sub-fertility and infertility?  What are the types of infertility?  What are the causes of sub-fertility?  What are the diagnostic test done in sub-fertility?  What are the management done in sub-fertility?  What is assisted reproductive technology? |

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| --- | --- | --- | --- | --- | --- | --- |
| 7.  8.  9. | state the nursing management in sub-fertility  state Prevention of sub-fertility | Nursing management in sub-fertility  Prevention of sub-fertility  summarization  References  Question  Home assignment  Plan for next class | 5 min  2min  3 min  1 min  1 min | Interactive lecture  Interactive lecture | Powerpoint  Newsprint | What are the nursing management of sub-fertility?  What are the preventive measure of subfertility? |

**Sub-fertility**

* Sub-fertility is defined as when couple have difficulty in conceiving jointly because both partners have reduced fertility.

It affects 1 in every 6 couples. Subfertility rate increases with female age, particularly in women in their thirties and forties.

**Infertility**

* Infertility is defined as failure to conceive after 1 year of properly timed, unprotected intercourse. Because fertility in women is known to decline steadily with age, some providers evaluate and treat women aged 35 years or older after 6 months of unprotected sex.

In subfertility, the possibility of conceiving naturally exists, but takes [longer](https://www.healthline.com/health/pregnancy/how-long-does-it-take-to-get-pregnant) than average. In infertility, the likelihood of conceiving without medical intervention is unlikely.

According to [research](https://www.aafp.org/afp/2015/0301/p308.html), most couples are able to conceive spontaneously within 12 months of having regular unprotected intercourse.

**Types**

**Primary infertility**: A pregnancy has never occurred.

**Secondary infertility**: At least **one prior** pregnancy has occurred, but **failure** to conceive at **present.**

**Relative infertility or impaired fertility**: A set of conditions that may impede or **postpone** pregnancy but often can be **corrected**

**Causes of subfertility**

Most of the causes of subfertility are the same as infertility. Trouble conceiving may be due to problems with male or female infertility, or a combination of both. In some cases, the cause is unknown.

1. **Ovulation problems**

The most common cause of subfertility is a problem with **[ovulation](https://www.healthline.com/health/womens-health/what-is-ovulation)**. Without ovulation, an egg isn’t released to be fertilized.

There are a number of conditions that can prevent ovulation, including:

* [polycystic ovary syndrome (PCOS)](https://www.healthline.com/health/polycystic-ovary-disease),
* [hypothalamus](https://www.healthline.com/human-body-maps/hypothalamus) and [pituitary gland](https://www.healthline.com/human-body-maps/pituitary-gland)
* Too much prolactin
* Cushing syndrome
* Chronic long term ilnesssuch as diabetes ,cancer or kidney failure may not ovulate .

1. **Fallopian tube obstruction**

Damaged or blocked fallopian tubes prevent the egg from meeting the sperm or block the passage of the fertilized egg into the uterus.It can be caused by:

* [endometriosis](https://www.healthline.com/health/endometriosis)
* [pelvic inflammatory disease (PID)](https://www.healthline.com/health/pelvic-inflammatory-disease-pid)
* scar tissue from a previous surgery, such as a surgery for [ectopic pregnancy](https://www.healthline.com/health/pregnancy/ectopic-pregnancy)
* a history of [gonorrhea](https://www.healthline.com/health/gonorrhea) or [chlamydia](https://www.healthline.com/health/std/chlamydia)

**3.Uterine abnormalities**

The uterus, also called the womb, is where your baby grows. Abnormalities or defects in the uterus can interfere with your ability to get pregnant. This can include congenital uterine conditions, which are present at birth, or an issue that develops later.

Some uterine conditions include:

* [septate uterus](https://www.healthline.com/health/septate-uterus), in which a band of tissue divides the uterus into **two sections**
* [bicornuate uterus](https://www.healthline.com/health/womens-health/bicornuate-uterus), in which the uterus has **two cavities** instead of one, resembling the shape of a heart
* [double uterus](https://www.healthline.com/health/double-uterus), in which the uterus has **two small cavities**, each with its own opening
* Benign polyps or tumors (fibroids or myomas) are common in the uterus. Some can **block fallopian tubes** or interfere with implantation, affecting fertility. However, many women who have fibroids or polyps do become pregnant.

**Cervical factor**

* Acute retroverted uterus
* Cervical polyps
* Excessive viscocity of cervical mucous
* cervicitis

**Problems with sperm production or function**

Abnormal sperm production or function can cause subfertility. More than 90% of male subfertility cases are due to low sperm counts, poor sperm quality or both.This can be caused by a number of conditions and factors, including:

1. **Defective spermatogenesis**

* Oligospermia / Azoospermia: when the sperm count is less than 20 million per ml
* Asthenospermia: Reduction in the viability of spermatozoa.
* Teratospermia: The presence of high number of malformed spermatozoa in the semen.

2. **Infection**-epididymitis, orchitis, some sexually transmitted infection including gonorrhea, HIV.

3. **Problems with sexual intercourse (coital problems)**

* Erectile dysfunction

4**. Errors in seminal fluid**

* Increased viscosity

5**. Anti spermatogenic** **agents**:

* Chemotherapy
* Drugs: betablockers, antihypertensives, anticonvulsants, antidepressants are likely hinder spermatogenesis.

1. **Medical condition such as** - Varicocele, hydrocele

**Factors affecting both sexes**

**Age:**

* According to statistics, the biggest drop in fertility levels occurs during our mid thirties.
* For women who are aged 35, 95% will fall pregnant within three years of having regular unprotected sex.
* For women who are 38 however, this figure falls to 75%.
* with regards to male age and fertility, it is thought that men over the age of 35 are half as likely to achieve conception in comparison to men younger than 25.

**Stress:**  
 Stress does in fact have a **direct impact upon fertility** - limiting the production of sperm in men, whilst also affecting ovulation within females

**Weight:**  
  
 Being outside of a healthy weight range can seriously impact fertility. Women who are overweight or severely underweight for example, will often find that their ovulation is effected, or in some cases it may stop entirely.

**Diagnosis in female**

**History**

* History**:** age, duration of marriage, sexual history
* Medical history: STI infection, Pelvic inflammatory disease, thyroid disease,
* Surgical history: abdomen or pelvic surgery
* Menstrual history: hypomenorrhea, oligomenorrhoea
* Contraception history
* Past obstetrical history and sexual problems
* **Examination**
* General examination
* Systematic examination
* Pelvic examination
* Speculum examination
* **Investigation for female**
  + Endometrial biopsy
  + Hormone estimation
  + Hysterosalpingography
  + Insufflation test (Rubin’s test)
  + Culture and sensitivity test
  + Laparoscopy
  + Postcoital test

**Diagnosis in Male**

**History**

* History: age, duration of marriage
* Medical history: STD, Mumps, orchitis after puberty, recurrent chest infection
* Surgical history: hernioplasty, operation of testes
* Occupational history: exposure to excessive heat, radiation
* Sexual history
* Personal history: smoking and alcohol intake

**Physical examination**

* + - Gynecomastia
    - Location of urethral meatus
    - Testicular size, consistency, volume

**Investigations:**

* Semen analysis with culture and antibiotic sensitivity on 2 occasions at least 4 to 6 weeks apart.
* Semen volume (Normal 2-6 ml)
* Sperm concentration (20-60 million/ ml or more)
* Sperm motility (60% progressive forward motility) Sperm morphology (60% normal form)
* Fructose (> 13 micromole/ ejaculation)
* Measurement of white blood cells (< 1 million/ml)
* Hormone Assay - Estimation of FSH/LH
* Testosterone, thyroid function, prolactin
* Testicular biopsy to rule out testicular or vesicle infection.
* Fructose content in seminal fluid
* Transrectal ultrasound
* Immunological test

**Management**

**Infertility Treatment**There are three main types of fertility treatment available;

1.Treatment to assist fertility  
2.Assisted conception, which may be intrauterine insemination (IUI) or

In-vitro fertilisation,  
3.Surgical procedures,  
(IVF)

**Couple Instruction**

* Assurance,
* To obtain body weight at an optimum of BMI 20-24,
* Avoid smoking & alcohol consumption,
* Coital problem- advice to have intercourse during the midcycle & minor psychological problem should be corrected accordingly

**Treatment of male infertility**

* Genital tract infection requires prolonged course of antibiotics. Generally, doxycycline or erythromycin is given for 4-6weeks.
* Avoidance of too frequent intercourse may at times improve the sperm count
* Surgical correction for varicocele and hydrocele.
* In genetic abnormality, assisted reproductive technologies is needed.

**Female infertility**

Anovulation (with amenorrhea)

can be treated with induction of ovulation with:

* Clomiphene citrate to increase level of FSH,
* Correction of biochemical abnormality:
  + metformin for high blood glucose level.
  + dexamethasone to reduce excess androgen dose is 0.5 mg daily for 10 days, starting from 1st day of cycle. The drug should be stopped soon after ovulation.

**Substitution therapy**:

* Thyroxin for hypothyroidism
* Improvement of nutritional status and weight gain in case of PCOs.
* Tubal damage may be corrected with surgery tuboplasty.
* removal of vaginal septum
* Antibiotics for reproductive tract infections.
* Advice on timing of intercourse
* In genetic abnormality and spermatogenesis defect, assisted reproductive technologies is needed.

**Reproductive alternative or assisted reproduction technology**

Assisted reproductive technology (ART) is defined as the fertility treatment in which both the egg and the sperm are handled.

ART procedure involves removing eggs from women ovaries combining them with sperm in the laboratory and returning them to women body or donating them to another women.

Techniques of Assisted Reproduction

* Intrauterine insemination (IUI)
* In vitro Fertilization and embryo transfer (IVF-ET)
* Gamete intra- Fallopian transfer (GIft)
* Zygote intra- fallopian transfer (ZIFT)
* Intracytoplasmic sperm injection

**Intrauterine insemination (IUI)**

Insertion of washed semen directly inside the uterus through cervical canal by using syringe and canula . It may be either artificial insemination husband (AIH) or artificial insemination donor (AID). Husbands semen is commonly used

**Invitro fertilization**

During IVF **mature eggs** are collected from **ovaries** and **fertilized by sperm** in  **lab,** then the fertilized eggs are transferred into uterine cavity close to the fundus.

**Gamete Intra-fallopian Transfer (GIFT)**

GIFT is a procedure where the **preovulatory oocytes** and **washed sperms** are transferred in the fallopian tubes As the gametes are placed in the site of natural fertilization, it attempts the physiological sequence of events involved in fertilization and implantation.

**Zygote Intra-fallopian Transfer (ZIFT)**

In this technique, the zygote (following one day of In Vitro fertilization) is place in the fallopian tube by either through the abdominal ostion by laparoscope or through the uterine ostion under ultrasonic guidance.

This is suitable alternative of GIFT when defect lies in the male partner or in case of failed GIFT. GIFT and ZIFT should be avoided when tubal factors for infertility are present.

**Intra-Cytoplasmic sperm injection (ICSI)**

Involves injection of sperm directly into the cytoplasm of an oocyte by micro puncture of Zona Pellucida under high quality microscope.it is indicated in oligospermia, obstruction of efferent duct system, congenital absence of vas deferens.

**Surrogacy:** In surrogacy, the child is not biologically related to the surrogate mother, who is often referred to as gestational Carrier. The embryo is created via in vitro fertilization using the eggs and sperm of the intended parents or donors, and then transferred to the surrogate.

**Nursing Management**

**Assessment**

* Assessment of the infertile couple is the initial stage of infertility management.
* Asses for medical problem
* Drinking alcohol and smoking habit
* Measure the weight
* Take menstrual history
* Occupational history: exposure to excessive heat, radiation
* Sexual history

**Nursing intervention**

* Provide emotional support by providing opportunities to explore the feelings and queries and answering properly and clearly in simple language.
* Reassure and provide information about availability of different treatment modalities and diagnostic tests.
* The nurse playsa vital role in alleviating the fear and anxiety about the various diagnostic procedures.
* The nurse's role is to educate the couple about each test or investigation, including why and how theseinvestigations will be performed.
* Assist the patient during therapeutic interventions like diagnostic tests and treatment procedures.
* Nurse offer and encourage participation in lifestyle programmes to address factors, such as diet, exercise
* Provide preoperative and post-operative care for patient undergoing surgery.
* Counsel the couple about availability of different assisted reproductive technologies.
* The nurse plays the link between the doctor and the couple and should always be available to the couple for their assistance, guidance and support before,during and after the fertility treatment
* When a treatment has resulted in failure, the nurse should have an idea about other options available and refer the couple torelevant professionals as necessary.
* In the majority of ART centres, the nurse is responsible for the collection of accurate

data regarding treatments and outcomes of infertility treatments.

* [Maintain privacy and](https://www.slideshare.net/AbhishekYadav503/infertility-87800694" \l "31" \t "https://mail.google.com/mail/u/0/?tab=rm&ogbl" \l "inbox/_blank)confidentiality of all cases. –Performing inseminations.
* Treatment of opportunistic infection and malignancies.

**PREVENTION**

* Prevent from STIS
* Prevent from other infections
* Maintain healthy weight
* Avoid alcohol and smoking
* Reduce stress
* Maintain healthy practices
* Avoid use of chemical
* Protect scrotum from heat

**Summary**

Sub-fertility is defined as when couple have difficulty in conceiving jointly because both partners have reduced fertility.In subfertility, the possibility of conceiving naturally exists, but takes [longer](https://www.healthline.com/health/pregnancy/how-long-does-it-take-to-get-pregnant) than average. In infertility, the likelihood of conceiving without medical intervention is unlikely.

According to [research](https://www.aafp.org/afp/2015/0301/p308.html), most couples are able to conceive spontaneously within 12 months of having regular unprotected intercourse.

**Question**

* Fill in the blank
* Infertility is failure to conceive after ………… of properly timed, unprotected intercourse.
* True/false
* Oligospermia is a condition where sperm count is more than 20 million/ml.\_\_\_
* **Home assignment:**
* Define Sub-fertility. Explain about causative factors of sub-fertility.
* Explain about assisted reproduction technology.
* **Plan for next class**:
* We will discuss health promotion in our next class.

**Reference**

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**THE END**