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Exam Preparatory Manual for Nurses

COMMUNITY HEALTH NURSING I

As per INC Syllabus

- RGUHS
- PGIMS
- BFUHS
- Kerala University

Abha Narwal
Honey Gangadharan



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Epidemiology and Nursing Management of Common Communicable Diseases

LONG ANSWER QUESTIONS

Q.1. During home visit you have observed the problems of worm infestation in the family of Mrs. Kasuri who resides in farm house and there is no proper toilet and drainage facility. Considering above situation answer the following:

a. What are the other causative factors responsible for this problem?

b. What observations will you do regarding health habit of family members?

c. What is your plan of action regarding solving this problem?

d. What are the complications of worm infestation?

(3 + 3 + 5 + 4 = 15 Marks)

Q.2. a. List the sexually transmitted diseases.

b. Explain the responsibilities of the community health nurse in the prevention and control of HIV/AIDS.

Q.3. Define Chickenpox, clinical features and mode of its transmission. Discuss the measures for the prevention and control of chickenpox.

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SOLVED QUESTIONS PAPER

Q.1. During home visit you have observed the problems of worm infestation in the family of Mrs. Kasuri who resides in farm house and there is no proper toilet and drainage facility. Considering above situation answer the following:

a. What are the other causative factors responsible for this problem?

b. What observations will you do regarding health habit of family members?

c. What is your plan of action regarding solving this problem?

d. What are the complications of worm infestation?

(A) CAUSATIVE FACTORS RESPONSIBLE FOR THIS PROBLEM

Worm infestation in children is very commonly seen in India. The common worm infestations are Threadworm, Roundworm and Hookworm. A worm is an organism, or small animal, that lives in or on and takes its nourishment from another organism.

Causative factors includes: Below are most common types of worm infections that trouble children:

- **Tapeworms:** These are flat, ribbon-like worms that can grow up to 15–30 ft and thrive in the intestine.
- **Roundworms:** They resemble earthworms and can grow up to the size of 30–35 cm.
- **Pinworms or threadworms:** As the name suggests, thread-worms appear to be fine white cottony threads and live in intestine and around anus of the individual.
- **Hookworms:** These are commonly contracted through coming in touch with the contaminated soil and later enter intestine.
- Whipworm
- Ascariasis.

(B) OBSERVATIONS REGARDING THE HEALTH HABITS OF FAMILY MEMBERS

- **Coming in contact with infected surface:** The worms and their eggs are capable of surviving up to two weeks without feeding. The most common places where their kid may contact with worm infestation are:

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  - Soil containing worms or eggs – in playground or outdoor play
  - Touching pets or their excrement infected with worms.
- **Inadequate handwashing:** After visiting the family, the most common and observable finding is that the family members were not washing their hands properly. It's difficult to keep young kids from putting things in their mouth. If your kid is suffering from worms, there will be itching around anus, particularly in case of pin worms. During scratching, the eggs of the worms come in contact with the skin on hand, which wherever touched tends to spread. The worse scenario is when kids put that hand back in the mouth, such as for thumb sucking or pleasure.
- **Improper hygiene:** Unwashed bedding, undergarments, filth in the room all present breeding room for worms and their eggs. Someone who has not washed hands properly can also pose a risk for others as worm eggs can stay on fingernails which can be passed to you child through touching.
- **Consuming infected food or water:** They are not washing vegetables and fruits before consumption as worm eggs can be on them. Raw or under-cooked food also carries a risk of worm infestation. Contaminated water is again a very common source of worm infestation.

  Signs and symptoms include:
  - Stomachache, weight loss or irritability.
  - Loss of appetite due to pain or discomfort
  - Anemia (especially with hookworm)
  - Nausea
  - Itching or pain around the anus, where the worms entered—this is true particularly for thread or pinworms.
  - Trouble sleeping, because of the itchiness
  - Painful or frequent urination due to urinary tract infection (UTI)
  - Blood in stool
  - Jaundice (More common in tapeworm infection).

(C) PLAN OF ACTION

- Course of antiparasitic medicine, e.g. mebendazole or albendazole, pyrantel pamoate.
- Antiworm medicines or deworming treatment should be followed.

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- Diagnostic tests as prescribed by the physician
- Preventive measures includes:
  - Inculcate the habit of **frequently** and thoroughly washing the hands with a good antibacterial soap
  - It's a good idea to introduce hand sanitizer to the apple of your eyes
  - Teach them to drink clean, filtered or boiled water. Practice the same at home
  - Make sure your kids change their undergarments daily
  - Wash their bedding, pillow covers, blanket, etc. regularly
  - Sterilize your toddler's toys
  - Encourage your kid to play in dry areas and not splash in muddy puddles as these horde millions of germs
  - Make sure that the vegetables and meat are thoroughly cooked before you serve them to your family.
  - Keep your kid's nails well-trimmed. Show them how dirt collects under long fingernails and must be kept clean
  - Washing hands thoroughly before eating anything should be the rule!
  - Teach potty hygiene
  - Do not share towels and undergarments
  - Teach your kid to shower regularly. Practice thorough cleaning of private parts
  - Clean your house thoroughly and with proper disinfectants
  - Allow plenty of sunshine in your kid's room as some worms are sensitive to light.

(D) COMPLICATIONS OF WORM INFESTATION

- **Slowed growth:** Loss of appetite and poor absorption of digested foods put children with ascariasis at risk of not getting enough nutrition, which can slow growth.
- **Intestinal blockage and perforation:** In heavy ascariasis infestation, a mass of worms can block a portion of your intestine, causing severe abdominal cramping and vomiting. The blockage can even perforate the intestinal wall or appendix, causing internal bleeding (hemorrhage) or appendicitis.
- **Duct blockages:** In some cases, worms may block the narrow ducts of your liver or pancreas, causing severe pain.

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Q.2. a. List the sexually transmitted diseases.
b. Explain the responsibilities of the community health nurse in the prevention and control of HIV/AIDS.

(A) SEXUALLY TRANSMITTED DISEASES

The sexually transmitted diseases are a group of communicable diseases that are transmitted by sexual contact. These are also known as venereal diseases.

The sexually transmitted diseases are listed below:

- AIDS/HIV infection
- Syphilis
- Bacterial vaginitis
- Lymphogranuloma venereum
- Genital warts
- Gonorrhea
- Trichomoniasis
- Candidiasis
- Herpes progenitalis
- Nongonococcal urethritis.

(B) RESPONSIBILITIES OF A COMMUNITY HEALTH NURSE IN THE PREVENTION AND CONTROL OF HIV/AIDS

- **Prevention of mother-to-child transmission (PMTCT) of HIV**, addressing the main mode of HIV infection in children.
- **Advise counseling and testing** (CT) for HIV, considered the gateway to comprehensive HIV prevention, care and treatment for people who test positive, as well as reinforced prevention for those who test negative.
- **Educate about male circumcision** (MC), shown to reduce the risk of female-to-male HIV transmission by 60%.
- If patient is housebound, community health nurse make coordination with the agencies that offer help specifically for HIV patients and provide home visits for services.
- Explain to the family members regarding routine household cleanliness of the bathroom, dishes, and laundry is sufficient to prevent HIV transmission.
- Explain that HIV positive family member should never share toothbrushes or razors because they can produce bleeding; a potential source of HIV transmission.

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- **Prevention of medical transmission** of HIV and other infectious diseases through simple infection prevention practices, as well as postexposure prophylaxis for HIV.
- Encourage patient to disclose HIV status to their near ones; so that he/she does not feel alone. Provide emotional support to client and try to be with the client when he/she wants to share the information with the family members.
- Teach patient to optimize immune system function by sound dietary practices, exercises and regular periods of sleep.
- Provision of adult and pediatric **antiretroviral therapy** (ART), **treatment for opportunistic infections** and **palliative care**, from the facility to the community level.
- **Integration of HIV/AIDS services** with tuberculosis (TB), cervical cancer, malaria in pregnancy, family planning and maternal and child health services, to address the problem of co-infection among HIV/AIDS patients and to reach as many people as possible.
- Promote and coordinate the development of strategies, tool and guidelines to ensure rational and safe use of injections.
- Knowledge, education and literacy: HIV and stigma education drug readiness training, infection control education, e.g. positive perception of people living with HIV.
- Behavior change and communication: HIV pretest counseling, partner/couple counseling, behavior change counseling, disclosure counseling and bereavement counseling, e.g. increased uptake of HIV testing.
- Efforts should be made to reduce the fear and discrimination towards HIV infected persons in the community.
- Prevent sexual transmission of AIDS.
  - Condom promotion, provision
  - Detect and manage STI
  - Safer sex, risk reduction counseling with emphasis prevention with people living with HIV.
    - Discordant couples risk reduction
    - Continued possibility of HIV transmission on ART
    - Condom promotion and provision
    - Counsel on sexual health, return to sexuality and fertility on ART, reproductive choices
    - Counsel on substance use and risky behavior
  - Male circumcision

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- Counsel the women who are HIV positive or who have an infected partner regarding avoidance of pregnancy.
- Symptomatic care should be provided to the client:
  - Diarrhea should be treated immediately to avoid dehydration.
  - Provide antiemetics as prescribed by the physician to relieve patient from nausea and vomiting.
  - Monitor vital signs: Give tepid baths or ice packs if fever persists.
  - Assess location, type, intensity of pain.
  - Encourage frequent rest periods and intermittent activity.
  - Change position 2 hours if patient is bed ridden.
  - Talk with the patient and allow him or her to express fears and concerns.

Q.3. Define Chickenpox, clinical features and mode of its transmission. Discuss the measures for the prevention and control of chickenpox.

(A) CHICKENPOX

It is also known as varicella. This is highly communicable disease in children. It occurs in both epidemic and endemic forms.

Epidemiological Factors

Etiology: Virus: Varicella Zoster Virus (VZV)
Incubation Period: 10–21 days (2–3 weeks)
Communicability period: One day before and six days after the appearance of the first vesicle.
Mode of Transmission: Droplet (direct or indirect). Dry swabs are not infectious.

Clinical Features

- Onset is sudden with **Prodromal stage**
  - Mild or light fever
  - Anorexia
  - Headache
- **Acute phase**
  - **Rash:** Successive crops of macules, papules, vesicles, crusts,(vesicles heals by forming the crusts by the end of two weeks). Different type of stages found together in this disease and this is a special character of this disease.

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- Rash is itchy
- Eruptive stage remains for 4–5 days.
- The rash is centripetal in distribution, i.e. it is abundant on the trunk and scanty on the face and arms.

Treatment

- There is no specific treatment for chickenpox.
- Provide symptomatic treatment
- To relieve itching, calamine lotion should be recommended. Antihistamines, local anesthetics ointment are prescribed.
- Antibiotics for secondary infection.

Prevention and Nursing Considerations

- **Notification** of the cases to the health department
- **Isolation**
  - Using medical aseptic techniques
  - Nasal and oral discharge, clothes and linens should be disinfected
  - Keep the child in isolation until all crusts disappear.
- **Rashes**
  - Cleaning the skin according to doctor`s order once or twice daily
  - Change child`s clothes and bed linen daily to prevent skin infection
  - For itchy lesions, nails must be cut and cleaned. Mitten or gloves should be give to child so as to prevent skin scratching.
  - Observe the skin lesions for change in appearance; any change must be recorded.
  - If lesions is found in mouth; mouth wash should be recommended.
  - If lesions are there in genitals; apply cold compresses.
- For **Fever**: Check vital signs regularly
- **Disinfection** of the articles and clothing used by the patient
- Observe for the **complications** and report immediately to the doctor.
- A live attenuated varicella virus vaccine is available for the prevention of disease. Recommended for 12–18 months of age but they should not have the attack of chickenpox.

Complications: Includes abscess, encephalitis, pneumonia and glomerulonephritis may occur.

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SHORT NOTES

(5 Marks)

Q.1. Control and prevention of tuberculosis
Q.2. Rabies
Q.3. Prevention and control of dengue
Q.4. Poliomyelitis
Q.5. Food borne diseases.
Q.6. Cold chain
Q.7. Zoonotic diseases
Q.8. Tetanus
Q.9. Prevention and control of malaria
Q.10. Hazards of immunization
Q.11. Immunization schedule
Q.12. Immunity

1. CONTROL AND PREVENTION OF TUBERCULOSIS

Prevention and Control of Transmission of *M. Tuberculosis*

Current recommendations for the prevention of health care associated transmission of *M. tuberculosis* involve a hierarchical approach to infection prevention and control measures, including the following:

- **Administrative controls**: For example, early case finding; institutional policies or measures that aim to reduce the time between the arrival of people with respiratory TB disease at a health care facility, diagnosis of their condition and placement in an airborne infection isolation room (AIIR).
- **Chemotherapy**: The objective of chemotherapy is to achieve bacterial cure rapidly. Current chemotherapy is based on multiple drugs with the addition of rifampicin and pyrazinamide to convectional drugs (streptomycin and Isoniazid).

Table 4.1: Treatment regimen in DOTS (directly observed treatment, short-course) chemotherapy

Category	Type of patient	Drug regimen and duration
Category I (Red Box)	• New sputum smear positive • Seriously ill sputum smear negative • Seriously ill extra pulmonary	$2(HRZE)_3 + 4(HR)_3$ For 6 months

Contd...

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Contd...

Category	Type of patient	Drug regimen and duration
Category II (Blue Box)	• Sputum smear—positive relapse • Sputum smear—positive failure • Sputum smear—treatment after default	$2(HRZE)_3 + 1(HRZE)_3 + 5(HRE)_3$ For 8 months
Category III (Green Box)	• Sputum smear negative not seriously ill • Extrapulmonary not seriously ill	$2(HRZ)_3 + 4(HR)_3$ For 6 months

All the drugs are administered thrice weekly. The number before the letter represents the number of months of treatment. Abbreviations are as follows: R-Rifampicin, E-Ethambutol, H-Isoniazid, S-Streptomycin, and Z-Pyrazinamide.

Daily dose regimen:

- Isoniazid : 300 mg
- Rifampicin : 450–600 mg
- Pyrazinamide : 1–1.5 gm
- Ethambutol : 800 mg
- Streptomycin : 150 mg

- **BCG Vaccination**: BCG vaccination provides protection against tuberculosis is about 80%.
- **Environmental (engineering) controls**: Environmental measures to reduce the likelihood of exposure of HCWs, other patients and visitors to viable airborne *M. tuberculosis*. These include mechanical ventilation systems (to supply clean air) in patient care areas, use of ultraviolet germicidal irradiation (UVGI) and high-efficiency particulate air (HEPA) filters.
- **Personal protection controls**: Measures directed to individual HCWs either to prevent infection (such as use of respirators) or to prevent disease if infected (such as detection and treatment of LTBI).
- **Health education:** Health education program should be directed to motivating patients for undergoing regular treatment and follow-up, disposal of sputum and cooperation with agencies organizing the program.

2. RABIES

Rabies is an acute viral disease that causes fatal encephalomyelitis in virtually all the warm-blooded animals including man. The virus is found in wild and some domestic animals, and is transmitted to other animals and to humans through their saliva (following

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bites, scratches, licks on broken skin and mucous membrane). Also known as hydrophobia.

Etiological Agents

- **Agent:** Lyssavirus Type-I
- **Source of infection:** Scratches or bites of infected animal
- **Incubation period:** 1 to 3 months; The time period between contracting the disease and the start of symptoms is usually one to three months; however, this time period can vary from less than one week to more than one year. The time is dependent on the distance the virus must travel to reach the central nervous system.

Signs and Symptoms

- Early symptoms can include fever, headache, malaise, pain and tingling at the site of exposure.
- These symptoms are followed by one or more of the following symptoms:
  - Violent movements.
  - Uncontrolled excitement.
  - Fear of water.
  - An inability to move parts of the body.
  - Confusion.
  - Loss of consciousness.

Once symptoms appear, the result is nearly always death.

Prevention of Human Rabies

- **Management of animal bite wound:** Washing bites and scratches for 15 minutes with soap and water, povidone iodine, or detergent may reduce the number of viral articles and may be somewhat effective at preventing transmission.
- **Antibiotic medicine and anti-tetanus** measures are to be taken.
- **Observe the animal for 10 days**: If the biting animal dies within 10 days after the bite or shows signs of illness; anti-rabies treatment should be started immediately.
- Passive immunization with Rabies Immunoglobulin (RIG).
- **Active immunization with anti rabies vaccine (ARV):** Active immunization is achieved by administration of safe and potent cell culture vaccines (CCVs) or purified duck embryo vaccine (PDEV).
- **Guide for the prophylaxis of Rabies:**
  Preprophylaxis: Preprophylaxis schedule for rabies is 3 inoculations of 1 mL given at 0, 7, 28 day.

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Postprophylaxis is 5 inoculations by cell culture vaccine at 0, 3, 7, 14, 28 days and booster at 90 days (optional). The indication for postexposure vaccination with or without rabies immune globulin depends on the type of contact with the rabid animal.
Types of contact are:
- **Category I–**Touching or feeding animals, licks on the skin (No treatment is required)
- **Category II–**Nibbling of uncovered skin, minor scratches or abrasions without bleeding, licks on broken skin (Immediate vaccination)
- **Category III–**Single or multiple transdermal bites or scratches, contamination of mucous membrane with saliva from licks; exposure to bat bites or scratches. (Immediate vaccination and administration of rabies immune globulin are recommended in addition to immediate washing and flushing of all bite wounds and scratches).

- **Currently available human rabies immunoglobulin in India:** Berirab-P, Imogamrab, Plasmarab, etc.
- **Currently available anti-rabies vaccines in India:** Abhayrab, Indirab, Rabipur, Rabivax, Vaxirab, etc.

3. PREVENTION AND CONTROL OF DENGUE

Dengue is a viral disease. It is transmitted by the infective bite of *Aedes Aegypti* mosquito. Man develops disease after 5–6 days of being bitten by an infective mosquito. It occurs in two forms: Dengue Fever and Dengue Hemorrhagic Fever (DHF).

Signs and Symptoms of Dengue Fever

- Abrupt onset of high fever
- Severe frontal headache
- Pain behind the eyes which worsens with eye movement
- Muscle and joint pains
- Loss of sense of taste and appetite
- Measles-like rash over chest and upper limbs
- Nausea and vomiting.

Signs and Symptoms of DHF and Shock Syndrome

- Symptoms similar to dengue fever
- Severe continuous stomach pains
- Skin becomes pale, cold or clammy
- Bleeding from nose, mouth and gums and skin rashes
- Frequent vomiting with or without blood

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COMMUNITY HEALTH NURSING I

Salient Features

- Presenting the foremost book in a series that aims to simplify the subject of Community Health Nursing for undergraduate students in various fields related to nursing.
- A large number of experts have contributed to this book and helped with inputs to make sure that the book is user-friendly and accurate. It is written and packaged to assure success for all students even if they are crunched for time.
- The book uses a three-step scientific approach to study the subject and is broadly divided into 3 parts:
  1. **Syllabus:** Knowing what to learn. Understanding the syllabus is the first step while preparing for any exam and so is true with community nursing. This part will tell you which sections need your most attention and how to go ahead and plan your study sessions.
  2. **Questions:** The next step involves the actual learning part. This section is divided into 6 carefully sorted chapters which enable you to take a comprehensive approach to study this subject. We begin with Introduction to Community Health and move through Determinants of Health, Epidemiology, Epidemiology and Nursing Management of Common Communicable Diseases, Epidemiology and Nursing Management of Common Noncommunicable Diseases before finishing with Demography and Population Control.
  3. **Practice papers:** It is time to put yourself to test and for that, we collected question papers from India's leading nursing colleges and universities for almost 10 years and turned them into sample papers that will make sure you are ready to take the toughest of tests.
- This is the first book in a series which aims to be a handy tool for nursing students through their 4 years of the curriculum. Every part will have year specific preparation and practice material which will ensure that nursing students do not have to rely on texts which are not made with them in mind.

Abha Narwal was born and brought up in Rohtak, Haryana, India. After completing her schooling in her hometown, she moved to Delhi in 2005 to pursue her BSc in nursing. Soon after accomplishing MSc from Bhopal's Barkatullah University, she worked as a Consultant Research Officer with the National Institute of Health and Family Welfare (NIHFW) in New Delhi. She is currently working as Lecturer in Shaheed Baba Deep Singh College of Nursing, Ratia, Fatehabad, Haryana, India.



Honey Gangadharan was born and brought up in Delhi with her school and college life spread across the capital city. A Keralite by DNA and a Delhite by upbringing, she has learnt to bring the best of both cultures together in her personal and professional life. After completing her BSc in nursing, she is currently working as a Nursing Officer in Dr Ram Manohar Lohia Hospital, New Delhi, India.



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