

Lecture 5 : Fundamentals of Nursing

Factors Increasing Susceptibility to Infection

1.Age: young infants & older adults are at greater risk of infection because of reduced defense mechanisms:

- Young infants have reduced defenses related to immature immune systems .
- In elderly people, physiological changes occur in the body that make them more susceptible to infectious disease.

2.Heredity: some people have a genetic predisposition or susceptibility to some infectious diseases.

3.Cultural practices:

Healthcare beliefs and practices, as well as nutritional and hygiene practices, can influence a person's susceptibility to infectious diseases.

4. Nutrition:

Inadequate nutrition can make a person more susceptible to infectious diseases; nutritional practices that do not supply the body with the basic components necessary to synthesized proteins affect the way the body's immune system can respond to pathogens.

5.Stress:

Stressors, both physical and emotional, affect the body's ability to protect against invading pathogens; stressors affect the body by elevating blood cortisone levels; if elevation of serum cortisone is prolonged, it decreases the anti-inflammatory response and decreasing the energy stores, thus increasing the risk of infection.

6. Rest, exercise and personal health habits:

Altered rest and exercise patterns decrease the body's protective mechanisms and may cause physical stress to the body resulting in an increased risk of infection; personal health habits such as poor nutrition and unhealthy lifestyle habits increase the risk of infectious over time by altering the body's response to pathogens.

7. Inadequate defenses:

Any physiological abnormality or lifestyle habit can influence normal defense mechanisms in the body, making the client more susceptible to infection; the immune system functions throughout the body and depends on the following:

- Intact skin and mucous membranes .
- Adequate blood cell production and differentiation .
- A functional lymphatic system and spleen.

8.Environmental:

An environment that exposes individuals to an increased number of toxins or pathogens also increases the risk of infection; pathogens grow well in warm moist areas with oxygen (aerobic) or without oxygen (anaerobic) depending on the microorganism, an environment that increases exposure to toxic substances also increases risk.

9.Immunization history:

Inadequately immunized people have an increased risk of infection specifically for those diseases for which vaccines have been developed.

10.Medications and medical therapies:

Examples of therapies and medications that increase clients risk for infection includes radiation treatment , anti-inflammatory drugs and surgery.

Standard Precautions and Isolation:

Standard Precautions:

Preventive practices to be used in the care of all clients in hospitals regardless of diagnosis or presumed infection status.

Standard Precautions Apply to:

- Blood.
- All body fluids, secretions, and excretions, except sweat, regardless of whether those fluids contain visible blood.
- Non intact skin.
- Mucous membranes.

Infection Control & Standard Precautions:

- Standard Precautions must be practiced with all clients.
- Standard Precautions represent the most effective means of decreasing the risk of infection among clients and caregivers.

Barrier Precautions:

Methods to minimize risk of exposure to blood and bodily fluids, involving the use of personal protective equipment (masks, gowns, gloves) to create a barrier between the person and the microorganism.

Basics of Standard Precautions include:

1. Hand washing
2. Gloves.
3. Mask, eye protection, face shield.
4. Careful processing of linen.
5. Careful around Client-Care Equipment.

6. Environmental control.
7. Gown.
8. Occupational health regarding blood borne pathogens.
9. Client place.

Hand washing:

The most basic aspect of Standard Precautions. Hands are to be washed:

- Immediately after gloves are removed.
- Between client contacts.
- Any other time when transfer of microorganisms is possible.

Airborne Precautions:

To be used when caring for clients who have or may have serious illnesses spread by airborne droplet nuclei. These illnesses include: measles, tuberculosis.

Droplet Precautions:

To be used when caring for clients who have or may have serious illnesses spread by large-particle droplets. These illnesses include: meningitis, pneumonia, diphtheria, pertussis, mumps, rubella, , influenza.

Contact Precautions:

To be used when caring for clients who have or may have serious illnesses spread by direct client contact .

These illnesses include: , Ebola virus, gastrointestinal, respiratory, and wound infections.

Psychological Interventions for Clients in Isolation:

- Explain isolation procedures and rationales.
- Discuss the client's feelings about isolation procedures.
- Permit visitors in consent with isolation precautions.
- Visit the client.

Reverse Isolation:

Barrier protection designed to prevent infection in highly susceptible client. Also known as protective isolation.

Uses of Reverse Isolation:

In those situations where clients:

- Are taking immunosuppressive medications.
- Have diseases such as leukemia, which depress resistance to infections.
- Are receiving chemotherapy or radiation therapy.
- Have extensive burns, dermatitis, or other skin impairments that prevent adequate coverage with dressings.

Infection Control Nurse (ICN):

A full time senior nursing staff should be appointed as ICN and to support her adequate full time or part time nursing. The duties of the ICN are primarily associated with ensuring the practice of infection control measures by healthcare workers.

Responsibilities of infection Control Nurse:

1. The ICN conducts Infection control rounds daily and follow up all positive culture cases and maintains monitoring the data.
2. The ICN is involved in education and training of health care workers (HCWs) under the supervision of infection control officer.
3. Ensures compliance to hospital's policy.
4. Maintains data of Sharps/Needle stick injuries and Post-exposure prophylaxis.
5. Initiates and ensure proper immunization for Hepatitis B Virus, annual influenza immunization for the staff especially in high risk areas and typhoid vaccination of kitchen workers.
6. In consultation with microbiologist/physician in case of suspected exposure of any hospital worker.