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ASSIGNMENT

Discuss on immunization and prevention

IMMUNIZATION:Immunization is the process of protecting a person from infectious diseases by giving vaccines.

It helps the body develop immunity—the ability to fight and destroy disease-causing organisms like viruses and bacteria.

HOW IMMUNIZATION WORKS

When a vaccine is introduced into the body:

1. It contains a weakened, killed, or part of a pathogen.

II. The immune system recognizes it as foreign and produces antibodies.

III. The body also develops memory cells that "remember" the infection.

IV. If the person is exposed in the future, the immune system responds quickly and strongly, preventing illness.

TYPES OF IMMUNIZATION

a. Active Immunization

- The body produces its own antibodies after receiving a vaccine or recovering from an infection.
- Long-lasting, sometimes lifelong.

Examples: Measles vaccine, Hepatitis B vaccine.

b. Passive Immunization

- Ready-made antibodies are given to a person.
- Provides immediate but short-term protection.

Examples: Anti-rabies serum, Tetanus immunoglobulin.

TYPES OF VACCINE

I. Live attenuated vaccines – weakened pathogens

Examples: Measles, Mumps, Rubella (MMR); OPV.

II. Inactivated (killed) vaccines

Examples: IPV, Hepatitis A.

III. Toxoid vaccines – inactivated toxins

Examples: Tetanus, Diphtheria.

IV. Subunit or conjugate vaccines – specific parts of the pathogen

Examples: Hib, HPV vaccine.

V. mRNA vaccines – genetic instructions for antigen production

Examples: COVID-19 mRNA vaccines.

IMPORTANT OF IMMUNIZATION

- Prevents diseases such as measles, polio, tetanus, hepatitis B, and tuberculosis.
- Reduces child mortality, especially in developing countries.

- Protects the community through herd immunity.
- Prevents outbreaks and epidemics.
- Reduces healthcare costs, since prevention is cheaper than treatment.
- Contributes to global health goals, such as eradication of polio.

IMMUNIZATION SCHEDULE

Most countries (including Nigeria) follow an Expanded Programme on Immunization (EPI).

Common vaccines given include:

I. At birth: BCG, OPV-0, Hepatitis B
II. 6, 10, 14 weeks: Pentavalent, PCV, OPV, Rotavirus
III. 9 months: Measles
IV. School-age & adolescence: HPV, booster doses
V. Adults & pregnancy: Tetanus toxoid, influenza (depending on risk).

COMMON MISCONCEPTIONS ABOUT IMMUNIZATION

I. Vaccines cause the disease.

False vaccines contain weakened or inactive forms that cannot cause full disease.

II. Traditional remedies can replace vaccines. No only vaccines can create immunity.
III. Vaccines are only for children.

Adults also need boosters and specific vaccines.

SIDE EFFECTS OF IMMUNIZATION

Usually mild and temporary:

I. Pain or swelling at injection site
II. Fever
III.Irritability
IV.Fatigue

Severe reactions are very rare, and health workers are trained to manage them.

FACTORSAFFECTING IMMUNIZATION COVERAGE.

I. Lack of awareness
II. Cultural beliefs
III. Distance to health facility
IV. Vaccine stock-out
V. Fear of side effects

Improving education and access helps increase coverage.

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PREVENTION:Prevention refers to actions or measures taken to avoid disease, injury, or health problems before they occur, or to reduce their impact if they do occur.

It focuses on keeping individuals and communities healthy and reducing the burden of illness.

LEVEL OF PREVENTION

Prevention is commonly divided into three main levels (some include five). Below are the major

ones:

A. PRIMARY PREVENTION

This aims to stop a disease or health problem before it occurs.

Examples:

- Immunization (vaccines)
- Handwashing and good hygiene
- Use of insecticide-treated nets (ITNs)
- Health education and awareness campaigns
- Safe water and sanitation
- Healthy diet and exercise
- Avoiding smoking and alcohol abuse.

B. SECONDARY PREVENTION

This aims to detect a disease early and begin treatment quickly to stop it from getting worse.

Examples:

- Screening tests (HIV test, BP check, Pap smear, breast exam)
- Early diagnosis and prompt treatment of malaria, TB, etc.
- Routine medical check-ups

C. TERTIARY PREVENTION

This focuses on managing established diseases to prevent disability and improve quality of life.

Examples:

- Rehabilitation for stroke patients
- Physiotherapy
- Counseling for mental illness
- Long-term medication for hypertension or diabetes
- Use of assistive devices (wheelchairs, hearing aids)

D. PRIMORDIAL PREVENTION

- Prevents the emergence of risk factors in the first place.
- Focuses on healthy lifestyle habits from childhood.

Example: Promoting physical activity and good nutrition in children.

E. QUATERNARY PREVENTION

I. Avoids unnecessary medical interventions.

II. Protects people from over diagnosis or over-treatment.

Example: Avoiding unnecessary antibiotics.

IMPORTANCE OF PREVENTION

1. Cheaper than treatment
2. Saves lives and reduces disability
3. Protects communities (e.g., herd immunity)
4. Reduces hospital admissions
5. Promotes long-term health and productivity

6.Essential for controlling epidemics and pandemics.

AREA WHERE PREVENTION IS APPLIED

1. Communicable diseases (e.g., malaria, measles, TB)
2. Non-communicable diseases (e.g., hypertension, diabetes)
3. Environmental health
4. Mental health
5. Road traffic accidents
6. Maternal and child health