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Paper

Teaching Methodology and Community Medicine

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Q1:

A) What is difference between prevention, Control, Elimination, and Eradiction ? Explain with Example.

Prevention :-

The process through which we reduce or eliminate the causes of a disease is known as prevention

→ Reduce the harmfulness of something or minimize the harm that occurs is prevention

While preventing a disease two steps may be followed.

a) Identification of risk factors and protective factors

b) Strategies to minimize the risk factors. and maximize protective factors.

There are four levels of prevention.

i) primordial prevention
II) primary prevention
III) Secondary prevention
IV) Tertiary prevention

I) primordial Prevention :-
primordial prevention consists of actions and measures that inhibit the emergence of risk factors in the form of environmental, economic, social and behavioral conditions and cultural patterns of living.

II) primary Prevention
In primary prevention we limit the incidence of disease in population by measures such as reducing the causes control exposure to risk factors. and we focus on promoting the protective factors.
- Health Education and Specific protection may be included in primary prevention

II) Secondary Prevention
In secondary prevention we tries to detect a disease early and prevent it from getting worse
It includes Early Diagnosis and Treatment.

iv) Tertiary prevention

In tertiary prevention we tries to improve our quality of life and reduce the symptoms of a disease we already have.

- Tertiary prevention includes
- Disability limitation
- Rehabilitation

CONTROL

Control is the reduction of disease incidence, its prevalence to an acceptable level as a result of continuous efforts.

- Continued intervention measures are required to maintain the reduction.

Example :

Coronavirus Disease.

Elimination :-

Elimination simply means the complete removal or destruction of something. Here elimination means stopping the transmission of a disease in a specific geographic area or country.

Eradiction :-

Eradiction of a disease refers to a deliberate effort that leads to the permanent reduction to zero of the worldwide incidence of infection caused by a specific agent.

Example :

Smallpox . eradicted in 1980.

Example of Prevention

immunization and taking regular exercise to prevent health problems developing in the future.

Secondary prevention includes those preventive measures that leads to early diagnosis and prompt treatment of a disease, illness or injury.

Example of Control

pediatric HIV is an example of how, by using control measures like PMTCT to stop the virus from infecting infants and

Children, the disease among children can be eliminated in some countries.

Example of Elimination

Measles, poliomyelitis.

Example of Eradiction

Smallpox.

B) Write down different stages of health education.

Stages of Health Eduction

There are six main stages in health education.

I) Sensitization
II) publicity
III) Education
IV) Attitude change & action
V) Motivation
VI) Social change.

I) Sensitization :-

Sensitization is a condition of responding to certain stimuli in a sensitive manner.
In this stage people are sensitized regarding an emerging issue through positive health message.

II) Publicity :-

In this stage through social media and advertisements people are informed regarding the issue

III) Education :-

Health education is provided to the communities through Imam, vadera and their schoolmaster, main aim of health education is to prevent the spread of disease and improve general health of communities.

IV) Attitude Change

Attitudes are important because they can guide thought, behavior and feelings.

Change occurs when a person goes from being positive to negative.

Behavior changes the attitude of the people towards their own good health changes.

V) Motivation & Action

persuasion of the people to act for the betterment of their own health. Once motivation is provided and actions in the right direction starts, it further motivates the individuals and families to continue such behavior.

vi) Social Change

When all above mentioned stages have been successfully completed, the whole community transformed into a healthy community and a social change occurs in it.

Q.2) What is Ethics? (Write down Types and principles of Ethics!

Ethics is a system of moral principles, they affect how people make decisions and lead their lives.

The term ethics and morality are the same thing they are often used interchangeably, however there is a distinction between them in philosophy.

Types of Ethics

There are four types of Ethics.

I) Medical Ethics
II) Health care Ethics
III) Bioethics
IV) Clinical medical ethics.

i) Medical Ethics

Medical ethics is based on a set of values that professionals can refer to in the case of any confusion or conflict.

⇒ It is primarily physician centered.

II) Health Care Ethics

It is a multidisciplinary lens through which to view complex issues and make recommendations regarding a course of action

→ It deals with the issues of nurses and other health care providers.

III) Bioethics

Bioethics is the study of the ethical issues emerging in biology and medicine.

Bioethics concerns itself with addressing ethical issues in healthcare, medicine, research, biotechnology and the environment.

Example of Bioethics includes organ donation, transplantation and genetic research.

IV) Clinical medical Ethics

It helps patients, families, physicians and other health professionals reach good clinical decisions by taking into account both the specific clinical situation and the patients values and preferences

Example

In caring for their patients, physicians must apply clinical ethics standards such as speaking truthfully to their patients, protecting patient confidentiality and assessing the patients decisional capacity.

Ethical Principles

An ethical principal is the foundation thought or idea that makes an ethical standard correct.

- It provides a framework which facilitate individuals to resolve conflict in a fair.

There are five main principles of ethics, which are:

i) Autonomy
ii) Beneficence
iii) Non maleficence
iv) Justice
v) Nunemberg Code

Autonomy :-

Respect and promote individuals choices for themselves in achieving what

they believe to be in their best interests

⇒ It includes respect for confidentiality and privacy

Respect for autonomy also underlies both informed consent and the drive toward using advanced treatment directives.

II) Beneficence.

⇒ Actions must gave benefit to the people

⇒ Improve a person's potential and quality of life.

⇒ prevent harm

⇒ Vulnerable people must be protected

⇒ Creating a safe and supportive environment for the people.

III) Non- Maleficence

Do not harm, and to protect others from harm.

→ Do not kill people

→ Do not cause suffering or pain

→ Do not deprive people.

→ Destroying hope

→ providing unnecessary sedation

→ failing to stop treatments when their burdens begins

to exceed their benefits.

iv) Justice

→ Treating individuals equally
→ Stop favouritism
→ Act in a non-discriminatory way
→ Respect for people rights.
→ Respect for the law
- Sharing the resources (heath services, professional time) in society in a fair and just manner.

v) Nuremberg Code

This code is a set of research ethics principles for human experimentation created as a result of the Nuremberg trials at the end of second world war.
It includes principles such as proper formulated experiment, informed consent, absence of coercion and beneficence towards study participants.

Q.3) What are Genetic Abnormalities? Write down different types of Genetic Abnormalities.

Genetic Abnormalities :-

Genetic abnormalities can be caused by a mutation in one gene, (monogenic), by mutations in multiple genes (multifactorial inheritance disorder). by a combination of gene mutations and environmental factors, or by damage to chromosomes.

Human body has 20,000 to 25,000 different genes. Genes are located on chromosomes. and each cell usually has 46 chromosomes grouped in 23 pairs. Each gene has a specific function, when a gene is abnormal it may cause health problems in the body.

Types of Genetic Abnormalities :-

i) Single gene Inheritance

Single gene inheritance is also called Mandelian or monogenetic inheritance, Changes or mutations that occur in the DNA sequence of a single gene cause this type of inheritance.

Single gene disorders have different patterns of genetic inheritance, including.

1) Autosomal dominant inheritance only one copy of a defective gene is necessary to cause the condition.
2) Autosomal recessive inheritance. (two copies are necessary)
3) X- linked Inheritance, defective gene is present on the female, or X- chromosome.

Example :-

Cystic Fibrosis
Marfan Syndrome
Fragile X Syndrome
Hemochromatosis

2) Common multifactorial genetic inheritance disorders.

- It is caused by a combination of environmental factors and mutations in multiple genes. For example different genes that influence breast cancer susceptibility have been found on chromosomes 6, 11, 13, 14, 15, 17 and 22. Some common chronic diseases are multifactorial disorders.

Examples

heart disease
high blood pressure
Arthritis
diabetes
Cancer
Obesity.

3) Mitochondrial genetic inheritance disorders.

This type of genetic disorder is causked by mutations in the non-

nuclear DNA of mitochondia mitochondria are small round rod like organelles that are involved in cellular respiration and found in the cytoplasm of plant and animal cells.

Example :-

1) Leber's hereditary optic atrophy (LHON) an eye disease.

2) Myoclonic epilepsy with ragged red fibers.

3) Mitochondrial encephalopathy.

4) Chromosomal Abnormalities
They may be inherited from the parent or may occur with no family history.
these are the most common
Aneuploidy.
This means more or fewer chromosomes than the normal number examples indude Down Syndrome (trisomy 21)

Cells contain 3 copies of the 21st chromosome

Turner Syndrome.
A condition that affects only girls and women, result when a sex chromosome (X) is missing or partially missing. So there are 45 instead of 46 chromosomes.

Deletion:-
When part of a chromosome is missing

Inversion:-
When a chromosome breaks and the piece of it turns around and reattaches itself.

Ring:-
A ring chromosome is one where the ends are attached to itself to form a ring. It can be passed down in families.

Mosaicism :-

This is when a person has 2 or more sets of chromosomes in his / her cells with different genetic material.

Single gene defect

Single gene changes have a higher risk of being passed on to children. It can be

Dominant :

When only one of the genes from one parent is abnormal. If the parent has the disorder, the baby has a 1 in 2 chance of inheriting it.

Recessive :

When both parents have abnormal genes. If both parents are carriers, a baby has a 1 in 4 chance of having the disorder e.g Sickle cell Anemia

X- linked :-

The disorder is

determined by genes on the
x chromosome E.g hemophilia.

Q.4) What is Diabetes? Write down different types of Diabetes Mellitus.

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces.
- Insulin is a hormone that regulates blood sugar.
- WHO defines Diabetes as fasting Blood Glucose more than 126 mg/dl on one single occasion.
OR random blood Glucose of 200 mg/dl or more on 2 and/or more occasions.

Types of Diabetes Mellitus

Type 1 diabetes :-

Type 1 diabetes (previously known as insulindependent, juvenile or childhood onset is characterized by deficient insulin production and requires daily administration of insulin.
- The cause is not known

Symptoms :-

- Excessive excretion of urine
- thirst
- Constant hunger
- (W)eight loss
- Vision changes and fatigue

Symptoms may occur suddenly.

Type II Diabetes Mellitus

(N)on insulindependent results from the body's ineffective use of insulin

- It comprises 90 % of people with diabetes around the world, and is largely the result of excess body weight and physical inactivity.

Symptoms :-

Symptoms may be similar to those of Type I diabetes but are often less marked.

As a result, the disease may be diagnosed several years after onset, once

complications have already arisen. Until recently, this type of diabetes was seen only in adults but it is now also occuring in children.

Cluster 1 Severe Autoimmune Diabetes :-
All subjects that fell into this cluster were found to have diabetes related autoantibodies that suggest their low insulin levels are caused by an autoimmune factor.

Cluster 2 : Severe Insulin-Deficient Diabetes :-
patients in this cluster were also found to have a higher rate of retinopathy compared to the other groups.

Cluster 3 : Severe Insulin-resistant Diabetes
patients in this cluster were identified as having a high degree of insulin resistance and high body

mass indexes.

patients with cluster 3 diabetes suffer from kidney disease than only other clusters.

Cluster 4: Mild obesity-Related Diabetes

This cluster was also made up of individuals with higher BMIs, but these patients did not show insulin resistance. their blood suger was elevated, but the cause appeared to be metabolic in origin, not due to insulin deficiency or resistance.

Cluster 5 Mild Age-Related Diabetes.

The final cluster contained the highest number of patients. Most of them were elderly but not obese.

B) What is difference between Diabetes Mellitus and Diabetes Insipidus ?

Diabetes Mellitus is a disorder in which blood sugar levels are abnormally high because the body does not produce enough insulin to meet its needs.

→ Urination and thirst are increased, and people may lose weight even if they are not trying to.

→ Diabetes damages the nerves and causes problems with sensation.

→ Diabetes damages blood vessels and increases the risk of heart attack, stroke, chronic kidney disease and vision loss.

→ Doctors diagnose diabetes by measuring blood sugar levels.

Diabetes Mellitus is a disorder in which the amount of sugar in the

blood is elevated. Doctors often use the full name diabetes mellitus, rather than diabetes alone to distinguish this disorder from diabetes insipidus.

Diabetes Insipidus.

It is a condition characterized by large amounts of dilute urine and increased thirst. The amount of urine produced can be nearly 20 liters per day. There are four types of Diabetes insipidus, each with a different set of causes. Central DI is due to lack of the hormone vasopressin. Nephrogenic DI occurs when the kidneys do not respond properly to vasopressin. Dipsogenic DI is a result of excessive fluid intake. Gestational DI occurs only during pregnancy.

Diabetes insipidus is a

relatively rare disorder that does not affect blood glucose levels but, just like diabetes mellitus. also causes increased urination.

c) How will you prevent yourself from Diabetes Mellitus.

=> I will check risk of diabetes

=> Manage my weight

=> I will eat a balanced, healthy diet.

=> limit takeaway and processed foods

=> limit alcohol intake

=> Quit Smoking

=> I will control my blood pressure

=> Increase my fiber intake

=> Control Stress levels

Q5)
A) What is Mental Disorder (Write different types of Mental Disorder

Mental health is a state of well being - in which an individual relaizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community. mental health is the foundation for individual well - being and the effective functioning of a community.

Mental Disorder
It is a behavioral pattern or anomaly that causes distress or disability, and which is not developmentally or socially normative.

Anxiety Disorder
people with this disorder respond to certain objects

with fear, as well as with physical signs of anxiety or nervousness - such as rapid heartbeat and sweating.

Eating disorder

It involves extreme emotions, attitudes and behaviors about weight and food.

Mood disorder

It involves persistent feelings of sadness or overly happy

personality disorder :-

people with this disorder have extreme and inflexible personality traits that are distressing to the person and causes problems in work.

B) Why we need Health information System

Health Information system improves the quality of healthcare delievery.

Increase patients safety

- decreases medical errors

Strengthen the interaction b/w patients and healthcare providers.

⇒ The use of health Information system in medical clinics improves the quality of healthcare that is delievered by providing accurate patient records and allows doctors to better understand the patient's medical history.

- patients that sutter from disease and ailments directly get benefit from health information system because of the improved level of care.