
UNIT 2 HEALTH CONCEPTS

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2.0 OBJECTIVES

After completing this unit, you will be able to:

- define health and ill health;
- describe the various concepts of health;
- explain the models of health and illness;
- describe the various dimensions of health;
- enumerate the various factors influencing health;
- explain the health indicators; and
- list health promoting behaviours.

2.1 INTRODUCTION

In the previous unit, you have learnt about nursing as a profession and the trends in nursing practice and education. You are familiar with the definition of nursing as “the unique function of the nurse is to assist the individual sick or well, in the performance of those activities contributing to health or its recovery (or to peaceful death) that he would perform unaided if he had the necessary strength, will or knowledge (Hendresan, 1966)”. Further nursing involves those activities that assist an individual to gain independence as rapidly as possible. In this unit you will learn about health and illness, concepts of health, various models of health, the dimensions and factors influencing health, indicators of health and health promotion practices.

2.2 DEFINITION OF HEALTH AND ILL HEALTH

2.2.1 Health

We understand the meaning of health but still we find difficult to define it. Different people have different perceptions of health. Some feel that when an individual is free from any sickness or disease he is healthy; other feel that an individual is said to be healthy if s/he is able to perform activities of daily living normally. Still others feel that an individual is healthy if s/he is well adjusted in social life and can function effectively even in stressful situation. What exactly is meant by health? You will be able to understand better if you go through the following definitions.

Health is defined as:

- a) A series of successful and continuous adaptation to a continuously changing environment.
- b) The conditions of being sound in body, mind or spirit and especially free from physical disease or pain (Webster).
- c) Soundness of body or mind; that condition in which their functions are duly and efficiently discharge (Oxford English Dictionary).
- d) “A state of relative equilibrium of body, form and function which result from its successful dynamic adjustment to forces tending to disturb it. It is not passive

interplay between body substance and forces impinging upon it but an active response of body forces working towards readjustment.” (Perkin)

- e) Health is a relative concept; this may be due to ecological conditions and the fact that standards of health vary among cultures; social classes and age groups.

This implies that health is not an ideal state and there are no international standards fixed for health. We cannot say that individuals of the same age, belonging to different countries and cultures will have the same health standard. There may be variations in weight and height of an individual belonging to different countries and socio-economic groups but both are healthy. We can further clarify this concept by the following example:

The above mentioned definitions give varied views of health. We shall now try to look into the most widely accepted definition of health given by World Health Organization (WHO) which states:

Health is a state of complete physical, mental, social and spiritual well-being and not merely an absence of disease or infirmity.

If you look at the definitions carefully, you will realize that four aspects or dimensions emerge from it. These are: (a) Physical (b) Mental (c) Social and dispiritual.

Physical well-being means having the physical strength, endurance and energy to work towards your goals. Mental well-being is ability to cope with the world in a way that brings you satisfaction; social well-being means development of relationships with others – both with people in your immediate surroundings and with the larger community through cultural, spiritual and political activities.

This also implies that goal of health now calls for not only the cure or alleviation of disease. It calls for even more than prevention of disease. Rather it looks beyond to strive for maximum physical, mental social and spiritual efficiency for the individual, for his family, and for the community.

Check Your Progress 1

Health is defined by the World Health Organization as:
.....
.....
.....

A new born baby in India weighs 2.8 kg. On an average compared to 3.5 kg in the developed countries and yet compares favourably in health.

Traditionally, the majority of health care was focused on treatment of acute and chronic conditions at the illness end of the continuum. Gradually the emphasis shifted to include attention to the wellness end of the continuum.

- f) Health a Stage of Being:
Health refers to a state of being, that is the qualities and characteristics. We might describe a person in such terms as energetic, outgoing, enthusiastic, beautiful, caring, loving and intense. Together, these qualities become the essence of a person’s existence, they describe a state of being. So also, health, as a set of qualities involves the total person i.e. Physical, Psychological, spiritual and sociocultural influences ones present condition. Thus, an individual’s placement on the wellness illness continuum can only be known, if we consider that person from a holistic perspective.

- g) Health Subjective and Objective Dimension of Health
Health involves subjective and objective dimensions. Subjective (i.e. feeling well or ill) and objective (function) dimensions together provide us with a clear picture of peoples health. Let us see these dimensions in detail. Subjectively, a healthy person is one who feels well, who experiences the sensation of vital, positive state. Healthy people are full of life and vigor, capable of physical and mental productivity. They

feel minimal discomfort and displeasure with the world around them, even this state of feeling well fluctuates. Some mornings we wake up feeling more energetic and enthusiastic than other mornings. How a person feels varies day by day, even hour by hour, nevertheless it can be a strong indicator of that person's health state.

A workable definition of health is required if we are to provide services which effectively meet health needs of individuals, family and community. From the definition given above you are aware of ways of defining health.

Since the WHO definition of health has been widely criticized for its lack of specificity, the WHO later produced a more specific definition stating that health is a condition or quality of the human organism which enables adequate functioning under given hereditary and environmental conditions.

Thus health can be defined as a series of successful and continuous adaptations to a constantly changing environment, appears to be a more realistic definition of health and more complete since health is a dynamic rather than a static state.

2.2.2 Ill Health

Ill health has been defined by Radford as the state in which a person is unable to adopt to the stresses of everyday living because of either lack of ease or signs of disease.

2.3 CHANGING CONCEPTS OF HEALTH

In many countries health has become a major social and political issue. Health is a common theme in most cultures.

In many countries health has become a major social and political issue. Health is a common theme in most countries. The most earlier concept of health was "absence of disease."

In some cultures, health and harmony are considered equivalent, harmony being defined as "being at peace with the self, community, God and Cosmos." The ancient Indians and Greeks shared this concept and attributed disease to disturbances in bodily equilibrium of what they called "humors".

The word "health" as it is commonly used today did not appear in writing until about 1000 A.D. Being healthy was considered the norm, sick people were ostracized. The idea of mental health as we know today, did not exist until the latter part of 18-19th century. People who acted strangely were also ostracized.

With the birth of scientific era in the 19th century, more and more discoveries led to a better understanding of human physiology and the origin of disease. At the same time, society to treat illness with less disgust. The notion that health and illness were two ends of a continuum existed for many years. In fact, it may still be used today. A seemingly healthy person may have an early form of a disease that does not yet have clinical manifestations. For example, young people in our society have heart disease, such as arteriosclerosis. They may be only 20 yrs old, and no evidences of disease is present. Although they appear healthy, without proper diet and exercise, heart disease will continue to develop until clinical manifestations appear.

An understanding is the basis of all health care. In a world of continuous change, new concepts are bound to emerge based on new patterns of thought. The changing concept of health are mainly of four types:

2.3.1 Biomedical Concept

Traditionally health has been viewed as "absence of disease" if one person is free from disease, s/he is considered as healthy. This concept is known as "Biomedical Concept", it has basis is germ theory of disease. The medical profession viewed the human body as a machine, disease as a consequence of the break down of the machine and one of the Doctor's task as repair of machine. Thus health in a narrow view, became ultimate goal of medicine.

The limitation of this concept is that, it has minimised the role of environmental, social, psychological and cultural determinants of health.

2.3.2 Ecological Concept

The ecologist put forward another hypothesis which viewed health as a dynamic equilibrium between man and his environment, and disease as a maladjustment of the human organisms to the environment. Ecological and cultural adaptations determine not only the occurrence of disease but also the availability of food and the population explosion. History argues that improvement in human adaptation to natural environment can lead to longer life expectancies and a better quality of life. The concept supports the need for clean air, safe water, ozonic layer in the atmosphere, etc. to protect us from exposure to unhealthy factors.

2.3.3 Psychosocial Concept

Contemporary developments in social sciences revealed that health is not only a biomedical phenomenon, but one which is in the need by social psychological, cultural, economic and political factors of the people concerned. Health is both a biological and social phenomenon.

2.3.4 Holistic Concept

Holistic model is a synthesis of biomedical & ecological model & psychosocial concept. It recognizes the strength of social, economic, political and environmental influence on health. It has been defined as unified or multidimensional process involving the well being of the whole person in the context of his environment. Holistic concept implies that, all sectors of society have an effect on health, in particular, agriculture, animal husbandry, food, industry, education, housing, public works, communications and health sectors the emphasis is on promotion and protection of health.

Check Your Progress 2

- 1) List the four concepts of health.
 - a)
 - b)
 - c)
 - d)
- 2) Fill in the blanks:
 - a) Health of an individual means back and forth along a through out life.
 - b) Holistic model of health is a synthesis of, and concepts.

2.4 MODELS OF HEALTH AND ILLNESS

A model is a theoretical way of understanding a concept or idea. Because health and illness are complex concepts, models are used to understand the relationships between these concepts and the client’s attitudes towards health and health practices.

Health beliefs are a person’s ideas, convictions and attitudes about health and illness. They may be based on factual information or misinformation, common sense or myths or reality or false expectations. Because health behaviours usually result from health beliefs, they can positively or negatively affect health. Positive health behaviours are activities related to maintaining, attaining or regaining good health and preventing illness such as proper sleep patterns and adequate exercise, diet and nutrition. Negatively health behaviours include practices actually or potentially harmful to health such as smoking, drug or alcohol abuse, poor diet and refusal to take necessary medications.

The following health models to understand clients health behaviours and beliefs so they can provide effective health care. These are the following models:

2.4.1 Health-illness Continuum Model

Health always involves a continuum, a range of degrees from optimal health at one end to death or total disability at the other. The health of an individual moves back and forth along this continuum throughout life.

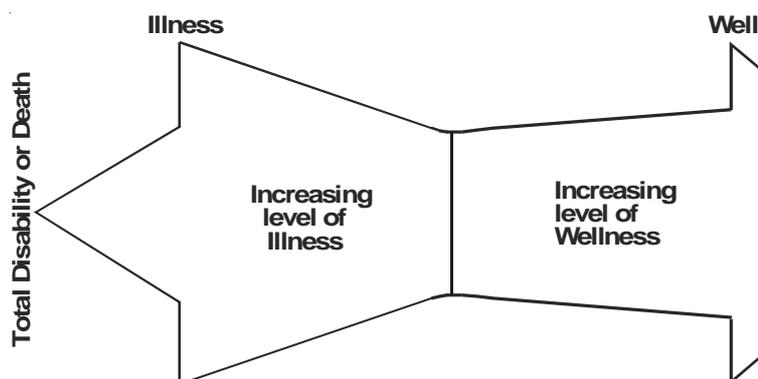


Fig. 2.1: Wellness-illness Continuum

According to health-illness continuum model health is a dynamic state that fluctuates as a person adapts to changes in the internal and external environments, to maintain a state of total well being. Internal environment refers to physiological system, body temperature, blood preserve, etc. and external refers to atmospheric temperature, humidity, dust, etc.

High level wellness and severe illness are at opposite ends of the continuum. According to Neuman (1990), “health on a continuum is the degree of client’s wellness that exists at any point in time, ranging from an optimal wellness condition, with available energy at its maximum to death, which represents total energy depletion.” A nurse can determine a clients level of health at any point on the health-illness continuum. Risk factors are important in identifying level of health. They include genetic and physiological variables such as age, life-style and environment. For example an adolescent is more likely than an adult to experience stressors, related to body image and self-concept and an older adult is more likely than a child to develop cardiac illness. The nurse helps clients identify their positions on the health illness continuum to set goals for optimal health (Meleis, 1990). This model is most effective when used to compare a clients present level of health with previous levels of health.

2.4.2 High Level Wellness Model

The high-level wellness model developed by Halpert Dunn (1977) focuses on maximizing the health potential of an individual, family or community. It requires the individual to maintain a continuum of balance and purposeful direction within the environment.

Halpert Dunn defined ‘high-level wellness’ as “an integrated method of functioning which is oriented towards maximizing the potential of which an individual is capable within the environment where he is functioning”. Dunn stressed that wellness is an ongoing process, directed towards higher potential, not a static goal, and that high-level wellness is a feeling of being “alive to the tips of the fingers with energy to burn, tingling with vitality. He conceptualized wellness model as given in Fig. 2.2.

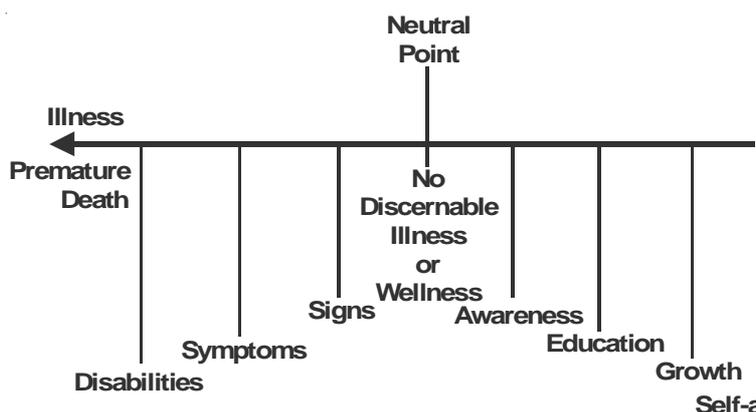


Fig. 2.2: Wellness Model (Medical)

The model above represented on the left side of the figure bring the client back from illness or disease to a neutral point. The right side represents the potential for high level health and wellness. The objective of this model is to demonstrate how people can move from the point of illness or neutrality into the realm of high-level wellness and to reduce the occurrence or recurrence of illness and disease.

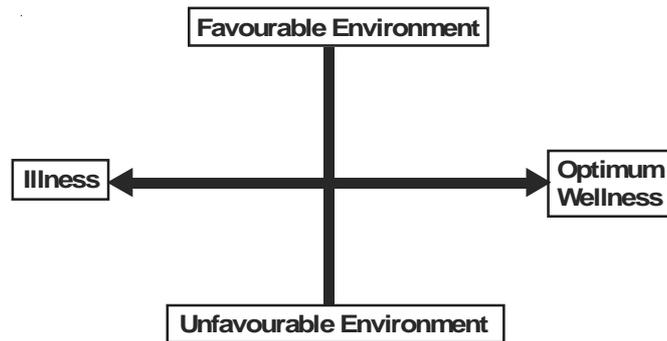


Fig. 2.3: High Level Wellness Model

Health care directed at helping a client achieve high level wellness emphasizes health promotion and illness prevention rather than treatment. High level wellness is a dynamic process not a passive, static state. No one ever reaches the point of perfect health, but there is constant attempt to achieve at optimal level of health as possible. Health is a dynamic process that varies as interactions between the individuals and their environment changes.

2.4.3 Health Belief Model

Rosenstoch’s (1974) and Becker and Mauman’s (1975) Health belief model addresses the relationship between a person’s belief and behaviour. It is a way of understanding and predicting how client’s will behave in relation to their health and how they will comply with health care therapies. Use of this model is based on a person’s perception of the susceptibility to an illness, the seriousness of the illness, and the benefits of taking action to prevent the illness. For example, this model helps nurse’s to understand factors influencing client’s perceptions, belief’s and behaviour and to plan the most effective care.

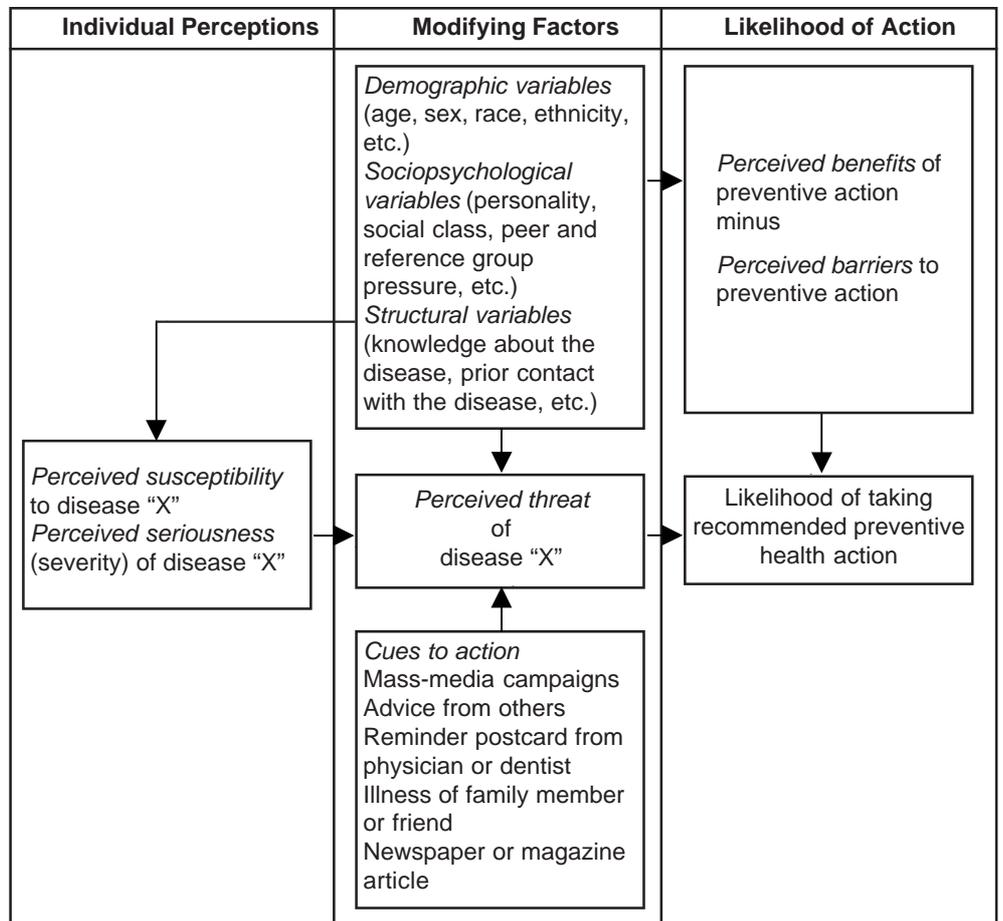


Fig. 2.4 : Health belief model

The first component of this model describes the client’s needs to recognize the familial or hereditary basic of Diabetics mellitus. If the father and an elder brother are diabetic the client has a personal risk of becoming diabetic and also the seriousness of the disease. Here the Modifying factor could be his age, sex, stress, coping and life style, influencing the perennial threat of illness. The causes to action, i.e. his knowledge/awareness through mass media, advice from doctors and relatives or friends may also influence his perennial threat, which is further affected by the previous action. The state of perennial threat may result in person’s likelihood of falling action.

2.4.4 Agent-Host Environment Model

Deficiencies in the biomedical concept gave rise to other concepts. The ecologists put forward an hypothesis which viewed health as a dynamic equilibrium between man and his environment, and disease as a maladjustment to environment.

The agent, host, environment model describes the cause of illness in other health areas. It states that the level of health or illness of an individual or group depends on the dynamic relationship of the agent, any internal or external factors that can lead to illness, the group who may be susceptible to the illness, and the environmental factors that may increase the risk of the illness. When the agent, host and environment factors are in balance health is maintained. When there are out of balance, disease occurs and thus health is an ever changing state.

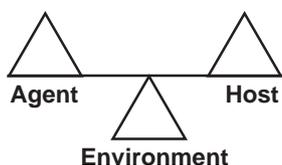


Fig. 2.5(a): Ecological model of health equilibrium

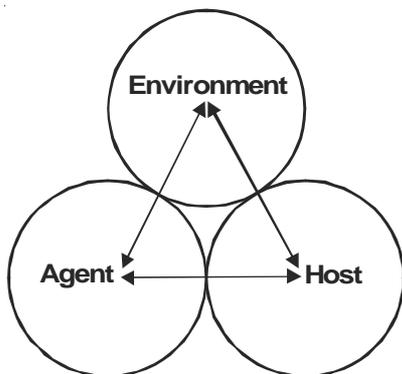


Fig. 2.5(b): The agent-host-environment triangle

Agents

Agents can be Biological, Chemical, Physical, or Psycho Social.

Host Factors

Host factors are physical or psychosocial situations or conditions putting people at risk for illness.

Environment

This includes external factors that make illness more or less likely to occur for example environmental sanitations, generic cleanliness etc. In the absence of any measures all diseases (specially infections, follow a natural cause of events which is referred as ‘Natural History of Disease’. It starts with the interaction of agent, host and environment.

2.4.5 Paradigm of Health Model

The epidemiologists have stated that health is influenced by a variety of factors such as human biology, environment, life styles and health and health related sources as shown in this Fig. 2.6.

Fig. 2.6: Health paradigm

These four factors are related to each other and also interact with each other in causation of health and illness. These four factors must be in balance for people to remain healthy.

As health cannot be seen in isolation as a separate entity and we know that health is influenced by a large number of factors, hence a coordinated and integrated approach is required so as to render comprehensive services. Health development requires and influences the joint efforts of Water supply, Sanitary Public works, Agriculture, Industry, Housing, Education, Recreation and Human resources for the optimal level of wellness. The shift in health concepts from superstitions to germ theory and later to multifactorial causation resulted in health promotion programs at the community levels such as MCH Family Welfare, School Health Program, Occupational Health Services, Integrated Child Health Development Services and so on.

With emphasis on ‘Primary Health Care’ approach to achieve ‘Health for All’ by 2000 much emphasis was paid on Community Participation to obtain self-reliance by placing health in people’s hands, empowerment of women, matters of health became the concern of all right from the planners to the consumers of health services.

2.5 DIMENSIONS OF HEALTH

There are mainly three dimensions of health. They are the physical, the mental and social. In addition to this there are many more dimensions like spiritual, emotional, vocational and political dimensions. Since human being has all the aspects, all the dimensions of health are interrelated and interdependent, and has its own nature.

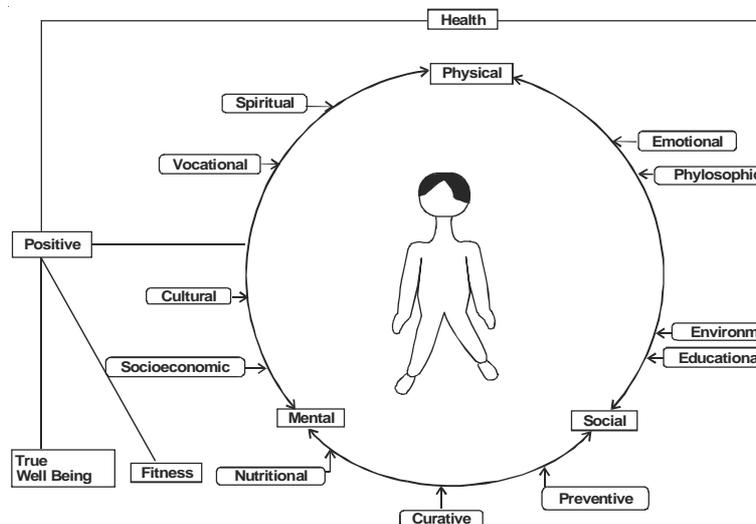


Fig. 2.7: Dimensions of Health

The state of positive health implies the notion of perfect functioning of the body and mind. It conceptualizes health.

- i) Biologically as a state in which every cell and every organ is functioning at optimum capacity and in perfect harmony with the rest of the body.
- ii) Psychologically as a state in which the individual feels a sense of perfect well being and of mastery over his environment.
- iii) Socially as a state in which the individual's capacities for participation in the social system are optimal.

Positive health will remain mirage, because everything in life is subject to change. Positive health depends not only on medical action, but on all the other economic, cultural and social factors operating in the community.

2.5.1 Physical Dimension

The physical dimension of health implies perfect functioning of the body. Biologically it is a state in which every cell and every organ is functioning at optimum capacity and in harmony with the rest of the body.

Signs of Physical Health

Signs of physical health are: good complexion, clean skin, bright eyes, lustrous hair with a body well clothed, with firm flesh, not too fat, a sweet breath, a good appetite, sound sleep, regular activity of bowels and bladder and smooth and easy co-ordinated bodily movements. All organs of the body are unexceptional size and function normally, all the special senses are intact, a resting pulse rate, blood pressure and exercise tolerance are all within the range of normality for individuals age and sex. In the young and growing, there should be a steady weight gain.

Evaluation of Physical Health

Various tools and techniques are used in various combinations for assessment of physical health. They include self-assessment, clinical examination, assessment of risk factors, listing of ill health and medication, nutrition and dietary assessment, etc.

At the community level various indices and health rate such as MMR, morbidity pattern, IMR and expectation of life can be used for assessment of health of the community.

2.5.2 Mental Dimension

Good mental health is the ability to respond to many varied experiences of life with flexibility and a sense of purpose. Mental health is defined as state of balance between individual and the surrounding world, a state of harmony between oneself and others, a coexistence between the realities of self and that of other people, and that of the environment.

Characteristics of a Mentally Healthy Person

There are certain characteristics of a mentally healthy person:

- a) Mentally healthy person is free from internal conflicts.
- b) S/He is well adjusted.
- c) S/He searches for identity.
- d) S/He has strong sense of self esteem.
- e) S/He knows himself, needs, problems and goals.
- f) S/He has good self control.
- g) S/He faces problems and solves them intelligently.

Assessment of mental health can be done by mental status examination and various other standardized tests such as adjustment scale, self esteem/self concept, tasks on problem solving ability, intelligent and personality test.

2.5.3 Social Dimension

Social well being implies harmony and integration within the individual, between each individual and other members of the society and between individuals and the world in which they live.

Social health is defined as the quantity and quality of an individuals interpersonal ties and the extent of involvement with the community.

Social Dimensions include the levels of social skills one possesses, social functioning and the ability to see oneself as a member of the larger society. Social dimension takes into account an individual as a part of family and wider community and focuses on well being of whole person including social and economic conditions. Social health is rooted in a positive material environment and positive human environment which is concerned with social network of the individual.

2.5.4 Spiritual Dimension

Spiritual health refers to that part of the individual which reaches out and strives for meaning and purpose in life. This transcends psychology and physiology Spiritual health includes integrity, principles and ethics, the purpose of life, commitment to some higher being and belief in concepts that are not subject to state of art explanation.

2.5.5 Emotional Dimension

Emotional dimension is related to feelings of an individual. Even though closely associated with mental health, it is a separate entity from cognition.

2.5.6 Vocational Dimension

Vocation dimension is a new dimension and is a part of human existence. Physical work is associated with improvement in physical capacity and goal achievement and self-realization are source of satisfaction and enhanced self- esteem. Capacities and limitations of work plays an important role in promoting both physical and mental health. Vocational dimension represents the culmination of the efforts of other dimensions as they function together to produce life success or may be merely a source of income.

2.5.7 Other Dimensions

There are many non-medical dimensions of health. These dimensions symbolize a huge range of factors to which other sectors besides health must contribute if all people are indeed to attain a level of health that will permit them to lead a socially and economically productive life. The main other dimensions are:

- 1) Philosophical dimensions
- 2) Cultural dimensions
- 3) Socio-economic dimensions
- 4) Environmental dimensions
- 5) Educational dimensions
- 6) Nutritional dimensions
- 7) Curative dimensions
- 8) Preventive dimensions.

Therefore the concept of health cannot become a reality because man can never be so perfectly adapted to his environment. Health is the ability of an individual or social group to modify himself or itself continually, in the face of changing conditions of life.

Check Your Progress 3

- 1) List any three health illness models.
 - a)

- b)
- c)
- 2) Draw a diagram of health-illness continuum, indicating various states of health or illness.
- 3) What are the basic concepts of Rosenstock's Health Belief Model.
 - a)
 - b)
 - c)
- 4) List three major dimensions of health.
 - a)
 - b)
 - c)
- 5) List any four characteristics of a mentally healthy person.
 - a)
 - b)
 - c)
 - d)
 - e)

2.6 FACTORS INFLUENCING HEALTH / DETERMINANTS OF HEALTH

Health has multiple dimensions as we have just seen and therefore health is multifactorial. The factors which influence health are both within the individual and externally in the society in which he or she lives. The factors influencing health can be broadly classified into **genetic factors** and **environmental factors** to which he is exposed. Interactions of these factors may be having deleterious effects or may be health promotive.

Health of individual and communities are due to many interactions. The important determinants are:

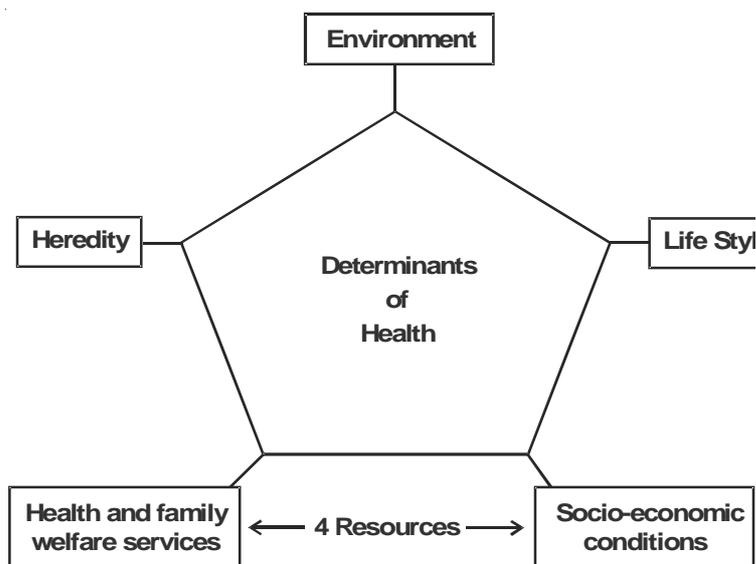


Fig. 2.8: Determinants of Health

2.6.1 Heredity/Human Biology

Health i.e., physical and mental health is determined to a large extent by genetic make up. There are a number of diseases of genetic origin. The state of health, therefore depends partly on the genetic constitution of man.

From the genetic standpoint health can be defined as that state of individual which is based upon the absence from the genetic constitution of such genes as corresponds to characters that takes the form of serious defects and derangement and to the absence of any aberration in respect to the total amount of chromosome material in the karyotype as states in positive terms from the presence in the constitution of the genes that correspond to the normal characterization and to the presence of normal karyotype. A person should be able to express as completely as possible the potentialities of his genetic heritage Gender : In the last decades it is found that women consistently record higher rates of chronic and acute sickness and has a higher mortality rate. The psychiatric admissions due to depression, deliberate self-harm, suicidal attempts etc. are also higher in women. Life circumstances influencing mental health of women, poverty, employment status, marital status or motherhood probably combines to create an atmosphere of stress.

2.6.2 Environment

Environment has a close relation with the health of an individual. Environment can be external or internal. The **internal environment** is pertaining to each and every component part, every tissue, organ and organ system and their harmonious functioning within the system. External environment consists of those things which man is exposed after conception. It is all that which is external to the individual human host.

It can be divided into:

- a) Physical
- b) Biological
- c) Psychological

The internal environment constitutes personal environment i.e., individuals way of living and life style. The environment has a direct impact on the physical, mental and social well being of those living in it. In the environment favourable to the individual, he can make full use of his physical and mental capabilities.

2.6.3 Life Style

Life style denotes the way people live, reflecting a whole range of social values, attitudes and activities. Lifestyles are learnt through social interaction with parents, peer, groups, friends and siblings and through school and mass media. Life style is composed of cultural and behavioural patterns and life long personal habits, that have developed through processes of socialization.

Many of the health problems are associated with life style changes. Risk for illness and death are related with life styles such as lack of sanitation, poor nutrition, personal hygiene, elementary human habits, customs and cultural patterns. Certain life styles like adequate nutrition, enough sleep, sufficient physical activity to promote health. Achievement of optimum health demands adoption of healthy styles.

2.6.4 Resources

The resources which help in maintaining and determining health of an individual are explained below.

Socio Economic Conditions

Socio economic conditions influence human health. Health status is primarily determined by the level of socio-economic development like per capita income, political system, economy etc. The important socio-economic factors that are of major importance are:

Economic Status: The per capita income is accepted measure of socio-economic performance. The socio-economic development has a major role in reducing morbidity, increasing life expectancy and improving quality of life. Socio-economic status determines the purchasing power, quality of life, standard of life, family size and pattern of disease and deviant behaviour in the community.

Education: Education is an important factor affecting health. Lack of education closely coincides with ill health, high IMR, malnutrition etc. Education compensates the effects of poverty on health irrespective of availability of health facilities.

Occupation: Occupation promotes health and unemployment shows higher incidence of ill health and death. Loss of work means loss of income and status resulting in psychological and social damage.

Political System: Health is related to country's political system as it can affect the implementation of health technologies. Political system shapes the community health services or decisions concerning resource allocation, manpower policy, choice of technology and the degree to which health services are made available and accessible to different segments of society. For example, adoption of policies related to gender equalities is a political issue.

Political commitment and leadership should be oriented towards social development, not merely economic development. If health patterns are to be changed, changes must be made in the entire socio-political system. The social, economic and political action are required to eliminate health hazards in working and living environments.

Health Services

Health services are directed towards treatment of diseases, prevention of illness and promotion of health. Purpose of health services is to improve the health status of the population and make health services available to all sectors of the population.

Health services are essential for social and economic development. To be effective, the health services must reach the social periphery that the community can afford and be socially acceptable. Health services is termed as primary health care, for example, immunization to reduce the incidence/prevalence of particular diseases, care of pregnant women and children to reduce the maternal and child mortality and morbidity etc. Health services how technically elegant or cost effective are ultimately pertinent if they improve health.

2.6.5 Other Factors

There are other factors such as culture, language, dietary pattern, hygienic status, health habits that contribute to the determination of health of a community.

- i) **Language:** Difference in language may create barriers to communication where verbal communication is difficult, non-verbal communication becomes an important aspect of interaction.
- ii) **Diet:** Many cultures, religious beliefs put limitations on diet and food preparation and prohibition of some foods. In some cultures there is requirement to fast at certain times which can have an effect on health.
- iii) **Hygiene:** Healthy hygiene practices such as daily bath, washing of hands after defecation, using right hand for eating food and left for washing, aids for maintenance of positive health.
- iv) **Habits:**
 - a) **Smoking:** Smoking causes death and considerable impairment to quality of life for those suffering from smoking related diseases. Cost of smoking is very high and harmful. Effects of smoking extend beyond individual himself and dangers of 'side stream' or passive smoking are being increasingly identified. There are higher incidences of lung cancers, LBW babies, miscarriages, pregnancy complications, respiratory tract infections etc.
 - b) **Alcohol:** Drinking too much or even drinking a small amount at the wrong time can lead to tragedy and ill health. Alcohol leads to impairment of physical, psychological and social functioning.

Certain other factors include employment opportunities, increased wages, prepaid medical programmes and family support systems.

2.7 HEALTH INDICATORS

“A wise man ought to realize that his health is his most valuable possession.” (Hippocrates 460-377 BC)

Man’s preoccupation with health has a very long history and is not just the product of our present day ‘health-conscious society : Increased knowledge of the causative factors of disease and technological advance has meant that many of the health problems of the previous decades (such as infectious diseases) have been eliminated. People’s awareness has improved, but to many, still health means the absence of illness.

Here arises the question “How health is measured? For measuring the health status of a community, certain indicators are used. These indicators help to measure the extend to which the objectives and targets of a programme are being attained.

Characteristics of Indicators

Ideal indicators have the following characteristics.

- 1) Ideal indicators should be valid i.e.
They should actually measure what they are supposed to measure.
- 2) Should be reliable and objective:
The answers should be the same if measured by different people in similar circumstances.
- 3) Should be sensitive.
They should be sensitive to changes in the situation concerned.
- 4) Should be specific.
They should reflect changes only in the situation concerned.

Classification of Indicators

Health is multi-dimensional and each dimension is influenced by numerous factors. Hence health cannot be measured by a single indicator. This clearly indicates that many factors – indicators – are required to describe health. These indicators are classified as follows:

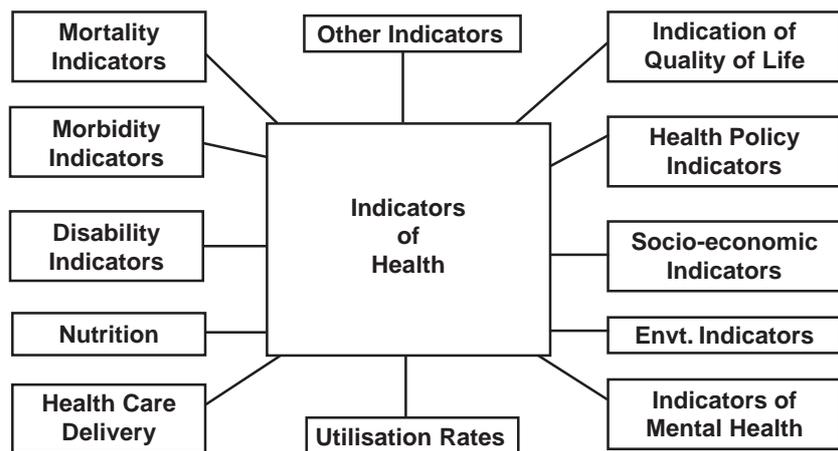


Fig. 2.9: Indicators of Health

2.7.1 Mortality Indicators

1) Crude Death Rate

It is the number of deaths per 1000 population per year in a given community. It indicates the rate at which people are dying. Although it is not a perfect measure of health status as it is influenced by the age-sex composition of the population, a decrease in death rate provides a good tool for assessing the overall health improvement in a population.

2) **Expectation of Life**

Life expectancy at birth is “the average number of years that will be lived by those born alive into a population if the current age-specific mortality rates persists”. Life expectancy at birth is highly influenced by the infant mortality rate where that is high. An increase in the expectation of life is regarded as an improvement in health status.

3) **Infant Mortality Rate**

It is one of the most universally accepted indicators of health status not only of infants, but also of whole population and of the socio-economic conditions under which they live. It is a sensitive indicator of the availability, utilisation and effectiveness of perinatal health care.

It is basically the ratio of deaths under one year of age in a given year to the total number of live births in the same year; usually expressed as a rate per 1000 live births.

4) **Child Mortality Rate**

It is defined as the number of deaths at ages 1-4 years in a given year per 1000 children in that age group at the mid-point of the year concerned. Apart from its correlation with inadequate MCH services it is related to insufficient nutrition, low coverage by Immunization IMR may be more than 10 times higher than, the developed countries, the mortality rate may be as much as 250 times higher. This indicates the magnitude of the gap and the room for improvement.

5) **Under 5 Proportionate Mortality Rate**

It is the proportion of total deaths occurring in the under-5 age group. This rate can be used to reflect both infant and child mortality rates. It communicates with poor hygiene the proportion may exceed 60 percent. This rate reflects high birth rates, high child mortality rates and shorter life expectancy.

6) **Maternal Mortality Rate**

Maternal mortality puerperial accounts for the greatest proportions of deaths among women of reproductive age in most of the developing world, although its importance is not always evident from official statistics.

7) **Disease Specific Mortality**

Mortality rates can be computed for specific diseases. As countries begin to extricate themselves from the burden of communicable disease, a number of other indicators such as deaths from cancer, cardio-vascular disease, accidents, diabets etc. has merged as specific disease problem.

The simplest measure of estimating the burden of a disease in the community is proportional mortality rate, i.e. the proportion of all deaths currently attributed to it.

For example, coronary heart disease is the cause of 25 to 30 per cent of all deaths in most western countries. The proportional mortality rate from communicable diseases has been suggested as a useful health status indicator, it indicates the magnitude of preventable mortality.

2.7.2 **Morbidity Indicators**

The traditional mortality indicators are not completely enough to represent the health status of community, as they do not reveal the burden of any type of ill-health in the community. Therefore morbidity indicators are used to supplement mortality data to describe the health status of the population.

Morbidity Rates Used for Health Assessment

The following morbidity rates are used for assessing ill health of the community.

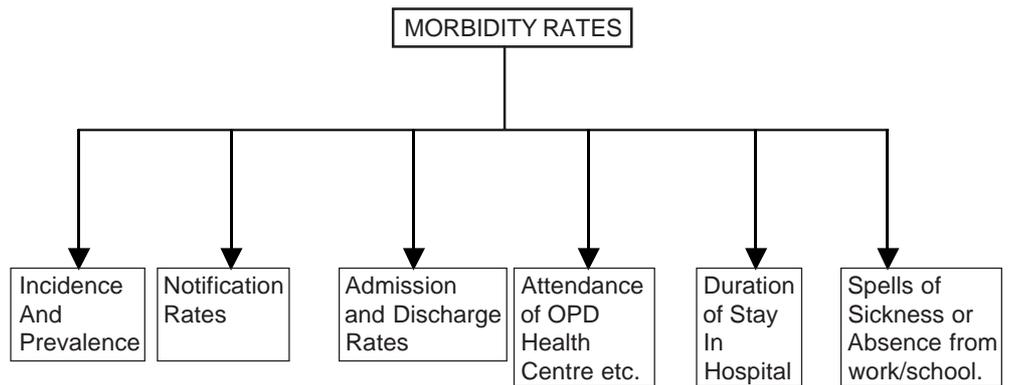


Fig 2.10: Morbidity Rates

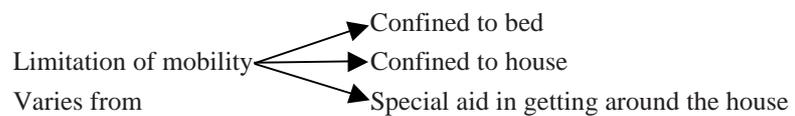
2.7.3 Disability Rates

In the recent years, despite the massive health expenditures, disability rates are increasing. Disability rates are based on the notion that health implies a full range of daily activities.

Classification of Disability Rates

Commonly used disability rates are grouped into two types:

- a) Event type indicators, such as Number of days of restricted activity, Bed disability days and Work-loss days.
- b) Person type indicators, such as limitation of daily activity (ADL) and limitation of mobility.



2.7.4 Nutritional Status Indicators

Nutritional status is a positive indicator. Three nutritional status indicators are important as indicators of health status. These are given in Fig. 2. Anthropometry measures include height, weight, head and chest circumferences, mid arm circumferences.

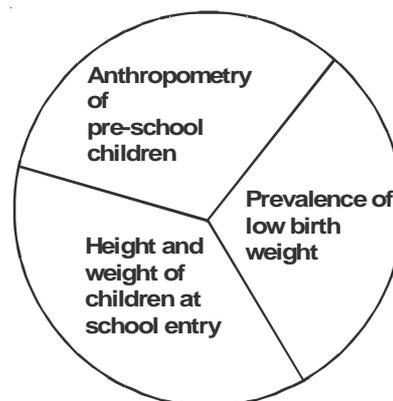


Fig. 2.11: Nutritional Status Indicators

2.7.5 Health Care Delivery Indicators

The frequently used indicators of health care delivery are:

- 1) Doctor – population ratio
- 2) Doctor – nurse ratio
- 3) Population – bed ratio

- 4) Population per health centre/sub centre
- 5) Population per traditional birth attendant.

These indicators reflect the equity of distribution of health resources in different parts of the country, and of the provision of health care.

2.7.6 Utilisation of Health Indicators

Health care utilisation is affected by factors such as availability and accessibility of health services and the attitude of an individual towards his health and health care system.

For example

- 1) Proportion of pregnant women who receive antenatal care.
- 2) Percentage of population using various methods of family planning.

These indicators direct attention away from the biological aspects of disease in a population towards the discharge of social responsibility for the organization in delivery of health care services.

2.7.7 Indicators of Social and Moral Health

It is not an easy task to measure the social and mental health with some direct indicators. Hence few indirect indicators are used to measure the social and mental pathology in the area (Fig 2.12).

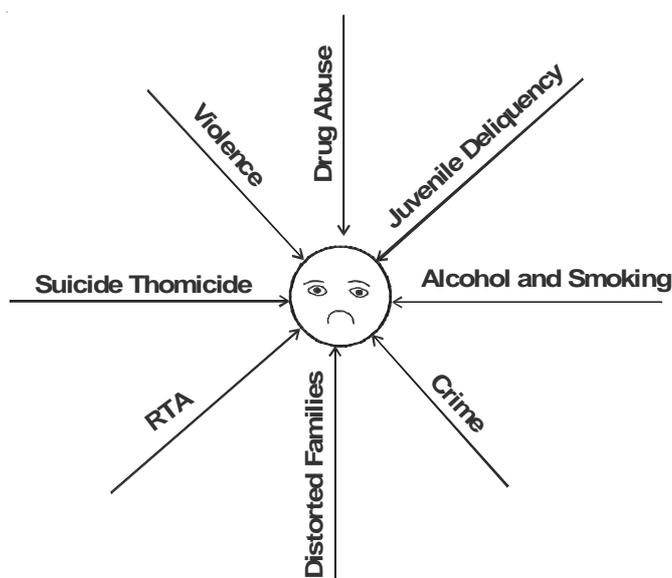


Fig. 2.12: Indicators of Social and Mental Pathology

2.7.8 Environmental Factors

Environmental indicators reflect the quality of physical and biological environment in which diseases occur and in which the people live. They include indicators relating to pollution of air and water, radiation, solid wastes, noise, exposure to toxic substance in food / drink. Among these the most useful ones are the measuring the proportion of population having access to safe water and sanitation facilities.

2.7.9 Socio-economic Indicators

These indicators play a significant role in the interpretation of the indicators of health care. They are:

- 1) Rate of population increase.
- 2) Per capita GNP (Gross National Production)
- 3) Level of unemployment
- 4) Dependency ratio

- 5) Literacy rates (especially female literacy rates)
- 6) Family size
- 7) Housing – No. of persons per room
- 8) Per capita “calorie” available.

2.7.10 Health Policy Indicators

The single most important indicators of political commitment is “allocation of adequate resources”.

These indicators are:

- 1) Proportion of GNP spent on health services.
- 2) Proportion of GNP spent on health related activities (water supply, nutrition, sanitation)
- 3) Proportion of total health resources devoted to primary health care.

2.7.11 Indicators of Quality of Life

Rather than restricting ourself to mortality and morbidity rates to measure health, we should be giving due attention to the quality of life enjoyed by individuals and communities. It is difficult to define as well as measure. Physical quality of life index consolidates three indicators i.e., 1) Infant mortality rate 2) Life expectancy at age and 3) Literacy rate.

2.7.12 Other Indicator Series

1) Social Indicators

These, as defined by the United Nations Statistical Office, have been divided into 12 categories. Population, family formation, families and households, learning and educational services, earning activities, distribution of income, consumption, social security and welfare services, health services and nutrition, housing and its environment, public order and safety, time use, leisure and culture, social stratification and mobility.

2) Basic Need Indicators

These are used by ILO. These mentioned in ‘Basic Need Performance’ include calorie consumption, access to water, life expectancy, deaths due to disease, illiteracy GNP per capita and doctors and nurses per population.

3) Health For All Indicators

WHO has listed the following four categories of indicators for monitoring progress towards health for all by 2000 AD:

- a) Health Policy Indicators
- b) Social and Economic Indicators
- c) Indicators – provision of health care
- d) Health status indicators.

Till date, the secrets for a single global index of health status could not be derived and the efforts are in process. Hence, for assessing the health status the above mentioned indicators are used and thus with the help of these we are able to derive some conclusions regarding the health status of a particular community.

Check Your Progress 4

- 1) List the determinants of health or the factors influencing health care.
 - a)

- b)
 - c)
- 2) Define health indicators.

- 3) Give any five examples of health indicators.

- 4) How do you measure nutritional status of children?

2.8 HEALTH PROMOTION PRACTICES

The term health promotion indicates the process of enabling people to increase control over and to improve health. This emphasizes on preventive approaches by adopting various healthy habits.

The Goal for health promotion is to raise individual's, families', groups' and communities' level of wellness to:

- a) increase understanding of health,
- b) raise standards for health, and
- c) assist in developing more positive health practices.

Health promotion aims at improvement and protection of health. It involves organisational, political, social and economic interventions designed to facilitate environmental and behavioural adaptations that will improve health and protect it.

2.8.1 Promotion of Healthful Living

Promotion per healthful living includes various activities such as health education, environmental modification, good nutrition and healthful life style and behavioural changes. Nurses always come in the forefront of health promotion.

a) Health Education

It includes educational activities, which enhance well-being and diminish ill health as well as those which influence the knowledge of policy makers and health professionals. It is one of the most cost-effective interventions. The targets for educational efforts may be the general public, patients, priority groups etc. Health education must provide opportunity and resources encourage made healthful practices.

b) Environmental Modifications

A comprehensive approach to health promotion requires environmental modifications such as provision of safe water, installation of sanitary latrines, improvement of housing, and control of vectors and rodents.

c) Nutritional Interventions

It includes providing supplementation of food through mid-day meal programmes and

providing iron and vit. supplementation etc. Nutrition education is an important factor to promote good nutrition and health.

d) **Lifestyle and Behavioural Changes**

By imparting knowledge and above interventions there should be some positive changes in lifestyle and behaviour (related to health).

Efforts have been made by providing the following health promotive services:

- a) Preventive Health Services
 - Family Planning
 - Pregnancy and infant care
 - Immunizations
 - Sexually transmissible diseases
 - High Blood Pressure Control.
- b) Health Protection
 - Toxic agent control
 - Occupational safety and health
 - Accidental injury control
 - Fluoridation of community water supplies.
 - Infectious agent control.
- c) Health Promotion
 - Smoking cessation
 - Reduction of alcohol and drug abuse
 - Improved Nutrition
 - Personal and Environmental Hygiene
 - Exercise and fitness
 - Stress Control.

2.8.2 Factors Affecting One's level of Wellness

Some of the factors are listed below:

- a) Presence of physical or mental disabilities: The need for eye glasses is a visual disability. Many persons function everyday with the disability of being more than 10% overweight. It is the level of functioning within that disability that is an indicator of the level of wellness.
- b) One's living habits and general life style can effect and influence one's level of wellness. Stop smoking or decrease intake of alcohol would improve our level of wellness.
- c) Occupation: Inhaling particles in an asbestos factory all day will effect wellness.
- d) Exercise: The amount of exercise one gets does contribute to one's wellness.
- e) Heredity: Health functioning is to a great degree dependant on heredity. Degree's of stamina, basal metabolism, and inherited diseases or traits all contribute positive and negative forces towards one's level of wellness.
- f) The Health Care System: That is available and the way in which it is utilized also affects the level of wellness, although it has more to do with sickness than with wellness. Sickness can however be interpreted as an absence of wellness. It does stand to reason that if a health care system does not encourage maintenance of health and wellness, the population it serves is likely to have a lower level of wellness than one in which health maintenance is encouraged.
- g) Environmental: It effects tremendously one's level of wellness. In cities there is more pollution and increased incidence of respiratory diseases and certain kinds of cancer in highly industrialized areas. Socio-economic conditions plays a large part in one's level

of wellness. Living in crowded areas, slums certainly does not contribute to one's mental, physical or emotional health.

- h) Homeostasis of the individual: Homeostasis is the ability to maintain the constancy of one's internal milieu (environment) despite changes in the external milieu. It usually refers to the physical and chemical properties of body tissues and fluids, but emotional homeostasis is a definite and palpable entity, organisms must interact with their environment. If self-regulatory mechanism is working wellness exists; if it goes out of control, sickness (or non wellness exists).

Check Your Progress 5

- 1) Define health promotion.

- 2) List the ways of health promotion.
 - a)
 - b)
 - c)
 - d)

2.9 EPIDEMIOLOGICAL ASPECTS OF DISEASE

With the progress of civilization from the primitive period to modern time the concept of disease and health have changed from supra-natural to multifactorial causes and holistic health approach. But these old concepts still prevail among people in the world who are under-developed and uneducated. The concept of disease and health have great bearance on health promotion, health protection and health maintenance. The concept of health is already discussed. In this section, emphasis will be put in to clarify disease causation, natural history of disease and risk factors.

2.9.1 Epidemiological Models of Causation of Disease

Before the discovery of microorganisms in 19th century diseases were associated with supranatural and spiritual forces. The germ theory became popular during the 19th and early part of 20th century. According to this theory there is one single specific causative agent to every disease as shown in the model given below. Examples are:

Disease agentManDisease

tuberculosis due to tuberculosis bacilli, cholera due to cholera vibric, diphtheria due to mycobacterium diphtheria etc.

But this theory has many limitations. For example every one exposed to disease agent did not get the disease say like tuberculosis, only those were undernourished, susceptible and lived in slum got the disease. This means in additon to specific causative agent there are many other factors related to host and environment which contribute to causation of disase as shown in the model given in Fig. 2.13.

This model is known as **Epidemiological Triad**. According to this model disease is caused by the interaction of **agent, host and environment**. This means that disease will occur only when the host is weak, the agent is strong and enters the host through the right channel and in sufficient amount and when environmental conditions facilitate the interaction of host and agent. For example, for pulmonary tuberculosis, the organisms must enter through respiratory tract and in sufficient amount, the host should not have specific resistance and should have weak general body resistance, poor, dark and dingy environment is conducive to the prevalence of tuberculosis in patients.

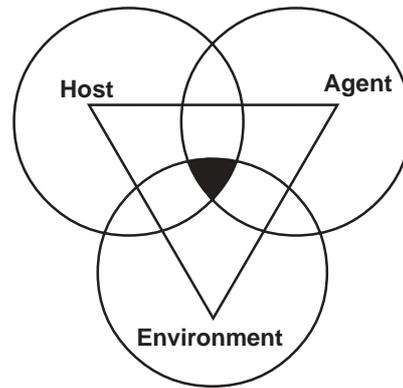


Fig. 2.13: Epidemiological Triad Model of Causation of Disease

This model in other words implies that disease will not occur without the optimal interaction of these three factors and remain in balanced state. This refer to state of health equilibrium and is represented in Fig. 2.5(a).

This model is applicable to infectious diseases and not to new types of chronic and degenerative diseases which are a result of modern civilization, for example cancer, cardiac diseases, diabetes, nephrotic syndrome, mental disorders, etc. These diseases could not be prevented and controlled by the traditional methods of isolation, curative, immunization and environmental sanitation, etc.

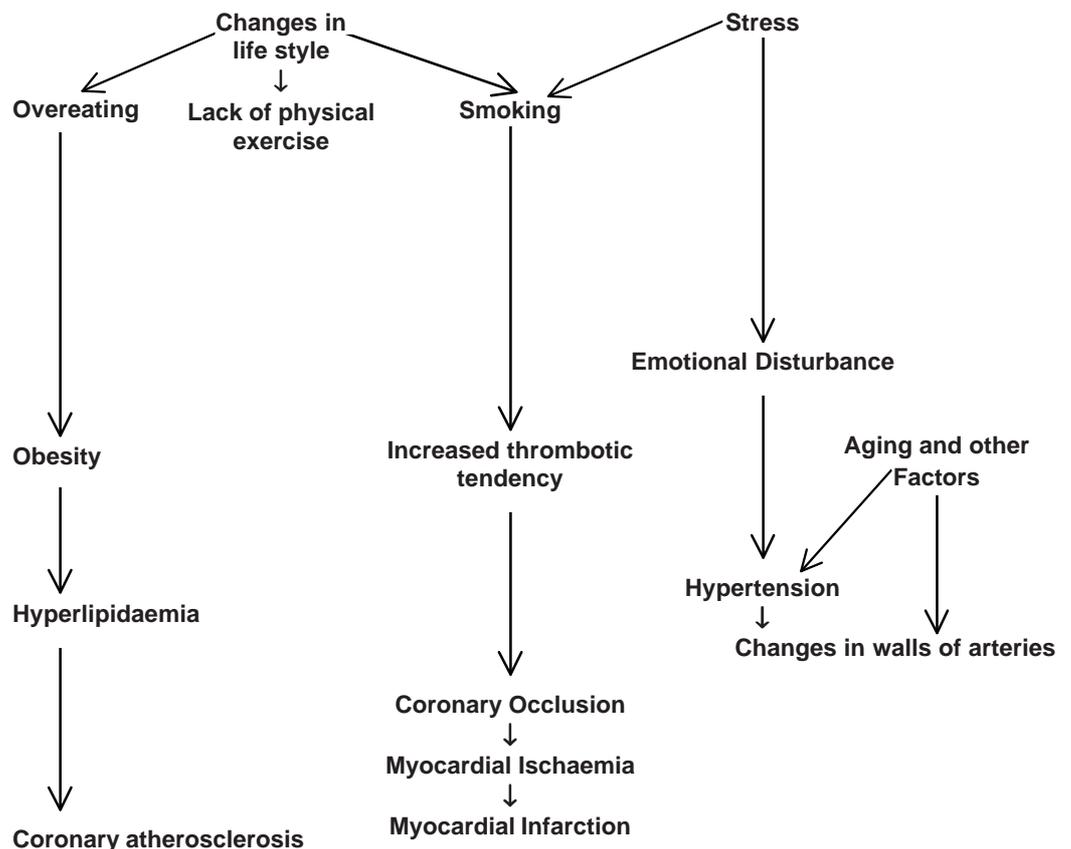


Fig. 2.14: The Web of Causation for Myocardial Infarction

It has been epidemiologically recognised that these diseases are caused due to complex interaction of multiple factors related to life style, human behaviour and the environment conditions as shown in model Fig. 2.13. Agent is regarded as an integral part of total environment.

This refers to web of causation as suggested by MacMohan and Pugh. This model suggests clusters of causes and combinations of effects related to each other. It also suggests variety of intervention e.g. avoidance of smoking, diet control, exercise, regular health check ups, etc. for prevention and control of cardio-vascular diseases, corpummonary disease, etc.

2.9.2 Natural History of Disease

In the absence of any intervention (i.e. prevention or treatment) almost all disease follow a natural course of events which refers to “natural history of disease”. It starts with the interaction of agent, host and environment i.e. epidemiological triad as discussed earlier.

The disease process in man depends on the characteristics of these three factors. The natural history of disease has two phases: (i) Prepathogenesis phase, and (ii) Pathogenesis Phase.

- i) **Prepathogenesis Phase:** This phase is before the onset of disease in man and it is in the environment. The disease agent has not yet entered the host (man). But the factors that favour its (agents) interaction with the human host exist in the environment (Fig. 2.5) e.g. poor physical environment, climate condition and prevalence of insects, pests and rodents, etc. unhygienic habits and health behaviour, traditional practices and biological factors i.e. age, sex, marital status, genetic traits, physiological status, etc. We are always exposed of the risk of disease but disease process in man starts only when there is interaction among agent, host and environmental factors as shown in the model Epidemiological Triad Fig 2.13 and 2.15.

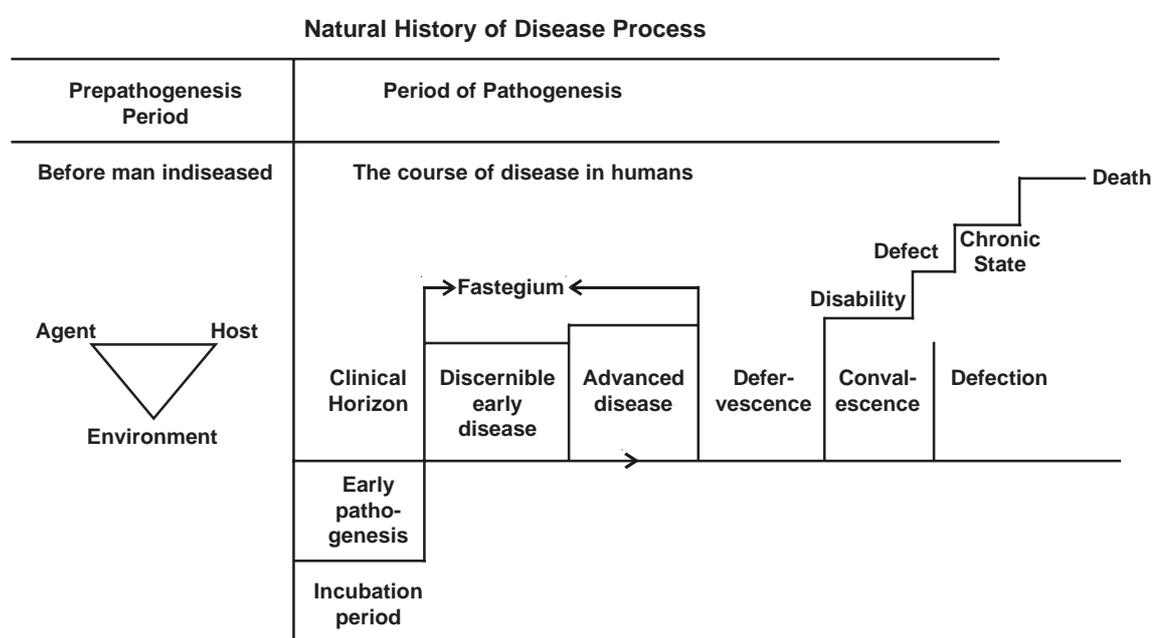


Fig. 2.15: Prepathogenesis and Pathogenesis Periods of Natural History

- ii) **Pathogenesis Phase:** This phase begins with the entry of the disease agent in the human host. As the agent e.g. ‘measles virus’ enter the body through appropriate channel e.g. in case of measles virus, the respiratory tract, the agent in this case i.e. the virus grow and multiply and bring in physiological changes in the body. These changes are subclinical i.e. clinical signs and symptoms of the disease are absent. The host remains apparently healthy and ambulant. After a lapse of some period, which differ in various diseases, the health equilibrium within the body is disturbed, the signs and symptoms of disease begins to appear. This period is called as **incubation period**. The signs and symptoms are vague during the first few days (1 to 4 days) of illness e.g. in measles, running nose, watering of eyes, etc. This period is called as **prodromal period** and it is early prepathogenesis phase. But as the disease advances, the signs and symptoms usually become clear cut and clinical diagnosis can be made with ease e.g. skin ashes all over the body in measles. This stage of pathogenesis (disease process) refer to **Fastegium**. Its duration varies from disease to disease and in case of same disease in different people depending upon the virulence of causative agent and the susceptibility of the human host. The end results of disease process may be complete recovery which refers to **defervescence and convalescence** or it may end into some kind of disability/defect, chronic state or death. From this discussion of pathogenesis phase of a disease we learn that each disease has a series of stages as shown in the Fig. 2.15.

2.9.3 Levels of Prevention of Disease

The Goal of medicine is to promote health, positive health, to restore health when it is impaired and to minimise suffering and distress. These goals are embodied in the word “Prevention”. Successful prevention depends upon the knowledge of causation, dynamics of transmission, identification of risk factors and risk groups, availability of prophylaxis or early detection and treatment measures.

In modern day, the concept has become broad based and includes four levels of prevention:

i) Primordial Prevention

This is a new concept and is receiving special attention in the prevention of chronic diseases. This is primary prevention in its purest sense, i.e. prevention of the emergence or development of risk factors in countries or population groups in which they have not yet appeared.

For example, many adult health problems like obesity, hypertension have their early origin in childhood. In primordial prevention efforts are devoted towards discouraging children from adopting harmful life styles like smoking, alcohol consumption, lack of exercise and unhealthy eating pattern, physical exercise.

ii) Primary Level of Prevention

It refers to measures undertaken during prepathogenesis phase so that man remains healthy and comprise of (a) Health promotion and (b) Specific protection.

- a) Health promotion includes factors like balanced diet, clean and safe environment to live, healthful life style and adequate use of resources.
- b) Specific protection refers to specific measures undertaken to prevent illness and injury, such as timely immunization, Vit. A prophylaxis, wearing ear plugs, helmets, gloves etc.

iii) Secondary Level of Prevention

These are the measures taken during pathogenesis phase to control the progress or spread of disease. It includes early identification of cases and their contacts, giving them adequate and complete treatment along with follow up. These measures assist to help in recovery, prevent complications, prevent further spread of disease and occurrence of fresh cases.

iv) Tertiary Level of Prevention

The aim here is to halt the progress of disease so as to limit/prevent disability occurrence and also to assist the individual to cope with the body/system reserves so as to lead a socially and economically productive life. This is known as rehabilitation and can be of physical, vocational and psychosocial nature so that the person is well adjusted to self, job and society.

a) Disability Limitations

When the patient reports late in the pathogenesis phase, the mode of prevention is disability limitation. The objective is to prevent/halt the transition of the disease process from impairment to handicap.

Disease → Impairment → Disability → Handicap.

Impairment is defined as “any loss or abnormality of psychological, physiological or anatomical structure or function”.

Disability is the result of an impairment. The affected person may be unable to carry out certain activities considered normal for his age, sex. This inability to carry out certain activities is termed as ‘disability’.

Handicap is a result of disability. The person experiences certain disadvantages in life and is unable to discharge the obligations required of him/her and play the role expected of him/her in society.

For example,

Gangrene – Disease

Loss of foot – impairment

Cannot walk – Disability

Unemployed – Handicap

b) **Rehabilitation**

It is defined as the “combined and coordinated use of medical, social, educational and vocational measures for training and retraining the individual to the highest possible level of function ability”.

The areas/types of concerns in Rehabilitation are:

- a) Medical Rehabilitation i.e. Restoration of function.
- b) Vocational Rehabilitation i.e. Restoration of capacity to earn a livelihood.
- c) Social Rehabilitation i.e. Restoration of family and social relationship.
- d) Psychological Rehabilitation i.e. Restoration of personal dignity and confidence.

2.9.4 Risk Factors

There are so many risk factors which affects the health of the individual. Risk factors can generally be classified according to six categories. There are six categories as given fig. 2. Some of these risk factors are modifiable, such as health holistic (e.g. stop smoking and alcohol consumption) and life style (e.g. appropriate exercise and right food and stress management). Some risk factors are not modifiable, such as age, sex, etc.

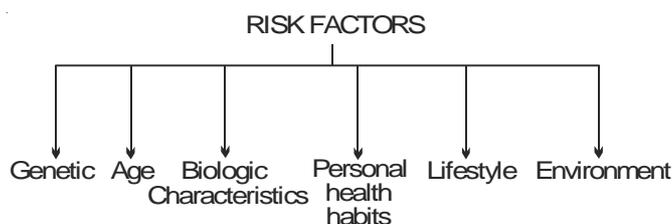


Fig. 2.16: Risk factors to health

Risk factors are a key to health promotion. Once identified, risk factors can be individually addressed and a primary prevention program initiated. There are some social problems which affect the health and well being. They are following:

- a) Demise of the extended family.
- b) The increasing disappearance of the small, tightly knit community.
- c) The numbers of mothers in the work place.
[The National Centre for Health Statistics (1990) Reports that in 1988, 13.3 million children 60% of all those age 5 or younger were in a regular day care arrangement; this included half of all those children younger than age two.]
- d) Dissatisfaction with so many jobs. The primary gratification is the money, an extrinsic motivation, which adds to an increasing mercenary attitude.
- e) Divorce
- f) Excessive competitiveness in all areas of American life.
- g) Jobs being more important than family.
- h) An increasing materialistic society.

Check Your Progress 6

- 1) List the epidemiological models of disease causation.
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- 2) Briefly describe the epidemiological triad theory of disease causation. How does it differ from germ theory?
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- 3) List four levels of prevention.
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- 4) List four examples of modifiable risk factors.
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2.10 LET US SUM UP

In this unit on the Health Concepts, we have defined and explained the meaning of health and illness. Changing concepts of health i.e. Biomedical, Ecological, Psychosocial and Holistic concepts were discussed. Various models of health and illness were explained. Further the health demensions were described. Determinants of health i.e. heredity/human biology, environment, life style and resources are discussed. You have also learnt about the various indicators of health and health promotion practices.

2.11 ACTIVITIES

- 1) What does the term 'health' mean to you. Compare your definition with the definition of your friends and other people in the community.

Ask other health professionals, how they define 'health'. What differences do you identify between your definition and the definitions given by other health professionals.
- 2) Conduct a life style survey of ten people. List their health behaviours. From this list identify health-positive and health-negative behaviour. Identify what actions they are taking (if taking) to change their health-negative behaviour.

2.12 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

Health is a state of complete physical, mental, social and spiritual well-being and not merely an absence of disease or infirmity.

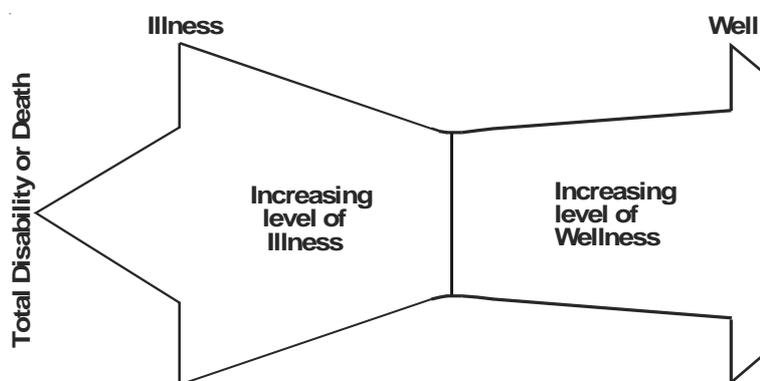
Check Your Progress 2

- 1)
 - a) Biomedical
 - b) Ecological
 - c) Psychosocial
 - d) Holistic
- 2)
 - a) continuum
 - b) Biomedical, ecological, psychosocial

Check Your Progress 3

- 1)
 - Health-illness continuum
 - High level wellness model
 - Health belief model
 - Agent-host environment model
 - Paradigm of health

2)



- 3)
 - a) Perceived susceptibility
 - b) Perceived threat of the disease
 - c) Perceived benefit of preventive action
 - d) Perceived barriers to preventive action
 - e) Modifying factors
 - f) Cures to disease
 - g) Likelihood of taking preventive action
- 4)
 - a) Physical
 - b) Mental
 - c) Social
- 5)
 - a) Free from internal conflict
 - b) Well adjusted
 - c) Has self identity
 - d) Has self esteem
 - e) Knows needs and goals
 - f) Good self control
 - g) Solves problems in telling gently

Check Your Progress 4

- 1)
 - a) Heredity/Human biology
 - b) Environment
 - c) Life style
 - d) Resources

- 2) Indicators of health care are defined as variable which help to measure changes in health status.
- 3)
 - a) Mortality
 - b) Morbidity
 - c) Disability
 - d) Nutrition
 - e) Health care delivery
- 4) Nutritional status is measured by anthropometric measures such as height, weight, head, chest and midarm circumferences.

Check Your Progress 5

- 1) Health promotion has been defined as efforts made to enhance positive health and prevent ill-health through health measures, and awareness to healthful living and activities leading to prevention of diseases and health protection.
- 2)
 - a) Health education
 - b) Environmental modification
 - c) Nutritional intervention
 - d) Life style and behavioural changes.

Check Your Progress 6

- 1) Epidemiological triad, Web of causation.
- 2) Epidemiological triad theory explains that the disease is caused due to interaction of three categories of factors which include host, agent and environment. This theory differs from germ theory which explains that there is one single specific causative agent to every disease i.e. one cause-one effect whereas according to epidemiological triad in addition to one single specific cause there are other factors which are responsible for causing disease i.e. three categories of causative factors to cause a disease i.e.  effect.
- 3)
 - a) Primordial Prevention
 - b) Primary Level
 - c) Secondary Level
 - d) Tertiary Level
- 4)
 - a) Appropriate diet
 - b) Exercise
 - c) Stop smoking
 - d) Control alcohol consumption

2.13 FURTHER READINGS

Black M. Joyce & Jacobs Matassarin Esther Sorensen's & Luckmann, '*Medical Surgical Nursing, A Psychophysiologic Approach*', 4th edn. W B Saunders Company, Philadelphia 1993, Chapter 2, 3, 4, 5.

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