

## DETERMINANTS OF HEALTH AND ILLNESS: A STUDY OF BIO-MEDICAL, BEHAVIOUR AND SOCIAL FACTORS

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| KEYWORDS                                                                                                                    | ABSTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <i>Health, Illness, Behaviour factors, Bio-medical factors, Social factors, Modifiable and Non-modifiable risk factors.</i> | The current study attempted to investigate the physiological, behavioral, social, and physical factors that contribute to both the development of illnesses and physical well-being. In order to determine the social and individual causes of disease development, this study examined the behavior, biomedical, and social determinants of health and illness based on the Dahlgren and Whitehead model of determinants of health and WHO's (2005a) report on social determinants for non-communicable diseases. In addition to focusing on risk factors found in people's physical and social environments, social determinants of health also examined how people's everyday behaviors contribute to the development of different kinds of diseases. Modifiable and non-modifiable risk factors are the two basic categories into which these factors may be separated. Modifiable risk variables are associated with human behavior, which is ingrained in people's daily routines and the socio-cultural, political, and economic milieu of the community. It is impossible to change non-modifiable risk variables, which include a person's age, gender, and genetic composition. Thus, behavior, biomedical, and social variables all contribute to overall health. |

### INTRODUCTION

Numerous things influence an individual's health. Social, cultural, ecological, political, economic, behavioral, and biological aspects are a few examples of these variables. These connected aspects impact a person's health status and likelihood of becoming ill. Health is therefore multi-causal in nature, depending on a variety of elements rather than being a single cause. An individual's health state is significantly impacted by a number of factors, including their area of residence, personal and professional environments, income, education, and the type of relationships they have with their family and friends.

In the past, spiritual powers were thought to be the primary cause of illness development. In order to punish sin, these spiritual forces assault the human body, which leads to the development of certain diseases. The germ hypothesis of disease development, which emphasized the part that a specific germ plays in the genesis of disease, gradually replaced the notion of spiritual forces. The social and psychological aspects of illness development were disregarded by this method. The body was handled independently of the intellect in this strictly biomechanical approach. Here, the body was viewed as a machine, and the emphasis was on treating the individual pieces rather than the entire thing.

The role of germ in the onset of an illness was questioned. The main limitation of this approach was that it was unable to explain that why some people had not inhabited by the germs and fallen sick despite presence of these germs in the environment. So, this situation gave way to the doubt that there may be some other reasons which were not taken in to consideration.

The "epidemiological triangle" strategy was developed in response to this ambiguity. This method holds that a disease arises from the interplay of the three elements. These three elements are the environment, the host, and the agent. A disease cannot develop in the absence of an agent, which is a physical, chemical, and biological component of the human body. A host is concerned with the personal behavior, genetic composition and immune system that may raise or lessen the vulnerability of a person to disease. The final one is the environment, which encompasses elements that are external to the human body and that cause sickness, such as social, political, economic, and physical aspects. As a result, the mono-causal theory of disease development was superseded by the multi-causal advancement of disease development, and the multi-causal approach to illness onset was emphasized. As a result, the phrase "web of causes" was coined to describe the various origins of illness onset. For example, biological, social, psychological, and behavioral variables all contribute to heart disease.

As a result, a variety of things influence one's health. Wider determinants, or social determinants of health, emerged as a result of this multi-causal approach. The social, cultural, political, commercial, and environmental elements that impact a person's health within a society are now the primary emphasis of these determinants. Without a doubt, the healthcare and social care systems are significant social determinants of health; yet, the responsibility for preserving good health in society now extends beyond these sectors and encompasses the entire society. When highlighting the social determinants of health, the World Health Organization (2018) noted that living and working conditions, income, education, genetics, and the type of relationships one has with family and friends are more effective in determining an individual's state of health than accessibility and frequency of use of healthcare services.

### **MEANING OF HEALTH**

Depending on the time period, health can mean many things. In Indian and Chinese medicine, as well as in ancient Greece, health is viewed as a state of equilibrium between the body and the soul as well as between the individual and the environment. Later, in the fifth century BC, the physical component of health became more significant, emphasizing the body's functioning aspects. "Health is the harmonious functioning of the organs with a feeling of comfort and without a feeling of pain," according to Pindar. Plato later developed the concept of the ideal society in his "Dialogues," emphasizing the need to establish a balance between the individual and the social and physical environments of society. Similar kind of thinking was reflected in the teaching of Aristotle where he calls man as a social animal and said that the man has to abide by the rules of the society in which he lives. Thus, a harmonious relationship between the society and the people is needed to live a healthy life.

Additionally, Democritus attempted to explain the connection between human behavior and health, arguing that maintaining good health is a human right. Hippocrates also emphasized the significance of environmental and lifestyle variables in attaining optimum health. He went on to say that a nutritious diet and regular exercise are essential for a disease-free existence. He also underlined how important environmental elements like the seasons are to leading a healthy life. In the Middle Ages, religion and the church controlled the system and shaped how people thought about health by learning about natural cures, such as herbs, for preserving good health.

The definition of health evolved to include an economic connotation during the industrial revolution. Nowadays, improved working capacity and higher financial gain are the outcomes of excellent health. As a result, health is increasingly regarded as a financial advantage. Furthermore, according to Darwin's "survival of the fittest" idea, health is an additional dimension that includes the capacity to adjust to a new environment. This method initially only applied to the physical environment, but it eventually expanded to include the social environment as well. Therefore, in

the present era, being in excellent health involves not just being physically well but also being mentally, spiritually, and socially well.

By defining health holistically and proposing that "health is not merely an absence of disease but a state of complete physical, mental, spiritual, and social well-being," the World Health Organization (1946) developed a comprehensive view of health. Therefore, rather than focusing just on the absence of illness, this definition also addressed the necessity of "social well-being" in addition to physical, mental, and spiritual health. In order to achieve the goal of good health, WHO therefore prioritized the importance of the social environment, which includes social contact, living and working situations, etc.

Furthermore, health is defined as "not just the physical wellbeing of an individual but also the social, emotional, and cultural wellbeing of the whole community, in which each individual is able to achieve their full potential as a human being, thereby bringing about the total wellbeing of their community," according to the Aboriginal Health and Medical Research Council of New South Wales, Australia. Therefore, the relevance of the social environment emerged alongside the natural environment, paving the way for the holistic approach to the idea of health, since the health of the community in which a person lives is just as important as the health of an individual.

## DETERMINANTS OF HEALTH AND ILLNESS

Australian Institute of Health and Welfare (AIHW, 2008) depicts that determinants of individual as well as population health depend upon the socioeconomic features, health behaviour of people and biomedical factors. All the aforesaid factors not only interact with each other but also with the physical and psychological makeup of the people. Broadly, the factors responsible for health and illness can be divided into the following parts-

- a) Behaviour factors
- b) Bio-medical factors
- c) Social factors

### **a) Behaviour factors**

An individual's daily lifestyle choices are a reflection of their health behavior. While bad eating habits, a lack of exercise, and the use of tobacco and alcohol are harmful to one's health, physical activity and a balanced diet are important components of maintaining good health.

### **b) Bio-medical Factors**

Biomedical variables pertain to the physical and biological aspects of humans and are mostly associated with elements such as immune system function, body weight, birth weight, cholesterol levels, and sugar metabolism. Here, the primary determinant of health is seen to be the optimal balance of biological elements within the body; any disruption in this equilibrium may lead to the development of disorders.

### **c) Social Factors**

The phrase 'social factors' refers to the social, cultural, political, economic, ecological, and environmental elements that contribute to the development of diseases. A person is born, raised, breathes, works, and ages in the society that contains all of these disease-causing factors.

People's social domain is connected to social aspects. These elements may be evident in people's lifestyles, social and communal relationships, political and social policies, home and workplace environments, socioeconomic standing, etc. These socio-cultural influences have the potential to have both good and bad effects on an individual's health and may also be accountable for both the health and illness.

Now, we are discussing these factors-

### ***Social Determinants of Health***

These factors include the circumstances surrounding a person's birth, development, maturation, and aging. In a word, these are the circumstances that people live in throughout their lives. These disparate living circumstances contribute to the emergence of health disparities both within and between societies. The World Health Organization has identified ten major socioeconomic determinants of health, including early life stress, unemployment, addiction, diet, social support, and so on. Through influencing human behavior, these social factors may have a direct impact on health or an indirect one also.

According to Braveman et al. (2011), social factors such as education, wealth, and employment influence an individual's behavior, which is directly linked to their health. For example, educated people have greater job options and, consequently, higher incomes since they are better knowledgeable about healthy behavior. A high income level raises a person's purchasing power and makes it easier for them to afford better food, a nicer home, and a higher standard of living, all of which have positive health effects.

### ***Cultural Determinants of Health***

The primary focus of the cultural determinants of health is on the cultural elements that promote the physical and mental well-being of individuals, families, and communities, such as customs, rituals, and spirituality. Strong cultural and national links contribute to the promotion of people's health and well-being (Department of Health, Common Wealth of Australia, 2017).

### ***Ecological Determinants of Health***

Natural resources such as clean, fresh air and water, fertile soil, a comfortable temperature, nice weather, and a good physical environment are examples of ecological determinants of health. Research has indicated a strong direct correlation between the development of renal disorders and cancer and hard, contaminated water.

### ***Commercial Determinants of Health***

The Director-General of the World Health Organization (WHO, 2013), Margaret Chan, stated that "business interests of powerful economic operations are at odds with efforts to prevent non-communicable diseases." Retailing tobacco and tobacco goods, alcohol, junk food, and fast food heavy in sugar, salt, and trans-saturated fat are all part of these lucrative business ventures. Increases in non-communicable diseases demonstrate the real intent of the global economic system, which prioritizes material gain over good health.

### ***Political Determinants of Health***

Political determinants are defined as "examining the ways in which conflicting power structures, institutions, procedures, interests, and ideologies impact health across various political systems, cultures, and governmental levels" (Kickbusch, 2015). In this case, national and international agencies' policies define the determinants of health. Healthy lives are promoted by the government by progressive policies like limiting the use of dangerous items like alcohol and tobacco, providing subsidized healthcare services, etc.

Since they are all connected, the aforementioned elements have an impact on one another. For example, socioeconomic, political policies, cultural, and other variables influence people's health behaviors, which in turn impact the biomedical aspects that cause diseases to develop. Thus, it is evident that social variables, in addition to behavioral and biological aspects of health, have become a significant contributor to the emergence of diseases.

Thus, a person's education, profession, financial standing, and social support network can all have a big impact on their health, and this could be the main reasons why health disparities between

members of different social classes continue to exist. A closer examination of this idea reveals that political forces and social policies have a significant impact on the aforementioned determinants of disease development in society. Therefore, while some aspects of society, like behavior risk factors, are within the control of individuals, others, like social or political policies, are outside their control.

According to the World Health Organization (WHO), “the social determinants of health are mostly responsible for health inequities- the unfair and avoidable differences in health status seen within and between countries” (cited in AIHW, 2013).

After going through the determinants of health in general, we are going to discuss the factors given by Dahlgren and Whitehead (1991) and WHO (2005a) as determinants of health and illness. In this paper, perspectives of Dahlgren and Whitehead and WHO (2005a) related to determinants of health and illness have been evaluated. These two viewpoints discussed the role of behaviour, social as well as biological determinants of health and emergence of diseases. These perspectives are as follows-

- A. Determinants of Health (Dahlgren and Whitehead, 1991)
- B. Determinants of Diseases (non-communicable diseases) (WHO, 2005a)

#### **A. Determinants of Health (Dahlgren and Whitehead, 1991)**

The 'rainbow model' is another name for this paradigm, which attempted to link environment and individual health. The various levels of this model depict the variables affecting health. Genetic factors, which are unchangeable because they are fixed, are positioned at the center. Four layers of various elements that affect health and are typically adjustable surround the hereditary components.

The lifestyle aspects associated with everyday routines, such as eating and exercise, are represented by the first layer. These lifestyle choices are crucial for preserving a person's overall health. A person's health depends on leading a healthy lifestyle, which includes things like eating a balanced meal, exercising frequently, abstaining from tobacco products, using alcohol in moderation, getting enough sleep, doing yoga, and so on.

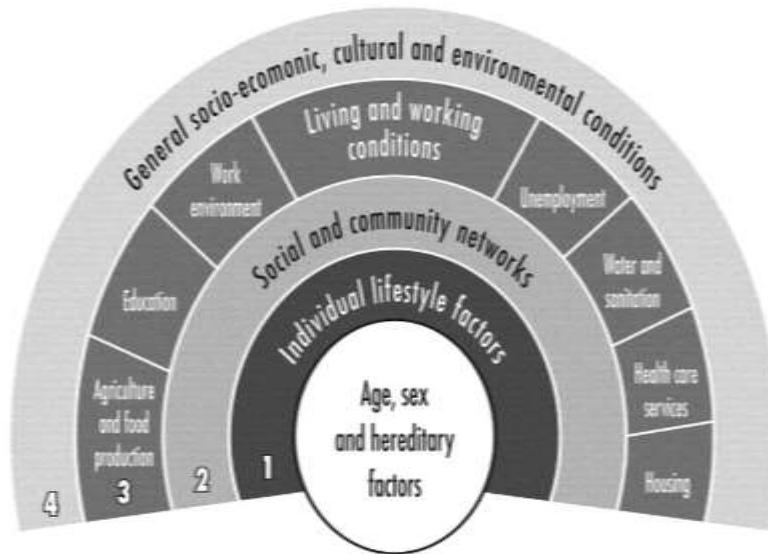
The second layer is concerned with social and community networks that could have an impact on a person's health. Research indicates that those who have strong relationships with their family, friends, and community are healthier than those who live alone. According to Uchino, Cacioppo, and Kiecolt-Glaser (1996), "happy and positive friendships and feeling part of community life protect them from the damaging health effects of social isolation." Additionally, Valtorta et al. (2016) revealed that loneliness and social isolation raise the risk of heart disease and stroke by 30%. They also established a link between these factors and the risk of developing heart disease and stroke.

Living and working situations, education, income, access to health care services etc. are key determinants of health and represented in the third layer of this model. Research indicates a strong correlation between improved health outcomes and physical and mental wellness and favorable living and working situations, education, money, and access to healthcare services, among other factors.

Finally, the general economical, cultural, and environmental conditions are represented by the fourth layer. These circumstances play a critical role in forming the previously mentioned critical elements for achieving a healthy state. Social and environmental factors can trigger different behavioral, physiological, and psycho-social elements, resulting in risk circumstances that can directly impact people's health and well-being (Labonte, 1993). Therefore, this paradigm

emphasized the significance of environmental, social, cultural, behavioral, and biological aspects of health for people's well-being.

### Layers of Determinants of Health



Source: Dahlgren and Whitehead (1991)

The above said determinants of health are given by Dahlgren and Whitehead and concerned with the physical wellbeing of the people in general. Next, the report by WHO (2005a) has been discussed that highlighted determinants of non-communicable diseases specifically.

### B. Determinants of Diseases (Non-Communicable Diseases)

WHO (2005a) elucidated the factors that contribute to the development of non-communicable diseases in its study on determinants of non-communicable diseases. Three key factors influence the development of non-communicable diseases: common modifiable factors, intermediate risk factors, and underlying socioeconomic determinants. Therefore, in addition to biomedical variables, WHO acknowledged the involvement of lifestyle and social-economic factors in the development of chronic disorders. The following factors were recognized by WHO as contributing to the start of non-communicable diseases.

#### a) Underlying Socioeconomic Determinants

Non-communicable diseases have rapidly emerged as a result of increased exposure to unhealthy lifestyles brought on by urbanization, globalization, and population aging. In addition to altering people's physical and social surroundings, the processes of urbanization and globalization also changed how they lived. Individuals' daily routines pertaining to food, exercise, sleeping patterns, and other aspects of their lives were altered as a result of these changes in their physical and social surroundings. These alterations also influenced the interaction pattern of a person with the other folks.

Since non-communicable diseases are of chronic nature and their prevalence increases with the increase in the age of the people, so these diseases are also called 'diseases of longevity'. Due to the advancement in medical technology and medical facilities, the life expectancy has increased. So population aging has emerged as a big cause for the onset of these diseases.

#### b) Common Modifiable Factors

Unhealthy eating habits, sedentary lifestyles, smoking, and excessive alcohol consumption are recognized as modifiable variables. These indicators indicate a person's unhealthy lifestyle, which can readily be changed by making simple adjustments. Therefore, the development of non-communicable diseases is caused by a flawed lifestyle.

#### c) Intermediate Risk Factors

Non-communicable diseases are caused by intermediate risk factors, such as high blood pressure, excessive blood sugar, abnormal lipid profiles, and being overweight or obese. These pertain to the biochemical functions of the human body and may be connected to biomedical variables.

#### d) Major Chronic Non-communicable Diseases

Above three determinants ultimately result in the manifestation of health problems like heart diseases, stroke, cancer, respiratory and type-2 diabetes. These diseases are of long duration and can not spread from one person to another, that's why, these diseases are called chronic non-communicable diseases.

### DISCUSSION

A person's physical and mental health is influenced by several things. These environmental elements may affect a person's physical health in both positive and negative ways. While a negative effect causes illness to develop, a positive effect results in a healthy body. For instance, optimal daily intake of fruits, vegetables, or legumes, physical activity, etc., have positive effects and are therefore referred to as protective factors, whereas risk factors—such as harmful alcohol consumption, tobacco product intake, etc.—are the factors that cause diseases to develop. Modifiable and non-modifiable risk factors are further subdivided from these risk factors.

Modifiable risk factors are those that can be changed by altering daily routines and are mostly associated with an individual's lifestyle choices, such as eating a healthy diet and exercising regularly. Due to urbanization, industrialization, and globalization, there has been a discernible shift in the patterns of physical activity and food for a considerable amount of time. Changes in nutrition and physical activity habits have been accompanied by changes in human health and demographic characteristics. The onset of health-related problems rose as a result of these alterations.

In the words of Michael Marmot (2015), “The fact is that the conditions to which we are exposed influence our behaviour. Most of us cherish the notion of free choice, but our choices are constrained by the conditions in which we are born, grow, live, work and age.”

According to World Health Organization (WHO, 2005a), approximately eighty percent of stroke, cardiac ailments and diabetes (Type-2) and forty percent of cancers globally can be averted by following a healthy lifestyle.

Non-modifiable risk factors are concerned with bodily states and these factors can not be altered by making changes in the daily habits by the people. These factors are genetic in origin. These factors such as heredity, age etc. may be the reasons for the onset of chronic disease.

Dahlgren and Whitehead (1991) gave the generalized view on the causes of health and illness by focusing on the behaviour, biological and social factors whereas WHO (2005a) was concerned with the determinants of illness with special references to non-communicable diseases. The basic idea behind both perspectives is the same. Both of them highlighted the significance of behaviour as well as social factors in the onset of diseases.

## CONCLUSION

The main conclusion to be drawn from the two aforementioned viewpoints is that social, behavioral, and environmental factors have a significant impact on health and disease patterns. The human body is where both health and illness are prevalent and manifest. However, it is impossible to downplay or deny the significance that social structures play in the development of disease. In addition to behavior and genetic variables, social factors are equally essential in the emergence of diseases. Dahlgren and Whitehead's (1991) model has brought this to light. In their discussion of the causes of non-communicable illnesses, WHO (2005a) concentrated on behavior, intermediate risk factors, and socioeconomic variables that influence the occurrence of these diseases.

There is no doubt that non-modifiable risk factors like age, gender, heredity are significant but role of modifiable risk factors such as behavior risk factors and social factors can not be undervalued. Thus, lifestyle of people, social and community ties, work place environment, living and working conditions etc. play an important part for the development of diseases. Also, social policies framed by political system may be responsible for the health inequalities in the society. Hence, social determinants of health and disease along with bio-medical and behaviour factors came forth as the significant reason for the emergence of diseases.

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