



ANTHROPOLOGY OF EPIDEMICS- CONSIDERATIONS FOR HEALTH CARE POLICY AND DECISION MAKING

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ABSTRACT Culture and disease are two important aspects of human population. Culture has a chief role in origin and spread of disease. In order to address the requirements and expectations of the patients, to diagnose the disease and to provide better treatment, anthropologists offer solutions that are holistic, culturally acceptable, and individualized. This kind of understanding that is urgently required to confront the issue can therefore be facilitated by anthropological methodologies and its comparative and holistic perspective more than by any other field experts. Medical personnel with the assistance of anthropologists can better provide patients with holistic care by understanding how habits are founded in each person's particular cultural background and as a response to social influences. Hence this paper suggests the employment and involvement of anthropologists in dealing the infectious diseases and to find solution of various human problems for the welfare of our present and future generation.

KEYWORDS : Anthropology, epidemics, culture, disease, cultural bound syndrome, fieldwork.

INTRODUCTION

Public health is a social and cultural activity (Saunders, 1954). EB Tylor defined culture as “the complex whole which includes knowledge, belief, art, law, morals, custom and any other capabilities and habits acquired by man as a member of society” (Tylor, 1871). Health is “the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948). Individual and community health is influenced by variety of factors. Social, physical environment, genetics, individual characteristics, and behavior are prime factors that decides the health and disease. Disease is defined as “any harmful deviation from the normal structural or functional state of an organism, generally associated with certain signs and symptoms and differing in nature from physical injury” (WHO, 1948).

Approximately 17 million people die every year from infectious diseases in the world (Sarma, 2017). Factors such as gender (Henrique-Araújo, et al., 2020), age (Yoshikawa, 1981), occupation (Fukusumi, et al., 2020) behavior (Mahmoudvand, et al., 2020), education level (Hassan & Baig, 2020), climate (Liang & Gong, 2017) geographical location (Lee, et al., 2002) hygiene and economic situation (Liu, et al., 2018) are usually linked with the emergence and transmission of infectious diseases (Mani, Ravi, Desai, & Madhusudana, 2012).

Every culture has their own health belief system which provides necessary explanation about the type of illnesses, its causes, diagnosis, and the solution for the illnesses. Modern medicinal practitioners who treat diseases and illnesses which are assumed to be the results of virus, bacteria, fungus, and other microorganisms often fails to identify the key elements in the respective culture. Some people relate the occurrence of disease and illnesses to the negative effect of super natural power or disfavor to the god, goddesses, or totem. Patient compliance is heavily influenced by cultural factors. Understanding the health belief system of the people or community is a challenging task for the medical and health care practitioners. Anthropologists have a key role to play here. Because an individual's behavior affects the family, behavior and any mental illnesses that suggests an absence of self-control may create shame and guilt among the patients. As a result, patients may be hesitant to share and discuss the symptoms of illness or depression with the family members. Sometimes the people should disclose it only to the head of the family, who has the right to make decisions whether to consult the doctor or not. Many health care ideas and practices are different among ethnic groups, and each adds unique perspectives and values to the healthcare system. Language and educational barriers are also important issues where anthropologist offers a solution. Cross cultural understanding also gives treasure of knowledge about health care practices among the different cultures.

Food is another driving factor for the outbreak of a pandemic. Food intake and choice are significantly influenced by culture and beliefs.

Infectious disease epidemics have been caused and induced by dietary factors throughout the course of human history. Out of eight Public health emergencies announced by WHO as Public Health Emergency of International Concern (PHEIC), five were linked with food and eating behavior (Zhou, Zhang, Zhang, & Ma, 2020). Several cultures prefer eating raw food. More than 70% of foodborne infections have been connected to seafood in Japan, a country with plentiful marine resources and a culture that values raw foods (Scoging, 1991).

Anthropology of epidemics is the amalgamation of two broad disciplines, Anthropology and epidemiology which aims to study the health and its related issues like distribution, determination, patterns, and control of diseases in a holistic way. Many diseases' genesis, frequency and distribution are influenced by social and cultural behaviors. How people live, what they eat and think, values they believe, and what technology they practice are all important determinants (Saunders, 1954).

In traditional classification, individuals distinguish diseases and illnesses based on their symptoms and the body parts to which they are related. In traditional African system, there are three group of illness (Jelliffe & Bennett, 1960). The first are everyday complaints which are treated with home remedies, second are European diseases which are treated by western medicine properly. Third are African diseases which are very serious and not cured by any medicine. People in some societies believe that diseases are caused by not performing certain religious practices. In India, the deities' ferocious wrath is usually blamed for causing smallpox, cholera, and plague. Worship is viewed as the only treatment for ailments, and patients are not given any medications (Dube, 1955). A pilot survey and health education on small pox in North India (Bharara, 1961) provided rich data on beliefs regarding the cause of the disease. People with mental illnesses are often not admitted to hospitals in many places of Ghana (Field, 1960), not because of stigma but rather because they believe it was a result of supernatural power (Opler, 1963).

Compared to us, our predecessors led more physically busy lives. They maintained their fitness by walking long distances every day and eating a more diversified low-fat diet than we do now. Despite having a longer life expectancy than in the past, we suffer greatly by chronic illnesses as we age. The changeover to a single crop diet and settlements into villages, as a result of people began farming instead of gathering which contributed to the rise in infectious diseases. While the development of antibiotics has helped to treat many infectious ailments and increased the prevalence of chronic illnesses. Human beings have evolved and adjusted to various infectious and non-infectious diseases in their genetic and cultural level over a period. Disease-causing agents such as viruses, bacteria, or fungus are not only the factors for the cause and spread of various diseases but human behavior and culture, their relationship with the host and the environment, environment-host

relationship are also responsible factors for the cause and spread of the diseases. Host, pathogen, and environment are the three important variables in the study of infectious diseases (Cockburn, 1963).

Role of anthropologists as policy thinkers and makers

Variables that cause disease are social and cultural in nature. Disease research, as well as its causes and spread, is essentially a biocultural idea. Ideas from all the branches of anthropology are utilized in the study process (Fig 1). Under the branch of Socio-cultural anthropology, behavior, and culture of the people in relation to health and various diseases can be studied. The aspects of culture as well as the biotic, climatic, geologic, and geographic characteristics of the environment contribute to the transmission of infectious disease (Armelagos & Dewey, 1970). The questions related to the processes of health and illness should be considered from the perspectives of the unique sociocultural environments in which they occur (Langdon & Wilk, 2010). In certain places, people have managed to maintain a certain level of harmony with their surroundings. Healthcare professionals and other medical professionals who are unaware of this balance may end up failing their attempts to treat diseases with modern medicines without considering their life, values, and culture. Human physiology, disease makeup and outcomes etc. is covered by physical anthropologists. With the help of skeletal and tissue remains, art works, coprolites paleopathological reconstruction have been tried by archaeologist and physical anthropologists for various infectious diseases like tuberculosis, leprosy, American and African trypanosomiasis, intestinal helminthiasis found among prehistoric and historic population (Inhorn & Brown, 1990). Linguistic anthropologists' studies and understands the importance of language during cross cultural communication. Linguistic confusions often arise between the medical practitioner or health care worker and the patients which results in misunderstanding of the symptoms of diseases and the treatment. Applied and medical anthropologists provide solution to various human problems by suggesting policies and prevention programs.

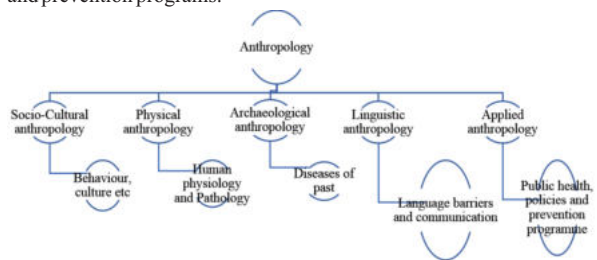


Figure 1 –Utilization of knowledge of the branches of anthropology in the study of diseases.

Five important steps that anthropologists follow in studying the culture and illnesses and their relationships are as below.

1. Understanding the etiology of disease
2. Preparing the schedule which has both open and close ended questions and to gather sufficient data on patients' knowledge and assumption of the disease
3. Interviewing the patient and family members with different schedules without any interventions or any judgments
4. Learning about the culture and culture specific health belief of the patients
5. Closely observing whether the patients are open and disclosing all the correct information and not hiding anything with the help of body language, behavior and response.

Fieldwork is a unique technique of anthropological study that allows researchers to derive varied disease results from the field. Earlier epidemiologists used fieldwork method to incur various results relating to the diseases from the field. Peter Panum (1847), a Danish physician known for his work on the epidemiology of measles, spent nearly five months in Faeroe Island conducting ethnographic fieldwork to investigate the causes of measles. He used participant observation method and gathered information regarding vegetation, lifestyle, clothing, eating habits, housing, climate, and other societal variables that contribute to the disease's cause (Peter, 2017). With

significant fieldwork, Rudolf Virchow (1848), a German physician and anthropologist, mentioned the links between social conditions and disease outcomes in his report to the government concerning the typhoid outbreak (Taylor & Rieger, 1985). John Snow, the father of field epidemiology, conducted a door-to-door assessment of the many characteristics of the cholera disease (Snow, 1849).

Anthropologists provided detailed information regarding various diseases with the help of anthropological theories and methods. Anthropologists engage themselves in the field by participating actively in the daily life of people which helps them to gain knowledge about what they have seen. Anthropologists are experts in learning the native language of the people and they communicate and gather the first-hand information using native language of the people. They proved that the subject can be well utilized in solving many human problems. These studies have provided fruitful results to consider for clinicians, epidemiologists, and other medical practitioners etc. To consider few, anthropologists have yielded valuable outcomes in connection with Kuru and Cannibalism, Echinococcosis and companion dogs, Malaria and cultural adaptation, Hepatitis surface antigen (HBsAg), Malaria and sickle cell trait etc.

KURU AND CANNABALISM

The Fore people of New Guinea suffer from a neurological degenerative disease. The Fore thought it was a curse and caused by sorcery, which they called "kuru". Early medical researchers speculated that the cause could be hereditary or environmental. Michael Alpers and Carleton Gajdusek with the help of autopsy samples identified kuru as a novel type of infectious disease that cause brain and nervous system deterioration and capable of crossing species boundaries (Spark, 2012). Anthropologists Robert Glasse and Shirley Lindenbaum were seeking for kuru indications in cultural customs and food, such as the Fore's funerary feasting habit. They found that Kuru was prevalent more among the women and children. They related the act of cannibalism to Kuru, where women's role was to prepare the corpse for the feast. Women and children eat the infected brain of the dead while remaining parts were eaten by the men (Lindenbaum, Understanding kuru: the contribution of anthropology and medicine, 2008) (Lindenbaum, An annotated history of kuru, 2015).

ECHINOCOCCOSIS AND THE COMPANION DOGS

Echinococcosis (hydatid illness) is a life-threatening parasite infection spread from domesticated livestock and dogs to humans. As a result, it occurs in locations where humans, dogs, and sheep live in proximity. The Turkana people of Kenya and adjoining Ethiopian tribes are severely affected. Medical anthropologists and geographers studying in this area have produced detailed accounts of human-dog relations. Women's "nurse dogs", which are specially trained to lick and clean children who have just defecated, are of particular interest from the perspective of echinococcosis transmission. In doing so, these nurse dogs spread infective parasitic eggs throughout the domestic environment and to their young ones. Furthermore, the Turkana women see the infectious dog feces as a traditional medical and cosmetic ingredient that is used to treat wounds, protect against evil spirits and women's skin from the damaging effects of their heavy layered necklaces (French & Nelson, 1982) (Watson-Jones & Macpherson, 1988).

HEPATITIS SURFACE ANTIGEN (HBsAg)

The Hepatitis B was not a genetic disease that passed down from parents to kids, according to anthropologists. Rather, the antigen was found in families that was caused by horizontal (person to person) and vertical mother to infant) viral transmission, a discovery made in part through participant observation of family life in the New Hebrides. These insights aided in the development of an effective hepatitis B vaccine (Dickie E., 1979) (Dickie, Knight, & Merten, 1982).

MALARIA AND SICKLE CELL TRAIT

Anthropologists and human geneticists have been studying the concept that certain genotypes transmit protection or resistance to infection over the past 40 years. Such concepts have also been proposed to explain relatively frequent genetic abnormalities that can be adaptive in one situation but harmful in another. Allison was the first to suggest that the heterozygous condition known as sickle-cell trait (inheriting the gene for common hemoglobin from one parent and sickling hemoglobin S from the other) was more common in areas of Africa where life-threatening Plasmodium falciparum malaria was endemic. Allison hypothesized that having hemoglobin S in the heterozygous state provide resistance to malaria mortality (Allison, 1954).

The prevalence of the sickle-cell trait in West Africa was attributed by Livingstone to specific cultural reasons, such as the introduction of iron tools and swidden cultivation (Livingstone, 2009). He opined that as the new technology spread, sedentism, horticulture production, and deforestation grew effectively expanding the available breeding grounds for *Anopheles gambiae*, the main mosquito vector. These alterations allowed falciparum malaria to become an endemic disease in West African agricultural nations and a selecting agent for the sickle-cell allele.

MALARIA AND CULTURE OF PEOPLE OF NORTH VIETNAM

May provides a classical example of how culture plays a significant role in understanding the process of diseases (May, 1960). He observed the intimate relationship that existed between the culture of the people of North Vietnam and the malaria vector *Anopheles minimus*. Delta people build houses on the ground with kitchen on one side and stable on the other. Fertile hill people build houses with living room of 8 to 10 ft height above the ground. Cooking is done in the living room and the livestock are kept underneath the houses. The flight ceiling of malaria vector *Anopheles minimus* is 8 ft. So, it encounters only on livestock of hill region and the cooking fumes from the kitchen avoids the vector in living area. The delta people were moved to hill region because of over population in the delta area. Here the people did not accept the culture of building the houses of the hill region. They built the houses on the ground where animals were kept on one side and cooking is done outside and taken inside to eat. This attitude of the people caused the malaria to spread to human population of delta region living in hill area.

CULTURAL BOUND SYNDROME

Culture bound syndrome; a category of illness found to be exclusive to cultural groups. They are also referred as folk illnesses and culture specific disorders. They are very important in the epidemiological studies.

The features of the cultural bond syndrome are

1. Found in specific cultures.
2. A high level of familiarity of illness in the culture.
3. People from other cultures have a complete lack of acquaintance with or understanding of the condition.
4. No objectively evident biochemical or tissue abnormalities.
5. The culture's folk medicine often diagnoses and treats the illness.

Some of the examples are Koro (Southeast Asia and Africa), Amok and Latah (Malaysia), Pa-leng (Taiwan and Southeast Asia), Dhat (India), Tajjin kyofusho (Japan) (Simons & Hughes, 1985).

CONCLUSION

Culture is constantly evolving. The impact of culture on health is significant. It influences how people understand their health, illness, and death. People's perception of causes of diseases, maintenance of their health, how they feel and express their pain and illness, where they go for help, and what kind of treatments they choose are based on their culture. Patients and healthcare workers have different cultural background. Cultural bias could lead to extremely different preferences and perceptions related to health. The ability to recognize and work with such disparities is referred to as "cultural competency." This viewpoint enables healthcare professionals to precisely inquire about other ideas or sources of care and incorporate fresh knowledge into diagnosis and treatment of diseases.

Thus, knowing a patient's culture can help to build trust, improve care, increase acceptance of diagnosis, and increase adherence to therapy. Anthropology offers such a holistic approach to the study of diseases. With the help of ethnographic fieldwork, Participant observation, Case studies, Anthropologists are contributing solutions to various human problems. Many endemic diseases across the world are becoming epidemic which is a concerned issue. Million and billion people have died and suffered from Covid-19 and it continued to show its destructing nature on the people. Several new diseases are emerging and damaging the lives and livelihood of the people. Hence anthropologists are required to engage in studying these diseases to find out the root cause and to offer solution. Without bias or prejudice, anthropologists aim to learn, examine, and listen in order to better understand behavior and how it affects the several aspects of health and diseases. Various policies, prevention and eradication programs are very much necessary for control of old and new diseases. Government institutions, NGO's, Health care facilities and

organizations should employ more anthropologists at block or district level to safeguard the lives of the people in future from diseases and illness. Sadly, anthropologists were having less or no space in the several fields of public health. Anthropologists are the real policy makers. Anthropologists can make valuable decisions regarding the emergence and transmission of infectious and non-infectious diseases. This paper suggests the employ and involvement of anthropologists in dealing the infectious diseases and to find solution of various human problems for the welfare of our present and future generation.

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