

## **DISEASE PLAYGROUNDS: A SOCIOLOGICAL CONCERN**

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### **ABSTRACT**

*The dramatic impacts of air, marine, and land pollutions influencing disease outbreaks have continued to be felt all over the world. Previous studies have discussed the emergence and reemergence of disease outbreaks, but dearth of information exist on how diseases have invaded human environment as playgrounds in recent times. The increase of disease playgrounds is a great burden to sociologists in today's social currents.*

*This study therefore explains how these diseases have invaded human grounds, settled within the zoonotic and anthropogenic environments as playgrounds for its growth and spread and also increased the potential of contracting legionnaire diseases, cryptosporidium and giardiasis parasites in drinking water, respiratory diseases, campylobacteriosis, and other potential disease in society.*

*This study therefore, show that the prerequisite for a successful control of disease playgrounds is the participation of all health professionals with the aim of developing practical plan to both reduce and eliminate the incidence.*

**Key Words:** Anthropogenic, biosphere, disease, playgrounds, Sociology

### **Introduction**

A playground is a designed place where a particular group of people choose to enjoy themselves such as, playing field, recreation ground, amusement park (splash parks, swimming pools), and adventure playgrounds.

A disease playground is that conducive environment where particular taxa of diseases easily develops and redistributes itself through various channels such as, land, marine or air space.

Increases in population growth and mobility have enhanced pathogenic transmissions and intensified the difficulty of interrupting diseases spread as new diseases have emerged through host or range shift of known pathogens (Butcher and Ulaeto 2005; Harvell, et al., 1999).

Annually, an estimated 16% of deaths worldwide and 30% of all disability-adjusted life years (DALYs) with a total of 1.5 billion per year result from infectious diseases (WHO, 2004; Smart Global Health, 2017)

Disposed body secretions and excretions (blood, feces, urine, saliva, respiratory secretions and nasal fluid) of both humans (ill persons) and animals wastes exposed to land, marine and sea is an anthropo-zoonotic effect that have caused (nosocomial infections, and other) potential diseases in human environments (Ballamy, Laban, Barrett, and Talbot, 1998; O'shea and field, 1992; Pruss-Ustun, and Covalan, 2006).

This shows that human activities influences the biosphere as incubators and conveyors of disease agents, especially through recreational exposure or consumption of contaminated marine and land foods (Harvell, et al., 1999; Fleisher, 1996; Lipp and Rose, 1997).

It was an unfortunate conclusion, that microorganisms and pathogens that led to many deaths in societies all over the world had been beaten, but it was soon discovered that the disease playgrounds influenced the pathogens and microorganisms to quickly adapt and cleverly change to resist the presence of antibiotics (WHO, 2001).

The paucity of baseline-epidemiological information and weak participation of all related health professionals has affected decades of intense study of the biological agents structuring natural communities, and the ecological and evolutionary impact of diseases in the ocean remains unknown, even when these diseases affect economically and ecologically important species (Harvell, Kim, Burkholder, Colwell, Epstein, Grimes, Hofmann, Lipp, Osterhaus, Overstreet, Porter, Smith, and Vasta, 1999).

The consequences of not controlling theses disease playgrounds over the years has shown from an annual worldwide statistics that the record of 1.7 million deaths from diarrhea diseases, 1.5

million deaths from respiratory infections and viruses causes an estimate of 60% of human infections; with a supporting indication showing that mass mortalities due to disease outbreaks have recently affected major taxa in the oceans and lands (Pruss-Ustun and Covalan, 2006; Berker, Stevens, and Bloomfield, 2001; McElhaney, 2003; Harvell, et al., 1999; WHO, 2001).

In addition, it appears that most new diseases are not caused by new micro-organisms, but rather by known disease agents infecting new or previously unrecognized hosts. One example is the contact from the infected sled dogs (used during the Antarctic expedition) with the crab eating seals in Antarctica, resulted to canine distemper virus (CDV) (Havell et al., 1999; Bengston et al., 1991)

Some of the incubators fostering disease playgrounds are inanimate objects (fomites) or materials on which disease producing agents may be conveyed and the other is the reservoir (a place where potentially pathogenic microorganisms can survive and may be transferred through certain vectors onto patients) (WHO, 2001).

The disease playgrounds on which some infections develop has compromised some of the host immune systems and served as a reservoir for other disease agents; and the added burden on waste water treatment system is likely to increase the probability of serious human fecal contamination of drinking water by variety of pathogens including hepatitis A, Coxsackie, and Norwalk-like viruses (Lahvis et al., 1995; Haas et al., 1993).

### **Disease playground in the Marine**

A disease playground in the marine is that aquatic conducive environment where particular taxa of diseases easily develop and redistributes itself, through various channels provided within marine space.

In identifying these disease playgrounds, records indicates that human activities influenced the increasing frequencies of compelling accounts showing, mass mortalities from outbreaks of coralline algae, lethal orange disease and coralline fungi disease among marine mammals, plants,

vertebrates and invertebrates in the Caribbean, Indo specific communities, North Atlantic and the Northwestern Europe which have resulted to the dramatic shift of structure on unprecedented scales (Harvell, et al., 1999).

In addition to identifying this disease playgrounds, early records have shown that epidemic outbreaks have one of their first signals from the oceans:

Epidemics of cholera follow major routes of commerce. The disease always appears first at seaports when extending into islands or continents (Snow, 1849 in Health and Globalization, 2017).

The conditions favoring disease playgrounds in a large scale, is the changing climatic, environmental conditions and warming oceans which have all increased the prevalence and virulence of existing diseases and facilitated it into existence of new disease transmissions, thereby increasing living organisms susceptibility to these disease outbreaks (Anderson, 1998; Havell et al., 1999).

It has also added disrupting challenges on existing food and water systems and posed devastating implications for development and livelihood, thereby making the oceans, incubator and conveyor of human diseases (Havell et al., 1999; Tersoo & Ugochukwu, 2014).

### **Disease playground on Land**

A disease playground on land is that conducive environment where particular taxa of diseases easily develops and redistributes itself through various channels provided within the earth space

To trace some of the conditions favoring disease outbreaks on human environments, there is need to understand the means of disease transmissions and the cycle of infections within and outside human settings.

According to the WHO (2001), the cycle of infections describes the process leading to acquiring infection within human environment, which can be made possible through the means of transmissions that has been invaded by the certain disease as its playgrounds.

The means of transmission include: Bloodborne (sexual transmission, injury or inoculation); Droplet (like airborne, droplet rather spread through close contact with an infected person or environment rather than been suspended in the air. Eg. Sneezing, coughing or contact with an infected bronchoscope); Contact through Fomites and Reservoir (contact with an infected objects or places that has retained disease substances can lead to transmission of the diseases); Vectorborne (usually through arthropods and anthropoids such as insects and animals) (WHO, 2001).

And the prevalence of these transmissions from disease playgrounds is most common in low-income countries. The effects have shown from the cycle of emergence and reemergence of diseases in Europe and Africa that lands or human grounds has become the incubators and conveyors of these diseases in society.

### **Disease playground in the Air**

A disease playground in the air is that air conditioned environment where particular taxa of diseases easily develops and redistributes itself through various channels provided within air space.

Part of the burden to fulfill developmental aspirations of man and animal and maintain the sustainability of environment to provide all necessary life support and materials, is dependent on the suitability of the climatic conditions and air space (Obioha, 2009).

Today, it is observed that there is an increased anthropogenic factor in climate change affecting air space involves threats posed by (burning of fossil fuel, gas flaring., etc.,) that either emits large amount of greenhouse gaseous substances into the atmosphere that depletes the ozone layer or from those activities that reduces the amount of carbons absorbed from the atmosphere

(Adajuwon, 2004; Intergovernmental Panel on Climate Change, 2007; Tersoo & Ugochukwu, 2014).

Conditions favoring this disease outbreaks include; airborne (spray and inhalation of small infectious particles suspended in the air for a long period of time) and climate change has been described as the most significant environmental threats of the 21<sup>st</sup> century (WHO, 211; Tersoo & Ugochukwu, 2014). The air space as incubator and conveyor of human diseases has shown a long term changes in the pattern of temperature and precipitation on pest and diseases patterns and modified the lives of humans and agricultural produce from warming effects (Edame et al. 2001; Tersoo & Ugochukwu, 2014)

### **Conclusion**

Disease playgrounds and its outbreaks have been found to be facilitated by the anthropogenic effects of habitat degradation and pollutant inputs affecting less apparent species, many of which may be disappearing without notice (Osterhaus et al., 1995; Carlton, et al., 1991).

These influences the level of infectious diseases in societies, which in turn affects the level of infection on those both in and outside of the hospitals, and thus affecting the burden on healthcare facilities (WHO, 2001).

This theoretical paper lacks standard epidemiological data for diseases playgrounds. It limits the ability to analyze the changes in population of disease dynamics by using the term “playground”, posed difficulty to assess the impact of diseases on host population and associated communities. This is due to the fact that there are not many known scholarly literature on diseases playgrounds known to the researcher during the process of carrying out this research.

### **Recommendation**

The study recommends collaborative efforts from health investigators from all discipline, including social scientists to explore findings that will increase awareness on disease playgrounds that has become a great burden to sociologists in today’s social currents.

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