

## **Social variables associated with airborne diseases**

### **Abstract**

Compatibility between humans. The relationship began from time immemorial. Humans interact with the environment in which they live, and thus it does not only guarantee access to the air, sea, and land, but also includes the various living organisms with which humans participate in their world. In recent years, there is agreement that this ratio has begun to gain interest. All human beings who live on this earth, and the reason for this is the development in technology, which has increased man's ability to subject the environment to his will, and in this a UNESCO study at the Tbilisi Conference in March 1983 says: There is an interaction between man and then it has appeared since the human species appeared on earth and formed This interaction is an inherent part of the human contracts that go through stages of life where they want to change their relationships with others.

The environment created by man, along with the effective social environment, is capable of changing the environment by itself, and what contemporary society faces from the societies that preceded it was radically distinguished in this, and soon the scientific and technological revolution in the environment will be able to learn it

### **the study Problem :**

Recently, the spread of airborne diseases has increased, and of course the world is now facing the Corona pandemic, which is the airborne virus that infects the entire world. The number of infections has exceeded 100 million. The researcher believes that social changes and the spread of some negative habits are what led to an increase in the spread of airborne diseases, which are Diseases that appear to be medical, but are actually more than social. In their causes, they are behavioral and in their impact, they have serious social effects that may lead to more serious repercussions.

In a study entitled Tackling zoonoses in a crowded world: Lessons to be learned from the COVID-19 pandemic

Which explained that it is among a number of lessons for humanity. One is to transform our connections with nature, especially wildlife given the likely origin of COVID-19 from illegal wildlife trade. Similar to vector-borne diseases (VBD, vector-borne diseases), the COVID-19 pandemic follows relevant patterns (e.g., no effective or available vaccines, difficult to diagnose, highly localized geographic foci of infection, non-human reservoirs) that we need urgently as preventive measures. To achieve this goal, governments around the world must strive to prevent further destruction of natural environments that serve as buffer zones for humans against zoonotic agents (among other health risks), protect biodiversity and its attendant causes (such as global change), and prevent The use of wildlife is an illegal asset. We report here that some VBD prevention strategies can also be applied to prevent zoonotic diseases, including COVID-19 or any variant potentially associated with environmental conditions. The future occurrence of a pandemic will depend on whether governments adopt these goals now (2)

### **Objectives of the study :**

The study aims to: identify the social variables associated with airborne diseases, and several sub-objectives stem from it:

Identify the relationship between age, education, occupation, crowding and airborne diseases.

Identify the relationship between airborne diseases.

Identify the relationship between airborne diseases.

Identify the relationship between airborne diseases

## **the importance of studying**

Airborne diseases are among the most common diseases, and their treatment is considered one of the long-term treatments that are costly to the family. Environmental pollution has serious effects on human health in general. Air pollution from car exhausts, factories, and other air pollutants may kill many people. Many studies have proven that these pollutants generally affect human health, especially the spread of the Corona virus, which has caused infections exceeding 100 million. It led to the death of large numbers, which prompted the World Health Organization to consider it a pandemic.

From this, we find that the importance stems from the following:

- 1- The increasing size, severity and seriousness of airborne diseases
  - 2- The importance of the role of the social environment in the occurrence of airborne diseases.
- The study also aims to: identify the social variables associated with airborne diseases.

## **Study hypotheses:**

The main hypothesis is that there is a significant relationship between some social variables and the incidence of airborne diseases

Airborne diseases:

Airborne diseases are diseases that are transmitted through the air and infect other individuals. Linguistically, its definition is: airborne diseases: diseases that are transmitted through the air. Some diseases can be caught simply by breathing. The airborne disease can spread when people with certain infections cough, sneeze, or talk, releasing nasal and throat secretions into the air. Some viruses or bacteria fly and get stuck in the air or land on people or other surfaces. When a person breathes in airborne pathogens, they live inside him. Germs can also be picked up when you touch a surface that contains them, then touch your eyes, nose, or mouth. Because these diseases are airborne, they are difficult to control. Types of airborne diseases: Many diseases spread through the air, including: Coronavirus - COVID-19: The rapidly spreading coronavirus, SARS-CoV-2, and the disease it causes, COVID-19, have been responsible for millions of infections and hundreds of thousands of deaths worldwide. World level in 2020. [3] Many common diseases can be spread by airborne transmission, at least in some cases, such as: anthrax (inhalation), chickenpox, influenza, measles, smallpox, cryptococcosis, and tuberculosis.[4]

## **Airborne diseases**

Many common diseases are transmitted through the air, including:

The common cold is caused by several types of viruses.

Influenza is a viral disease.

Chickenpox is caused by the varicella-zoster virus.

Mumps is a common viral disease during childhood that causes swelling of the parotid and salivary glands and other epithelial tissues.

Measles is a highly contagious viral disease, and one of the most important causes of death among children in the world.

Whooping cough (pertussis) is a highly contagious bacterial disease that causes swelling of the airways resulting in a persistent dry cough.

Tuberculosis is a bacterial disease that attacks the lungs. Shortness of breath, cough, inability to speak for a long time

Diphtheria is an uncommon bacterial disease that affects the respiratory system.

Meningitis is an uncommon bacterial disease that causes swelling of the tissues surrounding the brain and spinal cord.

SARS-CoV-2 is a highly contagious viral disease caused by the coronavirus COVID-19:

## **Symptoms of airborne diseases**

Airborne diseases usually cause one or more of the following symptoms:

Inflammation of the nose, sinuses, throat or lungs. Coughing and sneezing. Congestion and runny nose. Enlarged glands. Headache and general body pain. Anorexia. Fever and fatigue.

Prevention of airborne diseases

Avoid contact and direct contact with people who show signs of illness.

Stay home when sick. Do not let people who are more vulnerable to illness, such as children, come into direct contact with you.

Wear masks to avoid spreading germs.

Cover the mouth when coughing or sneezing with a tissue or the elbow if a tissue is not available.

Wash hands regularly, especially after coughing and sneezing.

Avoid touching your face or the faces of others with unwashed hands.

Use reliable air purifiers.

The World Health Organization indicates that poor ventilation in homes and buildings negatively affects air quality and helps spread airborne diseases, as some pathogens can be transmitted through air conditioning systems, especially when they are not well maintained, and when ventilation is not good.

While well-designed natural ventilation may be better than using air conditioning systems in preventing airborne diseases, it may sometimes not be appropriate, especially in hospitals and laboratories where certain degrees of temperature and purity must be maintained, and ventilation can be a problem. Natural pollution poses a risk if the outside air is polluted, which is often the case, especially in cities. [5]

## **Overcrowding and disease**

Crowding has a significant impact on chest diseases and their spread, as the percentage of oxygen decreases in crowded places, especially closed ones, which makes the atmosphere more suitable for chest diseases and their transmission from one person to another. In many studies, for example, in a study entitled Residential crowding and severe respiratory syncytial virus disease among infants and young children. Severe residential crowding and respiratory syncytial virus disease among infants and young children: “The study determined whether crowding in the home is associated with an increased risk of severe respiratory syncytial virus (RSV) disease in children younger than 5 years and studies conducted on residential crowding as a factor.” The risk of chest diseases and confirmed that children under the age of 5 years are vulnerable to chest diseases (6)

## **air pollution**

Although oversight has tightened in recent years, epidemiological studies continue to show links between adverse health effects and outdoor air pollution. These harmful effects occur at pollutant levels well below those encountered in earlier air pollution disasters, and in some studies at concentrations close to or below national standards. Although the relative risk tends to be low, the population attributable risk is important given the large number of people exposed to air pollutants. Exposure to outdoor air pollution is associated with numerous effects on human health. These adverse health effects are primarily those related to the respiratory system, such as increases in hospital admissions, decreases in lung function, worsening asthma, and increased respiratory tract infections and COVID-19. Some air pollutants, especially particulate matter, are also associated with adverse extrapulmonary effects, especially in the cardiovascular system. Cardiac effects likely contribute to the increased mortality associated

with exposure to air pollutants. Although healthy individuals may be affected, certain subgroups of the population, especially those with heart disease, the elderly, and children, are more susceptible.

In the study "Outdoor air pollution and respiratory health in patients with COPD," the study showed the harmful effects of outdoor air pollution on deaths and hospital admissions in patients with obstructive disease. Chronic obstructive pulmonary disease (COPD), this study demonstrated the effects of outdoor nitrogen dioxide, ozone, sulfur dioxide, particulate matter (PM10) and black smoke on worsening, respiratory symptoms and lung function in 94 patients with COPD in east London (6. (. (

### **Theories explaining the disease:**

The researcher will review some theories explaining the disease, which are:

First, the functional theory of disease

This theory depends on the existence of a structure whose function is to contribute to the preservation of society. Radcliffe defined functional theory by saying, "The function of any recurring activity is the role it plays in social life as a whole." In light of this, we find that the definition in the concept of functional theory includes the idea of the existence of a structure by which it is formed. Relationships between its constituent units. Maintaining the continuity of the building is achieved through a continuous process that represents the activities of its constituent units. (7)

In this definition, the focus was on two aspects:

a. The existence of a structure, and this structure includes units and a relationship between these units within a social system.

B. This building has a function, meaning that it contributes and has a role in the continuation of society.

This theory uses the analogy between society and the organic organism. The organic organism consists of several parts that all contribute to its survival and continuation of existence, preserving its overall entity. With this same concept, the proponents of the functional theory view society as consisting of a group of systems that contribute to the survival and continuation of society as a whole, maintaining its balance. This contribution is the function that the partial system performs in order for the whole to continue, and it is similar to the functions that the body's organs and systems perform in order for it to continue. Functionalists, then, rely on the idea of the stability of the social system, and this means its connection to the idea of reform without wealth. In the event of infection with influenza and so on, the patient may continue. He performs his normal roles during ill health and may seclude himself for a few days. Finally, illness, in Parsons' opinion, is a state of disturbance in the natural function of the individual. It includes the state of the body as a biological, psychological, and social system, and therefore it is always linked to biological, social, and environmental causes. Parsons believes that illness is not a physiological process. Purely only, but it is also a phenomenon that has a social origin and social effects at the same time, meaning that the disease has its social causes represented in some behaviors, customs, or social relationships, and it also has its social effects or consequences. Illness relieves a person from his normal social role and job responsibilities, meaning that illness leads to a temporary deviation from the usual requirements of the role, which threatens the stability and stability of the social system. (8)

2 - Theory of conflict (Marxism) and disease.

Some sociologists believe that "conflict" is the most important characteristic of modern social change. Perhaps the most famous person who spoke about the subject of conflict from the nineteenth century was Karl Marx. It can be said that historical materialism is the core of Marx's theory of society. Marxism represents a sociological theory and a living method in analyzing the changing social reality.

This theory focuses on two basic assumptions.

The first: - is that the economic factor is the basic axis of society's construction and

development, which consists of the technological means of production, and also determines the social organization of production and production relations.

The second: It is the mechanism of change that should be understood in light of its various stages. This means that each system of economic production is in a state of stability when the possible systems are most efficient at that time. In fact, the strength of Marx's sociological theory lies mainly in that it is the first organized case in explaining social structure and social change. It has also contributed to explaining the dialectical relationship between the basic structure and the superstructure, if functionalists believe that the equilibrium model, which analyzes the social environment on the basis of its functional role to maintain the current state, and according to that deviation represents the problem of the system. On the contrary, we find that Marxist theory emphasizes the importance of social change. He sees conflict as a basic condition for change in society. In light of this, the patient's role may prove social structures that put pressure on individuals or classes in society. Conflict analysis shows how the patient's role prevents individuals and groups from confronting the real sources of pressures and tensions inherent in the social structure. It also explains how to reduce them. One of these pressures may become a source of resentment and conflict, and thus it becomes conservative and sometimes counter-revolutionary behavior to curb social change. Marxism is concerned with the class system of health, meaning that health is linked to the class, which in turn depends on the basis of their relationships with the means of economic production, social roles, wages, education, housing, and health care. Marxism explains disease. As a result.

### **Evolutionary theory and disease:**

The proponents of this theory view society as a living, organic being that goes through a number of stages and states in its development. It moves from a state of simplicity to another, more complex state. Each new stage in the ladder of societal development is more advanced than the previous stage until it finally reaches the special progress or the highest stage. Perfection. Durkheim believes that society witnesses two stages:

The first stage :

In which society is simple and specific, the level of specialization and division of labor is low, because the family and religious ties achieve and guarantee the cohesion of society.

The second phase :

It witnesses a greater degree of specialization and division of labor, and people are linked to each other through ties based on contracts and common interests. Thus, we find that the theory of evolution, like a living organism, passes through several stages, and each stage has its own distinctive features and characteristics from the inside, but in general, these stages are characterized by simplicity, and then society moves more and more. Towards complexity and entanglement (7)

Method used: The study relied on the sample social survey method.

The study sample

#### **Spatial field of study**

The researcher chose Cairo Governorate, as Cairo is characterized by being a cultural center and having a large population. It also has many different and diverse cultures, and it has the highest incidence of chest diseases.

#### **Human field of study**

The sample consists of 100 individuals who have recovered from Corona disease, due to the danger of direct contact with patients. Public and private hospitals were also chosen.

The sample of patients is selected by going to government hospitals, as well as some private clinics in Heliopolis and Shubra, in order for the sample to be truly representative of the classes of people from upscale neighborhoods (Heliopolis), popular neighborhoods (Shoubra), and government hospitals (Sayed Galal General Hospital). He conducted interviews with the

respondents in those clinics and hospitals.

The sample consisted of 100 individuals, and the sample was divided into 25 from the neighborhoods of Heliopolis and Nasr City, 35 from the neighborhoods of Shubra and Rawd al-Farag, and 40 from Sayyid Galal General Hospital (Bab al-Sharia.)

**Table No. (1) shows the research sample in terms of age**

variable	Number	Percentage
From 20: less than 30	3	3%
From 30: less than 40	22	22%
From 40: less than 50	26	26%
From 50: and above	19	19%

Table No. (1) shows that the greatest percentage was between the age of 50 and above, where the percentage was 49%, followed by the age group from 40 to less than 50, where the percentage reached 26%, and then finally the age group from 30 to less than 40 years was 22. %, then followed by the age group from 20 years to less than 30 years, which is 3%. From the table it is clear that the oldest people are the most vulnerable to the spread of diseases and they are the most vulnerable to airborne diseases.

**Table No. (2) shows the research sample in terms of work**

variable	Number	Percentage
Worker	24	24%
employee	5	5%
Doctor (medical personnel	50	50%
free businesses	15	15%
With pension	6	6%

Table No. (3) shows that the largest percentage of the research sample who contracted the disease is 50% of workers in the medical field, who are (doctors, nurses, hospital workers in general - and ambulance men), as the percentage reached approximately 50% of the research sample, while the next percentage was The worker percentage is 24%, followed by the self-employment percentage at 15%, then the pension percentage at 6, then the last percentage is the employee percentage at 5%.

It is clear from the table that the large percentage of exposure to airborne diseases are workers in the medical field, which are doctors, ambulance workers, nurses, and workers in general in hospitals, and they are more susceptible to infection than their counterparts. This is followed by the percentage of workers and self-employed workers, who are also exposed to contact with infected groups. We find that the lowest percentage is for employees. This was due to the speed of the measures taken by governments to reduce employment and reduce crowding, which led to reducing the spread of diseases among this group.

**Table No. (3) shows the research sample in terms of the number of family members**

variable	Number	Percentage
From 1: less than 4	8	8%
From 4: less than 8	60	60%
From 8: and above	32	32%

Table No. (3) shows that the largest percentage of those infected were among those living in families consisting of 4 to 8 individuals within one family, at a rate of 60%, followed by a percentage of 8 or more in one family, at a rate of 32%, then followed by the smallest percentage of 1 to 4 individuals per family, at a rate of 8%

**Table No. (4) shows the research sample in terms of the presence of individuals residing at home**

variable	Number	Percentage
Yes	80	80%
No	20	20%
	0	0%

Table No. (4) also shows, regarding crowding, that 80% of those infected had other individuals living with them in the house, and 20% had no other individuals living with them, which confirms that crowding in the home leads to an increase in the incidence of airborne diseases.

**Answering the study assignments**

First: The first hypothesis was proven correct, as the results indicated that there is a significant relationship between some social variables and the incidence of airborne diseases.

Results and recommendations

The hypothesis was proven correct, as the results indicated that there is a significant relationship between some social variables and the incidence of airborne diseases.

- ١ There is a significant relationship between age and disease, and from Table (1) it is clear that the higher the age, the greater the chance of disease spreading.

- ٢ Medical workers are the most infected with the disease.

- ٣ Crowding in the apartment played a role in the spread of diseases. We find from Table No. (3) and Table No. (4) that a large percentage of those who contracted the disease lived in crowding.