**AFE BABALOLA UNIVERSITY**

**COLLEGE OF HEALTH SCIENCES**

**DEPARTMENT OF HUMAN ANATOMY**

**ASSIGNMENT**

**BY**

**BELLO AISHA**

**17/MHS07/005**

**ON**

**ANA308**

**EMBRYOLOGICAL MECHANISM AND TERATOLOGY AND REPRODUCTIVITY TECHNIQUES**

**APRIL, 2020**

1. **From our understanding of teratology, can we say Corona virus is a teratogen and if No/Yes, justify your answer**

Teratology the branch of medical science concerned with the development of physical abnormalities during the fetal or early embryonic stage, Teratogens are substances that may produce physical or functional defects in the human embryo or fetus after the pregnant woman is exposed to the substance. Alcohol and cocaine are examples of such substances. Exposure to the teratogen affects the fetus or embryo in a variety of ways, such as the duration of exposure, the amount of teratogenic substance, and the stage of development the embryo or fetus is in during the exposure. Teratogens may affect the embryo or fetus in a number of ways, causing physical malformations, problems in the behavioral or emotional development of the child, and decreased intellectual quotient (IQ) in the child. Additionally, teratogens may also affect pregnancies and cause complications such as preterm labors, spontaneous abortions, or miscarriages. Teratogens are classified into four types: physical agents, metabolic conditions, infection, and finally, drugs and chemicals. The fetus is most susceptible in the 3rd–8th weeks of pregnancy during organogenesis in the embryonic period; after 8 weeks, growth and function are affected. The earlier the exposure to the teratogenic agent in utero, the more severe the defects are in the embryo/fetus.

*What are coronaviruses, COVID-19*

According to World Health Organisation (WHO) Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes coronavirus disease COVID-19.

*What is COVID-19?*

COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019.

*Is COVID-19 the same as SARS?*

No. The virus that causes COVID-19 and the one that caused the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 are related to each other genetically, but the diseases they cause are quite different. SARS was more deadly but much less infectious than COVID-19. There have been no outbreaks of SARS anywhere in the world since 2003.

Covid-19 virus is a new virus which affect the Respiratory system and doesn't affect the reproductive system, therefore corona virus is not a teratogen and there is no evidence that it had affected any developing embryo neither is there any cure that will cause embryonic defect.

**2. what are the impact of ageing and environment in the outbreak of this Novel Covid 19**

According to World Health Organisation, the Novel Covid 19 affect both old and young, though there is different in mortality rate with the World record so far, most people who suffer and die from this novel covid 19 virus are about 50 to 60 years of age above with many having an underlying illness such as heart diseases, diabetes etc. The fatality rate for people over 80 from COVID-19 is almost 15% according to data from China.

*Why are the elderly more vulnerable to coronavirus?*

There are both physical and social reasons. Older people don't have as strong an immune system so they are more vulnerable to infectious disease. They’re also more likely to have conditions such as heart disease, lung disease, diabetes or kidney disease, which weaken their body’s ability to fight infectious disease. In many countries, they are more likely to be in institutionalized settings like a nursing or retirement home, or living with family in a more crowded situation where there's a greater risk of infection. The elderly might also have isolation or mobility challenges. So because they're isolated, they can't get information about what to do, or they're not able to get food they need if stores are out of stock and things become more difficult. In many societies, seniors are more likely to live in poverty, which makes it more difficult for them to get the things they need and to take care of themselves. Poverty presents a whole range of challenges pertaining to health.

There's a direct correlation between mortality and age. So if you're 60 to 69, the mortality rate is at 3.6%. At 70 to 79, it’s 8%. And if you're 80 or above, it’s 15%. In some of the data I’ve seen, it’s even higher, at 18%. The elderly are more likely to get acute respiratory distress syndrome, the acute lung injury that is causing many of the deaths. But it seems the virus is also more likely to affect the heart than any similar viruses, so they're actually seeing people dying from heart attacks who have COVID-19. A dialysis centre in Wuhan had a number of patients die from coronavirus without any pneumonia, so it just stresses the body in general. It doesn’t have to be the pneumonia that kills them.

There may be little or no environmental effect on covid 19 virus because it can spread both in cold and hot weather. Covid 19 tends to spread more in a contaminated environment, it spread by droplets from the infected patient mouth when talking or coughing and the nose when breathing out or sneezing, this droplets moves about 1m to 1.5m from the patient and fall on any surface available and the person closed to the patient might get infected by breathing in those droplet containing the virus or by using hand to touch the contaminated surface and using the same hand to touch his mouth, nose or eye. The person will become infected that's why it is recommended that everyone should give distance of about 6 feet apart because the virus cannot travel up to that 6 feet and also avoid hand shaking or contact with anyone. The virus does not move unless we move.

**3. Summarise the importance of Oogenesis and spermatogenesis**

The process of formation of sperms is called spermatogenesis. It occurs in the seminiferous tubules of the testes. The seminiferous tubules are lined by germinal epithelium. The important of spermatogenesis are:

(i) During spermatogenesis, one spermatogonium produces four sperms,

(ii) Sperms have half the number of chromosomes. After fertilization, the diploid chromosome number is restored in the zygote. It maintains the chromosome number of the species,

(iii) During meiosis I crossing over takes place which brings about variation,

(iv) Spermatogenesis occurs in various organisms. Thus it supports the evidence of the basic relationship of the organisms.

The process of formation of a mature female gamete (ovum) is called oogenesis. It occurs in the ovaries (female gonads). It consists of three phases: multiplication, growth and maturation. The important of oogensis are:

(i) One oogonium produces one ovum and three polar bodies.

(ii) Polar bodies have small amount of cytoplasm. It helps to retain sufficient amount of cytoplasm in the ovum which is essential for the development of early embryo. Formation of polar bodies maintains half number of chromosomes in the ovum.

(iii) During meiosis first crossing over takes place which brings about variation.

(iv) Oogenesis occurs in various organisms. Therefore, it supports the evidence of basic relationship of the organisms.

**4. Describe what you understand by personal hygiene and disaster; hence state their correlation if there any.**

Personal hygiene may be described as the principle of maintaining cleanliness and grooming of the external body. Hygiene is a series of practices performed to preserve health . According to the World Health Organization (WHO), "Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases." Personal hygiene refers to maintaining the body's cleanliness.

*Good personal hygiene habits include:*

1. washing the body often. If possible, everybody should have a shower or a bath every day. However, there may be times when this is not possible, for example, when people are out camping or there is a shortage of water
2. If this happens, a swim or a wash all over the body with a wet sponge or cloth will do
3. cleaning the teeth at least once a day. Brushing the teeth after each meal is the best way of making sure that gum disease and tooth decay are avoided. It is very important to clean teeth after breakfast and immediately before going to bed
4. washing the hair with soap or shampoo at least once a week
5. washing hands with soap after going to the toilet
6. washing hands with soap before preparing and/or eating food. During normal daily activities, such as working and playing, disease causing germs may get onto the hands and under the nails. If the germs are not washed off before preparing food or eating, they may get onto the food
7. changing into clean clothes. Dirty clothes should be washed with laundry soap before wearing them again
8. hanging clothes in the sun to dry. The sun's rays will kill some disease-causing germs and parasites
9. turning away from other people and covering the nose and mouth with a tissue or the hand when coughing or sneezing. If this is not done, droplets of liquid containing germs from the nose and mouth will be spread in the air and other people can breathe them in, or the droplets can get onto food

A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins.

Three types of disasters are:

Natural - Hurricanes, tornadoes, earthquakes, floods, volcanoes, etc.

Technological - Chemical releases, power outages, natural gas explosions, etc.

Man-made - Terror attacks, race riots, mass shootings, etc.

Clinical correlation of personal hygiene and disaster

1. personal hygiene have lot of benefit as we all known good health is wealth, and prevention is better than cure, maintaining good personal hygiene help to prevent all forms of infections, with the recent outbreak of Novel Covid 19, the WHO recommend good personal hygiene such as regular washing of hand to prevent contracting the Novel Covid 19 virus.
2. Good personal hygiene help maintain good health.
3. Disaster have done more harm than good by leading to loss of lives and properties
4. Disaster only help to reduce world population where is no increase in production and there is uncontrollable increase in population, therefore the available resources is insufficient. Disaster will reduce the population thereby reducing insufficiency of resources available.