



# **CLIMATE CHANGE AND THE MENTAL HEALTH OF THE OLDER ADULTS**

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### **Abstract**

This paper dwells on climate change and the mental health of the older adults. Climate change being an alteration of the earth's general condition mainly caused by green-house effects and ozone layer depletion causing global warming has not been considered a favourable condition globally. Emphatically, physiological changes in the ageing adults make them vulnerable especially with exposure to adverse conditions such as climate change. Though all age brackets are affected by intense/unfavourable weather condition but the older-adults remain the most hit because of weakness in the whole body system, decreased mobility, isolation, loneliness, not being active and agile doing things as in their younger times. Some elderly have chronic illnesses that prevent them from helping themselves and having access to resources, what they desire, need and want. The paper explains the effects of climate change on the environment that affects the health of the elderly, describes the challenges facing them, and coping strategies that can be adopted. The researcher therefore concludes that climate change affects the older adult mental health and well being and their condition has to be given proper attention in order to maintain long life span in humans. Based on the conclusion, the researcher recommends among all that the government should establish aged homes in all the 36 states of Nigeria where the elderly are harboured and secured for emergencies.

### **Keywords**

Climate change, mental health, older adults

### **Introduction**

Climate change has caused the earth environment to have a shift from the original nature to uncertain conditions that are harsh and unpredictable. One can easily reason that man and his environment have been affected in various ways. Inter-governmental panel on climate change (IPCC) (2013) which consisted of about 1,300 scientists from the United States and other countries forecast that global climate change has already had observable effects on the environment. There are losses of sea ice, accelerated sea level rise and longer more intense heat waves, frequent wild fires, duration and intensity of tropical storms and longer period of drought in some regions. According to third and fourth National Climate Assessment Reports (2017)

which is not limited to United States but globally predicts that change will continue through this century and beyond. On that note, temperatures will continue to rise, frost-free season (and growing season) will lengthen, there will be changes in precipitation patterns, more droughts and heat waves, hurricane will become stronger and more intense, sea level will rise 1-8 feet by 2100 Arctic likely to become ice free and other notable changes in the regions. In Nigeria of today, the researcher is putting it that there have been absolute changes in weather and climate. Unpredictable time for rainfall, increase in heat wave, intense scorching sun, lakes breaking up, plants and animals ranges being shifted, and trees produce flowers and fruits in unpredictable manners, harmattan surfaces anytime

and suite unpredictable.

According to the IPCC (2013), the extent of climate change effects on individual region will vary over time and with the ability of different societal and environmental systems to mitigate or adapt to change which is the reason for emphasizing research on climate change to adapt successfully. Nigeria's climate has been changing, evident in increases in temperature, variable rainfall, rise in sea level and flooding, drought and desertification. Weather events, affected fresh water resources loss of biodiversity (Institute of Development studies (IDS) 2021). IDS maintained that rainfall varieties is projected to continue to increase, precipitation in Southern areas expected to rise and rising sea levels are expected to exacerbate flooding and submersion of coastal lands. Climate Change is indeed an environmental issue that affects the global environment, our social, economic, health and political life. Due to the increasing concentration of green house gases (Methane, carbondioxide, nitrogen oxides, water vapour etc) being released daily into the atmosphere mainly by human activities and the warmth of the sun rays being reflected by the earth are not sufficient to disperse these gases back into outer space. Thus the heat from the sun is trapped in the atmosphere causing global warming (African Sisters Education Collaborative (ASEC 2018). ASEC (2018) maintained that these are due to human activities like fossil fuel burning, deforestation, desertification, and resourcedepletion, pollution of water, air and soil.

Previous study then discovered that older adults are the most at risk due to reduced physical economic capacity, chronic illness, and isolation all of which limit their adaptive capacity and therefore affect the mental health (Gamble, Hurley, Schultz & Harris 2012). The authors explained that evidence has shown that the older persons are particularly susceptible to heat-related morbidity with ageing and poor health being contributing factors to vulnerability. Normally, people who are active and are not down with known illness struggle to face environmental challenges, it is then pertinent to note that the older adults with the physiological changes and aging process have to be given wide attention. Not being able to adapt to changing conditions only give psychological trauma which affects all systems of the body. When the mental health is affected,

virtually all aspects of life go down and when the body system and environment are facing problems the mental health is invariably suffering.

### **Concept of climate change**

Climate change is a long term change in the average weather pattern that has come to define earths local, regional and global climate. These changes have a broad range of observed effects that are synonymous with the term <https://climate.nasa.gov/global> Climate here refers to the long term regional or even global average of temperature, humidity and rainfall patterns over season, years or decades. According to Nasa changes observed in earth's climate since the early 20<sup>th</sup> century are primarily driven by human activities, particularly fossil fuel burning which increases heat-trapping green house, gas levels in Earth's atmosphere raising average level. These human produced temperature increases are commonly referred to as global warming. Global warming is the long term heating of earth's climate system observed since the pre-industrial period between 1850 and `1900 as a result of human activities such as fuel burning, which increases heat trapping green house gas levels in earth's atmosphere. These human activities have gone on to increase the earth's temperature that has resulted to what people are witnessing presently. The scientists observation from the ground, air and space, alongside the theoretical models in monitoring the past, present and future climate change, provide evidence of climate change key indicators, such as global land and ocean temperature increases, rising sea levels; ice loss at earth's poles and in mountain glaciers, frequency and severity changes in extreme weather such as hurricanes, heat waves, wildfires, droughts, floods, precipitation, cloud and vegetation, cover changes and others. In addition, according to Jackson (2021) climate change is a periodic modification of earth's climate brought about as a result of changes in the atmosphere as well as interactions between the atmosphere and various other geologic chemical, biological and geographic factors within the earth system. Therefore it is inferred that climate change occurs with time frame with the presence of human beings and exposure to environmental factors. It is observed that with ageing and passage of time of weather conditions and accumulation of negative

and harmful substances on earth, the change becomes harsh not only on land, air, ocean, but on human beings, animals and plants.

### Causes of Climate Change

Geological records, scientists discoveries and mere observations have shown that there are a lot of causes of climate change which include natural factors, human activities and passage of timeline. British geological survey (2021) explained that strengths of the sun, changes in the earth's orbit axial tilt and precession, quantity of green house gases in the atmosphere, ocean currents and carbon dioxide content, plate tectonics volcanic eruptions, changes in land cover and meteorite impact are the major causes of climate change. It is observed that a change in any of the above can lead to additional, enhanced or reduced changes in the others and their interactions with each other makes it more complicated. For instance, oceans can take carbon dioxide out of the atmosphere: then when the quality of  $\text{CO}_2$  in the atmosphere increases, the temperature of the earth rises. This in turn would contribute to a warming of the oceans. Warm oceans are less able to absorb  $\text{CO}_2$  than cold ones, so as the temperature rises, the oceans release more  $\text{CO}_2$  into the atmosphere which in turn causes the temperature to rise again. Jackson (2021) discovered that the following below are predominantly the causes of climate change which include:

- (1) That the brightness of the sun continues to increase as the star ages and it passes on an increasing amount of this energy to earth's atmosphere over time.
- (2) Fossil-fuel combustion, deforestation, rice cultivation, livestock ranching, industrial production and other human activities have increased since the development of agriculture and especially since the start of the industrial revolution
- (3) Green house gases (GHGS) in the atmosphere, such as carbon dioxide, methane and water vapour absorb infrared.
- (4) Ice sheets, sea ice, terrestrial and vegetation, ocean temperatures, weathering rates, ocean circulation, and GHG concentrations are influenced either directly or indirectly by the atmosphere, however they also all feed back into the atmosphere and influence it in important ways.

- (5) Periodic changes in earth's orbit and axial tilt with respect to the sun which occur over tens of thousands to hundreds of thousands of years) affect how solar radiation is distributed on earth's surface.
- (6) Tectonic movements which change the shape, size, position, and elevation of the continental masses and ways.
- (7) Periodic changes in earth's orbit and axial tilt with respect to the sun (which occur over tens of thousands to hundreds of thousands to hundreds of years) affect how solar radiation is distributed on earth's surface.
- (8) Tectonic movements, which change elevation of the continental masses and the bathymetry of the oceans, have had strong effects on the circulation of both the atmosphere and the oceans.

The causes of climate change both in Nigeria and other parts of the world one not farfetched. It has been discovered from the literature that the passage of time on earth and the accumulation of harmful substances have resulted to changes in the climate. Many factors, both natural and human are capable of causing changes in earth's energy balance including variation in the sun's energy reaching the earth, changes in the flexibility of the earth's atmosphere and surfaces, and changes in the greenhouse effect, which affects the amount of heat retained by earth's atmosphere (United States Environmental Protection Agency 2017).

### Consequences of climate change as it affects the mental health of the older adults.

Mental health generally means the status of brain and its capability at a given time. Felman (2020) sees mental health as cognitive, behavioral and emotional well being. It is about how people think, feel and behave. Mental health according to WHO (2018) is a state of well being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his community. Mental health is more than just the absence of mental disorder or disability.

Everyone has some risks of developing a mental health disorder, no matter their age, gender, and social status. Mental health is important at every

stage of life, from childhood, adolescence and adulthood. Mental health determines how we relate to others make choices and take decisions. Mental health and wellness allows people to realize their full potentials, be confident, stand to manage difficulties both emotional and physical. It is indeed noteworthy that mental health is in state of wellbeing when one is able to manage psychological social, economic, religious and political stresses comfortably and still stand in accuracy of rational thinking and manifestation of behavior towards himself and to others around him.

Older adults are those age 60 and above according to WHO (2017) are strong community members whose mental health is as important as other age bracket. The following is a starting point for the span considering of old age: (a) between 60 – 75 years are referred to young old, (b) between 75 – 85 years are referred to old, (c) those 85+ are considered the older population. Older people face special and mental health challenges which must be recognized especially with the effect of climate change on their well being. Generally it is taken that ageing process comes with a lot of physiological changes which affect virtually all the body system and the organs. Older adults suffer as a result of decrease in physical, and physiological function of the body. Studies have shown that the aged population are faced with numerous challenges WHO (2016) enlisted some of the challenges as deteriorating health condition, poor nutrition, isolation, boredom and financial difficulties. In the same manner, Idris (2012) identified challenges faced by older people as mostly health issues and boredom which arises from loneliness as well as high blood pressure. Many ageing population face discrimination, and this can exclude them from many services such as public places, community life, leisure activity, employment among others such neglect foster a culture that tend to overlook or ignore their views and make them feel cast aside (Department of Health, 2008). In the same vein, Lee (2006) noted that depression is the most common mental health problem in later life. The author added that there are many older people who experience psychological or emotional distress associated with isolation or loneliness. Madu (2015) in her study found out that many older people face financial setback especially when they stop working. The situation is worsened

by economic situation in the country which makes it difficult for an average Nigerian worker to make ends meet because of inadequate wages and high inflation. Already these problems contribute to poor emotional wellbeing and low-life satisfaction.

On emphasis, effects of Climate Change have adverse effects on the older people looking at their characteristics. The effect on the Environment determines the mental health of the older adults who are already vulnerable. The entire known problems limit the adaptive capacity of the adults. Evidence shows that older persons are particularly susceptible to heat – related morbidity with ageing and poor health being contributing factors to vulnerability. The older population is at greater risk for adverse health effects from extreme temperatures, susceptibility of disease, stresses on food and water supply and reduce ability to mobilize quickly. The author also emphasized that low income groups are disproportionately at risk of multiple difficulties. It has been discovered that there is ocean warming, marine life in tropical waters declines, global warming and temperature on the increase, there is food reduction, plastics littered in waters (rivers, lakes) killing organs and living things, Deaths and disease on the increase, people who depends on fish for diet and business are finding it difficult to carry on, Erosion, poor water quality, floods and migration problems (National Academic of Sciences 2021). All the above challenges though affect every individual but the older adults are at a higher risk. There is a risk of drowning and sustenance of injury especially with those living within the riverine areas, flooding can also cause some respiratory, skin and eye infections, damages of health facilities, crops, houses, properties, displacement and migration. In a situation where the older adults cannot manage the situation it can lead to mental disturbance and death. According to Adeboyejo and Adewoyin (2017) the lifestyle, nutritional status and the conditions which they are exposed to, their social and physical environment, particularly those related to climatic elements have the propensity to aggravate health challenges through their exposure to weather extremities, fluctuations in temperature and rainfall. The authors discovered that the effect of climate change on incidence of high blood pressure was more prevalent among the ageing adults. The effects of climate change such as high temperatures,

storm, damage, and poor access to public services due to extreme weather events definitely pose a threat to the quality of life of older people. Mental health can be affected as a result of financial, physical and social background of an older adult especially when there is no access to resources and help as required. Even in real life situation, some of the working class adult are usually mentally imbalanced when there is no money to tackle known problems. Looking at an elderly who does not receive salary or wages and may not have a caregiver and cannot go out to run around and cater for his needs will die of heartbreak, hunger and loneliness especially when the environment is not favourable. In addition, William, Layva and Beaman (2017) discovered that heat temperature variability and air pollution increase mortality risk in older adults especially from cardiovascular and respiratory disease. Floods are linked with increasing incidence of post traumatic stress disorder, depression, and anxiety. Facing this adversities older people exhibit both vulnerability and resilience.

It is worthy to note that climate and environmental treats may compromise the mental health of the older population as a result of extreme heat, vulnerability to diseases, difficulty in getting desired food, reduced water supply, water pollution, and not being active to adapt quickly to the changing environment. The studies reviewed discovered that the elderly adults have a complex relationship to the environment. They are more sensitive to changes in the environment and exposure to toxins, noxious agents and infectious agents. This greater sensitivity is a by-product of a lower psychological reserve capacity, slower metabolism, and a more slowly responding immune system. They also have a higher disease burden (morbidity) than people at younger ages. The cumulative effect of this increased disease burden makes specific organ system less able to tolerate stress. For example, the central nervous system of the elderly adults is more sensitive to high internal temperatures, which can use memory loss, confusion, and also delirium. The cardiovascular system has to work harder in the heat increasing the risk for myocardial infarction. High prevalence conditions like chronic renal failure where fluid regulation is essential make elders particularly susceptible to dehydration, acute renal failure, liver

shock, and rhabdomyolysis among other life threatening challenges. The authors concluded that many of these radical environmental changes, such as increase in air pollution and airborne allergens, increases in disease pathogens, increases in the frequency and severity of heat waves, and degradation of water quality will have profound mental health consequences for older adults. (Carnes, Staats & Wilcox 2017). In order to deal with the above factors and conditions facing the older adults, coping strategies have to be examined and adopted.

### **Coping Strategies**

Recently, one observes that death has been on the increase especially among the older adults which no research has proven the statistics and extent of occurrence. Managing and providing information frequently and getting it rooted to the age bracket is a sure way to reduce the dangers of climate change. On the physical and psychological aspect of life of older people, true progress will require compliance approaches, close cooperation, synergy and coordination among the policy planners, institution and local communities informing about climate change impacts, vulnerability patterns, coping and adaptive capacity as well as facilitating location specific adaptation and mitigation practices are of central concern (Glants Gommès and Ramsamy 2009). The ability of the older adults to spring back from effects of climate change in Nigerian environment has to involve strategies/factors below.

- Older adults who are within the environment where adverse effect are observable have to relocate to safe and conducive environment
- Proper disposal of waste materials and channeling house hold waste into recycling will not only create jobs but improve life quality and make the environment cleaner.
- Older adults need frequent medical check-ups and enlightenment on how to manage known illness and disease. Adoption and utilization of adult educators and expertise has to be emphasized.
- Good transportation system including road, air and water are all areas that contribute to good adaptive measures. This will enhance easy access to other areas especially during eventualities and emergencies.
- Refrigerant management. On this, food can

be preserved and stored in the house to minimize frequent movement of the elderly and for emergencies.

- People have to be taught the essence of Proper planting of trees and plants within the environments.
- Proper family planning. Focusing not only on the nuclear family.
- Provision of wind turbines or wind breakers within homes and the environments.
- Powering of homes with renewable energy, examples touches, lanterns, instead of candles and frequent teachings on how to manage and maintain naked fires.
- Frequent sensitization/training workshop on adaptation and coping strategies touching all areas of life.
- Installation of chimneys in the kitchens.
- Stoppage of bush burning and cutting down of trees for charcoal and embracing possible alternatives.
- Older adults living with their caregivers and family members for proper attentions and guidance.

The above have been x-rayed, and enumerated to suit the Nigerian environment in dealing with the dangers of climate change on the older adults.

### Conclusion

The insight from the literature reviewed for this study has shown that climate change is a global problem and its dangers and effects are on all humans and their environments. On this, it has more adverse effects on the older adults and their mental health due to reduction in active life system as a result of ageing process. The identified conditions have to given proper attention in order to maintain long life span in humans. The reduction of effects and coping strategies are not just for an individual to conquer but with the cooperation of individual both young and old, community members and the government. When policies are formed, it is the responsibility of the government to implement and the duty of citizens to adhere to rules and acceptable way of life in the society.

### Recommendations

1. The government should be able to establish aged homes in all the 36 states of Nigeria where the elderly are harbored and secured.

2. The government should set up a national ministry for the aged that will be in charge of their security and rights.
3. Funding for research over climate change should involve not only the government but philanthropists and faith based organizations.
4. Adult educators should be given opportunities to design programs that will educate not only the older adults but the masses on how to manage, maintain and adapt safely in homes.
5. There should be open door access to information and frequent enlightenment programs on climate change, its dangers and coping strategies as suitable in the Nigeria society.

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