United Nations Human Rights Office of the Commissioner

The Impacts of Climate Change on the Effective Enjoyment of Human Rights

International Association of Gerontology & Geriatrics

**CLIMATE CHANGE: *Relevant Data, Adverse Effects and Impact***

A growing body of literature documents the significant domino effects of climate change on the planet and on all life. Chief among these changes is the rise in global temperatures which has triggered record numbers of heatwaves, as well as stronger, more dangerous hurricanes, cyclones, and floods. The World Health Organization’s Centre for Research on the Epidemiology of Disasters (CRED), in conjunction with the UN Office for Disaster Risk Reduction (UNDRR) works to understand and mitigate this impact. In its 2018 report, compelling data examines the economic link between environmental disasters and poverty. From 1998 to 2017, 1.3 million people were killed by hydrological, meteorological, and geophysical disasters, at the same time 4.4 billion people were injured, became homeless or displaced, or needed emergency assistance (CRED/UNDRR).

While climate change looms as a preeminent threat to our future, the public health ramifications for all are already apparent, with effects felt to a greater degree by older persons. One study found that even a 1°C rise in overall temperature led to increased cardiovascular, respiratory, and cerebrovascular elderly mortality, as did a 1°C decrease in cold extremes (Bunker et al., 2011). Temperature change can also exacerbate other health concerns. For example, the percentage of older adults with diabetes has more than doubled since 1980, with concomitant age-adjusted death rates for these individuals. As those with diabetes are at greater risk for heat-related morbidity and mortality than most, there will be an enlarged at-risk pool through this percentage growth as well (Gamble et al., 2013). With the consequences of climate change growing more drastic and continuously relentless (Sippel, et al., 2020), these outcomes can be expected to climb unless sufficient and adequate measures are enacted to combat global warming.

While climate change is a clear threat, it also leads to a more immediately dangerous issue, namely natural disasters. From a 2014 study, “…in the last four decades, the frequency of natural disasters…has increased almost three-fold, from over 1,300 events in 1975–1984 to over 3,900 in 2005–2014. The number of hydrological and meteorological events increased sharply…with the annual number of Category 5 storms tripling between 1980 and 2008” (Asian Development Bank, 2015). This trend has continued. While terrifying on its own, these data lead back to a previous point, that older populations are affected to a greater degree. For example, after Hurricane Katrina, half of all mortality was in the 75 and older age group (Brunkard, Namulanda, and Ratard, 2008). In the 1995 Chicago heat wave, nearly two thirds of deaths were individuals aged 63 and older (Whitman, et al., 1997). As disasters grow in frequency, it is clear that the more vulnerable populations are at greater risk for more serious outcomes.

**NATURAL DISASTERS: *Vulnerabilities and Risks of Older Persons***

Areas of necessary response to elevated risk are three-fold: prevention and preparation, survival, and the aftermath. According to a 2012 survey, “15 percent of U.S. adults age 50 or older would not be able to evacuate their homes without help, and half of this group would need help from someone outside the household”, while a 2014 survey found that another 15 percent relied on externally-powered medical devices, heightening vulnerability to extended power losses (Shih, et al., 2018). Worldwide, two-thirds of people aged 60 and over live in countries designated as low- or middle- income, where disasters are more likely and have a more devastating impact. As these lower-income countries are poorly positioned to provide disaster preparation and assistance (HelpAge, 2015), it only further heightens the danger to the elderly.

Second, older adults are disproportionately affected by the peril presented throughout the event itself. In the days following the two-month heat wave that swept through Europe in 2003, as many as 72,000 people died; resulting in 15,000 [excess] deaths in France alone. In one of the first studies highlighting the impact of this event, “the French Institute of Public Health Surveillance (InVS) found that most of the heat-related deaths occurred among community-dwelling elderly, that is, those living in their own homes” (Vandentorre, et al., 2006). Revisiting Hurricane Katrina, “Those over age 60 – some 15% of the New Orleans population before the storm – accounted for approximately 75% of bodies found immediate after; 40% were over 70” (Adams, et al., 2011). The danger of extreme weather events is already overwhelming and with failure of adequate preparation, it can become lethal for our older, more susceptible population.

Discussion of the aftermath is the broadest, and must be separated into three subsections: environment, infrastructure, and displacement. The environmental wake of natural disaster is more straightforward, but no less serious. The WHO designates the most common aftereffects as diminished air quality and compromised water supply. When the proportion of the population that is most susceptible to respiratory and immune complications is exposed to polluted air and water, the results are catastrophic. A study found that 79% of all injuries from the1992 Hurricane Andrew were following, not during, the storm itself (Uscher-Pines, et al., 2009). Similarly, infrastructure failure following disaster impacts communication, electricity, transportation, access to medical providers, and puts stress on the food chain and water supply. Transportation disruptions are crippling, impairing ability to obtain care and supplies, and increasing risks of death due to infection, malnutrition, chronic disease, and mental health crises (WHO, 2018). Just as importantly, delays in seeing family and friends for providing and receiving emotional, physical, and social support can be highly detrimental. One study discussed the benefit of resilience for those communities and individuals with the capacity to adapt and adjust, thereby creating opportunities to successfully address the crisis. It is not surprising that those with higher adaptive capacity are also those with higher incomes and access to resources, while those with lower adaptive capacity struggle (Bell, et al., 2016). Individual attributes that contribute to lower capacity include age, dependency on caregivers, disability or cognitive impairments, living with medical or chemical dependence, limited English proficiency (in the U.S.), social or cultural isolation, homelessness, and institutionalization in prisons, psychiatric facilities, or nursing homes (Bell, et al., 2016). The mental health impacts of stressors related to the losses and hardships associated with disasters are especially borne by women, older adults, children, persons of color, low-income populations, those with preexisting conditions, poor support networks, and those residing in sub-standard housing (Bell, et al., 2016).

Displacement, however, may be the most perilous effect of natural disaster. GRID (2018) reported that since 2009, an estimated one person every second has been displaced by a disaster, with an average of 22.5 million people displaced by climate or weather-related events. Those displaced must cope with “… the direct threat or impacts of floods, landslides, storms, wildfires and extreme temperatures on their safety, homes and livelihoods.” It is further stated that the “…cost of recovery on top of livelihood losses has the potential to plunge those affected into a cycle of unaffordable debt.” The problem of displacement is wide-ranging. For a country like Vietnam where 70% of the population live in coastal areas and low-lying deltas, more than 65 million people are at risk of hydrologic disaster. In Honduras, Hurricane Mitch displaced 2.1 million people, or almost one third of the total population in 1998 (Ensor, 2009). Looking at the effects of hurricanes Katrina, Sandy, and Maria, it is clear that even more developed countries such as the United States are vulnerable to similar crises.

Those who are displaced following natural disasters may be relocated or become homeless. For the existing homeless, their vulnerability during disasters is compounded. Frequently, spaces used for homeless individuals are repurposed to shelter the newly displaced, while outdoor spaces normally used by the chronically homeless are rendered unlivable. Furthermore, since prior relationships with police and rescue workers are frequently rooted in distrust, those resources which are available are often deemed suspicious. Competition for access can also be daunting (Morris, A., 2014).

For the newly homeless, these dangers can be even worse. Research shows that the conditions of homelessness can readily worsen or cause life threatening health crises. The risk of physical injuries, loss of access to medication or devices, and lack of access to health care services leading to prolonged disruption of treatment are particularly dangerous to older persons (Ghazali, et al., 2018). It is significant to note that most newly homeless following disasters are from lower-income areas (Fothergill and Peek, 2004). Coupled with the shortage of an estimated 7 million affordable low-income rental homes in the United States alone, (Ortiz, et al., 2019) the impact on the older population with more medical needs, is absolutely devastating.

Research has shown that while older individuals require greater assistance following a disaster, there is greater selectivity in what is accepted. Studies have noted that the elderly prefer post-disaster assistance such as loans, housing assistance, healthcare, and transportation over counseling, psychological care, or income assistance (Ngo, 2001). Even among those who can relocate to stable situations, the effects are not always positive. One study indicated a significant mortality increase among older individuals who moved from independent homes to institutions (Feng, et al., 2017), while others found involuntary relocation led to stress-related side effects which included physical/psychological problems, illness, and death (Hasselkus, 1978). It is clear that the impact from disasters and climate change is severe and far-reaching.

**ADDRESSING CLIMATE CHANGE, NATURAL DISASTERS, AND AFTERMATH: *Challenges, Good Practices, Policy, and Human Rights***

As Moody (2015) notes, “Older people are natural skeptics, since long life experience gives many good grounds for skepticism.” Perhaps that is why, as he found, only about fifty percent of older adults believe that climate change has begun, that the science is on track, or that the media is telling the truth about it (Moody, 2015). As a result, the greater portion of the task ahead lies in education. Frumkin, Fried, and Moody (2012) suggest that a focus on legacy may be the key to reversing older populations’ views (and votes) on climate change. Their work suggests “public discussion about duties to future generations should be encouraged,” along with economic incentives, education and dialogue. The prospect of reeducation on the causes and results of climate change may be daunting but is the most direct road to changing personal and community behaviors and political attitudes. Hand-in-hand with climate change education comes the training and resources to cope with disaster. One study found that less than a quarter of older adults had a disaster plan in mind despite over a third reporting participation in an emergency preparation course; additionally, approximately 27% stated that they were aware such programs existed (Al-Rousan et al., 2014). The disparity can be attributed to lack of resources, apathy, and a lack of urgency. Removal of these barriers through resources and education are clear paths to overall improvement in disaster response.

Steps have been taken in how best to approach the reeducation process, both in terms of how and what to focus on, as well as determining the value of these strategies. The work of Chandra et al., (2011) could be applied to the work ahead with older populations, especially regarding the areas of wellness, education, engagement, self-sufficiency, and partnership. This five-prong strategy was developed in response to disaster events and can be reworked to include stages of health and preparation, as well as concepts and causes of climate change and prevention.

Once adapted to fit our older populations, attention can be turned to response. Studies have shown that older adults can fully recover after a disaster, especially with proper preparation (Almazan, Cruz, and Alamri, 2019). Additionally, the governmental and economic resources following a disaster must be made available to those with the highest need. Bolin and Stanford (1993) found that small business loans following the 1983 Coalinga earthquake were only available to individuals with at least average incomes and employment. This did not reflect all impacted households. The exclusion of marginalized groups escalates the likelihood that those impacted will remain in need.

It is precisely this inequity of resource distribution that speaks to the inequality and loss of human rights experienced by older persons and minority groups, in this instance regarding climate change and natural disasters. Morgan and David (2002) argue for the inclusion of workplace management, retirement and financial security, elder heath care, and long-term care as human rights areas essential to older populations. However, this omits climate-related issues as a growing factor in aging lives (Morgan and David, 2002). The role of older adults and their effect on the environment must be considered as better health, income and longer life allows for more and decades-longer recreational opportunities. These benefits can create significant ecological impacts such as increased carbon dioxide emissions from car and plane travel, higher energy usage for heating and cooling, and increased electricity demands for medication and medical equipment.

A 1996 study found that older adults are the group most likely to believe that human beings control the environment and prioritize economic and social interests (Kellert, 1996). Many are concerned about climate change especially for their descendants. Their energy and commitment should be harnessed for mitigation efforts. While some older persons have been excluded from future oriented environmental volunteer work, others are active in environmental education, monitoring of pollutants and policy advocacy. Noteworthy are the Environmental Alliance for Senior Involvement (in 20 plus countries) and the Grandparents’ Climate Campaign (Norway and the UK).

The 1948 Universal Declaration of Human Rights states: “Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.” Despite this, older adults are forced to use environmentally unsustainable medical equipment, while sustainable housing options with sufficient heating and cooling options are limited (Kruger, Savage, and Newsham, 2015). Rights to access better health care and housing for older adults must be addressed. Human rights are not limited to those who live in advanced countries. A 2009 paper noted the burden that poorer countries shoulder in being dumping grounds for dangerous electronics waste produced by wealthier nations (Robinson, 2009). This endangers the population as a whole and increases risks for those who are older and more vulnerable. As much of this dumping is already illegal, at what point does enforcement occur? Laws are broken without penalty, while studies have reached consensus without resources being allocated to educate the population. As the effects of climate change accelerate, we must recognize that the need for global compliance far outweighs the perceived financial cost. This is not for the future: it must be dealt with now.

**SUMMARY: *Action Steps and Strategies***

The intersectionality of climate change and aging requires an immediate global response.

**Educate young and old persons concerning sustainable behaviors across the lifespan and their impact on global warming.** This joint commitment of youth and older adults incorporates the intent of the UN’s Society for All Ages, in which older adults can create a legacy for future generations by living a life committed to responsible use of the earth and endorsing sustainable activities (Frumkin et al., 2012). These adults can serve as ambassadors for change, educating peers, neighbors, children and grandchildren about global warming, thereby bringing the need for change to the local and community level. Noting that most reports and surveys sponsored by the UN, its NGOs, and associated groups give little to no discussion of the older adult and issues germane to their well-being, it is critically important to engage older adults in community planning efforts for disaster preparation and response; their experience, expertise, knowledge of the community, and their capabilities need to be recognized.

**Create trained response teams of participants across the lifespan who can react immediately to events, with response protocols, working collaboratively to restore the community.** Communities should create tools to guide community response to disasters with older adults’ assistance thus incorporating both their needs and expertise. In a world reliant on technology, explore sending emergency weather alerts and updates on smartphones, providing information on available recovery resources. In areas with limited technology, identify person(s) to be equipped with a smartphone to communicate critical information to the community.

**Develop community plans of reciprocal giving in response to natural disasters.** For example, older adults displaced by a hurricane may contribute to their new community life in shelter by helping new mothers or children with schoolwork or organizing games for youth. This can serve to ease the displaced older adult into a new community and develop a support network.

In sum, climate change offers significant challenges. Recognizing both the strengths and vulnerabilities of older adults can benefit present and future generations, thereby investing in the human rights of all and creating a Society for All Ages.