



Multi-dimensional Disaster Response for Older Adults

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Abstract

During disasters older adults are particularly at risk to be negatively affected. This paper will examine the increased vulnerabilities of older adults facing disasters, specifically through the lens of the 2018 Camp Fire in Butte County, California which killed 85 people, burned over 150,000 acres, and destroyed close to 19,000 structures in the rural communities it impacted. It has been designated the “deadliest and most destructive” fire in recorded California history. While research demonstrates that older adults tend to be more resilient in disasters, they also have some vulnerabilities that make them more susceptible to death. I discuss common issues faced by older adults including examples from recent disasters that disproportionately negatively impacted those over 60.

Keywords: older adults, disaster response, disaster preparedness elderly, risk

Multi-dimensional Impact of Disasters on Older Adults

At the time of this writing, massive wildland fires are burning in California and Oregon in the United States. The largest, the 680,000-plus-acre Dixie Fire, is burning in Butte, Plumas, Lassen, Tehama, and Shasta counties in Northern California. The Dixie Fire has become the second largest fire in California’s recorded history. It has leveled the town of Greenville, population about 900. While there are currently no reported fatalities, the Dixie Fire is still very active and only 35% contained. Current response is focused on the preservation of life and other communities in the region. A second major fire in the area, the Caldor Fire, is currently burning out of control in El Dorado County and has burned over 65,000 acres and destroyed the rural community of Grizzly Flats, and the structural losses are reported in the “hundreds.” Over 30,000 Californians are evacuated due to these two fires.

Numerous small towns and communities are currently threatened.

This is the same region where in 2018 the catastrophic Camp Fire raged out of control burning over 150,000 acres, consuming the town of Paradise and the communities of Magalia and Concow in Butte County, killing at least 85 people, and destroying close to 19,000 structures (Butte County, 2020). The Camp Fire has the unenviable designation as being the “deadliest and most destructive” fire in recorded California history. Those living in the rural and forested areas of the western United States are accustomed to wildfires. The combination of migration to rural areas, population increase, global changes in climate, and aging of residents is increasing the impact wildfires have on humans. In addition to fires, older adults are disproportionately impacted by other disasters: earthquakes, flooding, tsunamis, hurricanes, monsoons, and other extreme weather events such as heat waves and cold waves (Mokdad, 2005).

It is important to clarify the research does not support the idea that older adults have increased vulnerability; in fact studies show that older adults tend to be more resilient in disasters than younger populations (Kisely, 2016; Rafiey et al., 2016; Shrira et al., 2014; Friedman & Williams, 2010). However, older adults have physical, psychological, social, and economic susceptibilities that warrant attention based on the type of disaster and response (evacuation, shelter-in-place) needed. This includes the need for both pre- and post-disaster services. Most older adult deaths attributed to disasters are related to evacuation, inadequate shelter services, the direct impact of disaster (drowning, burning, collapsed building), and post-disaster health conditions. These conditions can be new health issues brought on by the disaster itself or the exacerbation of existing health issues.

A controversial yet important issue is the process of how disaster deaths are tabulated. As an example, Hurricane Maria, which occurred in and around Puerto Rico in 2017, had an initial official death toll of 64 people, which was revised to just about 3,000 after researchers included those who died from the hurricane-related diseases and health complications (von Kaenel, 2020). The official death toll of the Camp Fire is at 85, however family members, physicians, and liability claims against the Pacific Gas and Electric Company (responsible for the ignition of the Camp Fire) have confirmed at least 50 more deaths directly correlated with the fire. In addition, unaccounted deaths have occurred with strong associations to the Camp Fire (VonKaenel 2020). Fatalities from respiratory diseases, exposure to chemicals, heart attacks, strokes, and trauma-related suicide are among causes of death that advocates claim are direct results of the fire. As it is difficult to accurately determine disaster-related deaths, how are we to investigate deaths one, three, or ten years post disaster? This question will only grow as we continue to experience global disasters and the long-term impacts of them.

I have lived and practiced as a licensed clinical social worker in Butte County. In addition to having a private practice serving older adults and their caregiv-

ers, I resided in the Paradise/Magalia area for 27 years. As such, much of the information for this commentary came from her work with, and knowledge of, those impacted by the Camp Fire.

Disproportionality

While those aged 65 and older make up about 16% of the population, their fatality rates during disasters are disproportionately higher. Sixty-one percent of people over 65 living outside of congregate settings reside with a partner/spouse, and about 27% of older adults live alone (ACL 2020). Roughly half of people ages 85+ live alone (Kaplan and Berkman 2015). The area impacted by the Camp Fire, identified locally as “The Ridge,” was a retirement community where the pace of life was slower and the cost of living was lower. As such, thousands of older adults made Paradise, Magalia and Concow their home. In addition to the concentration of the older adult population, the communities could only be accessed by narrow curvy roads which meant many neighborhoods having one way in and one way out.

When examining the realities of what evacuations entail, we quickly see the multitude of potential barriers faced by older adults. Numerous research studies have demonstrated that the poor survival rate of older adults in a disaster are associated with sensory and cognitive impairments, mobility impairments, social isolation, and lack of social support and limited financial resources. (Al-Rousan et al., 2014; Fernandez et al., 2002; Killian et al., 2017).

A brief review of Camp Fire fatalities revealed that of the 85 confirmed fatalities, 70 were over the age of 60, that is 86% of deaths immediately attributed to the Camp Fire. Of these 60, 15 were identified as having physical impairments which made it impossible for them to evacuate on their own. This number could potentially be higher as 35 victims did not have any information on physical or cognitive issues that may have impaired evacuation attempts. The investigation also determined 10 of the deceased victims were attempting to flee the fire, whether it be by car, all-terrain vehicle, or on foot (Butte County District Attorney 2020).



*Figure 1: (Row of Crosses) A memorial tribute set up at a main road into Paradise, CA. Crosses built by Greg Zanis of Illinois that he delivered to Paradise to honor those who perished in the Camp Fire. *Mr. Zanis died on May 4, 2020. Photo by the author (Donna Jensen).*



Figure 2: (Rose Farrell 99 YO cross) Ms. Rose Farrell died just three months shy of her 100th birthday. Her remains were found on her front porch with her wheelchair nearby. Photo by the author (Donna Jensen).

Multidimensional Impact

There are many ways in which disasters impact older adults. The immediacy of the evacuation processes, the magnitude of the disaster, the type of disaster, and preparedness of the individual can bring up a myriad of issues.

Physical Mobility

Does the person have physical and/or cognitive issues preventing them from being able to evacuate? Is the person able to get out of bed/get out of their house on their own? Are they dependent on oxygen and do they have portable oxygen? Is there power to keep oxygen flowing? How long will their current oxygen tank last? According to the Administration for Community Living (ACL) 40% of older adults have difficulty with mobility, 31% have difficulty hearing, 27% have cognitive difficulties, and 22% have issues with their sight. These are all physical health issues that can adversely impact a person's ability to learn about and respond to evacuation orders (ACL 2020).

Transportation

Can they drive? Do they have a driver's license and ac-

cess to a vehicle? There are immediate and long-term transportation needs based on evacuation orders and post-disaster needs. Counties set up disaster resource centers which greatly assist evacuated communities as a one-stop center for resources and benefits (Federal Emergency Management Association [FEMA], insurance services, health care services, American Red Cross), as well as temporary relief assistance. It was not uncommon for older adults accessing the disaster service center post Camp Fire to have several hours wait time in line at the service centers.

Al-rousan and colleagues found that fewer than 25% of older adults have a car and the ability to drive if needed for evacuation (2015). A devastating story came out of the 2018 Carr Fire (229,651 acres) in Shasta and Trinity counties in northern California that killed eight people and destroyed 1,077 homes. One victim, 70-year-old Melody Bledsoe, perished in her home with her two great-grandchildren (ages 5 and 4) as she utilized a wheelchair and was unable to leave her house on her own. Her husband had left the home to run an errand, and was unable to return to rescue his family due to the speed of the fire (Estrada 2019).

Technology Access & Knowledge

Electronic forms of communications are increasingly used for disaster alerts, evacuation route updates, and shelter information; many of the processes to apply for post-disaster benefits and insurance claims are computer based. Access and knowledge to technology are needed to file claims after losses. In the 2018 Camp Fire, emergency response reverse 911 public-alert calls did not go out to everyone in the at-risk community. In fact, when residents of the area began seeing flames and called the 911 emergency telephone number, they were told to stay in place, when in fact the fire was bearing down on them. More accurate and up-to-date information was available through social media platforms. Several Camp Fire victims with whom the author spoke were angered to receive the reverse 911 calls coming to them hours after their homes had been burned.

Shelters

The usual protocols for shelters may not include partic-

ular attention to the needs of older adults. Secondary shelters specifically designed for the needs of older adults and those with disabilities may be slower to get set up. These shelters need to pay particular attention to medications, physical access, dementia, confusion, and treatment of chronic illnesses. Another critical issue is the shelters' capacity to deal with the evacuees' pets. Many older adults would not partake in shelter services, despite the need, due to not being able to bring their pets. At a time of increased stress, their pets were their lifeline, and many were not willing to part from them.

Practical Recovery Needs

Older adult evacuees may not have access to housing, clothing, care for pets, or may be dealing with the loss of pets. Financial stress compounds this. Evacuation orders frequently do not give people the opportunity to prepare financially and they often find themselves evacuated with little to no money. Further, they may not have copies or access to their important documents, leading to additional stress, time, and energy accessing documentation. Another critical need is access to medications. In dealing with a higher occurrence of chronic illness, common with older adults, access to medications can be a significant health issue. Medications may have been left at home or have been destroyed. Accessibility to needed medication may be difficult. In the days following the Camp Fire, pharmacies in nearby towns quickly ran out of stock and were under-staffed. One Camp Fire evacuee, an older adult with Type 1 diabetes, was evacuated so urgently that they were unable to get their insulin, a life-saving medication. Fortunately, the individual had transportation and health insurance. Even then, three days later, they had to drive to a town 90 miles away to find a pharmacy to replace their medication.

Health Issues

Cardiac issues, stress responses, injuries sustained in disaster/evacuation, pulmonary issues, diseases, strokes, etc. can be a result of or exacerbated by the disaster. These issues can occur as a direct result of the disaster/evacuation or develop after the initial crisis because of the disaster's impact or lack of available health care and treatment.

Loss

Depending on the magnitude of a disaster one can lose their home, their communities, the lives of friends/support systems, work/volunteer activities, and perhaps the most distressing, their role and purpose in life. For many people, the sense of safety is also lost, particularly with disasters that assault the sense of rationality (i.e., “how can the entire town burn”). Having to start over can trigger physical and psychological trauma and can significantly impact people’s energy and thus the willingness of victims to begin rebuilding their lives. There can be a paradoxical reaction as well when the disaster is so massive that entire communities are impacted. On the afternoon of November 8, 2018, when the enormity of Camp Fire was becoming known, a friend called me who had just learned they lost their home, including all their possessions. At the time of the initial phone call, the victim was crying, extremely emotional, and had difficulty focusing and formulating thoughts (all of which is to be expected during this crisis). When I followed up with the victim about three hours later, there was a different level of emotion. While still sad, overwhelmed, and grieving, they repeated the comment, “it’s everyone...it’s everyone” and began

stating the friends, town dignitaries, and businesses that were gone. While they still had their grief, the psychic load of it was being dispersed by the immensity and degree to which an entire town was gone.

Additionally, older adults live in different settings that require a variety of resources for evacuation and sheltering. Older adults reside in their own homes, small and large residential care/assisted living communities, and skilled nursing communities, which are typically highly populated and thus present unique challenging issues in evacuation situations.

Post-Disaster Trauma and Retraumatization

Mental health service providers find themselves stretched thin to provide necessary counseling to disaster survivors. Even without major catastrophic events, psychotherapists, gerontologists, and other mental health professionals with the expertise to treat older adults are in short supply. Finding any licensed and/or certified therapist is problematic in these disaster areas, yet we know the toll that trauma takes on individuals and communities and the importance of available and timely treatment. As wildland fire season extends, hurricane season intensifies and heat/cold



Figure 3: Taken 7/30/2021 of Paradise, CA. Smoked fills the air in Paradise, CA as the Dixie Fire burns out of control nearby. Seen in this picture is the smoke as well as the devastation from the 2018 Camp Fire which the town is still in the early recovery phase. Photo by: Cheryl Oberg.

waves become more frequent, traumas can be reactivated (Ogle et al., 2014) and can trigger increased anxiety, fear, nightmares, and flashbacks in people. This image, taken in Paradise on July 30, 2021, shows the destruction that still remains from the November 2018 Camp Fire. The photo also shows the town being locked in smoke from the currently burning Dixie Fire (in Butte and Plumas counties). The sights and smells of the not-so-distant fire can reactivate trauma response.

Long Term Care Communities

Existing research on disaster response in long-term care communities (Residential Care Facilities for the Elderly [RCFE] & Skilled Nursing Facilities [SNF]) is sparse (Nelson et al., 2013; Volkman et al., 2012). Nationwide there have been disasters in which long-term care communities were under mandatory evacuations and were not as successful in their efforts which led to catastrophic outcomes. As an example, in 2005 in the path of Hurricane Katrina, St. Rita's Nursing Home near New Orleans failed to evacuate residents, resulting in 35 patients drowning after they were trapped. In 2011, an EF5 tornado tore

through Joplin, Missouri. Residents in the SNF were trapped for 14 hours until emergency personnel could rescue them (Pandolfo, 2015).

Issues faced in the 2017 Tubbs Fire (36,807 acres and 22 fatalities) in the California counties of Napa, Sonoma, and Lake were the impetus for legislative changes in California. Two RCFEs in Santa Rosa failed to properly evacuate residents, which raised questions about the communities' disaster evacuation plans and the ability of staff to follow through with those plans. Seemingly basic information, such as staff not knowing where the keys to a facility's bus was, put residents at risk as they were left behind. Assembly Bill (AB) 3098 was passed just two months prior to the Camp Fire, amending the California Health and Safety Code's Code of Regulations (Title 22), which is the foundation for licensing and regulating long-term care communities (Residential Care Facilities for the Elderly 2018). Changes due to AB 3098 require facilities to add additional elements to their emergency and disaster plans, provide annual training to all staff, and conduct quarterly drills on each shift.

There were many lessons learned from these disasters, however there is currently no systematic review that



Figure 4: Picture outside of a Skilled Nursing Community in Paradise, CA. A reminder of the evacuation fury and vulnerabilities of those needing to evacuate. Photo by Alan Sheckter.

captures best practices of what worked, what went wrong, etc. The population of the town of Paradise consisted of 25.1% of people at or over the age of 65, much higher than the national average of just over 16% (U.S. Census 2018). In addition, there were numerous SNFs and RCFEs that needed to be evacuated. While Paradise was obliterated by the fire, it is remarkable that all RCFE and SNF residents were evacuated safely. There were post-disaster fatalities that appear related to the fire (smoke inhalation, cardiac arrests, strokes), but all residents were able to be safely evacuated. The Camp Fire exposed significant issues related to implementation of facility evacuation plans and protocols. The California Long-Term Care State Ombudsman, the California Assisted Living Association (CALA), California Advocates for Nursing Home Reform (CANHR), and the California Association of Health Facilities (CAFH), among others, are all addressing the disaster response for their communities.

Response to the Needs of Older Adults

This commentary has illuminated several issues related to disasters, and more specifically issues pertaining to older adults. In recent years, the U.S. federal government has dedicated funding to study the impact of disasters, including post-disaster related deaths. Local Area Agencies on Aging (AAA) and other national, state, and local organizations have made strong efforts to develop disaster response protocols, but it is not an easy task.

We cannot plan for and respond to every disaster with 100% success, however the incidents that have impacted older adults in the past decade alone demand that we take a closer look at how communities, first responders, and disaster response services can be enhanced with a greater awareness of what older adults need. There is a balance of maintaining the autonomy of older adults while preparing for needed assistance before, during and after catastrophic events. There is no easy answer, but clearly community work is needed to discuss and implement possible solutions. For every disaster, there are numerous reports of neighbors helping neighbors. The reality is that the priority of law enforcement and disaster response teams is to prevent the loss of life. While it may seem counterintuitive, this can entail the sacrifice

of some to the greater protection of others. In times of wide-scale disasters, outside assistance may not be available and thus communities must be more reliant on themselves and those around them. We can learn where at-risk older adults reside, provide disaster preparedness support, and ensure, to the degree possible, that when a disaster strikes, systems are ready to respond to the needs of older adults.

In California AB2311, which became law in 2017, requires each county and city to ensure their emergency response plans integrate the access and functional needs of varying at-risk populations, which includes older adults (Emergency Services 2016). These response plans must involve emergency communication, emergency evacuation plans and emergency shelter plans for older adult needs. This is a state law, it does not specify to what degree local emergency plans need to focus on special populations. After the Tubbs and Camp Fires in northern California, municipalities are taking a deeper look at emergency operation plans. The recent fires show the unique needs of older adults who reside in rural communities and the sweeping destruction from wildland fires where town and community protection can no longer be assumed.

Conclusion

Around the world older adults are at increased risk to the ever-increasing impact of disasters. Solutions will require involvement from older adults, their family/caregivers, community-based services, geriatric health care professionals, emergency responders, care institutions, researchers, environmental scientists, city and county planners and researchers. As the intensity of disasters and the numbers of older adults increase, keen attention is needed in assisting older adults and their families to prepare for and respond to these crisis situations. In addition to “boots on the ground” changes, aging focused legislative and agency policies that maintain accountability would well serve the unique needs of older adults in future disasters.

While this commentary discussed several issues that older adults face, the heroism of fire fighters, law enforcement, hospital personnel, mental health staff,

teachers, bus drivers and the greater community cannot be overstated. The number of fatalities the Camp Fire could have brought is unfathomable, but for the dedication and commitment of the resilient people of “The Ridge.”

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