

Emergency Preparedness for Vulnerable Populations

Alex Arcari

Bachelors of Emergency and Security Studies

Justice Institute of British Columbia

April 17th 2023

Beth Larcombe

Author Note

This paper was completed for ESMS-4900: Capstone Project, taught by Beth Larcombe.

This paper is due on April 17th, 2023 and is 5,691 words.

Abstract

This paper seeks to understand the current relationship between emergency preparedness and vulnerable populations. Vulnerable populations refer to individuals with physical, cognitive, or sensory disadvantages as well as individuals in low-income housing/poverty, unique family situations, or other similar issues. Various studies reveal that vulnerable populations are at a severe disadvantage in disaster management due to the lack of policy, guidance, awareness, and communication presently provided by emergency service groups and organizations. The disadvantages stem from a lack of education provided to these groups of the population and those outside these groups lacking the tools to assist and promote effective emergency preparedness. The findings of the studies reviewed in this paper present evidence suggesting a lack of research and recorded data on vulnerable population groups in disasters as well as the general disconnect between these groups and emergency management policy. Policy adjustments incorporating specific legislation and strategies for these groups and educating the public/spreading awareness of their needs are necessary adjustments to improve the relationship between emergency managers and vulnerable populations. Furthermore, making accommodations with local health facilities with preparations for uninsured low-income groups, and the handling of special needs care under each of the pillars of emergency management can contribute to altering the discourse between vulnerable populations and emergency handlers and professionals.

Keywords: emergency management, vulnerable populations, preparedness, pillars, policy

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Background – The Problem

Rubin et al. (2019) states the following: “Vulnerable populations can be divided into two major categories: by location, for example on a seismic fault line predisposing to an earthquake, or low-lying area predisposing to flooding, or by population characteristics.” (p. 312) In the context of this study, vulnerable populations will refer to groups of our communities who have a condition of the body or mind that restricts their functionality of fully able-bodied human activities. The functionality under study includes physical, cognitive, or sensory difficulties. For example, deaf or blind individuals, those with special disability needs, or the elderly frail. Much of the data currently available also extends this category to include those with low socioeconomic status, low income, poor housing conditions, and characteristics of that nature. Regarding emergency management, great effort has gone into the practice of preparing, planning, mitigating, responding, and recovering to emergency and disaster situations. However, one area that continually appears to be lacking in each of these areas is the management of vulnerable population groups as described. This study intends to examine the vulnerability of these groups in a “measure of both the sensitivity of a population to natural hazards and its ability to respond to and recover from the impacts of hazards” (Rubin et al., 2019)

Baker and Cormier (2015) notes that there is an “absence of an extensive literature base” (p. 66) under the topic of vulnerable populations in disaster settings. They also mention that despite this limitation, there is still much to draw from under more generalized categorization. This was a recurring theme during this study and will be referred to throughout the critical appraisal of literature. Essentially, vulnerable population groups are facing increased

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disadvantages during emergency situations and there appears to be minimal accommodation made within emergency planning to effectively support these groups of individuals.

Defining the Question and Rationale

The research question presented below was constructed based on the following problem statement; Emergency management processes are largely limited when considering vulnerable groups of the population. There is a general lack of structure and strategy currently preventing emergency planners from effectively providing for these groups of the public in emergency scenarios.

Under this problem statement, the research question developed for this study is as follows; What can be done and what changes can be made to existing emergency management processes in the emergency planning phase to better assist vulnerable population groups in emergency situations? “Vulnerable population groups” as mentioned extends to those with sensory, cognitive, or physical disabilities. It also may include groups of individuals with vulnerable socio-economic circumstances such as those in poverty, unemployed, or aging population groups.

This study will not exclude the other pillars of emergency management but is focused specifically on the planning phase. Placing focus on this pillar of emergency management allows for a more focused study that intends to understand what areas are working effectively to manage vulnerable populations while also exposing the areas that require improvements or changes. Research on this subject will also include examining the development of current emergency management policies pertaining to vulnerable populations to discover what changes can be made to these communities.

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This paper intends to examine literature on the subject and discover what specific and necessary improvements can be made to assist vulnerable population groups in times of disasters or emergencies. This paper will also examine the data surrounding how these population groups have been affected in the past. This includes any history within emergency management practice and other relevant factors.

It becomes clear that special health care needs, and disability assistance are two examples of major elements required but not currently handled by emergency practitioners. Nick et al. (2009) noted that both Hurricane Katrina and Rita in 2005 exposed major gaps in the emergency preparedness planning systems at that time. Nick et al. (2009) also highlighted “social, physical, and economic inequities among population groups.” (p. 338) and concluded that at-risk individuals, vulnerable populations, and special needs groups had collective needs that were not fully addressed. To ensure that these needs were characterized, Nick et al. (2009) utilized the following broad definition to identify vulnerable populations; “Any individual, group, or community whose circumstances create barriers to obtaining or understanding information, or the ability to react as the general population. ... Circumstances that may create barriers include, but are not limited to age; physical, mental, emotional, or cognitive status; culture; ethnicity; religion; language; citizenship; geography; or socioeconomic status.” (p. 338). This study intends to identify how these major gaps exposed by emergency events over the 21st century can be closed to greater assist vulnerable population groups.

Literature Review

Emergency Planning and Disabled Populations: Assessing the FNSS [functional need support services] Approach (Robinson et al., 2013) provides insight into the systematic limitations of emergency preparedness when taking into consideration vulnerable population

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groups. This study reviews policy and social constructs to identify and reveal the functional needs of these communities. By considering various theories to examine challenges surrounding disabled population groups, Robinson et al. (2013) supplies unique and valuable data enhancing this current study and subject matter. Similarly, *Social Vulnerability and Disaster: Understanding the Perspectives of Practitioners* (Williams & Webb, 2020) is a unique but relative study. The source seeks to address the following: how do local emergency managers perceive and define social vulnerability? Williams and Webb (2020) also state that this question is currently unanswered and presents a significant lack of knowledge pertaining to the subject as the reason.

Williams and Webb (2020) are targeting social classes over vulnerable groups in this study. Therefore, the results of this study need to be interpreted accordingly. While the population groups differ, there are considerable similarities between the findings which resonate with vulnerable populations as identified in the other collected studies. While not limited to, this includes lacking awareness/knowledge, security, access, and culture differences. In comparison, Robinson et al. (2013) presents findings which conclude that shelter management and service providers must serve the interests of those with functional needs. Robinson et al. (2013) presents an opportunity to begin a process of increasing integration and inclusion by reconstructing shelter management. They also note that opportunities are rarely acted upon and suggest placing pressure within a community to make needs understood with emergency management networks.

The main findings by Robinson et al. (2013) include communication with vulnerable population groups requiring integration within the planning efforts of emergency managers including the improvement of consistent and coordinated guidance. This is connected to a lack of outreach in the planning phase. There are also several findings and recommendations provided by Anderson (2014) in *Communications and Planning for the Disabled in Emergencies* and

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Disasters which stem from similar qualitative data. Anderson's (2014) data includes considerations and practices to be implemented to benefit vulnerable population groups. Anderson (2014) lists a summarization of findings that demonstrate effective communication, "which can save lives during times of emergency" (p. 3) This data was noted to be pulled from various natural and man-made disaster/emergency events in the United States. Lacking communication for those with disabilities is said to be common in these events. These findings portray similar results to Robinson et al. (2013) who demonstrates the importance of engagement with the public. Robinson et al. (2013) states that engagement should be a priority in emergency management as it currently stands. They relate this to increasing mutual education that can establish community functional needs where the desired changes would occur to support vulnerable populations. Furthermore, they suggest that establishing growth in these areas can begin on a small scale. Slowly increasing inclusion by starting with "limited (low opportunity cost) communication and meetings before moving to (higher opportunity cost) formalized relationships." (p. 328) Additionally, Anderson (2014) states that fortunately, a variety of facilitators can be identified through this data, which can provide emergency-related communication effectively. The data collected here contains a mix of reviewing the "enforcement of disability laws and regulations as they pertain to emergencies" (Anderson, 2014, p. 5) and collected information on the experiences and perceptions of those with disabilities.

Benevolenza and DeRigne (2019) completed a study on vulnerable populations and how climate change and natural disasters have impacted them. This study's longitudinal data ranges from 2007-2019. Anderson (2014) and Benevolenza and DeRigne (2019) studies present data that supports the desire to "synthesize what is known about potential policy and clinical interventions to combat barriers to holistic health function" (Benevolenza & DeRigne, 2019, p.

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268) The Benevolenza and DeRigne (2019) study's data led to findings based on major disaster events in the country which resulted in distinct policy implication findings. These findings range from preventative measures, alternative relief efforts, and the stabilization of vulnerable population groups. It is noted that these groups often lack individual "sufficient coping resources" (Benevolenza & DeRigne, 2019, p. 276) when faced with harsh weather conditions or other emergency scenarios. Similarly, a study by Phibbs et al. (2015) examined the vulnerability of disabled people following the Christchurch earthquakes in New Zealand. Phibbs et al. (2015) focused on the response and recovery pillars of emergency management due to a recognized increased risk for disabled individuals in areas including transportation, personal safety, communication, housing, and financial hardship. The data of this study is designed to be applied in support of disabled community members in disaster with "the use of knowledge, innovation and education to build a culture of safety and resilience at all levels" (p. 41) Comparatively, Benevolenza and DeRigne (2019) note systematic policy changes at the city or government level would entail being able to provide, through designated health facilities and clinics, appropriate medication, food, supplies, etc., to increased numbers of impacted vulnerable people in emergency scenarios. Effective preparations and promoting communication with the community prior to an emergency includes "developing risk reduction plans, providing clear information to people in high-risk areas and ensuring trainers are equipped" (Phibbs et al., 2015, p. 41) to relay information to all types of citizens.

Williams and Webb (2020) stress that a lack of public knowledge; specifically, a "knowledge gap that exists between emergency managers and the communities that they serve" (p. 290) is a main source that enhances the disconnect between emergency managers and vulnerable populations. Part of this stems from missing structured education provided by the

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communities which are being blamed by some in the study. (Williams & Webb, 2020)

Benevolenza and DeRigne (2019) found that residents who live in an “evacuation area who have family in nearby cities are more likely to evacuate than those who do not as higher income families who have the means to evacuate while low-income, minority households, and households with disabled or elderly individuals are less likely to evacuate” (p. 268) This connection between lack of knowledge and lack in motivation to act and prepare is a recurring theme throughout the data explored in this paper. While addressing vulnerable population groups in the United States, Benevolenza and DeRigne (2019) suggest federal response or state-run waiver programs for vulnerable populations ensure required assistance is met in preparation for a disaster event. Bartelt (2011) study addresses the ongoing needs of vulnerable populations in the nation of Haiti. Targeting the aftermath of catastrophic natural events, Bartelt (2011) uses data from the Haiti earthquakes from 2010 to discern healthcare challenges and management of illnesses for vulnerable populations. Bartelt (2011) found that severe additional challenges were presented following the Haiti 2010 earthquakes due to the nation living in low socioeconomic environments. While Robinson et al. (2013) notes various adjustments that can benefit the direction of policy adaptation for vulnerable populations in disaster such as greater integration with emergency planners, Bartelt (2011) presents several additional challenges. These challenges are caused by poverty and low socioeconomic status which can enhance community damage following a disaster. The findings of this study note that nine months following the Haiti earthquakes, a cholera epidemic took over the nation. This area already was experiencing high rates of HIV, tuberculosis, and malaria. (Bartelt, 2011) Due to the earthquakes, much of the population was displaced at refugee camps throughout the affected areas, causing even worse effects of the cholera outbreak due to shared resources of contaminated food and water supplies.

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The study found that even though the outbreak occurred under disaster response supervision and relief workers, a “proactive global response to poverty, the greatest harbinger of disease transmission” (p. 75) was required. This outcome is only enhanced by the earthquakes that took place, and poverty was noted as a leading cause of the damage done to an already vulnerable population.

The study by Benevolenza and DeRigne (2019) provides valuable data but has limited reliability given the sample size of information pulled was relatively small. Information pulled from this study resembled a recurring theme throughout the various studies. While the data is valuable and the research process conclusive, this area of emergency management remains underdeveloped and under researched. However, common findings that exist between the various studies support the importance of the data and further exploration into the relationship between emergency management and vulnerable populations. Robinson et al. (2013) notes improvements such as prioritizing public engagement and policy changes that adhere to social differences amongst a community as admirable steps in the direction of policy adaptation and extending the range of functional needs of a community which can adjust deeply rooted social construction to support the broader populations’ needs. The other studies present similar ideologies as they pertain to enhancing the resilience of vulnerable populations in disasters.

Additionally, Phibbs et al. (2015) uses data provided through questionnaires with members of the disabled community which provides additional quantitative data surrounding unique preparedness measures required for these communities. One of the main lessons Phibbs et al. (2015) notes is that vulnerable populations require specific attention, policy, and guidelines that differentiate from standard action strategies and priorities. An encouraging notion is that Phibbs et al. (2015) also states that inclusion for the disabled community has seen wider

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relevance, and upon review of legislation should see increased assistance in the future.

Unfortunately, until these adjustments are made, “enhanced opportunities for disabled people to maintain their independence in an emergency situation” (p. 45) remains a target for the future.

Williams and Webb’s (2020) data study presented surrounding issues that include lacking awareness, security, and access provides introspection for the overall system that connects vulnerable populations’ needs to emergency preparedness practices. Awareness is one element of social vulnerability that becomes another recurring theme throughout the various literature of this study. Data suggests that public officials undermine efforts to educate the public on hazards, and political motivations being in other sectors creates an environment where already at-risk individuals are facing even greater danger. This is perhaps suggesting that more persistent efforts are required to express the danger of vulnerable populations in emergency situations to increase its importance to those outside the sector.

Critical Appraisal

The following section will critically appraise the studies in the literature review to determine the validity, relevance, and value in relation to the research question and present a cumulative assessment of the various literature.

Throughout the literature in this study, the data comes from a timeline over the years of 2005-2017. Notable disaster events that occurred over that period include major events such as the Haiti 2010 earthquake and the Christchurch, New Zealand earthquakes of 2011. In the case of Robinson et al. (2013), a study which attempts to combat the neglect that residents with disabilities face in the emergency management sector post Hurricane Katrina, the data was collected via in-person interviews. In this study the interview transcripts were structured by

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evacuation hosting. These interviews were hosted with shelter managers from a variety of communities across the United States. This was a common method utilized by many of the reviewed studies.

Williams and Webb (2020) had a similar approach which examined the relationship between practitioners and social vulnerability. The researchers' findings are provided through a "grounded theory approach" (p. 284) where emergency managers were assessed based on their perceptions and understanding of social vulnerability. This process included "semi-structured in-person interviews with a sample of practicing emergency managers." (p. 284) The data was collected from 13 counties in the State of Texas including the areas of Houston-Galveston and Southeast Texas. The area was chosen due to its exposure to natural hazards such as hurricanes and floods. The results of the interviews were stated to be broad in nature, often depending on context, community, and region of each specific interviewee. "In qualitative studies such as this one... the use of multiple sources enables verification of the data, reduces bias, and strengthens the believability of the findings." (p. 286) This also compares to the study by Phibbs et al. (2015) who completed a New Zealand based study that utilized qualitative research to conduct interviews with 43 research participants. It is also noted that the study was heavily rooted in Ngai Tahu values and practices, as well as influenced by the local culture. The contrast between this New Zealand study based in one location, community, and cultural beliefs differs greatly from Williams and Webb (2020) who studied a broader area surrounding various parts of Texas. Phibbs et al. (2015) notes that civil defense and emergency management policies/practices were enhanced due to the "respectful integration" (p. 9) of Māori knowledge and strategies. Additionally, the 43 research participants were interviewed based on specific cultural factors in New Zealand and in direct correlation with the series of earthquakes that took place in that

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location. While the results are like the other studies reviewed in this paper, there is additional value in the focused scope and unique nature of this location, culture, and community. While the interview data structure was common across multiple sources, the additional cultural value founded by Phibbs et al. (2015) presented more focused data, albeit on a smaller scale.

The limitation that stands out in the study by Williams and Webb (2020) is the researchers' broad nature of their in-person interviews. The focus remained on "perception of" (p. 284) as they assessed emergency managers. However, perceptions do not guarantee practice or actual implementation. If process and practice were examined in addition to perception, the results would likely alter in some form. It is unlikely that significant differences would be found, but such broad questioning as portrayed in this study can lead to ineffective data in some cases. In contrast, Robinson et al. (2013) who also conducted structured interviews noted that their focus was on relating the data to the FNSS [functional needs support services] approach. This provided greater focus on typical emergency management practices, of which FNSS is aligned with. In both this study and the New Zealand based study by Phibbs et al. (2015) there is a similar advantage by structuring their interviews around a common variable amongst their participants; the FNSS approach and the cultural correlation in Christchurch. However, a similar hindrance between the Phibbs et al. (2015) and Robinson et al. (2013) studies was the limiting nature of remaining focused on specific interviewee factors. Both studies' data were described to be on a smaller scale. Particularly Robinson et al. (2013) as shelter managers provide excellent insight into the sector but are also limited by contained results. Widespread data collected across the country would have expanded the scope, providing additional benefit in pulling data from a wider array of participants outside of shelter managers, which as described by Robinson et al. (2013) placed a stronger focus on evacuations of disabled individuals. Bartelt (2011) presents a

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study with similar limitations. The data collected from Haiti following the earthquake that occurred in January 2010 is limited to a single emergency event in one nation. While this disaster does present valuable data applying to a nation with a significant group categorized under vulnerable populations, the findings remain exclusive to a single incident and community. However, the results do provide valuable data that express how vulnerable populations improperly prepared for a disaster suffer negative effects far greater than anticipated due to compromised health, poverty, and similar vulnerabilities.

Benevolenza and DeRigne (2019) completed a study utilizing a different approach to data collection. The data was acquired using Academic Search Premiere and 13 articles were selected based on relevance to the connection between climate change/natural disasters and vulnerable populations. This study contains a literature review which was conducted “with use of the conceptual framework of natural disaster-related experiences and health outcomes in the context of three major hurricanes which occurred in the United States” (p. 268) Similarly, Anderson (2014) identifies an overview of steps for local governments to build effective emergency-based communications that can include the diverse populations of people with disabilities. (Anderson, 2014) This report utilizes data collected from sources including The National Council on Disability, Federal Communications Commission, and the Department of Homeland Security. Both studies effectively collect data from additional sources using a designated search methodology to synthesize the variety of physical and psychological functions of vulnerable populations to discern and build effective communication with vulnerable populations. The importance of physical and psychological elements of both studies, and the method of data collection present a common area that both studies place focus upon. As mentioned by Benevolenza and DeRigne (2019) vulnerable populations in disaster is an area with little

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research and the findings that these populations must be considered “in separate and specialized emergency preparedness plans, trainings, and relief efforts” (p. 266) is aligned with the other studies in this paper and valuable to the growth of data in this sector.

Williams and Webb (2020) state the basis for their study is to understand how new knowledge is being translated into practice. This is unique in that the relationship between social vulnerability and disasters has not been effectively measured, yet disasters clearly have vastly different effects on some groups when compared to others. This is supported by Bartelt (2011) who in the study analyzing the effects of Haiti’s 2010 earthquake found that the vulnerability of a population in weakened conditions can lead to vastly worse effects when faced with disaster. Referring to Williams and Webb (2020) these results express the importance of a needs assessment that differs depending on economic, political, and social factors. This is justified by the various research and creates opportunities to further expand the sector to meet wider communities’ needs.

Providing greater emergency planning to vulnerable populations is found to be underdeveloped and requires significant improvements to serve effectively. Through this study, issues surrounding policy and communication have been identified with recurring themes of necessary adjustments in guidance and strategy amongst the literature. Furthermore, it was identified by each of the sources that awareness and education stand as a significant obstacle requiring improvements to both vulnerable populations and those populations not identifying as such. The literature did not lead to any contradictory data. However, with trends extending in the same direction, therein lies gaps in the research pertaining to a general lack in information predating the 2010s. While some of the data included in this review involves disasters predating 2010 such as Hurricane Katrina, the timeline of data is not particularly spread out over more than

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about 15 years. This is unfortunate as many of the studies presented smaller sample sizes or were structured to focus on one specific element such as the study by Robinson et al. (2013) that interviewed only shelter managers. Even with these limitations, the studies share common findings and present results that leave room for future research and areas to begin implementing positive change immediately. Additionally, with a greater volume of studies coming to light in recent years and more effective documentation, more data is coming available creating stronger views and distinct solutions to ensure that vulnerable populations are cared for effectively within the emergency management planning process. Therefore, the cumulative assessment based on this research shows that the commonly identified strategies involving increased outreach to vulnerable populations stands as a recurring finding amongst the data. The research supports this in the form of increasing communication with vulnerable populations and taking greater measures to ensure that knowledge is spread appropriately to the public, including those not identifying under the label of vulnerable populations. With awareness being a key element in these improvements, emergency managers can continue to implement more effective policy while researchers continue to evaluate the details surrounding the different levels of governments, NGOs, and private sectors and their willingness to implement changes that can assist vulnerable populations. Future changes in these areas can begin to create improvements for vulnerable populations to be cared for in emergency management processes, an area that these studies do not show current improvements in.

Discussion

Various connections are made by each of the evaluated studies in relation to the strategies and policy changes required to improve the management of vulnerable populations. The results of each study contain immediate correlation to one another despite the differences in data. These

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studies include data ranging from 2005-2020 and cover North American and international population groups. The results suggest that vulnerable populations are not effectively cared for at any of the stages of emergency response throughout the timeline and data covered in this study. Collectively, emergency management practitioners, involved levels of government, policy makers, and vulnerable communities, all require enhanced education on the variety of methods that are necessary to assist these groups. Fortunately, some of the necessary improvements are currently existing within designated methods utilized by these population groups. For example, the deaf community has known alternative methods of communication, less fortunate social groups have established resources to utilize, and the trend continues for other individuals who fit under the label of vulnerable populations. These kinds of resources should be introduced and regulated into the world of emergency management practice and policy to educate the public and responders for improvements to be made in this sector.

Baker and Cormier (2015) states that mass-media messaging is not a particularly effective medium for increasing preparedness levels, but utilizing knowledge can be a factor. Increasing knowledge and exposure to systems are said to benefit motivation and influence on others. Furthermore taking the necessary steps to become prepared financially and personally requires great effort that is difficult for those in vulnerable situations and with limited resources to utilize. Therefore, literature such as the presented studies in this paper provide the insight that can begin to reconstruct these communities' response capabilities despite societal barriers.

Evaluation and Recommendation

The aim of the data collected is to examine the current relationship between emergency management and vulnerable populations while presenting results that lead to action that can be taken to improve this relationship. Referring to the research question: what can be done and what

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changes can be made to existing emergency management processes in the emergency planning phase to better assist vulnerable population groups in emergency situations? The first point which occurs commonly between each of these sources is that the relationship between vulnerable populations and emergency management is under-represented in EM planning. Much of the data includes lack of communication, coordination, strategy, and guidance as major issues in this sector. These findings stand as the largest trends amongst literature regardless of if focus is placed on planning, response, or recovery phases of emergency management.

Focus must be taken on the awareness factor amongst vulnerable populations, or lack thereof. While the solutions to these varieties of issues vary throughout the data, Anderson (2014) presents solutions involving re-evaluations and periodic meetings to improve on current issues. Emergency managers and counties can meet with disability organizations to ensure emergency needs are met. Additional findings under Anderson (2014) involve planning phase improvements and consistent guidance to be communicated and developed with these population groups. Furthermore, extending the reach of emergency management practice to educate all communities on these specified needs is required. With appropriate leadership, these proposals play into increasing overall outreach to the disabled community to increase their resilience in disasters.

Additionally, vulnerable populations can benefit from incorporating FNSS [functional needs support services] into the planning phase of disaster preparedness (Robinson et al., 2013) and basing the operational principles of FNSS on non-discriminatory categorization. “Disabled populations” is a generalization which extends by self-determination. Essentially this means there is no “one size fits all” sequence for these members of a community. Robinson et al. (2013) explains this by stating “equal opportunity; inclusion; integration; physical access; equal access;

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effective communication; program modification; and no charge.” There is great value in comparing these results with that of Anderson (2014) who suggests in contrast a more generalized solution to be further explored.

Furthermore, information pertaining to the demand for vulnerable population related services must be explored. Individuals have different needs based on disability, living situations, health related weaknesses, among other factors which greatly affect demand and expense needs for emergency planners. Essentially, needs vary depending on community factors. Seeing as population groups are always changing, it lies within policy to ensure that all are accounted for and educated on the variety of methods needed to support vulnerable groups.

Policy changes and improved spread of information is another important area that targets stabilizing these groups. (Benevolenza & DeRigne, 2019) Regarding policy implications, researchers suggest creating an environment where officials “orchestrating the carrying out of such plans are trained to ensure credibility and cultural competency.” (p. 276) These improvements also extend to health facilities, where with current health care systems, preparations need to be made to support additional dependence seeing as large portions of vulnerable populations are uninsured. With heightened rates during emergencies, care and coordination needs to be reflected in the preparation of disaster management for these communities.

Collectively these recommendations are the common themes re-occurring throughout literature. Due to the nature of current legislation on the topic, it appears that room for improvement remains large but with the current literature and identified studies it does appear that many opportunities lie to make improvements in the short- and long-term.

Conclusion

This study reviewed various literature relating to vulnerable populations and emergency preparedness. The research was completed to discover what changes could be made to existing emergency management processes in the emergency planning phase to better assist vulnerable population groups in emergency situations. Within EM planning, the various studies examined data involving interviews with shelter managers, disaster victims, and emergency planners. Data from multiple disaster events such as the Haiti 2010 earthquakes and the Christchurch 2011 earthquakes was also analyzed as they pertain to vulnerable population groups. These studies concluded that awareness, spread of information, guidance, and emergency policies were the main areas creating limitations for vulnerable populations. With enhancements to these areas and greater focus on assisting all members of communities regardless of socioeconomic status or physical capabilities emergency planning can improve upon the processes that currently exist to provide more effective and stable processes as this area of emergency management continues to grow.

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