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PUERTO RICO AFTER HURRICANE MARIA: RESPONSES TO TRAUMA AND
CONSTRUCTING A NEW LIFE IN CENTRAL FLORIDA

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Sociology
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ABSTRACT

On September 20th, 2017, Hurricane Maria made landfall on the island of Puerto Rico causing devastating results. An Island with a history of decades of economic recession, inadequate infrastructure, and a negative effect of a century of colonial rule by the United States, Hurricane Maria unquestionably intensified the catastrophic circumstances in Puerto Rico. (Cons 2017; Torres 2018; Gay et al 2019). The aftermath of Hurricane Maria left thousands homeless and without basic resources in the Island.

The study examines the effects of disparate social factors on individual responses to trauma before, during, and after the disaster and illuminates the circumstances affecting migratory decisions and displacement to Central Florida. To accomplish this, I analyzed 16 in-depth interviews about individuals' experiences with Hurricane Maria and subsequent displacement to Central Florida immediately following the storm. First, consistent with the fundamental premise of the Model of Conservation of Resources (COR), the individual's aim to retain, protect, and build resources after a natural disaster significantly affected trauma responses by Hurricane Maria survivors. The storm had a major impact on the individual's ability to preserve, safeguard, and restore critical resources after the storm. Second, individuals use narratives to create meaning, alleviate stress, and increase group identification as coping mechanisms after the traumatic event. Finally, experience with discrimination and prejudice and difficulties with English language proficiency once in the US, affected individual responses to trauma. Overall, pre-disaster social inequalities had a significant effect on trauma responses during and after the storm.

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CHAPTER ONE: INTRODUCTION

On September 20th, 2017, Hurricane Maria made landfall on the island of Puerto Rico causing devastating results. An island with a history of decades of economic recession, inadequate infrastructure, and a negative effect of a century of colonial rule by the United States, Hurricane Maria unquestionably intensified the catastrophic circumstances in Puerto Rico (Cons 2017; Torres 2018; Gay et al 2019). Complete loss of power and a major impact on Puerto Rico's infrastructure and organizations had a devastating effect on the population, the economy, and public health. Puerto Rico experienced a complete disruption at the personal and professional levels, affecting all social, educational, public, and health services. Hurricane Maria's effect on the disruption of health care systems, worsen by electric outages, fuel, and food shortages, and damage to transportation and communication infrastructure was significant. The aftermath of Hurricane Maria left thousands of Puerto Ricans homeless and without basic resources. Within two months after Hurricane Maria, 83% of residents and businesses did not have electricity, 1 in 3 residents lacked running water, 50% of cell towers were not working, and 23% of the island's housing structure was affected due to structural damages, loss of housing, destruction of roads, and flooding (Zorrilla 2017). Hurricane Maria is considered the worst storm to hit Puerto Rico since 1928. Additionally, 3894 survivors were displaced to the US mainland and, as of 2019, remained on the Transitional Sheltering Program across 42 states (Centro 2019). Reports indicate all regions were impacted, and response efforts differed depending on socioeconomic status and age groups, thus, help for vulnerable populations was significantly delayed (Santos-Burgoa et al. 2018). Communities impacted by toxic pollution, water shortage, access to electricity, food insecurities, individual vulnerabilities, and the ability to recover from a hurricane are directly framed by existing socioeconomic disparities (Garcia-Lopez 2018). Socioeconomically

disadvantage communities experienced exceptionally disproportionate harm and loss after the storm. And, in the case of Puerto Rico, those living in metro areas with higher socioeconomic status and better access to resources benefitted much faster from the power infrastructure dependent on tourism and other industries than other, more mountainous, and secluded areas of Puerto Rico. The devastation after Hurricane Maria triggered an exodus of Puerto Ricans migrating to the US, and within weeks of the disaster, most were settling in the Central Florida area (Melendez, Hinojosa & Roman 2017; Centro 2018). A state of emergency was declared by Florida governor, Rick Scott, as agencies prepared for the arrival of individuals affected by the storm, opening welcome centers, and providing social, economic, and health services at Orlando International Airport. Two years after the storm, between 220,000 to 255,000 residents have left the island and moved to the US mainland. This is considered the most significant exodus to the US in the island's history, with 76% of the displaced relocating to Florida, New York, Texas, and Massachusetts within the first six weeks after Hurricane Maria (Centro 2019; Martin et al. 2020). Consequently, Florida is now the largest Puerto Rican population hub in the US (Melendez & Hinojosa 2017), and the state most likely to be impacted by the increase in Puerto Rican population, with an estimate of 40,000 to 82,000 people moving to the state from the island annually (Melendez & Hinojosa 2017).

Rationale/Purpose

The premise of the current study is to assess Puerto Ricans' response to trauma after Hurricane Maria. In this dissertation, I explore the effects of disparate social factors on individual responses to trauma before, during, and after the disaster. The Model of Conservation of Resources (COR) states that, after a natural disaster, the aim is to retain, protect, and build resources (Hobfoll 1988). Sociologically, individuals use collective trauma narratives to respond to a natural disaster. This responses to trauma are used to create meaning, alleviate stress, and

increase group identification. Using COR model of stress as an organizing framework, this study examines the relationship between disaster impact and collective trauma. By utilizing individuals' narratives about their experience with Hurricane Maria, I seek to understand the multiple avenues in which social vulnerabilities, loss of resources, and loss of community affect trauma responses after the disaster. By analyzing collective trauma responses, I seek to understand the effect of Hurricane Maria's impact on the survivors' ability to cope, recover, and rebuild, especially after displacement to Central Florida. This impact is further compounded by social vulnerabilities and disparate social factors present pre-disaster. Additionally, in this study, I seek to understand the factors affecting migratory decisions and displacement to the Central Florida area after Hurricane Maria. Finally, I seek to evaluate the effect of racial/ethnic prejudice and discrimination after displacement to Central Florida on individual responses to trauma. The study will provide information crucial about trauma responses after a natural disaster, and the information necessary to understand the effects of disparate social factors, displacement, and racial/ethnic discrimination on an individual's ability to cope and recover after a natural disaster.

CHAPTER TWO: LITERATURE REVIEW

Background

Natural disasters have a significant impact on the world's population. Scholars have shown the importance of recognizing the impact of a natural disaster on different communities, and the avenues in which social factors affect population responses to the event. Impact by a natural disaster can be unevenly distributed depending on exposure parameters and social vulnerability. Disasters are social events as much as a natural one, and the magnitude of the impact on social units affected by the event is measured by the community response. This impact can be measure by the degree of damage to property, the duration of the event, and the degree of social disruption to the affected community. And the response can be measure in terms of social processes associated with the impact before, during, and after the catastrophic event. By understanding the relationship between impact and response in the social unit, we can begin to understand the disparate effects of a disaster at the population level. Communities affected by a disaster are not homogenous, but rather a combination of intersecting units in which social and economic inequalities persist. Race, ethnicity, gender, and class (socioeconomic status) have a significant effect on disaster response, with those more vulnerable affected the most (Bolin & Kurtz 2018). To illustrate, after Hurricane Katrina African Americans were more likely to perceived environmental injustice than Non-Hispanic Whites (Adeola & Picou 2017); and differential socio-economic conditions pre-Hurricane Katrina in New Orleans had a significant effect on different economic classes ability to respond and cope post-disaster (Masozera, Bailey & Kerchner 2007). And, lower-income households are more likely to be impacted by food insecurity (inability to find food resources post-disaster) than other groups

(Cutter 2017). An individual's response to the event is dependent on the social and economic resources available to them. Race, ethnicity, class, and gender have been demonstrated to have a significant effect on disaster responses. If resources are not readily available, responses to the event are potentially more negative. Disasters are stressful events in which individuals may experience short-term or long-term traumatic effects (Erikson 1976). After a natural disaster, individuals report stress, worry, helplessness, and feelings of isolation, which can greatly impact a person's mental health. Besides, the disruption of family, community, and work-life after a natural disaster can have a remarkable negative psychosocial impact.

Socially disadvantaged individuals are less likely to have crucial resources to prepare, respond, and recover from a major hurricane. Research found notable differences in terms of disaster preparedness, with older adults with a lower socioeconomic status less likely to be prepared pre-disaster than higher-income older adults, Hispanic/Latinx were less prepared than Whites and African Americans, and black elders with low socioeconomic status found to be the most vulnerable (Cox & Kim 2018). Disaster effects are defined by the population's response to the event and cannot be understood apart from the social context in which the disaster occurs (Gill 2007). For instance, research shows that cities with vulnerable infrastructure and highly complex social conditions can produce noteworthy inequalities across different community responses to the event, such as those found after Hurricane Sandy in New York (Douglas, Koslov & Klinenberg 2015). After Hurricane Harvey, socially vulnerable minority communities report experiencing significantly more unmet needs, like access to electricity, food, water, and worry about safety; and racial and ethnic minorities in lower-income housing reported significantly more unmet needs than Non-Hispanic Whites (Flores et al. 2020). Racial and class differences after Hurricane Katrina identified low-income African American homeowners as the

most vulnerable after the storm (Elliott & Pais 2006); and African Americans attributed racial discrimination and inequality as the underlying factors affecting disaster response in their community (Adams et al. 2006; Henkel et al. 2006; Ai et al. 2011). After Hurricane Katrina, individuals reported higher levels of traumatic response to the hurricane as a function of longer evacuation wait times from hard-hit areas (Mills, Edmondson & Park 2007). Particularly to Puerto Rico after Hurricane Maria, research indicates that social factors like chronic health conditions, those with economic disadvantages, rural populations, and older Puerto Ricans experienced more negative health outcomes and report higher trauma responses than individuals in more advantaged communities (Niles & Contreras 2018). Minorities and the disenfranchised are most vulnerable to a disaster, experiencing negative consequences and significant challenges post-event (Reid 2017).

Environmental injustice is the unfair exposure of any group to environmental hazards and related risks. This injustice produces differences in urban change, economic and political marginality, disparate access to housing, differences in infrastructural investment, and uneven accessibility to prepare, respond, and recover due to a natural disaster. To illustrate, vulnerable populations connect environmental injustice to their experience post-disaster than more affluent counterparts (Adeola & Picou 2017). For example, research indicates that socioeconomically disadvantage and marginalized communities experienced more extensive damage after Hurricane Dorian in the Bahamas than those in the upper class, consistent with previous environmental injustice (Collins et al. 2019). The relationship between loss of resources, environmental injustice, and displacement due to a natural disaster have a significant effect on the individual's responses to trauma. In disaster research, displacement refers to the forced migration of people from their home or country of origin after a catastrophic event (an environmental change).

Displacement due to an environmental change can be seen as both an outcome of the natural disaster and a contributor to socio-economic inequality. And understanding the factors affecting migratory decisions will provide insights into the different mechanisms associated with an individual's response to trauma due to a natural disaster. The more reported loss of resources, the more negative responses to trauma by an individual after a natural disaster, with displacement having a significantly higher effect on trauma responses. For example, university students displaced after Hurricane Katrina reported experiencing greater responses to stress due to trauma exposure (Davis et al. 2010), and displacement stress is associated with poorer coping capabilities after a disaster (Wadsworth, Santiago & Einhorn 2009). Furthermore, displaced individuals on temporary shelters are exceptionally vulnerable to adverse mental health outcomes after a hurricane (Taioli et al. 2018). After a natural disaster, the needs of displaced individuals in terms of medical care, behavioral health care, social services care, and communication avenues to promote access to the various agencies must be assessed to provide a successful response to community crisis (Paek et al. 2018). Regarding Hurricane Maria, the influx of Puerto Rican migration to the US will continue to have a major impact on the area's public health resources (Ramphal 2018). Understanding migration as a response strategy will illuminate the potential avenues in which survivors of a natural disaster will overcome the event itself.

Five factors have been identified as affecting an individual's migration decision after a cataclysmic event: economic, political, social, demographic, and environmental (Black et al. 2011). And, mobility and displacement patterns are interconnected and driven by all these factors (Adger, de Campos & Mortreux 2018). A natural disaster, like the series of hurricanes experienced by the US and its territories in recent years, can trigger migration and displacement

of a significant number of individuals in a population. Population displacement changes the make-up of rural communities, and distinct to Puerto Rico after Hurricane Maria, changes in migratory patterns from rural areas to urban cities had a pronounced effect on the Islands economy and access to resources (Acosta et al. 2020). Nonetheless, the final decision to migrate depends on the extent of the damage to homes, the level of loss of resources like work, home, school, access to healthcare, and the lack of options to rebuild. Individuals are forced to move directly, or shortly, after the natural disaster and structural factors make some more vulnerable to displacement than others. Those who experienced displacement after a natural disaster report significantly higher anxiety and stress, due to separation from families, uncertainty or their future, lack of control, loss of community and identity, and financial and language difficulties (Li, Lidell, & Nickerson 2016). Furthermore, to understand migration patterns after a natural disaster, factors like the difference between those who are forced to migrate (report no other options due to loss of resources), versus those who voluntarily migrate (have resources in which migratory decisions are better), versus those from significantly vulnerable populations who do not have the resources to migrate even if they wish to do so must be assessed. The latter possessed a double risk, they are more vulnerable to disaster but less able to move away (Black et al. 2013). Individuals can become trapped and without resources for migration. On the other hand, force migration can have a deleterious effect on an individual's ability to return "home". After Hurricane Katrina, black residents returned to the city at a much slower-paced, or remain displaced to communities around the US, at much higher numbers than their White counterparts (Fussel, Sastry & VanLandingham 2010).

Displacement after a hurricane, in combination with experiences of racial/ethnic discrimination and prejudice, provides a distinctive opportunity to study the effects of

displacement and forced migration on an individual's response to trauma after the disaster. Environmental displacement, forced migration caused by an ecological event, is not only a disaster issue but an interconnected problem where the cataclysmic event and racial/ethnic discrimination vulnerability interact. These forces act together, affecting marginalized individuals. Historically, the categorization of the population into racial groups, and assigning hierarchical status to these groups in the US, produces a system of inequality (Strmc-Pawl, Jackson & Garner 2018). These enable the preferential allocation of resources and goods to those regarded as inherently superior. The system of racist ideologies often leads to the entrenchment of negative attitudes and beliefs towards minority groups (prejudice), and differential treatment of marginalized individuals (discrimination) (Maldonado-Morales, Caldera-Wimmer & Johnson-Cardona 2019). And, negative stereotypes towards minority groups provide an additional determinant of discriminatory practices among individuals. Experiences of discrimination and prejudice may be a neglected psychosocial stressor that adversely affects trauma responses to a natural disaster (Kirkinis et al. 2018). Plenty of evidence suggests that racism and discrimination produce harmful psychosocial effects among minorities in the US (Bailey et al. 2017; Lee et al. 2018; Cobb et al. 2019; David, Schroeder & Fernandez 2019). To name a few, perceived discrimination is associated with a higher incidence of substance abuse by African American parents of young children (Gibbons et al. 2004); and have a significant impact on mental health outcomes of Asian and Hispanic/Latinx university students (Hwang & Goto 2006). Structural racism, prevalent at the institutional level, reinforce discriminatory practices in the US and affect the distribution of resources for minority individuals (Bailey et al. 2017); and access to health care and other services (Feagin & Bennefield 2014).

The internalization of society's racist ideologies by non-dominant populations may also have consequences within minority groups (Smith 2017; Gonzalez-Sobrinio 2019; Valle 2019). Competition for access to resources in the US between minority groups can have a deleterious effect on displaced individuals after a natural disaster, and in how individuals respond to trauma after the catastrophe. For example, unique to the Puerto Rican population, their minority status is both affected by their legal status as US Citizens and White identity while simultaneously racialized as Non-White by others, leading to discrimination and prejudice by other minority groups. To illustrate, research shows that a homogenous Hispanic/Latinx denotation has not emerged from the divergent ethnic identities of Puerto Ricans and Mexicans. These groups are plagued by mutual suspicion, stigmatization, and competition for resources in the US (De Genova & Ramos-Zayas 2003). And, the media portrayal of Puerto Ricans and Mexicans as competitors for resources in the US perpetuates prejudice and discrimination among these groups (Gonzales-Sobrinio 2019). Puerto Ricans displaced after the hurricane report experiencing discrimination, social isolation, communication barriers, and racial/ethnic competition for work, housing, education, and social resources. And, those moving to the Central Florida area after the storm are more likely to experience significant challenges when transitioning into the labor force, returning to school, or developing fluency in the English language (Mora, Davila & Rodriguez 2018). On average Puerto Ricans in Central Florida have higher income, occupational and educational levels than Puerto Ricans in other states (Duany 2012). Nonetheless, these discriminatory practices may potentially harm economic advances and a sense of belonging for Puerto Ricans in the US, specifically in Central Florida (Aranda & Rivera 2016). Thus, little is known about the effects of displacement after Hurricane Maria and discrimination on responses to trauma.

Social support refers to the psychological and material resources provided by a social network to help individual's cope with stress (Vaux 1988). After a natural disaster, the disruption and decline of social support mechanisms has a significant effect on the population. Social support is a found to be a protective factor against the negative psychosocial impact of a natural disaster. For example, research indicates that social support buffered the negative impact associated with loss of resources after a natural disaster (Warner et al. 2015); significantly moderated the effects of a natural disaster trauma response on those impacted by Hurricane Katrina in New Orleans (Kilpatrick et al. 2007); and social support was significantly associated with recovery after a natural disaster, especially for those reporting higher levels of social support (Dai et al. 2016). Most importantly, culture is a powerful influence on help-seeking behaviors after a natural disaster. Rivera (2012) found cultural barriers to help-seeking behaviors after a natural disaster exclusive to the Puerto Rican community.

CHAPTER THREE: THEORY

The Model of Conservation of Resources (COR) states that, after a natural disaster, the aim is to retain, protect, and build resources (Hobfoll 1988). Individuals utilize key resources with the goal of managing and regulating disaster impact and stress. A community's disaster level of impact is measured by the degree of damage to individual property, the duration of the event, and the degree of social disruption. Stress is experienced when disaster impact causes an individual to undergo significant emotional, psychological, and behavioral changes and the resources to cope are not considered to be readily available. Consequently, loss of resources due to disaster impact can intensify stress response and collective trauma. Using COR model of stress as an organizing framework, this study examines the relationship between disaster impact, and collective trauma. Furthermore, the study seeks to understand the factors affecting migratory decisions and displacement after the disaster, and the compounding effects of prejudice and discrimination on collective trauma responses.

COR's basic tenet, the individual's need to retain, protect, and build resources, is threatened by the potential or actual loss of valued resources after the disaster (Hobfoll 1988). COR's stress theory has been used to study how to cope with the demands in the workforce (van Woerkom, Bakker & Nishii 2016); organizational stress (Hobfoll et al. 2018); work-family conflict (He, An & Zhang 2019); nurse burnout and patient safety (Prapanjaroensin, Patrician & Vance 2017); and the interactive effects of dual-earner couples on job security (Debus & Unger 2017) to name a few. This threat to loss of resources has both an objective and subjective component, significantly impacting chronic individual stress and collective trauma after a natural disaster. The perceived loss and the net loss of resources affect the psychosocial processes in which trauma memory is reconstructed and maintained, thus influencing the use of collective trauma narratives to mitigate and mediate an individual's psychosocial response to the disaster.

Trauma is defined as the impact of shocking occurrences that profoundly disrupts an individual's life. Trauma literature stresses the effect of a natural disaster on an individual's psychological health (May & Wisco 2016; Bromet et al. 2017; Myles et al. 2018; Benevolenza & DeRigne 2019; Brooks, Rubin & Greenberg 2019), but little is known about the effects of natural disaster exposure and trauma responses at the community level. Collective trauma is a psychosocial response to the traumatic event, rather than a psychological symptom. A catastrophic event can result in collective trauma. A shared experience, like a hurricane, can have the potential to influence a community's coping mechanisms and trauma responses (Erikson 1991). Exploring the sociological concept of trauma requires the interpretation and analysis of the individual's responses to the cataclysmic event. Individuals use social and psychological processes, focusing on the reproduction of the traumatic event, to create meaning, alleviate stress, and increase group identification (Hirschberger 2018). Human beings make sense of their world through meaning, and to make sense of the collective experiences after a hurricane, trauma articulation is essential. An individual's construction of trauma narrative mitigates and mediates the psychosocial response to the disaster. Social vulnerabilities are revealed to be a significant obstacle to overcoming stress and regain important resources, having a direct impact on collective trauma responses after the event. Social factors can either protect, support, and foster resource maintenance, or can diminished, obstruct, or denied resource reservoirs. As stated previously, environmental injustice is the unfair exposure of any group to environmental hazards and related risks. This injustice produces differences in an individual's ability to recover and rebuild post-disaster. Environmental injustice, disparate socio-economic conditions, age and gender differences, migratory decisions and displacement, and experience with racial/ethnic

discrimination and prejudice have a significant effect on an individual's ability to maintain resource reservoirs and access critical assets to prepare, respond, and recover after a disaster.

Through Hobfoll's (1988) COR model of stress as an analytical framework, I argue that: First, those with greater resources pre-disaster are less vulnerable to resource loss and stress post-disaster than those with fewer resources. Consistent with risks associated with environmental injustice, their ability to coordinate resource gain and rebuild are significantly hindered. Second, individuals' migratory decisions and subsequent displacement to the US are influenced by resources loss and options to rebuild in Puerto Rico. Finally, displacement to the US, combined with discrimination and prejudice and language barriers, can foster individual stress and collective trauma responses. Hence, having a greater effect on the individual's ability to cope and recover after Hurricane Maria and the construction of a new life in Central Florida. This study contributes to the knowledge base regarding the social impact of Hurricane Maria in Puerto Rico and to the understanding of the Puerto Rican diaspora in the US after the disaster. It complements the extensive history of disaster research and the effect of community impact. This research provides descriptive narratives shedding light on how resource loss interact with individual stress and collective trauma responses. The in-depth personal narratives illuminate on how Puerto Ricans' experienced stress, trauma and resource loss immediately following Hurricane Maria.

CHAPTER FOUR: METHODOLOGY

Using Hobfoll's (1988) COR model of stress as a framework to analyze collective trauma responses to Hurricane Maria, the study examines how the loss of resources affected Puerto Ricans before, during, and after the storm. Individuals utilize key resources with the goal of managing and regulating disaster impact and stress. Stress is experienced when disaster impact causes an individual to undergo significant emotional, psychological, and behavioral changes and the resources to cope are not considered to be readily available. Consequently, loss of resources due to disaster impact can intensify stress response and collective trauma. The purpose of the study is to assess Puerto Ricans' response to trauma after Hurricane Maria. Using COR model of stress as an organizing framework, this study examines the relationship between disaster impact, and collective trauma. The study examines how environmental injustice, socioeconomic differences, social vulnerabilities, displacement, and experience with prejudice and discrimination have an impact on trauma responses. Furthermore, the study seeks to understand the factors affecting migratory decisions and displacement after the disaster, and the compounding effects of prejudice and discrimination on collective trauma responses. And how these are influenced by levels of resource loss and options to rebuild in their homeland. My aim with this study is to contribute to the understanding of the effect disparate social factors and social vulnerabilities have on responses to trauma after a natural disaster and to inform on how social factors have a direct effect on an individual's ability to cope, recover, and rebuild after a natural disaster.

To accomplish this, I analyzed interviews of individuals displaced to Central Florida one to three months after Hurricane Maria in Puerto Rico. As the home of the largest Puerto Rican

community in the United States and given the expected migration to the Central Florida Area by Puerto Ricans after Hurricane Maria (Hinojosa 2018), the Orlando area was selected as the optimal site to conduct the research interviews. The interviews were part of a previous collaboration between the National Hazard Research Center and Dr. Ariana Valle for the University of California, Los Angeles. This report established how disparate political and social factors affected responses to Hurricane Maria, how individuals engage in recovery behaviors, and individual experiences with displacement to Central Florida. The data was used for this dissertation because of the rich narratives providing information on how Puerto Ricans prepared and responded to Hurricane Maria, their migratory decisions, and experiences with displacement to Central Florida after the storm. These factors provided a unique opportunity to examine participants narratives immediately following Hurricane Maria and displacement to the Orlando Metro area by using the COR stress model to analyze the effect of resource loss on trauma responses.

The original interview sample included 16 in-depth interviews conducted in the Orlando Metropolitan Area between October and December 2017. These participants originated from Puerto Rico. Participants included 13 womxn and 3 men between the ages of 25 - 70 years old individual interviews were selected for analysis. Table 1 provides a description of the participants including: age, gender, geographic location, and employment status.

Table 1: Demographics

Respondent	Age	Gender	Marital Status	Children	Employment Status	Urban vs. Rural
Diana	70	Female	Single	Yes	Retired	Rural
Camila		Female	Married	Yes	Employed pre-disaster	Urban
Sara		Female	Married	Yes	Employed pre-disaster	Rural
Carlos		Male	Married	Yes	Retired	Urban
Irene		Female	Married	Yes	Employed pre-disaster	Urban
Alma	41	Female	Single	Yes	Unemployed	Rural
Carla	29	Female	Single		Employed pre-disaster	Urban
Lea	25	Female	Single	Yes	Unemployed	Urban
Amaia		Female	Married	Yes	Unemployed	Rural
Cristina	40	Female			Employed pre-disaster	Rural
Alina		Female	Divorced	Yes	Unemployed	
Rocio		Female	Single	Yes	Employed pre-disaster	Urban
Costanza		Female	Married	Yes	Employed pre-disaster	Urban
Alicia	41	Female	Married	Yes	Employed pre-disaster	
Diego	43	Male	Married	Yes	Employed pre-disaster	
Franco		Male	Married		Employed pre-disaster	

Participants were asked to respond to questions regarding preparation for and experience with hurricane Maria, experiences with migration to Florida, and background information. Interviews were conducted in Spanish by a culturally and linguistically competent researcher. Interviews were conducted at a location selected by the participant and guided by a semi-structured interview style that lasted between 60 minutes and 120 minutes per participant. All interviews were digitally recorded and transcribed in Spanish to maintain thematic strength of the narrative by the original researcher. The interview transcripts were shared in the original language in order to complete this project.

Procedure

Once interviews were received, the study used qualitative content analysis to examine the specific objectives of the interviews, allowing the possible identification of themes through multiple readings of the transcripts in the original language and subsequently analyzed each interview via qualitative thematic analysis (Marshall & Rossman 1999). I began by engaging in multiple readings of the transcripts, identifying similarities in the data, and creating codes. Interviews were coded and broken down using thematic data analysis. After the data were coded and analyzed for broad qualitative themes and sub-themes, their attributes were analyzed to determine codes and themes emerging in the narrative. By engaging in multiple read-throughs, coding was broken down into different stages (Charmaz 2006). Codes were organized into themes and examined to get a general sense of the data. At initial coding, a line-by-line analysis was used to generate a list of emerging themes that were then compared and synthesized. Once an initial list of themes was developed where each interview was categorized into distinctive themes, the participants' responses within each theme were examined for similarities and differences. Next, focused coding was used to identify links between initial codes and emerging patterns in the data (Charmaz & Belgrave 2012). Finally, after focused on coding, I identified

themes and subthemes within the data. For the study, all analysis was done in Spanish and then translated by the author into English for final writing.

The thematic analysis yielded three main categories that broadly represent all of the data: impact before, during, and after Hurricane Maria and loss of resources; response to Hurricane Maria and loss of resources/collective trauma; and displacement/migratory decisions after Hurricane Maria and loss of resources/collective trauma. These categories, and their subthemes, are explored in more depth in the following sections.

CHAPTER FIVE: FINDINGS

Impact before, During, and After Hurricane Maria and Loss of Resources

As stated in chapter three, the fundamental premise of the Model of Conservation of Resources (COR) is that an individual's aim is to retain, protect, and build resources. After a natural disaster, the impact on the ability to preserve, safeguard, and restore critical resources is affected by disparate social processes. Consequently, stress and the ability to cope influences trauma responses after natural disaster. In the case of Puerto Rico after Hurricane Maria, several factors directly influence trauma responses. In this chapter, I will describe the impact of environmental injustice (i.e. urban vs. rural areas) on the loss of resources and trauma responses. And, the impact of socioeconomic status differences (i.e. employed vs. retired vs. unemployed; age and gender with children vs. no children) on the loss of resources and trauma responses.

Environmental Injustice: Urban vs. Rural and Loss of Resources

Environmental injustice, and its relationship to the differences found between urban and rural communities in Puerto Rico, was measured by categorizing the population using a remoteness index established by Kishore et al. (2018). Using this method, population was stratified according to travel time to the nearest city with a population of 50,000 people. These clusters (defined as *Barrios*) were grouped into eight categories from least remote (Category 1) to most remote (Category 8). Using participants' demographic information stated in each interview, each participant was matched with the *Barrio*, or geographic location in which they resided when Hurricane Maria made landfall in Puerto Rico, and the respective remoteness index. For this analysis, the data was divided into two categories: rural, those with remoteness index in the most remote categories; and urban, those with remoteness index in the least remote categories. There are significant differences in exposure to environmental injustice depending on

the geographic location, specifically urban versus rural communities. Of the 16 participants, eight participants were grouped into least remote, or urban category; and, five participants were grouped into most remote category, or rural area. For the last three participants, they did not disclose an exact location. Nonetheless, the narratives contained extensive information about the make-up of their community describing whether they resided in the urban metro area versus rural communities. Once categories were established, significant differences between urban and rural *Barrios* were found in terms of resource loss and trauma response before, during, and after Hurricane Maria. Particularly, in terms of preparedness for Hurricane Maria and response and recovery post-disaster.

COR and Preparedness, Response, and Recovery

Consistent with COR's basic tenet, individuals strive to obtain, retain, and protect that which they value pre-disaster. In turn, the level of preparedness has a direct effect on the individual's response and recovery post-disaster. Furthermore, social vulnerabilities experienced by marginalized and disadvantage communities sustain disproportionate harm and loss affecting the individual's ability to prepare, respond, and recover after the disaster.

In the case of Puerto Rico after Hurricane Maria, those in urban areas benefitted greatly from the infrastructure already in place. Consistent with environmental injustice markers, individuals in urban areas reported having shutters, access to hardware stores, and/or other ways to protect their homes before the Hurricane in comparison to those in rural, more mountainous areas of Puerto Rico. To show the difference, Camila, married with children and a homeowner, when asked about her pre-disaster preparation she responded by stating:

“Pues ya la gente sí, se preparó muy bien. Pusieron las tormenteras, se prepararon con gasolina, se abastecieron todo el mundo, hicieron mucha compra porque se veía. La gente se preparó antes de que Irma llegara, ya una semana antes, ya todo el mundo en Puerto Rico estaba

preparado, con todo lo que correspondía para un huracán” (yes, everybody was prepared well. They set up the shutters, everybody collected and safeguarded resources, they purchase a lot of goods. You could see it. Everybody prepared a week in advance. A week before the hurricane everybody in Puerto Rico was prepared, with everything needed for the hurricane). Camila statements illustrate disparate factors in terms of access to resources and goods to prepare and secure the homes pre-Maria. The assumption was that not only she was able to prepare but “All of the people in Puerto Rico” had access to these resources.

On the other hand, individuals in rural areas described not being able to secure their homes properly or having to use primitive, makeshift materials to “aguantar la tormenta” (“sustain the storm”). The infrastructure of those living in rural areas is described as a less regulated by the government, more like makeshift housing structures, called *parcelas*. For example, Sara, married with children, describes preparing her *parcela*

“las ventanas de la casa, las pusimos como si fuera un... ¿cómo se llama eso, como una ruedita de madera, que todo lo ponen en la ventana? Para que no se mueva la ventana, como si fuera un seguro. Porque no le puse nada este... de... protección por lo menos a las que son de cristal, nada así. Unos como... bolsas de basura clear que se abren, y tú las pones así entre una ventana sí y una no, y una varita sí y una no, y eso era para que no se metiera el agua dentro”

Sara describes securing her windows with a piece of wood in the hopes that during the storm they remained stable, otherwise no other materials were used for protection even though her windows and doors were made of glass. The only other material used was plastic trash bags to prevent flooding. She could only prepare days before the storm and safeguard only a limited amount of resources. After the storm, she describes severe flooding inside her house and loss of

furniture and clothing due to water damage. She describes damage to her roof and different areas of her house. Sara states that:

“La casa se me hundió de agua, toda, menos el cuarto de la nena, que queda más escondido. Ahí fue que lo usamos todos como refugio, y entró agua por el otro cuarto, por el cuarto de nosotros, por la cocina, por la sala y el comedor. Todo esa área, a mí se me juntó el agua en la cocina” (My house was flooded, everything but my daughter’s room, that room was more hidden. We used that room as a refuge, water flooded the other rooms, our room, the kitchen, the living room, and the dining room. The whole area, water flooded the kitchen).

Also, she goes on to describe significant damage in the houses surrounding her property, also living in *parcela* structures. Consequently, those in rural communities report higher levels of loss of resources than those in urban areas. Housing structures in urban areas benefitted from infrastructure regulated by governmental construction codes and the use of solid material to build. To illustrate, participants residing in urban areas, especially San Juan metro area, benefitted for having shutters to safeguard their windows, roofs and building materials made of cement and the strong infrastructure. These houses were built to withstand hurricane like winds and they had access to generators or gas to maintain functioning inside their home during and after the storm. For example, Irene, a resident of San Juan and a homeowner, describes her preparation before the storm:

“People prepare well...[before Maria] shutters were put up to secure doors and windows, people filled up their gas tank, everybody stocked up with goods...They did a lot of shopping [for food and goods] because we could see what was coming...”

Most participants, especially in rural areas, report minimal preparation since they did not expect the magnitude of the storm. Sara reports:

“Pero también nos dijeron que no pasaría nada. Que la preparación, como quien dice no nos preparáramos, porque no iba a venir nada.” (They [radio messages] said that nothing was going to happen. To not prepare, because nothing was coming).

On the other hand, Carla, from an urban community states:

“Antes de Maria...se anunció mucho... la gente se preparo” (Before Maria...it was announced a lot... people did prepare [for the hurricane]).

We can see the stark difference between preparation in rural areas and preparation in urban areas, as illustrated by the significant difference between Sara, Irene, and Carla’s (see above) answers about their preparation efforts. Those in urban areas were more likely to report ease of accessibility to resources and higher level of trust in the messages being communicated about preparation efforts and benefited from the powerful infrastructure already in place.

Hurricane Maria proved to be a catastrophic event for all. Nonetheless, less protected houses experience more extensive damage than those who had access to resources to protect the home. Communities in urban areas benefitted from a more powerful housing infrastructure than those in rural areas. To illustrate, Irene goes on to say that:

“Pues quizás la área de clase alta pues no se ven tan impactadas y se nota más cuando, cuando afecta áreas más de escasos recursos” (I think that the upper class housing was not as impacted, you can see the affected [areas] more on areas with less resources).

Consistent with previous research, relief efforts were impacted differently by disparate socioeconomic status (Santos-Burgoa et al. 2018). Those in urban areas lived in houses made of concrete with a strong foundation. Those in rural areas lived in houses made of wood, or less

powerful materials thus having a weakened infrastructure and more vulnerable to hurricane damage. All participants who lived in the metro area of Puerto Rico during the storm report less significant loss (windows and doors broken, flood damage, loss of personal belongings) in comparison to rural areas in Puerto Rico. Therefore, those less fortunate had nowhere to go and had to stay in what was left of their homes. Irene states that for her it was easier to find resources than other rural *barrios*. There were great difficulties with electricity restoration and access to clean water. And her area was able to get electricity at a much faster rate as illustrated in the quote below.

“Después poco a poco nos llegó a nosotros pero a los pueblos de la montaña... más todavía se tardó... en llegar. Este... después ya, como una semana después pues por lo menos era un poquito más fácil encontrar las cosas.” (After little by little we received [electricity] but the towns on the mountain, it took a while [to get electricity]... about a week later it was easier to find things [resources]).

Recovery efforts were exceptionally impacted by the loss of access to crucial resources to rebuild. Overall, all of Puerto Rico and its *Barrios* experienced extraordinary loss. Following Hurricane Maria, and weeks after, there was no access to electricity, water, food resources and supplies, gasoline, banking systems to obtain cash, healthcare systems in case of emergency, and complete loss of cellphone towers preventing communication (Cons 2017; Torres 2018; Centro 2019; Gay et al 2019). Individuals report having to stand in lines for more than five hours to get food, water, and gas every day post-disaster. Those in rural areas were markedly affected by the damage, as they report having significantly more difficulties in acquiring resources. To illustrate, Diana, a 70-year-old retired female describes her routine:

“Every day I have to wake up at about 3 am to get ready to stand in line and get water and food.... My body aches...I need medicine... I have to walk several miles to find an open supermarket... I am exhausted. It’s too much for me”.

The added stress and effort it took individuals in rural areas significantly impacted their ability to recover after the storm. Cristina, a 40-year-old female with children reports:

“With Maria it was chaos. No water, no food, no help.... And the endless lines to attempt to get anything... it was a horrible tragedy... But I have to do it to survive, for my children...”.

Reports of similar sentiments of living under survival mode are found in most participants narratives. For instance, Diego, a 43-year-old married man, describes his everyday experience obtaining resources as living like a character on well-known tv shows like *The Walking Dead* and *Survivor*, he uses these examples as a visual analogy of what he was experiencing trying to safeguard much needed goods for survival. Diego states that:

“debo decirte que cuando se fue la luz y estuvimos sin luz, que solo esos galoncitos (de agua) no me dieron y estuvimos dos días sin poder cocinar, porque no tenía nada, no tenía gas para poder cocinar y luego ahí empezó la tristeza, y esa tristeza no se va, porque cuando estás acostumbrado a que tú tienes todo, y que todas las veces que vas al supermercado traes caja de agua, traes comida, y de pronto te quedaste que no tienes nada” (I should tell you that when we lost power and we had no electricity, only the small bottles of water, there wasnt enough and we spent days without being able to cook, because we had nothing, we didnt have gas to cook, and thats where the sadness begins. And this sadness does not dissappear. Because when you are used to having access to

everything, and that you go to the supermarket whenever needed and get water, and food, and then all of the sudden you have nothing).

The major difference in the impact between urban areas and rural areas is that, even though all individuals were experiencing difficulties accessing resources, in rural areas these difficulties were compounded by disparate social factors already in place. Those in rural areas were more isolated and did not have access to transportation to aid with reaching the long lines and obtaining crucial resources. Amaia states that:

“Sí, pero se me hacía bien difícil, bien difícil, la comida, todo mundo se puso desesperado, no habían cajeros, ni un tipo de cajero automático después de un mes y uno sacar efectivo para poder, pues, comprar alimento. Tampoco había supermercados abiertos, no todos abrieron, no todo banco abría. Había uno que quedaba muy lejos para mí, la gasolina, a veces la gente aguantaba dos días corridos en una fila súper larga para echar gasolina” (This was very difficult, very difficult [for finding] food, everybody was in a state of desperation, there was no ATM, nothing even after a month to get cash to be able to buy food. Supermarkets were closed, and not all were able to open [long after] no banks. There was one that was too far way from me, and there was no gasoline. And the lines were very long, people would be in line for two days straight just to get gas).

Much like Diana and Amaia describe earlier, those in rural communities were much more impacted by Hurricane Maria, as social vulnerabilities already in existence pre-disaster were exacerbated by the storm's powerful impact.

Socioeconomic Status and Loss of Resources

Employed vs. Unemployed vs. Retired

Correspondent with COR, socioeconomic status as a function of employment status had a significant impact on survivors' ability to retain, protect, and rebuild. Of all the individuals

interviewed, more than half were employed pre-Hurricane Maria, two participants were retired, and the rest were unemployed. Those who were employed held at least one college degree. All of those employed lost their jobs leading or after Hurricane Maria. The destruction of infrastructure did not allow for most businesses to re-open, therefore access to re-employment was not available (Dijulio, Muñana, & Brodie 2018; Lopez-Cardalda et al. 2018). Nonetheless, those who were employed were most likely to own their homes and lived in urban areas versus those who were unemployed, who rented/leased their homes and lived in rural communities. It is important to note that employment status has a significant impact on rural communities, thus a factor of environmental injustice. This significant difference in employment status affected the individual's ability to recover and rebuild in Puerto Rico post-disaster. For example, Amaia, an unemployed mother of three before Hurricane Maria, describes living in a government housing *Barrio* with her partner. Her apartment was in a building with hundreds of other apartments. None of the residences had structures in place to protect their homes, like shutters and wood panels for windows and doors. She reports losing all of her furniture, bedding, and clothing due to flooding. Amaia reports violence and looting in apartments adjacent to hers, and hearing gunshots every night. She says:

“[yo decidí] despedirme de Puerto Rico, por lo que pasó. Yo tomé la decisión porque a mi mamá le hicieron eso (golpearon) y ya prácticamente donde yo vivía, las personas que se apoderan de los barrios que... como que... todo el tiempo tiros” ([I decided] to say goodbye to Puerto Rico, I decided because they attacked my mom, and basically where I lived, people will take over the *barrios* (squatters) and all the time gunshots).

Eventually, she reports breaking up with her partner due to significant financial difficulties and having to leave her home because of squatters moving in the area. Significant differences are

found on Hurricane Maria's impact on these communities, thus hindering their ability to recover and rebuild. As I will discuss in upcoming sections, disparate socioeconomic differences also had a direct impact on individuals' migratory decision and displacement to the US mainland and the ability to recover and construct a new life in Central Florida.

Age and Gender

Age and gender differences significantly impacted individual responses and recovery post-disaster. Older individuals described a more pronounced impact, especially when describing the physical difficulties associated with the search for resources like water, food, and medicine after the storm. Like 70-year-old Diana (see previous sections), they described less mobility and higher dependence on others to have access to food, water, electricity, and other necessities after Hurricane Maria. Diana states:

“Sí, porque entonces ya... tuvo como más de dos semanas que había que hacer esas filas de levantarte a las cuatro de la mañana y a veces tú no alcanzabas gasoline. Esto, nos levantábamos temprano (con mi hija), pero era para hacer un turno bajito, para el supermercado, para la gasolina, para todo” (Yes, it was like two weeks of waking up every day at 4am and sometimes you would [be in line for hours] but there wasn't enough gas. We would wake up early (with my daughter), to try to be in line for a bit, for the supermarket, for gas, for everything).

These factors compounded with pre-existing health conditions, were worsened after the storm. The healthcare infrastructure in Puerto Rico completely collapse, and access to necessary medicine was null (Alcorn 2017; Niles & Contreras 2018; Mellgard et al. 2019). Diana reported not having access to her medication for high blood pressure and cholesterol for more than two months significantly impairing her health and her ability to recover.

Womxn, report the most impact when single and/or with small children after the storm. Participants with children who were also unemployed report experiencing more food insecurity than those with no children and employed. Individuals with children were severely more impacted by the loss of resources. Participants account for the harrowing routine of waking up each morning, in the early hours to stand in line to receive food, since they did not have access to childcare, thus children had to endure the long lines and the trauma and fear when searching for resources. Mothers of small children report significant fear due to the stress of acquiring resources, worrying if it was going to be enough for their whole family, and possible violence erupting while in line to receive food, water, and other necessities. Lea, a young single mother of one living in a rural area stated:

“mi nene casi ni dormia.....se levantaba muchas veces llorando.... Con hambre...enfrentar esto fue horrible...lo hize por mis hijos” (my baby couldn’t sleep...he will wake up all the time crying...hungry....to face this was horrible....I did it for my children).

Motherhood and socioeconomic status disparities had a significant effect on the individuals’ responses and the significant impact Hurricane Maria had on their lives.

Responses to Hurricane Maria and Loss of Resources/Collective Trauma

Trauma is the psychosocial response to a cataclysmic event rather than a symptom. Sociologically, psychosocial responses to trauma are used to create meaning, alleviate stress, and increase group identification after a natural disaster (Hirschberger 2018). These psychosocial factors are used to interpret and analyzed individuals’ collective trauma responses to Hurricane Maria in Puerto Rico. In this chapter, I argue that the use of trauma narratives and responses to Hurricane Maria will illuminate the avenues in which COR is representing it. Mainly, how the loss of resources impacted the responses to trauma to Hurricane Maria in the collective sense.

Particularly to the Puerto Rican population after Hurricane Maria, these narratives will shed light on the disparate social factors and social vulnerabilities that ultimately impacted the individual's ability to cope, recover, and rebuild a new life in Central Florida.

Collective Trauma Responses

The themes discussed in this section will concentrate mainly on respondents' experience during and after Hurricane Maria, as they represent the participants' psychosocial responses to the storm. The trauma narratives will point to the disparate social factors affecting these responses to the hurricane. Hurricane Maria is described by all participants as the worst disaster they had experience in their lifetime. Costanza response to the storm was:

“Aunque nosotros ya estábamos preparados, pero como quiera te pone un poco ansioso y te desesperas porque es algo que es horrible, para mí fue horrible” (Even though we were prepared, but you get anxious and desperate because his was horrible. For me this was horrible).

And Rocio shares the sentiments:

“Nunca cesó. Fue siempre la misma constancia. Eso es, en un momento me dio taquicardia y a mi nene también. Porque es algo que tú sientes, es un ruido horrible, todo el tiempo, todo el tiempo, no se va. Oh, Dios mío, ¿cuándo se va a parar esto? Aun tú guardado en el cuarto, tapado y encerrado, y el cuarto además de seguridad que se escucha menos, porque hay otras áreas en la casa y ese es el cuarto que más adentro está. Era algo constante, constante, y que no se iba, entonces te desesperaba” (its like it never stop [the storm] it was constant. At one point I started having heart palpitations and my son too. Because it is something that you feel, the sound is horrible, all the time, all the time, it does not go away. Oh God [you asked] When is this going to stop? Still, you hiding in your room, covered and locked, and staying in the room where we feel most

safe, you can hear [the sound] less, because there are other areas in the house in another room. It was constant, constant, it will not go away [the storm], so we would get desperate).

Conditions that were precarious in Puerto Rico pre-disaster, were exacerbated by both Irma and Maria happening within weeks from each other. Individuals described “shock” and “horrible disbelief” as Maria reached the Island. Maria kept people isolated in their homes for more than 24 hours. All individuals described the sound of the hurricane as the most traumatic experience during the storm. The wind traveled through neighborhoods, the sound of the trees ripping from their roots, glass breaking in adjacent houses, and heavy metal objects clinking outside their homes increased participants anxiety and stress throughout the night. Individuals report an inability to eat or sleep during the storm. And those with small children, report having the greatest difficulty when trying to calm the kids and appease anxiety, while at the same time attempting to keep their own emotions in check. Individuals report the severe exhaustion associated with having to engage in significant emotional work during and after hurricane Maria. To illustrate, Alicia, a single-womxn with small children living in a rural community stated:

“the kids started crying (all of us were crying) our stomach was a mess, nobody slept.

The kids saw (through a window) how the house collapse, they could not sleep, they were very nervous, they wouldn’t stay still...it was exhausting!”.

And after the Hurricane, in terms for searching for resources and responses to the difficulties in finding food and water, she stated that:

Sí, y tenía hijos, que ya cuando vi las cosas más apretadas, yo lloraba y decía, Dios mío, ayuda a estos puertorriqueños, que no nos desesperemos, no nos desamparemos. Que no cometamos el error de querer matarnos todos por comida, ¿entiendes? O por una botella

de agua. (Yes, I had children and when I saw that things were more difficult, I will cry and say, Oh God, please help us *Puertorriqueños*, to not get desperate, not feel abandoned. That we do not make the mistake of killing each other for food. You understand? For a bottle of water).

As illustrated in the previous section, significant differences in psychosocial responses are found between those in urban areas versus rural areas. In this section, I maintain that the trauma narrative used by participants to describe their fear and anxiety are dependent on their geographic location and socioeconomic status. These narratives show a marked difference, those who were able to prepare for the storm were more likely to describe their fear in terms of their community and what was happening outside their home. On the other hand, those who reported not having resources to prepare, and lived in rural isolated areas, were more like to describe their fear as an immediate danger to their own homes and body. Lisa, a single 41-year-old living in a rural area of Puerto Rico, in a rented apartment, describes:

“horrible sound of water smashing against the house...I ran to the hallway where I curled up on the mattress on the floor and begged all night that it would not attack me”.

She is speaking about both the fear of water flooding her house and animals attacking her body. At the same time, Carla, a 29-year-old university graduate living with her parents in the metro area of Puerto Rico describes that:

“I kept thinking about other people in my neighborhood...there are older more disadvantage, what is this horrible ripping sound doing to them”.

She is referring to the same “horrible sound” but her fear response is centered around others, outside of the safety she felt in her own home. Through these narratives, both women are using psychosocial responses to fear, yet socioeconomic factors and geographic location of their

Barrio significantly affected their description of the event. By one internalizing the fear response while the other externalizing her fear, the ability to cope, and the agency to recover is affected. Both womxn were consequently displaced to Central Florida. At the time of the interview, Alicia was living in a hotel in Orlando designated as a shelter, while Carla was living with a family member and considering applying for Post-doc positions in the US. Even though they both experience the same traumatic event and use fear to describe their response, the womxn experiences after the Hurricane significantly differed. Their psychosocial responses to the trauma are different and driven by social vulnerabilities already present before the hurricane.

Another example shows the participant's use of cultural narrative describing resiliency as a Puerto Rican identity staple, a way of coping with collective trauma, and the impact of Hurricane Maria. Collective trauma narratives reflect deeply felt identities that are publicly expressed. These narratives are used to demonstrate the interplay of emotion and framing techniques to alleviate stress and respond to a shocking event. Several participants describe their responses to the event by using cultural trauma narratives exclusive to Puerto Rican identities to represent how they were impacted. For example, throughout the interviews, we can find a statement like:

“Traigo el Corazon...el coraje Boricua y la fuerza que temenos” (I have the heart....the courage Boricua and the strength we have).

“Yo quiero que mi país se levante...yo quiero verlo bien...yo amo a mi pais” (I want my country to rise up...I want to see it well... I love my country).

Yo le pedí mucho a Dios que mi Isla me la bendiga y me la proteja...” (I asked God to bless my Island and to protect it).

These statements are used as a form to rationalize their trauma responses, to enhance group identity, and to enact resiliency as a coping mechanism. Using their Puerto Rican identity as the foundation to retain, protect, and rebuild the loss of their resources after the storm, their ability to cope and alleviate stress is strengthened. Interestingly, trauma responses using resilience narrative differed by gender: females described their response to trauma in terms of survival. For example, stating that they're doing it for the sake of the children and utilizing faith to describe survival ("it's all in the hands of God"). On the other hand, males describe their response to the trauma in terms of action, anything they can do to rebuild and protect ("We have to do something"). These gender differences demonstrate the importance of understating the cultural framing techniques Puerto Ricans use to describe experiences with trauma. Although different language is being used, both genders are responding to trauma.

Trauma responses are compounded by the feeling of isolation and helplessness from the government officials, nonetheless, collective trauma narratives are enacted as a form to mitigate and mediated stress responses after the storm. Participants report that even though neighbors, and including themselves, had lost everything, people came together to help each other with acquiring and retaining basic resources. Trauma narratives were found to contain language associated with resiliency. For example, individuals compared their current situation to the others, less fortunate. Those with means to share their resources, report checking up on neighbors, and helping any way they could to rebuild after the hurricane. The more social support a person reported, the less internal trauma and stress reported on individual narratives. These stories were used as a form of coping mechanisms and as the protective factor helping to rationalize the trauma felt during and after the storm. Nonetheless, as stated in the previous sections, those in more secluded rural areas were significantly disenfranchised from taking

advantage of the community coping mechanism. And, those who reported higher levels of loss of resources, are more likely to use trauma narrative as a response to the hurricane.

Displacement/Migratory Decisions After Hurricane Maria and Loss of Resources/Collective Trauma

In this section, I will discuss how social vulnerabilities had a direct impact on individuals' migratory decisions, subsequent displacement, and trauma responses after Hurricane Maria. I will explain the factors associated with loss of resources (subjective loss vs. objective loss) and how they affected migratory decisions after the storm, how the opportunity to rebuild affected migratory decisions, and how access to children's education and job opportunities affected migratory decisions. Furthermore, I will discuss how displacement (forced migratory decision) affected responses to trauma and the ability to cope and recover after the disaster. Finally, I will show how experience with discrimination and prejudice and difficulties with English language proficiency once in the US mainland, affected individual responses to trauma and on their ability to construct a new life in Central Florida.

Loss of Resources

COR states that the quality (subjective) and quantity (objective) of resources lost after a traumatic event has a direct effect on an individual's ability to cope and rebuild (Hobfoll 2001). Individuals will strive to secure, maintain, and safeguard resources. Stress occurs when the ability to enact these protective factors is threatened or taken away completely. Psychosocial stress has both objective and subjective factors influencing trauma responses. The threat of net loss of resources, the actual net loss of resources, and the lack of resource gain following a natural disaster all play an integral part in how individuals respond to trauma after the event (Hobfoll 2016). Particularly to Puerto Rico after Hurricane Maria, individual social vulnerabilities (i.e. net loss difference between urban areas versus rural areas) influenced

individuals' responses to trauma after the storm. Thus, these factors had a direct effect on individuals' migratory decisions and response to displacement to Central Florida, and their ability to cope and rebuild after the storm.

The primary factor affecting individuals' migratory decisions was the significant dwindling of resources and lack of opportunity to rebuild immediately following the storm. Worse difficulties were reported by those who experience the complete loss of resources. Much like with Diana and Amaia discussed above, the ultimate loss of their home, experience with looting and violence in their neighborhood, lack of options to move houses on the Island, compounded by food insecurities and worsened health conditions accelerated migratory decisions and displacement to the US. Those living in rural, isolated and mountainous areas experience significant difficulties with obtaining resources post-storm. Womxn who were single with children; older and retired individuals; were more likely to report the urgency to move to the US post-disaster, even when they did not want to leave their beloved homeland. For example, Alma, single older womxn from a rural area whose home was destroyed reported

“yo no tenía trabajo, no tenia casa...no tenia a nadie...que iba a hacer alla?{Puerto Rico}” (I didn't have a job....I didn't have a house...I didn't have anyone... what am I going to do there {Puerto Rico}).

Alma states this is the major factor affecting her migratory decision and displacement to Central Florida. These social vulnerabilities influenced trauma responses after displacement to Central Florida. Those with higher difficulties describe their experience in the US as more difficult, stressful, and lonely than those who had social support already in place in the US. These factors will be discussed more closely in the following sub-sections. At the time of this interview, Alma was living in a Hotel room designated by FEMA in the Central Florida area. Nonetheless, those

who did not experience a complete loss of home or community (objective loss) still decided to migrate to the US mainland due to their subjective experience with their loss of resources and fear of dwindling necessities for them to continue to survive in PR as the weeks progressed post-disaster. Those with family members living in the US, basic knowledge of US culture, basic language proficiency, and monetary resources to rebuild in the US report a more positive experience during their migratory journey than those who did not have these social factors in place.

Opportunity to Rebuild

A secondary reason for displacement is the lack of opportunity to rebuild in Puerto Rico post-disaster. As the weeks progressed in the Island immediately following the storm, individuals describe hopelessness for the future and fear for their well-being as resources diminished and the ability to rebuild disappear. Post Hurricane Maria, major social vulnerabilities emerged: environmental injustice factors, significant socioeconomic differences and disparate residential environments, and diminished access to resources and services like food, shelter, and healthcare. Most importantly, respondents reported the major reason for migratory decisions is the lack of education opportunities for their children and lack of job opportunities for adults, regardless of education or skill level. All schools remained closed for months after the storm. And, the rebuilding of an already suffering financial infrastructure was difficult. Participants report having to scramble for plain tickets and resources available to leave Puerto Rico, even when they did not want to leave. Diana states:

“crying as the plane took off and their Island was seen in the distance”.

Trauma narratives are centered around the pain of losing their homeland, and all participants report the desire to return, once is feasible and safe. All participants report significant difficulties

in Puerto Rico forcing displacement to the US mainland. The loss of resources and the ability to rebuild continue to pose significant difficulties. Even when participants report minor damage to their homes, their ability to rebuild and return to normalcy was severely hindered by the economic collapse in Puerto Rico. Displacement to the US was seen as the only option to rebuild, even if it meant moving to transitional shelter, experience culture shock, and not having the financial resources to maintain life in the US. Most importantly, those who reported social support in the US describe their moving experience more positively than those who did not have social support in place once in the US.

Education Opportunities (PR vs. the US)

Post-storm schools remained closed for months after. Individuals with children reported the need for schooling as the major factor associated with displacement. They did not want the children to fall behind and lose on future opportunities. Those with family members in the US and/or those who were placed in a mostly Spanish speaking community (where professors, neighbors, social agencies in which Spanish was spoken) report less shock and trauma at moving to the Central Florida area. This is where we encountered a trauma narrative associating suffering and loss with factors necessary to survive for the sake of the children. Mothers describe situations in which they feel like crying and/or giving-up, but the well-being of the children was more important. These sentiments were echoed across the board by all mothers with children, regardless of marital status, education status, and satisfaction with their current conditions in the US. This is an important factor to understand the necessity of culturally and linguistically competent individuals in charge of providing social services for the Puerto Rican community.

Job Opportunities (PR vs. the US)

Historically, Puerto Rico has suffered a major exodus of professionals from the Island to the US and Europe. Therefore, competition for available employment opportunities in the Island was already significantly affected and positions were already scarce. Post-hurricane, any available position vanished, everyone was left scrambling. In terms of displacement, individuals who reported higher levels of stress after migration to the US and significant difficulties with finding housing, employment, and medical care, use more trauma narratives (horrible, hard, chaos, anxious, suffered, feel sad) more often than those who report ability to assimilate to their new way of life in Central Florida with less difficulties when recounting Hurricane Maria. Once in the US, those who did not speak English and troubles with licensing/transferring of job skills had significant difficulties obtaining jobs in the US. The most socially vulnerable, those who worked in skilled labor, part-time work, and did not hold a college degree were more vulnerable to obtaining work in the US. Those who were retired and had a retirement and social security income report significant difficulties due to the higher expenses associated with living in the US versus in PR. Language fluency is reported as the biggest barrier for finding employment, and barriers are intensified by prejudice and discrimination. To illustrate, Rocio states that:

“ahí nos tienen a los Puertorriqueños bien discriminados...nos tratan sumamente mal”

(They have us (Puerto Ricans) discriminated against.... They [employers and co-workers] treat us really bad).

Rocio is referring to her experience in low-paying jobs and how she, and others, were discriminated against, specifically by other minorities. Factors affecting trauma responses compounded by discrimination and prejudice experience are described in the following section.

Discrimination/Prejudice

As found on the narratives, significant differences were found in Puerto Ricans trauma responses after displacement and feelings towards their residential environments, socioeconomic status and employment opportunities in the US, and access to much needed goods and services in Central Florida. The impact and the effect on trauma responses by Puerto Ricans after the storm are unevenly distributed as a result of exposure to discrimination and prejudice and social vulnerabilities.

Displacement and experience with discrimination and prejudice once in the US mainland have a significant effect on participants' responses to trauma post-disaster. Individuals are found to experience negative stereotypes towards Puerto Ricans in the US even by other minority groups (Gonzales-Sobrinio 2019). Minority status is both negatively affected by their legal status as US citizens and white identity while simultaneously racialized as non-white by others. This unique identity particularly to only those from Puerto Rico has a noteworthy effect on individual responses to the trauma associated with displacement after Hurricane Maria. Moreover, this dual framing present with US culture, as both citizens and Non-white minority status, has a deleterious effect on recovery and rebuilding efforts once in the US. People's ability to cope and construct a new life in the US post-disaster is crucially affected. For example:

Lea, a young womxn displaced and living in a FEMA transitional sheltering program in Central Florida, reports feeling disenfranchised because of her Puerto Rican identity. After finally obtaining a job as a dishwasher at a Mexican restaurant, she recounts the experiences of prejudice and discrimination encountered by her at the hands of other minority co-workers from different parts of Central and South America. She specifically stated:

“I know I am mistreated and given the worst jobs/shifts because “yo soy Puerto Riqueña” (I am Puerto Rican)”.

A homogenous Hispanic/Latinx denotation has not emerged within minority groups, and these groups are plagued by mutual suspicion, stigmatization, and competition for resources in the US. The question is: are Puerto Ricans “real” US citizens? And so, do they deserve the same access to resources as other American citizens. These disputes create a significant divide and schism within minority groups. These stereotype threat and mutual competition for resources poses a significant barrier to overcoming trauma and reconstructing a new life in Central Florida.

This is an important finding that illustrates the effect the dual framing of Puerto Rican identity, both as US citizens and Non-white minority, on the survivor’s trauma responses to Hurricane Maria and ability to cope and recover after displacement to Central Florida. Puerto Rican identity acts as a protective factor to rationalized trauma while simultaneously exposing the individual to significant discriminatory uniquely experienced by those from Puerto Rico.

CHAPTER SIX: DISCUSSION

On September 20th, 2017, Hurricane Maria made landfall on the island of Puerto Rico causing devastating results. An island with a history of decades of economic recession, inadequate infrastructure, and a negative effect of a century of colonial rule by the United States, Hurricane Maria unquestionably intensified the catastrophic circumstances in Puerto Rico (Cons 2017; Torres 2018; Gay et al 2019). After the storm, loss of power and severe damage to housing, communication, and transportation infrastructure impacted all of Puerto Rico at the social, educational, public, and health service levels. Hurricane Maria is considered the worst storm to hit Puerto Rico since 1928. Communities impacted by toxic pollution, water shortage, access to electricity, food insecurities, individual vulnerabilities, and the ability to recover from a hurricane are directly framed by existing socioeconomic disparities (Garcia-Lopez 2018). Socioeconomically disadvantaged communities experienced exceptionally disproportionate harm and loss after the storm. And, in the case of Puerto Rico, those living in metro areas with higher socioeconomic status and better access to resources benefitted much faster from the power infrastructure dependent on tourism and other industries than other, more mountainous, and secluded areas of Puerto Rico. The devastation and inability to recover on the island triggered a massive exodus of Puerto Ricans to the US mainland, most settling in Central Florida. In this dissertation, I assessed Puerto Rican's responses to trauma after Hurricane Maria by examining the effects of disparate social factors on responses trauma before, during, and after the disaster.

The Model of Conservation of Resources (COR) states that, after a natural disaster, the aim is to retain, protect, and build resources (Hobfoll 1988). Sociologically, individuals use collective trauma narratives to respond to a natural disaster. This impact is further compounded by social vulnerabilities and disparate social factors present pre-disaster. Using the COR model of stress as an organizing framework, the study examined the relationship between disaster

impact and collective trauma responses. For this study, I analyzed sixteen in-depth semi-structured interviews of individuals who have been displaced to Central Florida two to three months after Hurricane Maria. The thematic analysis yielded three main categories that broadly represent the data: impact before, during, and after Hurricane Maria and loss of resources, response to Hurricane Maria and loss of resources/collective trauma, and displacement/migratory decisions after Hurricane Maria and loss of resources. The study found that individuals' ability to maintain resource reservoirs and access critical resources to prepare, respond, and recover after a disaster is affected by environmental injustice, disparate socioeconomic status, gender and age differences, migratory decisions and displacement, and racial/ethnic discrimination. First, those with greater resources pre-disaster are less vulnerable to resource loss and stress post-disaster than those with fewer resources. And, consistent with risks associated with environmental injustice, their ability to coordinate resource gain and rebuild is significantly hindered. Second, individuals' migratory decisions and subsequent displacement to the US are influenced by resource loss and options to rebuild in Puerto Rico. Finally, displacement to the US, combined with discrimination and prejudice and language barriers, can foster individual stress and collective trauma responses. Hence, having a greater effect on the individual's ability to cope and recover after Hurricane Maria and the construction of a new life in Central Florida.

The fundamental premise of the Model of Conservation of Resources (COR) is that individual aims to retain, protect, and build resources. After Hurricane Maria, the impact on the ability to preserve, safeguard, and restore critical resources is affected by disparate social processes. Consequently, stress and the ability to cope influenced Puerto Ricans' trauma responses. Specifically, the impact of environmental injustice, differences between those

residing in urban areas versus rural areas of Puerto Rico, and socioeconomic status differences on resource loss and trauma responses.

Environmental injustice impact, the unfair exposure of a disadvantaged group to environmental hazards and risks after a natural disaster, was significantly different between those living in urban areas versus those living in rural communities in terms of preparedness, response, and recovery. Those in rural communities were much more impacted by Hurricane Maria, as social vulnerabilities already in existence pre-disaster were aggravated by the storm's powerful impact. To illustrate, individuals in rural communities described living in parcelas, plot, or allotment in which individuals can build their own homes and a significant characteristic of rural areas of Puerto Rico. The parcela dwellers described securing their homes for the hurricane with makeshift materials. The materials used were pieces of wood to attempt to secure glass windows and trash bags covering doors and other surfaces in the hopes of preventing flooding. These structures have been put together over time but not build to withstand any hurricane-level winds and flooding. Due to the inability to prepared and secured the home pre-disaster, these communities experienced significantly more damage than those in urban communities. Additionally, these rural neighborhoods were built uniformly over the land. Surrounding neighbors were miles apart from each other adding to difficulties with preparation and recovery efforts. On the other hand, those in urban areas were more likely to report ease of accessibility to resources, a higher level of trust in the messages being communicated about preparation efforts, and benefited from the powerful infrastructure already in place. Individuals living in the Metro area of Puerto Rico, an urban center, had housing facilities in which shutters and protective tools and devices were already in place. These houses have been built to withstand hurricane-level winds and water flooding. These houses had shutters, protective covers over roofs, and

generators in case of electricity loss already in place. Urban communities were more likely to have infrastructure regulated by government construction codes and the use of proper materials to build, thus less likely to experience significant damage after. And, due to neighborhood composition and location, they report access to hardware stores, supermarkets, and other facilities providing tools necessary to prepare for the disaster. Therefore, individuals in urban areas were more likely to prepare for the storm, report less significant loss, more neighborhood cohesion, and more positive recovery efforts post-disaster.

Overall, all of Puerto Rico experienced extraordinary losses. Following Hurricane Maria, and weeks after, there was no access to electricity, water, food resources and supplies, gasoline, banking systems to obtain cash, healthcare systems in case of emergency, and complete loss of cellphone towers preventing communication (Cons 2017; Torres 2018; Centro 2019; Gay et al 2019). Nonetheless, those in rural areas were markedly affected by damage, experienced higher levels of loss of resources, and more difficulties in their recovery efforts than those in urban areas. To highlight, due to the complete collapse of their social structure, all individuals described difficulties and trauma associated with the long lines to acquire resources post-storm. Individuals had to stand in line for hours, unable to leave to eat or go to the bathroom in fear of losing their spot. They had to stand in lines for six hours or more to get water and food at supermarkets, cash at the ATM, and gasoline at gas stations. With these resources running out for the day soon after doors open. However, those in urban neighborhoods were able to report easier access to these resources. The supermarket was closer, they had access to a car and gas, they could have provisions in place that protected them from the collapse. While individuals in rural areas experienced significantly more difficulties in accessing these resources. Supermarkets, banks, and gas stations were further away and much more difficult to access, they

did not have transportation to reach the lines, and did not have access to crucial resources necessary to respond and recover. Rural neighborhoods were severely much more impacted by Hurricane Maria, as environmental injustice due to social vulnerabilities already in place pre-disaster were exacerbated by the storm's powerful impact.

Consistent with COR, socioeconomic status as a function of employment status had a significant impact on survivors' ability to retain, protect, and rebuild. Disparate socioeconomic status severely impacted respondents' ability to safeguard resources and rebuild post-disaster. Those who lived in low socioeconomic status neighborhoods and who were unemployed had more significant difficulties preparing for the storm and report more loss of resources post-disaster than those from higher socioeconomic status who were employed. All of those employed lost their jobs leading to or after Hurricane Maria. The destruction of the infrastructure did not allow for most businesses to re-open, therefore access to re-employment was not available (Dijulio, Muñana, & Brodie 2018; Lopez-Cardalda et al. 2018). Nonetheless, those who were employed were most likely to own their homes and lived in urban areas versus those who were unemployed, who rented/leased their homes and lived in rural communities. This is highlighting a factor of environmental injustice effect on response and recovery efforts after a disaster. Socioeconomic status cannot be evaluated just in terms of employment and financial differences, as illustrated in the study, differences between urban and rural neighborhoods also pose a significant difference in the individual's ability to prepare, recover, cope, and rebuild after a disaster of this magnitude. Several individuals from rural communities, residing in the lower socioeconomic status neighborhood, who have experienced significant employment insecurity pre-disaster reported harrowing pictures of what it was like in these communities post-disaster. These individuals were more likely to report a complete loss of housing infrastructure, but not

having anywhere to move and report experiences with violence, looting, and squatters taking over neighboring houses. They report significant fear for their well-being when standing in lines, described previously, to acquire crucial resources after the storm. They report higher difficulty in finding food, water to drink and bathe, and the ability to weather the storm.

Age and gender differences significantly impacted individual responses and recovery post-disaster. First, older individuals described a more pronounced impact, especially when describing the physical difficulties associated with the search for resources like water, food, and medicine after the storm. Older individuals experience more disadvantages in terms of health and social conditions. Particularly to the older Puerto Rican population after the storm, the collapse of the health care system provided significant disadvantages. Pre-existing health conditions were exacerbated after the storm. Hospitals and doctors were not functioning and the ability to acquire much-needed medicine was null. Individuals report the inability to refill their prescriptions for high blood pressure, heart conditions, and pre-diabetes. Post-disaster, these health conditions prevented older individuals from leaving their damaged homes, stand on the long lines to obtain food and water, and seek out health services when needed. Significant disadvantages were experienced by older mothers, who also had aging children with exacerbated health conditions. Therefore, and most importantly those who were mothers of young children experienced significantly more difficulties overall. Womxn and mothers were severely more impacted. Motherhood is a significant stressor, worsening trauma responses with considerable social vulnerabilities unique to this population. This is an important factor to highlight, as mothers, as primary caregivers, were significantly more vulnerable to the effects of Hurricane Maria. Womxn and mothers take the brunt of the impact and report higher levels of trauma responses than those who do not have children. Mothers experienced more food insecurity, higher levels of

exhaustion due to the emotional work required to care for small children during a disaster, and anxiety and stress associated with caring for their children and securing crucial resources to maintain post-disaster. In this particular sample, motherhood as a factor exacerbating social vulnerabilities concerning a natural disaster must be highlighted. As it poses the need to have the right institutions in place to help and cared for this particularly vulnerable population. As it is not only the mothers who suffer but the children can potentially carry with them significant negative outcomes into adulthood. Motherhood is a potential risk factor, compounded with other disparate social factors, preventing the recovery and rebuilding of this population after a disaster. Thus, perpetuating a cycle of disadvantage and environmental injustice. Differences in age and gender significantly impacted trauma responses to the storm. Specifically, for older individuals, womxn, and mothers.

Hurricane Maria is described by all participants as the worst storm they have ever experienced in their lifetime. By using individual trauma narratives to analyze the psychosocial response to the event or collective trauma, the study uncovered the disparate social factors and social vulnerabilities severely impacting storm survivors' ability to cope, recover, and rebuild as a direct consequence of the disaster. All individuals described the sound of the hurricane as the most traumatic experience during the storm. The winds traveled through neighborhoods ripping trees from their roots, breaking glass in homes, and heavy metal objects clinking increased participants' anxiety and stress throughout the night. Individuals report an inability to eat or sleep during the storm or concentrate on other activities. Participants describe the duration of the storm (24 hours plus), the sound during the hurricane of the destruction taking place outside their door, and the helplessness felt post-disaster as the most significant factors used to describe their trauma experienced during and after the storm. Bringing back the differences in housing

structures between urban and rural neighborhoods, these psychosocial responses are also affected by this factor. Differences in collective trauma narratives are found between those residing in urban areas versus those in rural communities. As established previously, those in urban communities benefited from the power infrastructure already in place pre-disaster describe their trauma experiences as an external factor. To explain, they report their hurricane experience as “not that bad” or “worse things are happening to others”. They externalize trauma responses by using empathizing and resiliency language when describing their own experience, even if they have had a significant loss. On the other hand, those in rural communities, with significant more disadvantages and social vulnerabilities, describe their trauma experience as happening internally. Their narrative is centered around their bodily, visceral, responses, and fear for their own home and safety. This is important to note, the social position they occupied affected how needs are articulated, and severely impact trauma responses. Social vulnerabilities and environmental injustice factors linked with the visceral responses to stress and anxiety.

Furthermore, motherhood is found to be a significant factor affecting trauma responses post-disaster. Mothers were severely more impacted by the complete collapse of crucial infrastructure in Puerto Rico after Hurricane Maria. The mother’s ability to rebuild and cope in the island was significantly reduced. Those with small children report being the most affected by stress and anxiety responses. Mothers of small children report the inability to eat and sleep to keep the children entertain while worrying about their home and what was happening outside during the storm. Womxn experienced the brunt of the impact, as the storm raged outside, their physical and mental well-being was severely impacted. Mothers report severe exhaustion and cognitive decline post-disaster, due to the emotional work used to care for their children and keep them calm. Consistent with previous research, single mothers after Hurricane Katrina

experienced many recovery-related difficulties post-disaster (Tobin-Gurley, Peek, Loomis 2010). In particular, mothers report being unaware of available resources, suffered a significant loss of resources, and feel often disenfranchised. There is an important factor to understand, as motherhood poses as a significant stressor exacerbating trauma responses with considerable social vulnerabilities unique to this population.

Finally, participants' use of cultural narrative as a collective trauma response and a coping mechanism in reaction to the storm is highlighted. Collective trauma narratives reflect deeply felt identities that are publicly expressed. These narratives are used to demonstrate the interplay of emotion and framing techniques to alleviate stress and respond to the shocking event. Several participants describe their responses to the event by using cultural trauma narratives exclusive to Puerto Rican identities to represent how they were impacted. The Puerto Rican, Boricua identity is used as a tool to mitigate and mediate stress responses, as a coping strategy, and to make sense of the tragedy. When participants were asked to revisit the night as the storm-ravaged the island, the more resource loss they experience, the more likely participants are to describe their experiences post-disaster as a Puerto Rican identity narrative of survival. Recognizing the importance of cultural identity in disaster research and trauma responses is paramount. This factor has a significant effect on the way individuals will respond to a cataclysmic event. This highlights the importance of cultural identity, language competency, and how it affects responses to trauma after the disaster and contributes to the understanding of the needs unique to the Puerto Rican diaspora in the US after Hurricane Maria. This finding is valuable in understanding the Puerto Rican identity and coping strategies after the disaster. And, as it will be illustrated in the following section, this identity can both protect from trauma and enable coping strategies both in Puerto Rico and the US, but it can also be used as a detriment to

explain reports of discrimination and prejudice by other minority groups once displaced to the US. Overall, this factor sheds light on the importance of culturally and linguistically competent individuals providing health and social services.

After Hurricane Maria, Puerto Rico suffered from a complete disruption of the healthcare system, electric outages, food and fuel shortages, and damage to transportation and communication infrastructure. Migratory decisions and displacement due to environmental disruptions are both the outcome of the hurricane and a contributor to socio-economic inequalities and compounded social vulnerabilities. In the case of Puerto Rico, four major factors were found to have a direct effect on migratory decisions, displacement, and trauma responses after the disaster.

First, the significant dwindling of resources and lack of opportunity to rebuild immediately following the storm was an important factor affecting migratory decisions and subsequent displacement to the US mainland. Those who experience the complete loss of their home, experience with looting and violence in their neighborhood, significant food insecurities, and worsened health conditions accelerated migratory decisions and displacement to the US. Those living in rural areas experience significant difficulties with obtaining resources post-storm. Obtaining plane tickets, or even to be able to communicate by phone, was a significant obstacle. The ticket price to fly to the US was strikingly higher than before the storm, and those with serious financial disadvantages suffered greatly. Once provisions were in place to move to the US, individuals report a second factor affecting their migratory decision was the opportunity to rebuild in the US. Hopelessness for the future and diminished access to resources and services like food, shelter, and healthcare in Puerto Rico is reported as the most important factor driving the choice to move to the US mainland. Displacement to the US was seen as the only option to

rebuild, even if it meant moving to a transitional shelter, experience culture shock, and not having the financial resources to maintain life in the US. And, those who reported social support in the US describe their moving experience more positively than those who did not have social support in place once in the US. Additionally, those with family members in the US and/or those who were placed in a mostly Spanish speaking community (where professors, neighbors, social agencies in which Spanish was spoken) report less shock and trauma at moving to the Central Florida area

Third, education and job opportunities are important factors driving migratory decisions. For young professionals and skilled workers in Puerto Rico, the complete collapse of the social make-up and inability to re-open significantly impacted the individual's ability to stay post-disaster. Hoping for better opportunities for employment in the US was a driving factor, even when language barriers were persistent and the ability to secure employment in the US. Same with education. Furthermore, school closures remained permanent and mothers were worried that their children's education was going to be suffered. For mothers, the most important driving force to move to the US was the ability to return their kids to schools, even when there was no social support waiting for them on the US mainland or financial difficulties were significant. We find the important interplay of disparate social factors and motherhood having a remarkable effect on migratory decisions and trauma responses to displacement to the US.

Finally, experience with prejudice and discrimination by other minority groups once in the US show the effect on trauma responses of displaced individuals' post-disaster. The differential treatment reported by displaced Puerto Ricans by members of other minority groups believed to compete for much-needed resources in the US, lead to discrimination within these groups. Negative racial/ethnic stereotypes prescribed to individuals displaced to Central Florida

after Hurricane Maria are an additional source of discrimination. Evidence of discrimination and prejudice experienced by the individuals displaced harm their capability to preserve, safeguard, and restore much-needed resources. These experiences have an effect on the survivor's trauma responses post-disaster. Puerto Ricans' minority status is both affected by their legal status as US Citizens and White identity while simultaneously racialized as Non-White by others, leading to discrimination and prejudice by other minority groups. This is a unique identity construct particularly to only those from Puerto Rico and this dual framing, as both citizens and Non-white minority status has a direct effect on responses to trauma post-disaster. This stereotype threat and mutual competition for resources pose a significant barrier to overcoming trauma and reconstructing a new life in Central Florida. Puerto Rican identity acts as a protective factor to rationalized trauma while simultaneously exposing the individual to significant discrimination and prejudice factors uniquely experienced by those from Puerto Rico.

Conclusion and Limitations

The study consisted of sixteen interviews of displaced individuals to Central Florida immediately following Hurricane Maria. I would like to state that even though the interview transcripts contain robust information about individual experiences before, during, and after Hurricane Maria, the categorization and the thematic analysis can only be based upon the limited number of interviewees. Due to these limitations, the study cannot make claims about the complete experience with Hurricane Maria in the Island by all residents. I would like to disclose that a major limitation in completing this research project was because I had to change my research design. When requesting participants, most responded by feeling fatigued, or tired, by continuing to have to talk about their experiences with the Hurricane. People responses was fatigue in having participated in so many previous interviews or not willing to share. This brings an important ethical consideration when conducting disaster research, as asking individuals to

significantly relieved their experiences with a natural disaster, the interview process may act as a potential re-traumatization process. Furthermore, those interview about migratory decisions and displacement were already located in the US mainland which can reproduce different narratives about their experience and trauma responses to the storm different for those still residing in the Island. Finally, the analysis of responses by participants to the traumatic storm can only be look at through the available narratives. These narratives can only be categorized and analyzed by themes that emerged in the available data. It is beyond the scope of this paper to explain trauma responses in terms of diagnosis and treatment of a mental health disorder. In the context of a larger body of research on this topic, it is my hope the study contributes in the understanding of the needs unique to the Puerto Rican diaspora in the US after Hurricane Maria, then we can begin to serve the population accordingly.

APPENDIX

IRB Approval



UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

July 19, 2019

Dear Angela Vergara:

On 7/19/2019, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Modification / Update, Category
Title:	Puerto Rican Students After Hurricane Maria: Overcoming Trauma and Constructing a New Life in Central Florida
Investigator:	Angela Vergara
IRB ID:	MOD00000354
Funding:	None
Grant ID:	None

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Gillian Morien".

Gillian Morien
Designated Reviewer

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