


# “That day no one spoke”: Florida Puerto Ricans’ Reaction to Hurricane María

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## Abstract

We conducted two focus groups and four individual interviews to examine the experiences of Florida Puerto Rican adults ( $N = 26$ ) with secondary exposure to the devastation caused by Hurricane María. Results from our thematic analysis yielded four major themes and eight subthemes depicting responses to Hurricane María. Four major themes emerged across participant responses: 1) Participants’ Experience with Hurricane María, 2) Participants’ Negative Reactions to Hurricane María, 3) Participants Providing Support, and 4) Resilience and Growth. We also found that Florida Puerto Ricans’ secondary stress reactions were influenced by Puerto Rico’s political status and economic crisis. Results also indicated that participants experienced vicarious posttraumatic growth not only at the individual but also at the community level.

## Keywords

Puerto Ricans, secondary exposure, secondary stress, posttraumatic growth, Hurricane María

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**Significance of the Scholarship to the Public**

*Our investigation offers information about the reactions of Florida Puerto Ricans to Hurricane María. We have shown how participants experienced traumatic stress as a result of their secondary exposure to the storm's devastation. Results also underscore the centrality of community support, coping, and post disaster growth among Puerto Ricans and offer valuable information mental health professionals can utilize when working with Puerto Ricans indirectly impacted by this hurricane and future natural disasters.*

Hurricane María made landfall in Puerto Rico on September 20th, 2017 as the first category 4 hurricane to directly impact the island in 85 years. The destruction of the power grid and roads made delivery of aid difficult. A shut-down of landline and cell phone services made communication within, into, and out of the island practically impossible (Becker, 2017). While Puerto Ricans on the island struggled to receive basic services, Puerto Ricans on the U.S. mainland desperately waited for weeks to learn about the fate of their families (Rogers, 2017). Unable to communicate with family on the island, Puerto Ricans on the U.S. mainland searched for any news about the island and their families in conventional (e.g., T.V. stations) and other (e.g., social media posts) outlets (Pérez, 2017). The images and information shared depicted Hurricane María's widespread damage.

Emerging information about the psychological aftermath of Hurricane María on island Puerto Ricans further confirmed the devastating losses caused by the storm. For example, the number of reported suicide attempts among island Puerto Ricans increased 246% within the first three months after Hurricane María, compared to the same time the previous year (Fernández Campbell, 2018; Puerto Rico's Department of Health, 2018). The psychological consequences of traumatic events are not contained by geographical or physical boundaries and negatively affect those indirectly exposed (Shultz et al., 2012). As individuals cope with their experience of secondary exposure to trauma, opportunities for positive psychological outcomes also emerge (Calhoun & Tedeschi, 2006). However, no literature is yet available about the psychological effects of Hurricane María among diaspora Puerto Ricans who were indirectly affected by the storm. For the purpose of this article, secondary exposure reflects the experiences of Puerto Rican participants living in Florida when Hurricane María made landfall in Puerto Rico. The current study presents an examination of the effects of secondary exposure to Hurricane María on adult Puerto Ricans living in Florida.

## **Puerto Rican Diaspora in Florida**

Florida is home to the largest Puerto Rican community on the United States mainland (U.S. Census, 2017). Approximately 1,128,225 Puerto Ricans lived in Florida in 2017, a 42% increase from 2010 (U.S. Census, 2010, 2017). About 43% of all Florida Puerto Ricans were born on the island (U.S. Census, 2010). This may explain why this growing community is also characterized by its strong connections with the island. For example, Duany (2010) found that in 2010 about 87% of Florida Puerto Rican professionals traveled to the island at least once a year. Connection to the island may put Puerto Ricans at both an advantage and a disadvantage in terms of their secondary trauma from the storm. For example, frequent travel to the island may help Florida Puerto Ricans maintain ties with Puerto Ricans living there (Aranda, 2007), which may in turn, provide support in times of stress. On the other hand, maintaining connections with the island and its residents may intensify secondary exposure and stress associated with Hurricane María.

## **Secondary Exposure, Stress, and Traumatization**

The literature suggests that secondary exposure to natural disasters is associated with significant psychological distress (Wickrama & Ketring, 2012). Although the terms secondary exposure and secondary traumatic stress are often used interchangeably, there are important distinctions between the two (Shoji et al., 2015). Secondary exposure is generally defined as an indirect experience of traumatic events (Makadia, Sabin-Farrell, & Turpin, 2017), such as seeing pictures of the devastation caused by a natural disaster. On the other hand, secondary traumatic stress is understood as psychological symptoms resulting from secondary exposure (McCann & Pearlman, 1990). These may include symptoms of hyperarousal, avoidance, negative feelings, thus mirroring the symptomatology of posttraumatic stress disorder (Makadia et al., 2017). The extent to which a person experiences secondary traumatic stress is thought to be at least partly dependent on the frequency and severity of secondary exposure (Makadia et al., 2017). Within our population of interest, Florida Puerto Ricans were indirectly exposed to the aftermath of Hurricane María through local and national T.V., radio stations, newspapers, and social media platforms (e.g., Facebook). For example, the Facebook page Puerto Rico María Updates was created to help Puerto Ricans on the mainland search for family members and find information about the island (Aviles-Santiago, 2017). The few radio stations in Puerto Rico that still functioned, along with social media, became makeshift emergency lines of communication through which island and mainland Puerto Ricans sought medical attention for themselves and family

members (Kirby, 2017). Given the documented secondary exposure to Hurricane María among Florida Puerto Ricans, it is critical to examine the psychological impact of this exposure.

Multiple studies have indicated a positive association between secondary exposure to natural disasters and secondary traumatic stress among clinical (Garbern, Ebbeling, & Bartels 2016; Van de Auwera, Debacker, & Hubloue, 2012) and nonclinical communities. To illustrate, in a qualitative examination of nonclinical volunteers during the 2005 Hurricanes Rita and Katrina, a majority of respondents identified a wide range of secondary traumatic stress symptoms (e.g., anger) associated with their secondary exposure (e.g., helping survivors; Clukey, 2010). More recently, in a quantitative study of Haitian American adults with secondary exposure to the 2010 Haiti earthquake, Smith and colleagues (2014) found that a majority of participants reported experiencing secondary traumatic stress symptoms (e.g., anxiety, avoidance) resulting from secondary exposure (e.g., news about the earthquake). Smith and colleagues (2014) also found that Haiti-born participants reported significantly higher levels of secondary traumatic stress than United States-born Haitians. The influence of secondary exposure also appears to be long lasting. In a comparative study between Haitian Americans with direct exposure and Haitian Americans with secondary exposure to the 2010 earthquake, Messiah et al. (2014) found that, even two years after the disaster, both groups reported clinically significant symptoms of posttraumatic stress disorder. These reports further highlight the need to examine the psychological impact of secondary exposure to Hurricane María, especially among island-born Puerto Ricans now living on the mainland.

## **Secondary Exposure and Vicarious Growth**

Experiencing traumatic events has the power to change an individual's beliefs about the self, others, and the world (Janoff-Bulman & Yopyk, 2004). Although these changes can lead to a host of posttraumatic symptoms, survivors of natural disasters can also experience posttraumatic growth (PTG; An et al., 2018). PTG is defined as the positive outcomes that emerge from otherwise negative experiences (Tedeschi & Calhoun, 1996) and is believed to be an essential part of the posttraumatic event healing process (Anderson, 2017). These positive outcomes can be observed at the individual, interpersonal, and cognitive levels. At the individual level, Calhoun and Tedeschi (2006) describe PTG as individual resilience and perseverance in the face of challenges. Interpersonal growth may manifest as improvements in relationships or giving greater importance to interpersonal relationships after the trauma (Lowe, Rhodes, & Scoglio, 2012). Lastly, cognitive changes allude to

the individual's ability to find a positive meaning about why the event occurred (Calhoun & Tedeschi, 2006).

PTG has also been observed among those with secondary exposure to traumatic events. Vicarious PTG (VPTG) has been observed among clinical (for a review, see Cohen, Collens, & Gold, 2013) and nonclinical community samples. In a qualitative study by McCormack, Hagger, and Joseph (2011), the partners of Vietnam veterans shared how secondary exposure to their partners' combat trauma led to increased empathy and marital satisfaction. More recently, a quantitative investigation by Abel, Walker, Samios, Morozow, and Bride (2014), indicated that secondary exposure among college students was positively related with VPTG. The racial and ethnic homogeneity of the samples on both studies (White Europeans), highlight the need to research VPTG in diverse cultures. In order to bridge this gap, we also explored the meaning and growth Florida Puerto Ricans attributed to their own experiences of Hurricane María.

## **The Role of Coping and Predisaster Stressors on Secondary Stress and Growth**

The psychological impact of secondary exposure and the experience of VPTG may also depend on the coping skills the individual uses to deal with secondary exposure (Calhoun & Tedeschi, 2006; Smith et al., 2014). Coping is the process of managing or reducing stress associated with difficult situations (Folkman & Moskowitz, 2004). Coping efforts are often categorized as adaptive (e.g., adopting positive ways to regulate stress; Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001) or maladaptive (e.g., engaging in negative behaviors to reduce stress; Compas et al., 2001). Examples of adaptive coping may include seeking support (Thompson, 1994) and spirituality (Constantine, Wilton, Gainor, & Lewis, 2002). Conversely, avoidance (Holahan, Moos, Holahan, Brennan, & Schutte, 2005) and distraction (Edwards & Holden, 2001) have been identified as maladaptive coping efforts.

Specific to individuals dealing with secondary exposure, scholars have identified a wide range of adaptive and maladaptive coping efforts, including avoidance (MacNeill, DiTommaso, & Brunelle, 2016), distraction (McCann & Lubman, 2018), humor (Manning-Jones et al., 2016), seeking support (McCann & Lubman, 2018) and spirituality (Ai, Cascio, Santangelo, & Evans-Campbell, 2005). Park, Aldwin, Fenster, and Snyder (2008) found that adaptive coping strategies such as seeking support were linked to less secondary traumatic stress. However, whereas Akinsulure-Smith, Espinosa, Chu, and Hallock (2018) found positive correlations between avoidance as well as distraction strategies and secondary traumatic stress, McCann and

Lubman (2018) found that more avoidance and distraction was associated with less secondary traumatic stress. In fact, trauma scholars suggest that avoidance and distraction may give the individual experiencing trauma the space and time needed to reevaluate the traumatic event and find a positive meaning (Linley & Joseph, 2005). Thus, it is also important to understand how Florida Puerto Ricans reacted to their secondary exposure to Hurricane María and how they coped with this natural disaster.

Beyond helping reduce secondary traumatic stress, coping can also have an important role in VPTG by giving the individual the opportunity to experience positive outcomes (Calhoun & Tedeschi, 2006; Manning-Jones, de Terte, & Stephens, 2016). For example, besides providing support, family and friends can also help the individual experiencing secondary exposure gain perspective or correct irrational thoughts associated with the natural disaster. Finding positive meaning in the disaster (Abel et al., 2014) and receiving support from family and friends (Manning-Jones et al., 2016) have been inversely associated with secondary traumatic stress and positively correlated with VPTG.

The individual's pretrauma context may also influence how they experience secondary stress and VPTG (Anderson, 2017). For instance, Rhodes and colleagues (2010) found that having fewer financial resources pre-Hurricane Katrina was a risk factor for postdisaster traumatic stress. In a Puerto Rican sample, Rivera (2012) found that pre-Hurricane George social support was inversely related to postdisaster traumatic stress. However, Puerto Rico's persistent economic woes have disrupted island and mainland Puerto Ricans' access to economic (Cabán, 2017) and social support (Aranda, 2007). Puerto Rico's relationship with the United States could also influence postdisaster recovery efforts. For example, a review of Federal Government statistics revealed that FEMA had a faster and greater response to Hurricane Harvey, which affected the Houston, Texas area on August 25, 2017, than Hurricane María. Additionally, while FEMA leaders approved \$141.8 million in assistance to those affected by Hurricane Harvey nine days after the storm, they only approved \$6.2 million for Puerto Rico (Vinik, 2018). Thus, Puerto Rico's economic and sociopolitical context may influence the resources available for Puerto Ricans on the island. This in turn may influence how Puerto Ricans on the mainland experience secondary exposure, secondary traumatic stress, coping, and VPTG.

We are the first to explore the psychological reactions of Florida Puerto Ricans with secondary exposure to Hurricane María. We also aimed to examine how they cope and experience VPTG. This information can provide valuable information to integrate into psychological work with Puerto Ricans indirectly impacted by the hurricane.

## Method

In this manuscript, we focus on a part of a larger study on the pre- and post-migration experiences of Puerto Ricans residing in Central Florida. We believe that the time frame of the data collection (i.e., one month after Hurricane María's landfall), encouraged participants to engage in extensive conversations about their reactions to and coping strategies used to resolve issues with Hurricane María beyond their overall experiences of pre- and postmigration to the mainland. We used a qualitative approach. Qualitative research can be particularly valuable when exploring the meanings and perspectives people attribute to their own experiences (Schutt, 2014). This is especially the case when researchers seek to understand topics that have not been previously studied or understood (Morrow, 2007).

### Participants

Participants in the study ( $N = 26$ ) were self-identified Puerto Ricans. The age range for participants was 19–52 years old with an average age of 35.52-years-old ( $SD = 8.55$ ). At the time of our study, all participants resided in Central Florida. The range of months living on the mainland United States was 4–300 months with the average time living on the mainland United States being 73.13 months ( $SD = 66.22$ ). The range of members who migrated to Florida with the participant was 0–5 with an average number of 3.16 members ( $SD = 1.28$ ). With respect to household income, while living in Puerto Rico, the range was \$0–\$120,000.00 dollars with an average of \$30,571.43 dollars ( $SD = \$26,121.97$ ). The range for the household income while living on the mainland United States was \$12,000.00–\$70,000.00 dollars with an average of \$37,055.00 dollars ( $SD = \$15,456.68$ ). Table 1 includes full participant demographic information with regard to birthplace, gender identity, educational level, and relationship status.

### Procedures

*Research team and researchers' positionality.* The research team included an assistant professor of psychology who identifies as a Puerto Rican cisgender heterosexual woman whose research focuses on the migration experiences and psychological well-being of Puerto Ricans residing on the mainland United States (Cristalís Capielo Rosario). Cristalís Capielo Rosario shared and reinforced some of the intense emotional reactions observed in the sample as she has family members who currently reside in Puerto Rico and were affected by Hurricane María. Throughout the research process, Cristalís

**Table 1.** Participant Demographics

Demographic	<i>n</i>	%
<b>Birth Place</b>		
Puerto Rico	21	80.77
Mainland United States	4	15.38
Unknown	1	3.85
<b>Gender Identity</b>		
Woman	15	57.69
Man	11	42.31
<b>Home in Puerto Rico</b>		
Adjuntas	4	15.38
Santa Isabel	4	15.38
Bayamon	3	11.53
Corozal	2	7.69
Dorado	2	7.69
Naguabo	2	7.69
Salinas	2	7.69
Arecibo	1	3.85
Caguas	1	3.85
Carolina	1	3.85
Gurabo	1	3.85
Quesbradillas	1	3.85
Rio Piedras	1	3.85
Unknown	1	3.85
<b>Education Level</b>		
Bachelor's degree	7	26.93
High school	5	19.23
Some college	5	19.23
Associate's degree	4	15.38
Advanced college degree	4	15.38
Unknown	1	3.85
<b>Relationship Status</b>		
Married	16	61.53
Single	7	26.93
Common union	2	7.69
Unknown	1	3.85

Capielo Rosario used a reflective journal to record self-reflections about any personal reactions felt during different times in the data analytic process. This standard procedure in qualitative analysis helped to monitor and reflect



on potential biases (Braun & Clarke, 2013). The research team also included an assistant professor of psychology who identifies as a first-generation Cuban cisgender gay man whose research addresses the intersection of Latinx and LGBTQ+ issues, with an emphasis on community and family acceptance (Roberto L. Abreu). The research team also included an assistant professor of psychology who identifies as a Mexican American Latina cisgender heterosexual woman whose research focuses on the psychological well-being of marginalized communities across race/ethnicity, gender, and sexuality and cultivating allyship with privileged communities (Kirsten A. Gonzalez). Finally, the research team included a psychology graduate student who identifies as a first-generation Mexican cisgender heterosexual woman whose research interest is in undocumented Latinx populations and resilience in Latinx populations (Elizabeth Cardenas Bautista).

Roberto L. Abreu and Kirsten A. Gonzalez have expertise in qualitative methodology, including publishing in multiple peer-reviewed journals that use different qualitative research approaches. The diversity of identities and qualitative research experience of the research team provided a system of checks-and-balances that was beneficial in reducing bias and accurately capturing the experiences of the participants. To maximize objectivity in the data analytic process and to ensure a check-and-balance system given the Cristalís Capielo Rosario's personal connection to the topic, Roberto L. Abreu and Kirsten A. Gonzalez took the lead in coding the data. Given Cristalís Capielo Rosario's expertise in Puerto Rican research, she served as the auditor for the project and provided clarification to Roberto L. Abreu and Kirsten A. Gonzalez about the complexities of Puerto Rican migration patterns and political status as they emerged in the data. These discussions created an opportunity to examine the research process among the authors in a way that accurately captured and did not stigmatize the intense emotional reactions described by the participants (LeCompte & Goetz, 1982).

**Participant recruitment.** Participants were eligible to participate if: (a) they self-identified as Puerto Ricans, (b) migrated from Puerto Rico to the mainland United States, (c) resided in Central Florida, and (d) were between the ages of 18 and 60 years old. Although Puerto Ricans reside in different geographic locations on the mainland United States (e.g., Illinois, New York), we decided to focus our recruitment efforts on Central Florida due to recent demographic data indicating that Florida is home to the largest concentration of Puerto Ricans on the United States mainland (U.S. Census, 2017).

We conducted recruitment using two approaches: (a) targeted and (b) snowball sampling (Gardner, 2009). First, we performed targeted recruitment by sharing the approved flyer with Puerto Rican organizations in Central

Florida and on social media groups (e.g., Facebook; Twitter) specific for Central Florida Puerto Ricans. Second, we asked Puerto Ricans living in Central Florida to forward the study information to others who might be eligible and willing to participate. Cristalis Capielo Rosario shared the study flyer with personal contacts (i.e., Puerto Ricans residing in Central Florida) and asked them to forward the study information to people they thought could be good candidates for the study. Qualitative researchers (e.g., Braun & Clarke, 2013; Moore, 2006) argued that traditional forms of recruitment (e.g., flyer) might not be effective when recruiting participants from marginalized groups and, therefore, rapport must be built before collecting data. Given this precedence and an extensive history of marginalization in the United States toward Puerto Ricans (Aranda 2007; Arellano-Morales et al., 2015), Cristalis Capielo Rosario's strong rapport with key members in the community was important for recruiting participants for this study. In fact, snowball sampling proved to be the most effective method of recruiting participants ( $n = 24$ ) due to our focus on a hard-to-find population.

**Data collection.** We collected our data approximately one month after Hurricane María devastated Puerto Rico. As part of the informed consent process, we informed participants about the potential risks (e.g., potential discomfort as a result of expressing complex feelings associated with the recent natural disaster) as well as potential benefits (e.g., creating a supportive environment). In addition, we informed participants that their responses would be audio recorded and that they were free to withdraw from the study at any time.

For our main source of data collection, we used focus groups, defined as a method of gathering a group of individuals in a supportive, peer-centered environment with the goal of collecting information about commonly shared experiences (Krueger & Casey, 2008). Focus groups create a collectivist social environment where participants are able to produce rich ideas (Madriz, 2000). In focus groups, researchers are also able to record attitudes and interpersonal interactions among participants that are not available through individual interviews (Suzuki, Ahluwalia, Arora, & Mattis, 2007). They are additionally effective when addressing sensitive topics, as they allow participants to openly talk about experiences that they share with other group members (Purcell, Koenig, Bosch, & Maguen, 2016). Considering that all participants in this study shared a unique common experience (i.e., Puerto Ricans who migrated to the United States and who expressed intense emotions as a result of the devastation created by Hurricane María in Puerto Rico), we anticipated that participants would be more open to discussing their experiences and feelings among other Puerto Ricans who shared the

same experiences and emotional reactions. For these reasons, we used focus groups as our main data collection source.

Researchers have argued that using both individual interviews and focus groups when collecting qualitative data may help to gain further knowledge about the phenomenon being explored (Lambert & Loissele, 2008; Purcell et al., 2016). Taking this into consideration, we decided to conduct four individual interviews based on the participants' preference for a more individual approach where they could more comfortably share their experiences. A similar approach has been used in recent studies. For example, in a qualitative study with 26 combat veterans, Purcell et al. (2016) used focus groups and individual interviews. Specifically, the authors shared that they accommodated participants who wanted to engage in individual interviews in order to "ensure that all participants' voices [were] heard. . . and [due to] the challenging nature of recruitment tied to the sensitivity and stigma of the topic under discussion" (p. 1066). Because of our commitment to provide the appropriate setting for participants to voice their feelings about Hurricane María, it was important for us to be flexible and include the experiences of these participants in our study.

Cristalís Capielo Rosario conducted the interviews. Before each interview, participants completed a brief demographic questionnaire. Afterward, Cristalís Capielo Rosario conducted semistructured interviews composed of 17 questions regarding the participants' experiences prior to and after migrating to the United States as well as their emotional experiences and ways of coping with Hurricane María. To develop the interview protocol, Cristalís Capielo Rosario generated a preliminary list of questions. To ensure that the length and wording of the interview protocol was adequate, Cristalís Capielo Rosario solicited feedback from three community members that fit the inclusion criteria for the study but whom were not recruited for the study. After consulting with the community members, Cristalís Capielo Rosario reduced the number of questions to 17 and changed some of the wording to improve clarity. Five of these questions specifically focused on the participants' reactions, emotional state, and coping strategies as a result of Hurricane María. These questions included: (a) Can you tell me about your overall impression and reactions about Hurricane María on the island of Puerto Rico? (b) How much do you know about the situation on the island? (c) How do you currently feel about the situation? (d) How are you coping with the situation? (e) Have you noticed any changes in the way you see yourself or others because of this situation? Cristalís Capielo Rosario used additional probing questions as needed to keep the participants focused and engaged. All participants appeared comfortable sharing their experiences with the group facilitator and the other participants, and each participant shared different perspectives.

Cristalís Capielo Rosario conducted a total of two focus groups, one with 13 participants and one with nine participants. The number of participants in the study and focus groups were consistent with research on optimal numbers of participants for focus group research. According to Gill, Stewart, Treasure, and Chadwick (2008), focus groups are optimal with six to eight participants but can be effective with anywhere from three to 14 participants. Thus, our two focus groups met appropriate standards for qualitative research.

The first focus group lasted approximately 90 minutes and the second one lasted approximately 150 minutes. Childcare was available during both focus groups. However, more child interruptions took place during the second group that required redirection. This, in turn, lengthened the second focus group. In addition, Cristalís Capielo Rosario conducted four individual interviews, with each session also lasting between 90 and 150 minutes. Similar to the second focus group, longer individual interviews were due to child interruptions requiring refocus as part of rapport building. To ensure that all participants had ample opportunity to respond to each query, the interviewer asked participants if they had any additional thoughts to share before proceeding to the next question. We gave participants the option to fill out the demographic questionnaire and participate in the interviews in either English, Spanish, or a combination of both languages. This accommodation was not only culturally appropriate, but also allowed participants to express their ideas and feelings without the restriction of language.

*Transcription and translation of data.* Elizabeth Cardenas Bautista audio-recorded and transcribed all sessions and removed all identifying information before coding. Once all transcriptions were completed, organized, and de-identified, Elizabeth Cardenas Bautista completed the translations from Spanish to English and a back-translation from English to Spanish to double check for translation accuracy. Elizabeth Cardenas Bautista completed this task because of her previous transcription and translation experience in translating Puerto Rican Spanish. After the translations were completed, Cristalís Capielo Rosario read each original piece of transcription and provided translations to ensure accuracy of the final product. Cristalís Capielo Rosario is fluent in Spanish (reading, writing, and comprehension) as well as English and is familiar with the cultural and linguistic nuances of the Spanish spoken in Puerto Rico. Minor revisions were resolved between Cristalís Capielo Rosario and Elizabeth Cardenas Bautista.

### *Data Analysis*

We analyzed our data using a thematic analysis approach. Thematic analysis is a systematic method for identifying, analyzing, and reporting themes, within

qualitative data (Braun & Clarke, 2006, 2013). Unlike other qualitative methodologies (e.g., grounded theory), the goal of thematic analysis is to highlight how people make sense of their experiences in a social context (Braun & Clarke, 2006) with emphasis on creating themes from the research questions (Vaismoradi, Turunen, & Bondas, 2013). Thematic analysis is highly flexible and can be modified to our needs. While providing a rich analysis of the data, it allows for an examination of different perspectives (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). This approach allows researchers to develop a deeper appreciation for the group they seek to explore (Braun & Clarke, 2006; 2013). As such, we followed the six phases of thematic analysis proposed by Braun and Clarke (2006): (a) familiarizing with the data, (b) generating initial codes, (c) searching for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report.

It should be noted that we organized all of the qualitative data by using a web-based program commonly used for qualitative research (i.e., Dedoose). In Phase 1, all authors became familiar with the data by reading the translated transcripts and writing down their initial impressions. In Phase 2, Roberto L. Abreu and Kirsten A. Gonzalez independently read all participant responses line by line about feelings, emotions, and forms of coping related to Hurricane Maria. Each author divided each response into interpretable units of text that expressed one idea, or meaning unit (Giorgi, 1985). Roberto L. Abreu and Kirsten A. Gonzalez then met to discuss, clarify, and reach consensus on these initial meaning units. In Phase 3, Roberto L. Abreu and Kirsten A. Gonzalez individually placed each meaning units into an initial set of themes using a constant comparative process. They then met again to discuss their impressions and agree on a common initial set of themes. Discrepancies were reconciled and these authors meticulously went through the data together in order to consolidate, create new themes, and eliminate themes as needed. In Phase 4, after Roberto L. Abreu and Kirsten A. Gonzalez agreed upon a set of themes, Cristalís Capielo Rosario served as the auditor, reviewed each theme then provided feedback and suggestions for revisions as needed. In Phase 5, Cristalís Capielo Rosario, Roberto L. Abreu, and Kirsten A. Gonzalez met to discuss any discrepancies found in the previous phase until the three authors achieved a final parsimonious thematic structure of the data with clear definitions and names for each theme. We made the revisions accordingly, including consolidating, creating new themes, and eliminating themes as needed. In Phase 6, all of the authors drafted results that related back to the research questions and literature and selected examples representative of each theme.

As described by Nowell and colleagues (2017), trustworthiness was addressed in each phase by: (a) gathering thoughts about potential codes and themes and keeping records of field notes and transcripts in Phase 1, (b) establishing a coding framework and peer debriefing in Phase 2, (c) making

sense of connections in the data and keeping detailed notes about the development of themes in Phase 3, (d) testing adequacy in the data through an auditor and going back to the raw data as needed in Phase 4, (e) debriefing of the two coders by the auditor and documenting a team consensus on themes in Phase 5, and (f) providing in this manuscript rich descriptions of the coding and analysis process.

Using Braun and Clark's (2006) methodology, we engaged in several discussions about what constitutes a theme based on data from the participant narratives. As Braun and Clark (2006) suggested, there is no "hard-and-fast answer" with respect to the necessary proportion of data needed to constitute a theme (p. 82). Braun and Clark (2006) suggested that themes should provide important contributions to the research questions. As such, we were interested in the impact of Hurricane Maria on Central Florida Puerto Ricans. During Phase 5, Cristalís Capielo Rosario, Roberto L. Abreu, and Kirsten A. Gonzalez solidified the thematic structure and decided to include major themes that emerged from more than 25% of participant narratives. During Phase 6, Cristalís Capielo Rosario served as auditor to ensure that results comprehensively reflected participant narratives.

## Results

Analysis of the data from the two focus groups and four individual interviews yielded four major themes and eight subthemes depicting Florida Puerto Ricans' responses and reactions to Hurricane María (see Table 2). Four major themes emerged across participant responses: 1) the Participants' Experiences With Hurricane María, 2) the Participants' Negative Reactions to Hurricane María, 3) Participants Providing Support, and 4) Resilience and Growth. All participant responses can be categorized in at least one of the themes/subthemes and many of the participant narratives reflect multiple themes.

### *"My dad lost everything": Participants' Experiences With Hurricane María*

Nine participants (34.62%) spoke directly about their personal experiences with Hurricane María; specifically, they named their own reactions and struggles after being presented with information, including visuals and information presented in the media, about Hurricane María's damage and destruction to the island of Puerto Rico. Two subthemes emerged that represented participants' own experience of Hurricane María: 1) seeing the impact of Hurricane María in the media, and 2) recognizing the lack of resources of Puerto Rican people on the island.

**Table 2.** Thematic Structure and Percentage of Individuals Acknowledging Each Theme

Theme	Subtheme	% of sample
Participants Experiences With Hurricane María		34.62% (n = 9)
	Seeing the Impact of Hurricane María in the Media	19.23% (n = 5)
	Recognizing the Lack of Resources of Puerto Rican People on the Island	19.23% (n = 5)
Participants Negative Reactions to Hurricane María		34.62% (n = 9)
	Concerns about Loved Ones	23.08% (n = 6)
	Perceptions that the United States Government is not Helping	11.54% (n = 3)
Participants Providing Support		26.92% (n = 7)
	Providing Support at the Individual Level	15.38% (n = 4)
	Providing Support at the Community Level	15.38% (n = 4)
Resilience and Growth		26.92% (n = 7)
	Community Resilience and Unity	15.38% (n = 4)
	Strengthened Ethnic Identity	23.08% (n = 6)

*“I got up at 6 in the morning and I entered Twitter”*: Seeing the impact of Hurricane María in the media. Participants (n = 5; 19.23%) talked about the ways in which they were exposed to the destruction of Hurricane María on the island through the media. One participant exemplified this subtheme when he said, “I started to hear on the radio that one person was there in a building. The building was moving, the elevators did not work, and the water was getting in” (Heterosexual Puerto Rican man, age 32). Another participant voiced how seeing the information on the news was hurtful,

We are hurting as a people. . . whether we are on the island or we’re at home, we see the news. The mainstream media says, ‘There are 48 deaths.’ I’m, like, that’s not true, we are seeing 400, 700 deaths. There may be 1,000 by the time this is done (Heterosexual Puerto Rican man, age 44).

Participants also talked about the lack of information and the confusion created by inaccurate information being presented in the media. One participant echoed this finding when she said, "They put a photo and they say 'Adjuntas' and we say, 'but that doesn't appear like Adjuntas', and it wasn't, it was another place" (Heterosexual Puerto Rican woman, age 30). Although participants were not living on the island during the hurricane, they spoke at length about their pain and sadness as well as the significant impact the natural disaster had on them.

*"They are living with the worry about how to make food": Recognizing the lack of resources of Puerto Rican people on the island.* The second subtheme that emerged from the data was participants' ( $n = 5$ ; 19.23%) recognition that people on the island lost significant resources in the wake of Hurricane María. This subtheme is exemplified in this participant's response; when she said, "My mother-in-law takes care of her elderly mother and has difficulties locating a case of water for her mother" (Heterosexual Puerto Rican woman, age 28). Participants also discussed how the devastation of the hurricane and the resources on the island would cause island Puerto Ricans to migrate to the mainland United States

Participants shared their sadness and pain in response to the devastation caused by Hurricane María as well as recognition that it left the people on the island without access to basic needs and resources. One participant said: "The places are devastated, and it hurts. My cousin says that—she works in the medical field—and she said yes, the people are dying, yes, because there is no insulin" (Puerto Rican heterosexual woman, age 30).

Lastly, participants talked about how Hurricane María would worsen the island's economic and crime problems and cause additional stress for island Puerto Ricans. One participant exemplified this when he said, "People will become desperate because things are going to get worse. People are stealing, and with the murders, things are going to get worse" (Heterosexual Puerto Rican man, age 25). Participants reflected on how Hurricane María caused significant stress for the people of Puerto Rico, who were left with little after the devastation caused by the hurricane. These participants also experienced their own stress as a result of seeing the suffering among island Puerto Ricans .

### ***"Very difficult": Participants' Negative Reactions to Hurricane María***

Nine participants (34.62%) spoke about their negative reactions to the damage caused by María. Two subthemes emerged that represented participants'



negative reactions: 1) their concerns about loved ones, and 2) their perceptions that the United States government was not helping.

*“I don’t know about my mom”*: *Concerns about loved ones*. Some participants ( $n = 6$ ; 23.08%) felt worried and fearful in the aftermath of Hurricane María. Participants’ worry was often focused on the well-being of loved ones on the island. One participant said: “Nobody answered me, neither my sister, not my dad, nobody, nobody answered me. I was very worried” (Heterosexual Puerto Rican woman, age 31). Another participant echoed pain in response to her concern about her family when she said: “My chest got tight, it gave me something bad, and gave me a headache. I started to cry and cry. They told me to calm down because my blood pressure is rising, and I told him, I don’t know how [my] family is” (Heterosexual Puerto Rican woman, age 42).

Other participants expressed feeling worried about how the devastation caused by the hurricane would lead to the death of family members, “I don’t want to hear news and find them dead or whatever or hung. I think that is what I’m more scared of at this point. . . . A friend of the family hung himself after he saw what happened to his house” (Heterosexual Puerto Rican man, age 44). Participants felt worried, afraid, and frustrated at the difficulty of not being able to communicate with loved ones in the aftermath of Hurricane María.

*“Frustrating, hurtful, and difficult to describe”*: *Perceptions that the United States government was not helping*. Participants ( $n = 3$ ; 11.54 %) also had negative reactions to the way the United States government responded to the storm. This was emphasized by the following quote:

Puerto Ricans are American citizens and in a moment of crisis, the U.S. has not given us the backup. They haven’t given us the help that is necessary. This is hurtful. . . . To know that we are part of the biggest superpower in the world and that they aren’t doing enough, and that people are dying, that is hurtful to me. It hits a nerve down in my gut (Heterosexual Puerto Rican woman, age 28).

Other participants felt angry and frustrated with the United States government’s lack of support in reaction to the hurricane’s destruction on the island. One participant said:

I feel like the United States has helped but they haven’t fully helped to the level that they could and for me that is disrespectful. For me, that’s like saying to us that we are not worthy (Heterosexual Puerto Rican man, age 32).

Participants also felt that the way the United States government reacted when Hurricane María hit the island made them question Puerto Rico's political status. This is exemplified by the following statement:

Before María, I would say Puerto Rico needs to stay being a colony, having our own laws, our own culture but having the backup of a superpower. Now that I see how we have been disrespected, I think it is best for Puerto Rico to not be part of the U.S. (Heterosexual Puerto Rican woman, age 28).

According to these participants, their view of Puerto Rico in conjunction with the mainland United States changed dramatically as a result of how the United States Federal Government treated Puerto Rico after the devastation of Hurricane María.

### ***“Everything is going to be ok”: Participants Providing Support***

Seven participants (26.92%) spoke about how they provided support to community members in the wake of Hurricane María. Two subthemes emerged which represented participants' support furnished to others after Hurricane María: 1) providing support at the individual level, and 2) providing support at the community level.

*“I know you are going to call me”*: Providing support at the individual level. Participant narratives reflected a tendency for participants ( $n = 4$ ; 15.38%) to provide support to other Puerto Ricans in response to the devastation caused by Hurricane María. Participants talked about having to manage their own feelings in order to help others more directly impacted by Hurricane María. One participant said:

My whole thing is that I need to be strong. I know I can't break down while you are breaking down because you need me. You are turning to me obviously because you need me to keep you steady (Heterosexual Puerto Rican woman, age 28).

Another participant talked about supporting others by minimizing the situation:

I was hearing that Ponce was devastated, and I had a friend, in our apartment, she was saying 'I don't know about my mom' and I said 'don't worry about it, thank God, Ponce is good' But I knew that Ponce was devastated. I did not want to say anything negative (Heterosexual Puerto Rican man, age 45).

*“I think it’s something we carry in our spirit, it’s who we are”*: Providing support at the community level. Participants ( $n = 4$ ; 15.38%) talked about the importance of providing support to those in need in the wake of the destruction caused by Hurricane María. Participants often turned to other Puerto Ricans on the mainland United States to receive and to give support. Participants shared their thoughts and feelings about how Puerto Ricans across the mainland and the island came together to support each other in the aftermath of the hurricane. One participant shared a story of how he has worked to give back to those struggling in Puerto Rico:

One of my friends, he lives in Carolina, he tells me, ‘you have done so much for us even though you are over there. Not everyone checks up on us, not everyone has the ability to see if we are okay. You’re asking how I’m doing emotionally and that means more to me than you sending me a box of batteries. You are doing more than what you think you are doing’ (Puerto Rican heterosexual man, age 44).

Participants also described their own suffering in reaction to Hurricane María and shared how they coped by connecting with Puerto Rican culture (e.g., Puerto Rican cultural activities, music) and by being around and supporting other Puerto Ricans. The following participant quote exemplifies this finding:

Well at least all of us at work, all the Boricuas<sup>1</sup>, we interrupted each other’s class. We asked, ‘Boricua, how are you? How is the family?’ At least we are giving support from here. Even though we are not there, we are also suffering (Heterosexual Puerto Rican woman, age 26).

Participants felt that relying on and giving support to other Puerto Ricans both on the mainland and on the island was one way of coping and working through the pain and sadness.

### *“We left [Puerto Rico] so we can be here and help our island”*: *Resilience and Growth*

Seven participants (26.92%) spoke directly about how they were able to reframe the devastation in a positive light, which allowed them to move forward and have positive experiences despite their sadness and pain. Two subthemes emerged that represented participants’ experiences of growth after Hurricane María: 1) community resilience and unity, and 2) a strengthened ethnic identity.

*"I know that our people have it in them": Community resilience and unity.* Participants ( $n = 4$ ; 15.38%) spoke about seeing the Puerto Rican community as strong and resilient in the face of the devastation caused by Hurricane María. One participant said, "I know Puerto Ricans could make it if they really put themselves to it. I think they can" (Puerto Rican heterosexual woman, age 28).

Participants also talked about how God used Hurricane María to unify the Puerto Rican community. The following participant quote exemplifies this feeling:

What I see positive in the midst of the negative is that our Father God always knows what He is doing and I think that our Father God knows what He is doing with this hurricane, we need to be more united. Our country has to be conscious, we have to unite more, and this has helped. I have seen unity (Puerto Rican heterosexual man, age 45).

*"We love the island": Strengthened ethnic identity.* Participants ( $n = 6$ ; 23.08%) also referenced the importance of their ethnic identity after Hurricane María. One participant exemplified this theme when he said:

We are here with a purpose. From here we can help our family. It is not that we left because we wanted to, I can assure you that in these hearts there is Boricua pride (Heterosexual Puerto Rican man, age 32).

Another participant echoed this theme when he said:

If they have any doubt that we do not love the island, how do you explain the people who go back to help? Those [of us] that are out of the island, love the island (Heterosexual Puerto Rican man, age 45).

Participants asserted their identities as Puerto Ricans when they talked about the importance of supporting recovery efforts in Puerto Rico.

## Discussion

We are the first to document the reactions of Florida Puerto Ricans to the devastation caused by Hurricane María. Consistent with the literature (Rhodes et al., 2010; Shultz et al., 2012), we found that the trauma caused by natural disasters also affects those with secondary exposure, and that predisaster stress and Puerto Rico's predisaster political and economic status also seem to have influenced secondary traumatic stress. The participants in our study, for instance, feared that the hurricane's destruction would worsen the island's pre-María living conditions and cause island Puerto Ricans to feel even more

desperate. We also found that Puerto Ricans with secondary exposure to Hurricane María coped with secondary traumatic stress by receiving and providing support to individuals and the community. Participants also identified experiences of VPTG at the individual and the community level.

### *Limitations*

Although our results constitute important contributions to the nonclinical secondary traumatic exposure literature, various limitations should be considered when interpreting these results. For instance, while our participants reported symptoms that mirror posttraumatic distress, we did not conduct clinical interviews or use psychological distress measures that would help determine the presence of clinical levels of trauma. Thus, future investigators should assess whether or not the distress reported by Florida Puerto Ricans due to secondary exposure to Hurricane María raises to the level of clinical concern.

Although secondary exposure has been associated with long-term secondary traumatic stress (Messiah et al., 2014), the cross-sectional design of our study limits our ability to understand the long-term effects of secondary exposure to stress from, and traumatization by, Hurricane María on Florida Puerto Ricans. Thus, future researchers should explore how secondary exposure, among mainland Puerto Ricans, may be associated with chronic secondary stress and psychological distress. Researchers have also demonstrated that the intensity of a natural disaster, the effectiveness of recovery efforts, and secondary stressors (e.g., prolonged lack of access to shelter) may put individuals at increased risk of experiencing chronic secondary psychological distress (Kessler, McLaughlin, Koenen, Petukhova, & Hill, 2012). Specific to post Hurricane María recovery, two years after the storm, the island of Vieques (southeast of Puerto Rico's mainland) was still waiting for FEMA to release funds allocated to rebuild Vieques' only hospital (Bloomberg Law, 2019) and tens of thousands of homes in Puerto Rico that were damaged by the storm still have blue tarps (Acevedo, 2019). As the island continues to struggle with a slow recovery, it will be important to investigate the long-term effects of secondary exposure to Hurricane María.

Although focus groups and individual interviews were appropriate tools for us to use due to the sensitive nature of our research questions and to ensure that the experiences of all participants were captured; using both approaches to collect data presents some limitations. For example, focus groups composed of individuals who share similar experiences lead to the sharing of spontaneous and rich details (Krueger & Casey, 2008). It is plausible to conclude that the four participants who engaged in individual interviews might have provided more details if they had been part of one of the

focus groups. Future researchers should consider using one method of data collection at a time in order to make sure that the circumstances for all participants are the same.

### *Theoretical Implications*

Our investigation suggests that Puerto Rico's political context may inform Florida Puerto Ricans' experiences of secondary stress. The participants' interpretation of the Federal Government's response to the disaster may be inextricably connected to the island's colonial relationship with the United States. Scholars have shown how this subordinate relationship has influenced Puerto Ricans' perceptions of the self and Puerto Rican society in comparison with the dominant United States' culture—for example, Puerto Rican society may be seen as inferior but that of the United States' may be described as superior (Rivera Ramos, 1998). When interactions with the United States' dominant society do not align with their perceptions of the United States as the superior benefactor, Puerto Ricans may be at a risk for experiencing stress (Capielo Rosario, Schaefer, Ballesteros, Renteria, & David, 2019). With some of our participants, the Federal Government's response to Hurricane María was seen as inadequate. These participants thought the discourse depicting Puerto Ricans as dependent was disrespectful. Our finding here is an important contribution to the literature as it shows how events that spotlight island Puerto Ricans' subordinate relationship with the United States may also produce psychological distress among mainland Puerto Ricans.

Results also provide important information about the role of coping when dealing with secondary exposure and secondary traumatic stress. Although the trauma literature continues to categorize coping as adaptive or maladaptive (Akinsulure-Smith et al., 2018; McCann & Lubman, 2018), these classifications may not be adequate. Participants in our study used avoidance, distraction, and minimization to cope with the destruction caused by Hurricane María. These coping efforts, in turn, helped participants reduce pain, remain optimistic, and strengthen community relationships. Our results align with previous scholarship which has identified avoidance and distraction efforts as effective ways to cope with secondary exposure and secondary traumatic stress (Day, Bond, & Smith, 2013). As such, we should move away from broad categorizations of coping as adaptive or maladaptive and should instead focus on examining how using different coping strategies at different times or in different contexts may help down regulate stress. Additionally, participants identified providing support to the larger Puerto Rican community as an effective way to cope with their secondary exposure to Hurricane María. Although the literature of postnatural disaster stress among Puerto Ricans with direct

exposure has indicated receiving community support as a coping mechanism to regulate stress (Rivera, 2012), we expand on this work by identifying how Puerto Ricans also provided community support as a way to cope with stress related to Hurricane María. Even though the role of providing support as a form of coping remains understudied, emerging data has identified how providing support to others can also function as a coping resource among individuals with secondary exposure. For example, in a sample of sports coaches who had experienced secondary exposure to athletes' traumatic injuries, Day et al. (2013) found that giving support to others was an effective way to mitigate secondary traumatic stress. Along with previous work, our results underscore the need to revisit our understanding of coping efforts.

Our findings also offer an important extension of the VPTG literature by illustrating how VPTG could manifest as a strengthened ethnic identity and as growth at the community level. Participants noted how their Puerto Rican ethnic identity was strengthened after Hurricane María. As discussed in our introduction, receiving support from others can facilitate VPTG by allowing those experiencing secondary exposure to find positive meaning in the traumatic event (Linley & Joseph, 2005). Among our participants, receiving support from other Puerto Ricans may have presented an opportunity to find positive meaning in the natural disaster (e.g., God's plan to unite Puerto Ricans). Interactions with other members of the Puerto Rican community may have also provided an opportunity to strengthen their Puerto Rican ethnic identity. This is consistent with previous work showing how ethnic identity can be affirmed through interactions with other members of the same ethnic group (Phinney, Romero, Nava, & Huang, 2001). An individual's ethnic identity can be also affirmed in the face of threats to that identity (Sherman et al., 2013). Thus, the strengthening of Puerto Rican ethnic identity identified by our participants may also be a response to the threat Hurricane María posed to Puerto Rican society and culture.

We also found that Florida Puerto Ricans experienced growth, not only at the individual level (e.g., stronger ethnic identity), but also at the community level. For example, multiple participants described having positive feelings in response to seeing the Puerto Rican community unified after the hurricane. This is consistent with literature indicating that, compared to island Puerto Ricans, Florida Puerto Ricans have a stronger attachment to Puerto Rican cultural values such as preference for personal interactions (Capielo Rosario, Lance, Delgado-Romero, & Domenech Rodriguez, 2018). Thus, it makes sense for Puerto Ricans to also experience community oriented VPTG (e.g., increase in Puerto Rican community fellowship). Our investigation answers the call for research on PTG that integrates a bottom-up approach to understand the VPTG perspectives of collectivistic communities (Splevins, Cohen, Bowley, & Joseph, 2010).

## ***Practice, Advocacy, Education/Training, and Research Implications***

Important implications for psychological work with Florida Puerto Ricans can be drawn from our findings. Results indicated that Florida Puerto Ricans were indirectly affected by Hurricane María. Thus, it would be important for practitioners to evaluate potential distress associated with natural disasters affecting the island. Clinicians and researchers are also encouraged to assess how predisaster stressors (e.g., island financial crisis) influence how Puerto Ricans on the United States' mainland experience this and future natural disasters. For example, clinicians and researchers working with mainland Puerto Ricans experiencing secondary exposure and stress should evaluate how Hurricane María and future natural disasters may be exacerbated by Puerto Rico's ongoing financial crisis. We also found that participants' ethnic identity and pride were strengthened and they promoted a sense of unity with the larger Puerto Rican community in the aftermath of Hurricane María. Thus, Puerto Rican clients experiencing stress associated with the devastation caused by Hurricane María may benefit from interventions that emphasize Puerto Rican cultural heritage and ethnic identity. We also found that providing support to the community was an effective coping tool for Puerto Ricans experiencing secondary traumatic stress, clinical interventions could help the therapist identify ways in which their clients can become active in community advocacy. Researchers and clinicians can also join these advocacy efforts by evaluating and educating others about how predisaster stressors related to the island's political and economic struggles may exacerbate stress related to Hurricane María and future natural disasters.

Our findings also call for psychologists to have a thorough understanding of Puerto Rico's political status and its impact on Puerto Ricans. In our sample, some of our participants questioned Puerto Rico's political relationship with the United States and reported negative feelings due to the inadequate response from the United States' federal government. These results highlight how Puerto Rico's colonial status may have negative implications for the psychological wellbeing of Puerto Ricans. Training in psychological work with Latinxs therefore must be accompanied by an understanding of how the socio-political realities of Latinx communities influence their wellbeing.

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**Note**

1. A term often used to describe Puerto Ricans born in the island of Puerto Rico.

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