
Original Paper

Resilience of Puerto Rican Physical Education Teachers Post-Hurricane Mar ía

Christian Martínez-Rivera¹ & Samuel R. Hodge²

¹ CDC Foundation, San Juan, Puerto Rico

² Department of Human Sciences, The Ohio State University, Columbus, Ohio

Corresponding Author: Samuel R. Hodge, Ph.D., Professor, Kinesiology, A-254 PAES Building, 305 Annie and John Glenn Avenue, Department of Human Sciences, The Ohio State University, Columbus, Ohio. 43210-1224, Email: hodge.14@osu.edu | (614) 313-0661 iPhone

Abstract

The purpose of this study, which is the second paper in a two-part series, was to explore and describe the resilience of physical education teachers post-Hurricane Mar ía in Puerto Rico. A secondary purpose was to explore and describe cultural impacts on teachers coping with stress associated with teaching post-Hurricane Mar ía. This ethnographic study was positioned in the socio-ecological model. The participants were nine physical education teachers in Puerto Rico. The sampling design was purposive. The primary data sources were semi-structured interviews, and the data were analyzed using a thematic line-by-line analysis method. Three major recurrent and interrelated themes emerged, which were: (a) *fear, uncertainty, and anger*; (b) *coping*; and (c) *overwhelmed*. In summary, we found Puerto Rican teachers faced challenges (e.g., economic constraints, school closings, job insecurities) long before and still years after Hurricane Mar ía devastated the island. Cultural impacts were manifested in coping strategies and mutual support among teachers and enhance their resilience to overcome such challenges.

Keywords: Culture, Hurricanes, Natural disasters, Socio-ecological model

1. Introduction

Given the serious impacts of Hurricane Mar ía on all areas of life in Puerto Rico, including the school system and teachers, staff, and students, there is a need to explore and describe the resilience of teachers post-Hurricane Mar ía. To that end, in this current paper—the second paper in a two-part series, we explore and describe the resilience of physical education teachers and explore and describe cultural impacts on teachers coping with stress associated with teaching post-Hurricane Mar ía. Previous research findings indicate that following natural disasters¹ teachers may have greater workloads, less job security, less job satisfaction, fewer resources, greater time demands, increased bureaucracy and role ambiguity, and much more (DeVaney et al., 2009; O’Toole, 2018; Weixler et al., 2018).

Research on Schools, Teachers, and Natural Disasters

DeVaney et al. (2009) examined the effects of Hurricane Katrina on students, teachers, and schools in Southeast Louisiana a year after Hurricane Katrina. The researchers found that the psychological effects of Hurricane Katrina were considered severe, and numerous negative outcomes were experienced. Students and teachers needed support to cope, which was often reported to be inadequate. There were psychological effects on student mental health such as anxiety, depression, and post-traumatic stress disorder, as well as student displacement and decline in school performance. Hurricane Katrina challenged school districts with overcrowded classrooms and budget cutbacks resulting in fewer materials and resources.

Alzahrani (2018) examined academic, economic, social, and structural changes made to the New Orleans Public School System, post-Hurricane Katrina, particularly regarding general and special

education programs. The participants were two women, both veteran special education teachers. From participant interviews, the researchers unpacked several themes, which were: (a) the journey back home, (b) the charter school movement, (c) school culture, (d) special education teacher/administrator collaboration, and (e) financial implications. Both teachers described the journey back home and their experiences based on the evacuation and rebuilding of their lives. After returning to New Orleans, they also faced change in going from public schools to charter schools. Not only did the participants have to deal with the devastation of the hurricane and its consequences such as structural destruction, health issues, lack of services, and more, they also had to face changes to their workplace (e.g., switch from public to charter schools).

Regarding the theme, *school culture*, changes occurred in the culture and school environment. There was more teacher rotation, as many teachers were new. Additionally, the administration was different, and the school was stricter, so many teachers were afraid to request support. Due to these reasons, the school no longer felt like a family environment. In terms of the theme, *special education teacher and administrator collaboration*, many factors emerged during the hurricane's aftermath that resulted in loss of a sense of family and collegial collaboration. The last theme that emerged concerned the financial implications of Hurricane Katrina, which further impacted an already poor school system. The participants acknowledged the low pay teachers received and the devastated conditions of the buildings in which they worked.

After the hurricane, there was some funding to improve buildings, but at the same time, teachers now needed to negotiate their salaries in the charter schools (Alzahrani, 2018). Also, the availability of resources was dependent on which charter school they worked for and what resources the leaders deemed important. Typically, schools that were in low income districts did not receive adequate funding for school improvements. Because of destroyed neighborhoods, the district did not have the capital to rebuild schools; consequently, there was a proliferation of charter schools, which changed the way teachers interacted with their work environments.

Puerto Rico's Population, Natural Disasters, and Resilience

In Puerto Rico, the population has been resilient in the face of hurricanes² and other natural disasters. Since Hurricane Mar  in 2017, for example, efforts to rebuild Puerto Rico have resulted in some progress as the island's residents continue to strive for a better future (*The Dialogue*, 2019). However, Puerto Rico is experiencing the largest population decline registered in its history. To have an idea of how quickly Puerto Rico's population is declining, we compare the estimated population of 2012 at 3.63 million to 2022 at 2.8 million, which represents a 23% decline (Government Development Bank for Puerto Rico, 2021). The most recent census data show a continued decline in the population which now stands at less than 3.2 million residents (U.S. Census Bureau, Vintage 2018 Population Estimates 2018). Despite a rapidly declining population, Puerto Ricans who remain on the island have shown sustained resilience³.

It is important to distinguish community resilience from personal resilience after a natural disaster. Typically, community resilience is comprehended as the adaptive capacity of communities to deal with unfavorable circumstances (Phillips et al., 2018). Community resilience is characterized by such key factors as: (a) community strengths, (b) community capacity, (c) local knowledge, (d) governance, (e) social capital, (f) leadership resources, (g) collective agency, (h) economic investment, (i) self-organization, and (j) community network (Phillips et al., 2018). In most cases, after natural disasters, schools end up being safe spaces for students to return to a sense of routine and normalcy, where they are surrounded with teachers, staff, and other students that have the ability to provide support. Teachers often are the main figures of support after trauma recuperation (Chemtob et al., 2002).

Specific to Puerto Rico, it is important to understand the landscape. Thousands of U.S. citizens died in Puerto Rico because of Hurricane Mar  (Santos-Burgoa et al., 2018). The structural damage was calculated in hundreds of millions of dollars. The physical destruction was visible, but it was not until one year after Hurricane Mar  that statistics revealed the mental health struggles of teachers (Rosario, 2018a). For example, Rosario (2018b) reported that from July to September 2018, the Multidisciplinary Service Centers of the Teachers Association in San Juan and Mayag uez had 988 cases of educators with

mental health-related issues such as adjustment disorders, work stress, anxiety, and depression. Further, she stated 3,733 cases were reported in the 2017-2018 school year. The Department of Education in Puerto Rico has about 50,000 employees, of which 28,000 are teachers (Santana-Miranda, 2018). Combined the 4,721 cases since autumn 2017 through September 2018 represent some 16.9% of the teacher workforce seeking mental health services. The resilience of teachers post-Hurricane Mar á and their ability to cope with stress associated with living, socializing, and teaching in damaged home, community, and school environments, respectively, rise health concerns.

Theoretical Framework and Purpose

The Social Ecology Model (SEM) is useful in interpreting health risk factors that can affect community or individual health (Green et al., 2005). SEM presents the relationship among various levels of human behavior and environmental factors, and how the environmental factors are related and directly/indirectly influence an individual's development. The environment influences the way individuals behave although interacting in a specific setting (Bronfenbrenner, 1977). SEM has subsystems that are influenced by and connected to each other. The subsystems established by Bronfenbrenner, 1979 are the: (a) *microsystem*, (b) *mesosystem*, (c) *exosystem*, (d) *macrosystem*, and later (e) *chronosystem*. A microsystem is the adjacent environment that interacts with an individual such as her family members. Whereas, a mesosystem consists of the influence and relationship of other factors, such as the influence of parents and students on teachers. The mesosystem involves those variables that affect an individual's behavior indirectly, such as organizations and neighborhoods. Moreover, an individual's behavior may be influenced by laws, institutional regulations, and policies that represent the exosystem. Based on this model, the economic and political environments may have a direct or indirect effect on the other levels of SEM and consequently, indirectly affect an individual's behavior. The chronosystem depicts time and accounts for changes in the other five systems; that is, regarding changes across time (e.g., how a child perceives her environment as she grows older). Changes or conflicts within any of the systems can cause complications in the other systems, causing relationship changes as well as psychological or emotional difficulty within the person (Bronfenbrenner, 1977).

In the first paper of this two-part series, we presented a historical brief regarding the history and culture of Puerto Rico. The purpose of this current study, which is the second paper in the two-part series, was to explore and describe physical education teachers' resilience post-Hurricane Mar á in Puerto Rico. A secondary purpose was to explore and describe cultural impacts on teachers coping with stress associated with teaching post-Hurricane Mar á. This study was guided by the following research questions.

1. Do physical education teachers consider themselves resilient post-Hurricane Mar á in Puerto Rico? If so, to what do they ascribe their resilience?
2. Were physical education teachers stressed post-Hurricane Mar á? If so, what do they attribute their stress to? What were their coping mechanisms or strategies to counter their stress?

2. Methods

Ethnographic Research Design

Ethnography is a qualitative method requiring immersion into the structural and cultural environment by first learning the culture of the group under study (e.g., Puerto Rican physical education teachers), then interpreting meanings ascribed to cultural phenomena (Merriam, 1998). Ethnographic research is mainly associated with and directed toward learning about the culture and interactions among those within the culture and understanding patterns of socially shared behavior (Merriam, 1998). Ethnography is an active process and requires the researcher to go into a particular setting, be among participants within a particular culture, and record their beliefs and views. In the design of this current study, our end sought was to interpret (make sense of) what had happened and was happening in teachers' lives Post-Hurricane Mar á. In addition, we sought to explore and describe how physical education teachers were influenced by their culture in coping with stress linked to teaching post-Hurricane Mar á. To that end, the researchers' university's IRB protocol was followed prior to and throughout the conduct of the study.

Participants and Sites

The participants were nine general physical education teachers (five women and four men) from public schools in Puerto Rico. The sampling design was purposeful using criterion sampling. The logic of criterion sampling is to select and investigate all or selected cases that meet some predetermined criterion of importance or interest (Patton, 2015). In our study, the main criteria were that the participants were all physical education teachers working in public schools in Puerto Rico prior to and after Hurricane Mar ía struck the island.

The participants were Adriana Rivera and Samuel Medina in the municipality of Arecibo (Efra n Soto High School); Corally Mart ínez and Moncho Rodr íguez in Toa Baja (Libertad High School); Carolyn L ópez in Toa Alta (Alexander Xavedra High School); Á ngelo Rosario in Humacao (Luis Laboy Junior High School); Luis Santiago in Yabucoa (Do ña Fela High School); Natalia Cacho in Yabucoa (Sixta Figueroa High School); and Marcos Ort íz in Dorado (Milagros Rivera High School). Pseudonyms were used for all teachers and schools identified in this study.

For the purposes of this study, we focused on schools located in cities along the path of Hurricane Mar ía. Hurricane Mar ía made landfall in Puerto Rico around 6:00 a.m. (Eastern Standard Time) near Yabucoa, in the Southeastern region of the island, a municipality with some 34,000 residents. It followed a Northwestern path crossing the island and directly impacting such municipalities as Guayama, Cata ño, Toa Alta, Comer ó, Naranjito, Dorado, Toa Baja, and Arecibo. Again, we recruited physical education teachers from schools in the aforementioned areas (geographical path hit particularly hard by Hurricane Mar ía) to explore their resilience and the ways in which culture influenced their coping skills.

Data Collection

There were two data collection periods (i.e., 14- and 18-months post-Hurricane Mar ía), and the primary data sources were semi-structured, face-to-face interviews, on-site observations, and visual artifacts (photographs and video clips) of the physical environment of the local communities and schools, including facilities and physical education programs. In addition, the lead researcher followed up with correspondence using e-mail messaging.

Interviews and Observations. Semi-structured, face-to-face interviews were conducted with all the participants individually on two separate occasions. For each teacher, the first interview was conducted in November 2018 and the second interview was conducted in March 2019. In both data collection periods, the research team also conducted on-site observations, wrote field notes, and collected visual artifacts (photographs and video clips) of the built environment of the local communities and schools under study including facilities and physical education programs.

Photography and Videography. As in the current study, qualitative research may include photography and/or videography as an information source. Photographs and videos help in capturing the setting for others as well as in recalling things that have happened (Patton, 2015).

Follow-up E-mail Interview. E-mail communication was used to supplement interview data. For instance, e-mail messages were used when clarifications or explanations were needed.

Lead Researcher's Subjective Bias

The lead researcher was born in Puerto Rico; and has lived most of his life, received his formal education (public school system and local universities), and works on the island. The lead researcher earned an undergraduate degree in physical education pedagogy at the University of Puerto Rico, Mayag üez, and later a master's degree at the Interamerican University, San Germán campus in Puerto Rico. His doctoral degree was earned at The Ohio State University in Ohio. The lead researcher's formal education, life circumstances, and professional experiences were influential in the conception and conduct of this study.

Trustworthiness and Procedures

Trustworthiness was established through data triangulation, member checking, visual artifacts (photographs and video clips), and peer-debriefing. Triangulation involved the use of multiple data sources including data from interview transcripts, visual artifacts (photographs and video clips),

observation field notes, and e-mail messages. To enhance the trustworthiness, both primary (i.e., line-by-line inductive analysis) and secondary data analysis (using NVivo 12 Pro software) procedures were conducted. Credibility and dependability were established with data triangulation (artifacts, field notes, interview transcripts), member checks, peer-debriefing, and consistent and repeated involvement in the field (Merriam, 1998). Having attended and worked at schools in Puerto Rico previously, ensured the lead researcher was quite familiar with the school system and local communities, and this made it easy for him to connect culturally with teachers and administrators during the conduct of this study.

Dependability rests in providing “details of the research process, including processes for defining the research problem, collecting and analyzing data, and constructing reports are made available to participants and other audiences” (Stringer, 2004, p. 59). In this current study, we provide such detail. As an additional component of the study process, member checking was used to reduce the impact of subjective bias. In addition, two peer debriefers (i.e., faculty colleagues who were not members of the research team) with expertise in qualitative research were asked to determine the degree to which the interpretations of the data were accurate and representative of the participants’ statements. Lastly, transferability is the ability to apply the current findings to similar environments (Merriam, 1998). To that end, we present plentiful information about the physical education teachers, their schools, and communities, in addition to the methods used during this research.

Data Analysis

The audio-recorded interviews were translated and transcribed by a paid professional language translator and editor. Later, using a line-by-line inductive coding approach (van Manen, 1997), whereby we assigned meaning to small pieces of text such as a specific word, sentence, passage, or phrase for each piece of data from the data sets (interview transcripts and field notes) from each participant was compared by members of the research team (triangulation) to identify thematic categories, which were then refined into recurring themes. Moreover, NVivo 12 Pro-software was used to confirm the primary findings and to enhance the study’s trustworthiness. After uploading the data into NVivo 12 Pro, the data were organized into nodes, merged into categories, and then combined into themes. Common recurrent themes emerged from the line-by-line inductive coding and these themes were further confirmed using NVivo. Lastly, each theme was supported by quotes from the transcripts, and findings were exposed.

3. Findings

In this next section, we first present the demographic data and profiles of each physical education teacher; and then, we present the qualitative findings.

Demographic Data and Profiles

In all, nine general physical education teachers (five men, four women) participated in the study. They were Adriana Rivera, Samuel Medina, Marcos Ortíz, Ángelo Rosario, Carolyn López, Moncho Rodríguez, Corally Martínez, Luis Santiago, and Natalia Cacho (Table 1).

Table 1. Communities, Schools, and Teachers’ Demographic Data

Teacher	School	Gender	Age	Years	Location	Municipality Population
Adriana Rivera	Escuela Efraín Soto	F	51	18	Arecibo	82,114
Samuel Medina	Escuela Efraín Soto	M	44	20	Arecibo	82,114
Marcos Ortíz	Milagros Rivera	M	42	19	Dorado	35,779
Ángelo Rosario	Luis Lamboy	M	47	23	Humacao	50,532
Carolyn López	Alexander Xavedra	F	53	29	Toa Alta	71,094
Moncho Rodríguez	Libertad	M	51	17	Toa Baja	74,623
Corally Martínez	Libertad	F	49	16	Toa Baja	74,623

Luis Santiago	Doña Fela	M	42	15	Yabucoa	32,158
Natalia Cacho	Sixta Figueroa	F	31	7	Yabucoa	32,158

Note. Age = Teacher age in years; F = Female; M = Male; Years = years of teaching experience.

Note. Municipalities population statistics extracted from U.S. Census Bureau, Vintage 2018 Population Estimates (2018).

The participants' ages ranged between 31 to 53 years old with a mean of 45 years of age. They were all veteran teachers with 7 to 29 years of experience teaching (mean = 18 years), and they had progressed to the mature stage in their teaching careers (Katz, 1972). They were all Puerto Rican citizens living and working in Puerto Rico. The participants' schools were in different cities along the hurricane's path. The cities were Arecibo, Dorado, Humacao, Toa Alta, Toa Baja, and Yabucoa. According to data reported by the World Population Review (2020), the median household annual income ranged from a low of \$15,892 in Yabucoa to a high of \$34,813 in Dorado (Table 2). Moreover, the annual growth rate across all six cities and municipalities was 0.0%. Of concern, the poverty rates were quite high across these cities and municipalities, particularly for residents who worked part-time and those who were unemployed (Table 2).

Table 2. City, Household Income, and Poverty Rates

Municipality	Median Household	Poverty Rate	Poverty Rate	Poverty Rate
	Annual Income	(full-time)	(part-time)	(unemployed)
Arecibo	\$17,591	13.7%	41.0%	55.4%
Dorado	\$34,813	8.3%	27.3%	38.9%
Humacao	\$17,644	10.0%	52.3%	47.9%
Toa Alta	\$23,608	14.0%	25.5%	47.6%
Toa Baja	\$19,750	13.7%	59.6%	64.5%
Yabucoa	\$15,892	13.0%	51.0%	59.6%

Note. Poverty rate full-time represents the rate among residents who worked full-time for the past 12 months, poverty rate part-time represents those residents working part-time, and poverty unemployed represents those residents who did not work.

Note. Municipalities statistics extracted from the World Population Review (2020).

This study involved seven schools, most of them in urban settings; only one of the schools was in a rural environment. All the schools under study were high schools. Again, pseudonyms were used for all teachers and schools identified in this study.

Profiles of the Communities, Schools, and Physical Education Teachers

Arecibo. Arecibo, located to the north, is considered one of the five main cities in Puerto Rico. It is also categorized by the local government as a region, serving nearby towns. The city's population is distributed in 19 neighborhoods. In 2020, Arecibo had a population of 39,176, according to data reported by the World Population Review (2020a). However, the city's population has decreased by 11.4% since the 2010 Census (World Population Review, 2020a).

Arecibo has mostly flat terrain, with an area of 127 square miles. The city of Arecibo is also known as "Village of Captain Correa" in honor to heroic action from Antonio de los Reyes Correa who defended the village of Arecibo from England's attack in 1702. Culturally speaking, the city of Arecibo celebrates various festivities during the calendar year such as Patron celebrations in honor of the

apostle San Felipe in April and the Arecibeño Carnival in February. In addition, Arecibo is distinguished by the traditional celebration of the Cet í Festival at the end of November. The cet í is a tiny fish that is usually found at the mouth of the Arecibo River (Nuestro Puerto Rico, 2014a). There is no other place in Puerto Rico where food confectioned with this tiny fish can be found. As of July 31, 2019, there were 1,375 crimes (e.g., aggravated assault, auto theft, murder) reported in Arecibo, according with the Police Department of Puerto Rico (Polic ía de Puerto Rico, 2019).

Escuela Superior Efra n Soto is an urban high school located in Arecibo, with a student population of 511 in grades 9 through 12, where 87% of the student population receives free or reduced lunch. The student to teacher ratio is 12 to 1 (<https://www.niche.com/k12/escuela-superior-dra-maria-cadilla-de-martinez-arecibo-pr/>). Both Ms. Adriana Rivera and Mr. Samuel Medina were veteran teachers who taught general physical education at Escuela Superior Efra n Soto in Arecibo, Puerto Rico.

Ms. Adriana Rivera was an 18-year veteran physical education teacher. She grew up in a predominant White neighborhood in New Jersey and later moved to Puerto Rico. Even though her parents were very strict, they instilled in her a sense of Puerto Rican culture. Ms. Rivera described herself as a very positive person with strong beliefs in God.

Mr. Samuel Medina also taught general physical education at Escuela Superior Efra n Soto in Arecibo, Puerto Rico. Mr. Medina was a 20-year veteran physical education teacher. Mr. Medina was also divorced and had one daughter who lived with her mother in a different town approximately one and half hours away. Mr. Medina was relocated from an elementary school in San Juan to teach at this high school (Escuela Superior Efra n Soto) in Arecibo. He stated that he did not know his co-workers or students very well yet. He was working to adapt to this new school culture and community environment, as well as co-workers, administrative leaders, students, and teaching level (i.e., high school). At the time of this study, he still lived in San Juan and commuted during weekdays to Arecibo, which is about a one hour and 18-minute drive away without traffic.

Dorado. Dorado is in the north coast of Puerto Rico, fifteen miles west of San Juan. In 2020, there were 12,695 residents living in Dorado, according to data from the World Population Review (2020b). However, Dorado's population has decreased by 4.3% since the 2010 census (World Population Review, 2020b). The city of Dorado, known as the clean city or "gold city", is distributed across 6 neighborhoods, and an area of 23.5 square miles. The city caters to luxury hotels serving the tourist industry. As of July 31, 2019, there have been 1,052 crimes (e.g., aggravated assault, auto theft, murder) reported in Dorado, according to the Police Department of Puerto Rico (Polic ía de Puerto Rico, 2019).

Escuela Superior Milagros Rivera is an urban school with a population of 734 students in grades 10 through 12, of which, 87% receive free or reduced lunch. It has a student to teacher ratio of 16 to 1 (<https://www.niche.com/k12/escuela-jose-santos-alegria-dorado-pr/>). Next, a synopsis of Mr. Marcos Ort z is presented.

Mr. Marcos Ort z was a 19-year veteran physical education teacher at Escuela Superior Milagros Rivera in Dorado, Puerto Rico. Mr. Ort z lives near the La Plata River located in Toa Baja, which is the longest river in Puerto Rico. Mr. Ort z's community was one of the most affected after the hurricane because the government decided to open the dam without adequate prior warnings. His neighborhood, Ingenio, was flooded and had some 4 inches of mud inside the houses. He stated that in some sectors, the residents had 12 to 15 feet of water inside their homes. He believed that three people died in his community as a consequence of this flooding. He commutes weekdays from Toa Baja to Dorado, which is approximately a 10-minute drive with little or no traffic. His family is from the city of Cata ño, which is approximately an 18-minute drive with minimal or no traffic from his home. Mr. Ort z was relocated from his high school Juan Quirindongo Morrell in Vega Baja to Dorado.

Humacao. The city of Humacao is in the east coast of Puerto Rico. It had a population of 17,939 residents, but its population has decreased by 3.7% since the 2010 U.S. Census estimates (World Population Review, 2020c). Divided into 13 neighborhoods, Humacao is rich in natural resources, such as the Pterocarpus Forest, beaches, and the Palmas del Mar complex, in approximately 44.8 square miles. As of July 31, 2019, there have been 414 crimes (e.g., aggravated assault, auto theft, murder)

reported in Humacao (Policía de Puerto Rico, 2019).

Escuela Superior Luis Lamboy is an urban school located in Humacao with a population of 375 students in grades 6 through 8, 91% of them receiving free or reduced lunch and. The student to teacher ratio is 20 to 1 (<https://www.niche.com/k12/escuela-juan-ponce-de-leon-humacao-pr/>).

Mr. Ángel Rosario holds two jobs: physical education teacher (for 23 years) and private basketball league administrator. He is part of the residential committee in his community and described himself a very sociable and humorous person. Mr. Rosario grew up in a poor community and lives in a better community with controlled access. Mr. Rosario used to play basketball and is very passionate of this sport. Also, he suffers from obesity and physical conditions. Mr. Rosario has been relocated because of the hurricane. His wife is also a teacher in Puerto Rico.

Toa Alta. Toa Alta is located on the northern part of the island. In 2020, the municipality of Toa Alta had a population of 66,852 (U.S. Census Bureau **2020a**). However, according to data from the World Population Review (2020d) report, there were 3,396 residents living in the city limits of Toa Alta and its population has decreased by 8.5% since the last U.S. Census estimates in 2010 (World Population Review, 2020d). Its nine neighborhoods spread across an area of 28 square miles. The economy of Toa Alta mostly relies on agriculture and dairy farms. As of July 31, 2019, there were 842 crimes (e.g., aggravated assault, auto theft, murder) reported in Toa Alta (Policía de Puerto Rico, 2019).

Escuela Superior Alexander Xavedra is a rural school with a population of 326 students in grades 9 through 12, 90% of them receiving free or reduced lunch. The student to teacher ratio is 13 to 1 (<https://www.niche.com/k12/escuela-tomas-masso-rivera-morales-toa-alta-pr/>).

Ms. Carolyn López is a 29-year veteran physical education teacher at Escuela Superior Alexander Xavedra in Toa Alta, Puerto Rico, whose brother also works as a physical education teacher in Puerto Rico's Department of Education. Ms. López is married and has a teenage daughter and a teenage son with a disability.

Toa Baja. Toa Baja, a coastal town in northern Puerto Rico. The municipality of Toa Baja had a population of 75,243, according to data from the U.S. Census Bureau (**2020b**). However, according to the World Population Review (2020e) report, there were 1,497 residents living in the city limits of Toa Baja. The population has decreased by 1% since the last U.S. Census estimates in 2010 (World Population Review, 2020e). It has an area of 24 square miles. Toa Baja is located next to the city of Toa Alta; but the farming industries have decreased in this city since 1998 (Nuestro Puerto Rico, 2014b). As of July 31, 2019, there were 1,904 crimes (e.g., aggravated assault, auto theft, murder) reported in Toa Baja (Policía de Puerto Rico, 2019).

Escuela Superior Libertad in Toa Baja, Puerto Rico, is in an urban setting and has a population of 628 students in grades 9 through 12, 89% of them receiving free or reduced lunch. The student to teacher ratio is 17 to 1 (<https://www.niche.com/k12/escuela-adolfina-irizarry-de-puig-toa-baja-pr/>).

Both Mr. Moncho Rodríguez and Ms. Corally Martínez are veteran teachers who taught general physical education at Escuela Superior Libertad in Toa Baja, Puerto Rico.

Mr. Moncho Rodríguez was a 17-year veteran physical education teacher, whose sister was also a physical education teacher. His brother worked at a local grocery store. His mother, who had a heart condition and diabetes was hospitalized and nearly died during Hurricane María. Mr. Rodríguez lives in a rural area, close to Highway #2 (a major highway in Puerto Rico). He also coach softball for the school team. Mr. Rodríguez had experienced hurricanes before (e.g., Hurricane Hugo in 1989) prior to Hurricane María.

Ms. Corally Martínez also taught general physical education at Escuela Superior Libertad in Toa Baja, Puerto Rico. Ms. Martínez was a 16-year veteran physical education teacher. When she was young, she was a track and field athlete and represented Puerto Rico nationally and internationally. She won a scholarship that allowed her to attend a private university, the University of Sagrado Corazón in Puerto Rico. Her focus now is helping other students reach their goals through sports and academic pursuits.

Yabucoa. The town of Yabucoa is in the southeast coast of Puerto Rico, next to Humacao. The municipality of Yabucoa had a population of 30,426, according to data from the U.S. Census Bureau (2020c). However, according to data from the World Population Review (2020f) report, there were 7,070 residents living in the city limits of Yabucoa. The population increased by 16.9% since the 2010 census estimates (World Population Review, 2020f). Its 11 neighborhoods are comprised in an area of 55 square miles. Hurricane Mar ía made landfall in Yabucoa. As of July 31, 2019, there were 262 crimes (e.g., aggravated assault, auto theft, murder) reported in Yabucoa (Polic ía de Puerto Rico, 2019).

Escuela Superior Do ña Fela and Escuela Superior Sixta Figueroa are urban schools located in Yabucoa, Puerto Rico. Escuela Superior Do ña Fela has a student population of 597 in grades 9 through 12, with 89% of them receiving free or reduced lunch. The student to teacher ratio is 17 to 1 (<https://www.niche.com/k12/escuela-ramon-quinones-medina-yabucoa-pr/>). Similarly, Escuela Superior Sixta Figueroa has a student population of 537 in grades 9-12, with 87% of them receiving free or reduced lunch. The student to teacher ratio is 12 to 1 (<https://www.niche.com/k12/escuela-teodoro-aguilar-mora-yabucoa-pr/>). Superior Sixta Figueroa is located across the street from a low-income housing community, characterized by high crime, violence, and poverty.

Both Mr. Luis Santiago and Ms. Natalia Cacho teach general physical education at high schools in the city of Yabucoa, Puerto Rico, albeit at different schools. More specifically, Mr. Luis Santiago was a 15-year veteran physical education teacher at Escuela Superior Do ña Fela in Yabucoa, Puerto Rico. Mr. Santiago was married, and his wife was also a teacher in Puerto Rico. Mr. Santiago had a medical condition which requires him to take medicines regularly. Mr. Santiago also started teaching at elementary and secondary level and eventually was relocated, as many other teachers in Puerto Rico. Now, he teaches students at the high school level only. Following the passing of Hurricane Mar ía, Mr. Santiago took the initiative to help his community, especially the elderly population.

Ms. Natalia Cacho was a 7-year veteran physical education teacher at Escuela Superior Sixta Figueroa in Yabucoa, Puerto Rico. She was 31 years old and married to a Puerto Rican soldier who served in the U.S. Army reserve and was active now of the hurricane. He was also a physical education teacher in Puerto Rico. Ms. Cacho indicated that she liked reading books in her free time. During 2017, she was a student at the University of Turabo (a private university) in Puerto Rico. She was still experiencing strong emotional effects of the hurricane. In fact, she cried during the first interview while talking about her experiences. She has two master's degrees, one in School Administration and the other in physical education. She also wants to pursue a doctoral degree eventually. She was still waiting for emotional help (e.g., counseling) from the DOE in Puerto Rico. Her mother also works in the DOE headquarters in San Juan.

Qualitative Findings

The researchers acquired information concerning the physical education teachers' experiences through interviews and observations (including field notes and photographs) in different environments (classrooms, gymnasiums, basketball courts, physical education facilities, and other school facilities). Three major interrelated themes emerged from the data analysis, which were: (a) *Fear, Uncertainty, and Anger*; (b) *Coping*; and (c) *Overwhelmed* (Table 3).

Table 3. Table of Themes and Subthemes

Major Themes	Subtheme 1	Subtheme 2	Subtheme 3
Fear, Uncertainty, and Anger ➡	Family Household Compromised	Education Compromised	Abandoned
Coping ➡	Coping <i>In</i> Community	Coping <i>As</i> Individual	Coping <i>In</i> Culture
Overwhelmed ➡	Overwhelmed <i>As</i> Individual	Overwhelmed <i>In</i> Milieu	

Specifically, Theme 1, *Fear, Uncertainty, and Anger*, exposed the emotions and feelings expressed by the physical education teachers in connection to Hurricane Mar á. Theme 2, *Coping* exposed how the physical education teachers found ways in their own lives and their communities to deal with stresses associated with Hurricane Mar á, and manage or adapt to life circumstances after Hurricane Mar á. The third major theme was, *Overwhelmed*, which disclosed the difficulties that physical education teachers faced in their homes, schools, and communities. These themes were supported by subthemes that are discussed later in this article.

Theme 1. Fear, Uncertainty, and Anger

This theme exposed the emotions and feelings expressed by the physical education teachers in connection to Hurricane Mar á. In other words, the essence of this theme was the unpleasant emotions that physical education teachers felt after Hurricane Mar á. The participants shared that living in Puerto Rico was very difficult after the hurricane. The teachers expressed innumerable negative emotions because they were unable to provide for their families and provide high-quality education for their students during and post Hurricane Mar á. These negative emotions were expressed in the form of fear, anger, and uncertainty. Moreover, they were afraid of not being able to provide their families with basic resources such as gasoline, water, and food for their daily living in the hurricane's aftermath. Like their inability to provide for their families, the teachers believed they were unable to provide high-quality physical education to their students because of the conditions of their schools post-hurricane. All participants shared feelings of anger towards the government's negligence when responding to the crisis. Apart from the uncertainty lived every day, they also shared anger towards the government. The teachers explained the government's (e.g., Federal Emergency Management Agency [FEMA] workers) negligence to their basic human needs emphasized their feelings of being unheard, unimportant, and abandoned by their government. The teachers witnessed how politicians took pictures and made promises to the people of Puerto Rico, but failed to respond to their basic needs, further accentuating their feelings of abandonment. Theme 1, *Fear, Uncertainty, and Anger* was supported by three subthemes: (a) family household compromised, (b) education compromised, and (c) abandoned.

Theme 1, Subtheme 1. Family Household Compromised. This subtheme exposes the difficulties experienced by the physical education teachers while attempting to provide basic resources for their families. The difficulties experienced by the physical education teachers who lived in Puerto Rico after Hurricane Mar á included family separation; raised prices to buy food for themselves and their families; waiting in extremely long lines to purchase essentials such as food, water, and gasoline; and lack of communication services.

Having to satisfy our own needs, including visiting my mother, since I had no other way to communicate, I had to shop for food at the supermarket, stand in lines. Take into account that prices were steep, and prices have not really come down that much. (Ms. Natalia Cacho, First Interview)

Ms. Cacho stated that her family was very important to her and during this period the time they spent together as a family was affected, in addition to the high cost of acquiring food and the extremely long lines she had to do to cover her basic needs, developed in her feelings of fear, anger, and uncertainty.

Further, these teachers voiced stress caused by these circumstances. "To me, it was something devastating. It was very impressive; it made a huge impact. I never could have imagined how intense it would be" (Mr. Marcos Ortíz, First Interview). Based on Mr. Ortíz's comments, the circumstances that made him feel stressed at that moment was the huge devastation that the hurricane left on the island and the consequences or impact that this would have on daily life. It was very impressive for him, so much that he couldn't imagine that something like this would ever happen in his life. The teachers recalled how they had to fulfill working obligations at their schools, even though they were not able to secure basic needs for themselves and their families. For example, Mr. Ortíz explained that "Because our issue was that when we got out of the school, we had to do what everyone else was doing: make lines to buy water, to fill up on gas, all that stuff. Find food" (Mr. Moncho Rodríguez, First Interview). Among the basic needs that were lacking were the lack of water, food, and gasoline. Further aggravating the desperation, he had to wait in long lines to get these basic resources.

I felt desperate, because gasoline was scarce early on, and I had been asked to go back to work. I was anxious, I thought to myself, My God, I must be at school, but I must move from town to the other and I am almost running empty, I must find food, and that caused me a lot of anxiety and frustration. (Mr. Luis Santiago, First Interview)

The above quote demonstrates the internal battle between responsibility, ethics, and self-protection, “Do I go to school, or do I stay and protect my family?” wondered Mr. Santiago. Being unable to provide adequately for their families exacerbated their fears by creating uncertainty; and at times, they felt anger and frustration amongst themselves and toward their environment. The excerpt below exemplifies this, as it shows how a teacher who lost her home because of the strong winds from Hurricane María had to live with her husband’s family temporarily. However, even though the teacher and her husband oversaw providing the food for this household in exchange for shelter, it created problems among them since the prices soared in the hurricane’s aftermath, the lines were long, and supplies were scarce.

We were without shelter for 7 months. Our family had a falling out because of problems with the family we were sheltering with. They were relatives of my husband and there was always friction about the food. We were the ones to always provide food and [stand in] lines of gasoline and water. It was a very difficult time. (Ms. Adriana Rivera, First Interview)

Ms. Rivera articulated that, it was not enough just the trauma of losing their home and not having their own place in which to live; this event brought other problems with their family and the lack of food security. In addition, after the data collector stopped recording the interview, Ms. Martínez, a teacher from Libertad in Toa Baja, stated that she had lost her father after Hurricane Mar á due to the lack of medical services and treatment in the hospitals during that time. She started crying when she told us about her father’s death. She was unable to provide her father with what he needed at that time to save his life (Ms. Corally Martínez, Field Notes).

Theme 1, Subtheme 2. Education Compromised. The essence of this subtheme was that participants articulated being unable to provide basic needs to their families, but they also felt that they were not providing quality physical education classes to their students in Puerto Rico after Hurricane Mar á because of multiple reasons. First, according to the participants, the structural damage to the recreational facilities caused by Hurricane Mar á made it almost impossible to safely teach their classes (Figures 1 and 2). “It [Hurricane María] destroyed much of the physical education areas. The basketball court, the playing areas for the kids” (Mr. Luis Santiago, First Interview). In the previous quote the physical education teacher explained how the only areas to provide physical education classes were destroyed by Hurricane Mar á. Figures 1 and 2 are before and after photographs of a physical education facility with basketball and volleyball courts located at Escuela Superior Do ña Fela in Yabucoa.



Figure 1. Photograph of Physical Education Facility at Escuela Superior Do ña Fela in Yabucoa taken the day before Hurricane Mar á struck the island. Taken by Edwin Ort ́z and Gabriel Fontanez (September 19, 2017)



Figure 2. Photograph of Physical Education Facility at Escuela Superior Doña Fela in Yabucoa taken after Hurricane María struck the island. Taken in 2018 by Edwin Ortíz and Gabriel Fontanez

Further, participants articulated that the physical education equipment was also damaged, making it impossible to teach high-quality physical education. “What’s hardest is lacking materials. We don’t have enough materials. This is from before the hurricane, although it is much worse now after it. We don’t have the funds for materials” (Ms. Carolyn López, First Interview). Similarly, Mr. Rosario talked about collecting funds for materials by organizing a dance. “About 150 students from our school went there. We participated and collected donations for purchasing basketballs, volleyballs, and other materials. We’ve got other materials here” (Mr. Ángel Rosario, First Interview).

Similarly, the lack of resources such as transportation, limited the participation of physical education students in extracurricular and afterschool sporting events.

“... and if the student did not have transportation, I had to take him” (Mr. Moncho Rodríguez, First Interview).

In the previous quote the teacher expressed how he had to transport students in his private vehicle (school to sport practices or games), which posed a risk for the teacher. However, they are forced to do so because of the lack of transportation available to the school, especially for the physical education program.

The lack of resources, materials, equipment, and sport facilities created stress and concern to those physical education (PE) teachers who participated in this study.

So now, I am a PE teacher without a basketball court or anything. The yard is not safe to be used to play, despite them trying to make a volleyball court there. But I cannot use it, because if students hurt themselves while playing in a place like that, I will be held as the negligent party. So here we are waiting. (Ms. Natalia Cacho, First Interview)

In the preceding quote, Ms. Cacho explained how the lack of safe sport facilities and the lack of physical education equipment worries her. She not only cannot provide a high-quality physical education class, but she can also face the justice system for negligence if any injury occurred while using unsafe facilities.

Theme 1, Subtheme 3. Abandoned. This subtheme uncovers the hopelessness that the teachers felt because of their inability to both provide for their families, and their perceived failure to provide quality services to their students. The teachers felt abandoned by the Puerto Rican government for not taking action to care for their needs as part of the Puerto Rican people.

To give you an example, yes, a hurricane struck the Island. You get politicians coming in and taking photos, making promises. The photos were published, the needs were published, and we’re still waiting. (Ms. Corally Martínez, First Interview)

Ms. Martínez asserted politicians only appeared to take political advantages through photos that portrayed the need that existed and still exists. This, in addition to false promises that a more than year

later have not solved anything.

This feeling of abandonment was not only perceived by Puerto Rican teachers toward the local government but also towards the United States federal government. “The park [where we teach physical education classes] was operational before [Hurricane Mar í], we’re waiting on FEMA, because the park is insured through Town Hall, and the activities I used to do there with my students have had to be relocated” (Mr. Moncho Rodríguez, First Interview). Mr. Rodríguez explained that they are still waiting for help from the federal government; in this case, FEMA, to restore and repair the sports facilities that he used to offer his physical education classes.

Still, one and a half years after Hurricane Mar í struck the island, teachers reported inadequate sports and recreational facilities, problems with electricity, and water of poor quality.

Right now, what worries me are the facilities around them. Many of them complain that the [basketball] court is in bad shape. They don’t have anywhere to run; the track is in bad shape as well. The sport facilities (Mr. Marcos Ort í, First Interview)

Mr. Ort í was concerned about the lack of safe sports facilities to offer classes. Altogether, this contributed to the Puerto Rican people not trusting either the local or the federal government. Despite government inaction, non-government agencies helped restore physical education facilities in a few fortunate schools.

The [roof of the basketball] court is leaking a bit, but the Amgen Company [American multinational biopharmaceutical company] adopted a few schools in the north region and one of the adopted schools was this one because of the student academic aptitude, and they will be fixing the court and a few other things. (Mr. Ángelo Rosario, First Interview)

Mr. Rosario asserted that private companies had to come to repair their school, since the government never arrived.

Theme 2. Coping

The essence of this theme was to present the external, as well as the internal strategies, and cultural norms that physical education teachers used to overcome the difficulties after Hurricane Mar í. According to the participants, Hurricane María’s aftermath caused many families and teachers in Puerto Rico to lose cellphone, landline, radio, and internet communications. The loss of different modes of communication limited how teachers could successfully complete their administrative responsibilities (e.g., uploading attendance sheets and lesson plans). In addition to the lack of communication, participants shared that there was significant damage to the environment and to the infrastructure in Puerto Rico. Despite the perceived feelings of abandonment toward the local and federal governments, participants expressed that the unfortunate situation led communities to undertake recovery efforts themselves. Communities united to help in the cleaning of debris and in the search for resources during the emergency. Participants reported how their communities came together, serving as a coping space and place of mutual support to get ahead and overcome the national crisis. Participants shared experiences as they recalled how they were involved in helping their local communities. Specifically, teachers acted to fill additional roles (e.g., psychologist, cleaning crew). The additional roles the teachers took on were how they coped with the government’s inaction to the crisis. Theme 2, *Coping* was supported by three subthemes: (a) coping in community, (b) coping as individual, and (c) coping in culture.

Theme 2, Subtheme 1. Coping in Community. This subtheme unwraps the external strategies that the physical education teachers were involved with in their communities to deal with Hurricane Mar í. Teachers stated, not only did they act to respond to the needs of their personal and school communities, but also their greater community.

For instance, I did not even know who my neighbors were, and now I do. They helped us clear the debris from the house, salvage a few things. My next-door neighbor will often call me when I am running late, and tell me that she made dinner, that I should go over there and eat. Or we ask each other what is for dinner, so she will fix some of it and I fix the rest. (Ms. Adriana Rivera, First Interview)

Ms. Rivera explained, there was more unity among neighbors. Among this help we can point out knowing the needs of their neighbors; and in turn, cooking for each other. The union between neighbors served as a coping space and place of mutual support.

As a result, participants described how all people who belonged to their community contributed to recovery efforts. “They survived because other neighbors looked out for them” (Mr. Marcos Ortiz, First Interview). In his thoughtful words, there were people who did not die, but rather survived post-Hurricane Mar á, because neighbors mutually looked out for one another. To this phenomenon, Ms. López stated the following.

We supported each other. The neighbors influence, the unity we had. You feel the influence [the community] because normally, you never really spend time with your neighbors. This is something that unified the community. At nighttime, we would light lamps and play cards or domino. We talked about what was going on. After the crisis passed, we stopped doing it, but right after the hurricane, we were closer as a community. The community, the neighbors, changed a bit because they showed more solidarity, helped each other more. (Ms. Carolyn López, First Interview)

Based on Ms. López’s comments, neighbors and the community had a great influence with the support provided between neighbors as never seen before. The community came together and started socializing more.

My neighbors started to socialize more with one another. There’s always going to be a neighbor who you spend some time with, but these neighbors you don’t really see much, we started socializing, helping each other out, communicating with each other about things like ‘There’s ice available at this place’, or ‘there’s a tanker providing water at this other place’, or ‘This restaurant reopened, we can get food there’, and that’s how we helped each other. We took turns in shifts about 4-5 hours long, and we would keep an eye out for any strangers. If we saw anyone suspicious, we asked them to stop and give us information and whatever to make sure no one got robbed. (Mr. Ángelo Rosario, First Interview)

Mr. Rosario explained that solidarity and help increased among the neighbors of their community. This help included the search for resources, the security and safety of his community, and the dissemination of information regarding available resources to cover their basic needs. They organized their own security committee to walk around their community for safety purposes and often cooked meals together.

At nighttime, we made meals and made rounds to keep the neighborhood safe, since the security guard was not coming in. We made up a committee and walked around with flashlights, asking people to identify themselves if we did not recognize them. We did this until the lights came back on, the Sunday after Thanksgiving [which was over two months post-Hurricane Mar á]. (Mr. Ángelo Rosario, First Interview)

Mr. Rosario explained how the members of their community took the initiative to patrol their community for the safety of those who lived there because of the lack of electricity.

Moreover, participants expressed how they often utilized the community sport facilities rather than school facilities, which required them to be more involved in the community. “...in physical education, I have closer contact [with the communities]. In other classes, the teacher stands at the front and talks to them, and then they leave. In my class, we go to the court, we spend time at the communities” (Mr. Moncho Rodríguez, First Interview). Mr. Rodríguez expressed that his physical education classes gave him opportunities to get closer to his school community in using their community’s sports and recreational facilities to teach his classes.

Community initiatives served as coping spaces and places of mutual support to deal with the tragic event Puerto Ricans experienced at the time of Hurricane Mar á.

Theme 2, Subtheme 2. Coping as Individual. This subtheme exposes strategies the physical education teachers used to overcome the difficulties after Hurricane Mar á. Participants reported personal coping strategies they implemented or utilized in their communities and at home to handle the

crisis they faced at the time. The participants stated that some of the coping strategies they utilized were collecting gas and other resources to share them with the elderly or ill people around their neighborhoods.

Because they do not have the mobility or the ease to go collect gasoline and other resources. Some of them are ill. There were many people like that [elderly population]. They had their needs, and it motivated me to go collect resources for myself as well as them. (Mr. Luis Santiago, First Interview)

Based on Mr. Santiago, he also decided to help the elderly people in his community who were being neglected or forgotten by the government, many of them lacking the resources or health to be able to move to the collection centers.

Moreover, participants expressed how they helped neighbors and family in any way they could to overcome this awful situation. *"I helped my neighbor, my family, in any way I could. I did not lose my patience, which was not easy"* (Mr. Marcos Ortíz, First Interview). Mr. Ortíz articulated, he did everything he could with the few resources he had available at the time to help himself, his family, and his neighbors. He was not the only one of the teachers to do so: *"I helped my community, and my neighbors clean the affected area. I helped neighbors"* (Mr. Ángel Rosario, First Interview). Similarly, Mr. Medina exclaimed, *"Really, yes, I am an independent person who can really find ways to help myself and help others. There was not work available at the time, so I helped others"* (Mr. Samuel Medina, First Interview). Mr. Medina explained that he did not return to work immediately post-hurricane, but rather decided to help his neighbors.

All of this served as positive coping strategies. However, not all the coping strategies can be considered healthy. One participant shared that her alcohol intake increased significantly. *"My friends are my three sisters. If I want to sit down and have a few beers, I do it with my parents and my sisters. I had a support network. In that aspect, it was a lovely experience"* (Ms. Natalia Cacho, First Interview). Based on Ms. Cacho, she used alcoholic beverages; in this case, beer with her family as a coping outlet, which was illegal at this time by decree of law.

Ms. Cacho also talked about being fearful and depressed and chose to turn to illicit activities to cope with the increased stress. Other teachers interviewed shared they had turned to church, or community, or security committees. Everyone had their own way of working through the crisis. Both personal and community coping strategies helped teachers with the overwhelming environment that they were living in, post-Hurricane María.

Theme 2, Subtheme 3. Coping in Culture. This subtheme unveils how immersion in the Puerto Rican culture served as a medium for coping after Hurricane María. In addition, 'culture and coping' exposes the essence of being a Puerto Rican. physical education teachers immersed themselves in the culture to overcome or deal with this crisis in Puerto Rico. Teachers articulated how culture helped them to overcome these difficult moments in their lives.

Puerto Rican culture is very much about moving forward and working with what you have. Not sit down and cry. ...but it is the general culture we have. ...When the lights were out, the traffic lights stopped working. And maybe getting to a certain place only took you 15 - 20 minutes, and after the hurricane, it took you twice the time, three times as long. You could not be out at night, because there was crime going on in the dark areas. Culture helps. (Mr. Moncho Rodríguez, Second Interview)

In the previous quote, Mr. Rodríguez expressed how the Puerto Rican culture helped make people stronger, to adapt to any adverse circumstances they faced. How the influence of his family and the learning experience specific from his parent help him to overcome difficult situations. Ms. Martínez meanwhile explained the essence of being Boricuas or Puerto Rican.

We are jolly, we are happy, everything is a joke, but when things get serious, we get down to business, which may annoy other [people from different] cultures. Whatever we set our minds to; we accomplish. One way or the other (Ms. Corally Martínez, Second Interview).

She also mentioned how the Puerto Rican culture is different from other cultures and how resilient it is expressed in their culture. *“I would say that Boricuas, Puerto Ricans, are a different breed. We do not quit. We persevere. We are tough. We are dying hard, like the movie! We are not easy to beat”* (Ms. Corally Martínez, Second Interview).

Mr. Ortíz believed that in the Puerto Rican culture people smile no matter what, and they have a positive attitude, which helps them to overcome any difficult situation. *“When facing adversity, we never stop smiling. We are always positive”*. Mr. Rosario explained the culture, which he learned through his parents, that helped him to overcome this difficult situation. *“Yes, the culture in which mom and dad raised me has helped me face certain situations”* (Mr. Ángel Rosario, Second Interview). Similarly, Ms. López articulated that what she learned from her parents help her to continue against any adverse situation. *“Everything my parents taught me about never giving up, to keep fighting for what you want. To always reach for a goal”* (Ms. Carolyn López, Second Interview).

Theme 3. Overwhelmed

The essence of this theme was how the different settings where the physical education teachers were involved contributed to harsh conditions. Historically, and contemporarily, the situations that teachers have experienced in Puerto Rico have always been difficult. In large part, it responds to the politicization of the Department of Education, which is influenced depending on which political party is in power. The elected political party determines who will be the new Secretary of Education and her or his staff. Many times, the government is in the hands of people who do not necessarily have the training or expertise required to fully function in the area, but these positions are paid as political favors. Consequently, teachers have always had problems with the Puerto Rico's Department of Education's central administration and the government due to lack of equipment and poor facilities, among other concerns. However, after Hurricane María, the situation worsened for teachers since their needs had drastically increased because of the destruction. Furthermore, participants reported how being a teacher in Puerto Rico was not easy and affected them emotionally (psychologically), which can be overwhelming. Theme 3, *Overwhelmed* was supported by two subthemes: (a) overwhelmed as individual, which influenced the teachers on a personal level while living in an overwhelming environment; and (b) overwhelmed in milieu, which influenced the teachers in all aspects of their current reality (both personally and professionally) causing them to feel overwhelmed in this environment.

Theme 3, Subtheme 1. Overwhelmed as Individual. This subtheme exposed the events and situations faced by participants on a personal level that were difficult to deal with after Hurricane María. Participants reported individual or personal conditions and moments of desperation that were overwhelming to them after the hurricane. For example, Ms. Adriana Rivera explained that *“[because] of Hurricane María. I lost everything. After that, we lived in a shelter for seven months. After that, I got the news that I had breast cancer”* (Second Interview). Ms. Rivera expressed, besides going through the traumatic experience of losing her home and having nowhere to live, she then received the terrible news that she had cancer. In addition, other teachers were affected by the poor working conditions, which affected them and their families emotionally. One of the interviewed teachers, Mr. Santiago, explained *“My wife is a teacher as well, and we have cried together at some hard experiences we have been through, and we have shared joyous moments when they happen, because this job is not easy”* (Mr. Luis Santiago, Second Interview). Based on his words, it seemed that unfavorable working conditions were different from one school to another. There were teachers who were in the middle of food deserts. *“I live in Naguabo and there was barely any food. The pantry was running low because you prepare for one or two weeks. The kids would ask for something cold to drink but there was nothing to give them. It hurt”* (Mr. Luis Santiago, Second Interview). Mr. Santiago explained that past emergencies like this meant that citizens were prepared for one, perhaps two weeks, as recommended by disaster preparation agencies. They were not prepared to spend months suffering from lack of basic needs which exacerbated food insecurities.

Injustice is another problem teachers faced in Puerto Rico. Compared to the salaries of teachers in the continental U.S., teachers in Puerto Rico are paid far less. Seniority further compounds the issue, since a teacher who is mediocre but who has been there for many years will out-earn a younger, more

dedicated educator.

So, when I see a teacher earning \$2,500 when I am earning \$1,900, and I know that I am working harder than he is, that my evaluations are better, that I do not have disciplinary events in my classroom and his is in chaos, and yet he is being paid so much more than I am and getting the same evaluation scores, it is very demotivating. (Ms. Natalia Cacho, Second Interview).

Based on Ms. Cacho's comments, the salary of Puerto Rican teachers increases by year of service and not by merit, achievement, or quality of teaching they offer. In her eyes, this is unfair, since she understands that while some teachers have more years of service, they can then expect to perform shabbily but their pay is secure. There are barely any incentives for engaged teachers to perform well.

One of the participating teachers was also affected by the controversial deaths associated with Hurricane Mar ía, which meant that not only the fact of going through a traumatic experience of the hurricane as bad enough, now she would also have to deal with the loss of her loved ones.

My father, I lost him because of the lack of electric power, and he was a wonderful man, a man who would not give up. I was the only girl out of five children. He never treated me any different from the boys. He taught me the same lessons about enduring and achieving everything you set your mind to. (Ms. Corally Mart ínez, Second Interview)

Ms. Mart ínez explained the loss of her father because of the lack of electricity for months in Puerto Rico. She still remembers everything she learned from him during her life. Moreover, during the interview, she showed that she was still mourning his passing, crying during the interview. The hurricane and its aftermath were tremendously harmful, and the poor response from government and national authorities caused, whether directly or indirectly, further loss of life that tested even the toughest nerves. As mentioned previously, many turned to alcohol.

Alcohol consumption was banned in Puerto Rico since shortly before Hurricane Mar ía made landfall. This so-called "dry law" seeks to suppress reckless behavior from inebriated people and is often implemented at moments like elections or hurricanes and tropical storms. The Governor of Puerto Rico at the time, Ricardo Rosselló, decreed not only a dry law during Hurricane María's onslaught and the weeks afterward, but also a strict curfew that was enforced by the state police. However, many found loopholes and ways to acquire alcohol, despite the severe limitations in communication, transportation, and living situations.

We were under a curfew, no one could be outdoors from 4 p.m. through 7 a.m. Only first responders were allowed out. Otherwise, you had to stay in. There wasn't any alcohol for sale. But then, there was alcohol for sale, of course there was. In my personal experience, we just had to drink. I was not about to go to the hospital and let myself be committed. That was my coping mechanism. (Ms. Natalia Cacho, Second Interview)

Ms. Cacho shared that, she and her family looked for ways to get alcoholic drinks even though it was illegal, this being her coping release at that moment.

The use of alcoholic beverages is just one of the many strategies that emerged from the interviews on how physical education teachers dealt with the overwhelming circumstances. Other teachers felt that they had sacrificed their lives too much for doing the work for which they felt passion and love. Participants reported how they made this a daily sacrifice in their lives because they felt true commitment to their jobs. *"It is really my profession. I sacrificed a lot for it"* (Mr. Samuel Medina, Second Interview). Mr. Medina stated that, he feels that he has sacrificed too much in his life to continue working as a teacher. However, more than the personal situations already exposed, there are external circumstances that affected the physical education teachers in Puerto Rico.

Theme 3, Subtheme 2. Overwhelmed in Milieu. In essence, this subtheme highlights the events and situations faced by participants on an external level that were hard to deal with after Hurricane Mar ía. Participants reported external situations that came from a third party that affected them negatively, creating an overwhelming milieu for them. Some examples of this overwhelming milieu include Puerto Rico's DOE not caring if the teachers were emotionally well, student vandalism, and unacceptable behavior in the classroom with no parental support. *"We are supposed to figure it out ourselves. The*

employer identifies the situation as not being a problem of the Department of Education. I am not emotionally well? Not the Department's problem” (Ms. Natalia Cacho, Second Interview). In Ms. Cacho's view, Puerto Rico's DOE apparently does not care if the teacher is emotionally well. For each situation faced in the school setting, the teachers interviewed had to solve problems on their own without resources. Puerto Rico's DOE demanded teachers to perform their work without offering the necessary resources and tools to accomplish their tasks and perform their job adequately.

In addition, physical education teachers were negatively affected by the lack of support from Puerto Rico's DOE in the form of frequent absenteeism and misbehavior by students as well as lack of support from parents and the school administrators including directors.

It was a year in which we had a very difficult graduating class. There was vandalism, students climbing onto the seats, students putting stuff on cars. Students were emotionally damaged, and so were the parents. There was not much communication; it the students were flunking or passing, they did not care. The parents did not care. (Ms. Natalia Cacho, Second Interview)

Ms. Cacho shared that, it was a very difficult year since the start of the bad behavior of her students and the lack of support to the teachers from the parents of the students and the bad decisions from school administrations made it a terrible academic year.

Participants also reported that the Department of Education in Puerto Rico made decisions that affected the physical education program without consulting or taking teachers into consideration. For example, Ms. Carolyn López asserted that “*because when they are making all the decisions about physical education over at the Department, the administrators do everything over there. And then they tell us ‘This is what is happening’. And we must make it work” (Second Interview). In Ms. López's opinion, there is a clear disconnection between the reality of the school and the decisions made by Puerto Rico's DOE. Many times, this disconnection exists because people who were hired by Puerto Rico's DOE are not necessarily hired due to their merits or because they are experts in the field. The situation is further complicated when, in contrast to other school subjects, physical education has no regional supervisors overseeing the implementation and functioning of class policy dictated by the central administration.*

Further, participants reported no regional supervisor from physical education programs, political favor to get higher position in the Department of Education, deteriorated physical education facilities, and equipment that made it more difficult to provide a high-quality physical education program.

We do not have an acting supervisor in this region who can oversee physical education and offer us guidance and support. Right now, the teachers in Humacao are coordinating all the activities on our own, without any kind of support. So, you see yourself struggling, on your own... the Department of Education at the upper levels, they will not help. And you start thinking, ‘Well, why am I doing this if they will not help?’ And then they keep taking what little aid you do have. Like right now, they are going after the teachers' retirement funds. You're a teacher, and you get to retire with 75% of your salary, and now they want to lower it to 50% or less. What do you say to that? ‘Why stay here if I am never going to get to that goal?’ I have five years to go, and I am supposed to be able to retire with 75% of my paycheck, which would be \$2,300 a month. With the new law they are proposing, it goes down to \$1,300. (Mr. Ángel Rosario, Second Interview)

Therefore, Mr. Rosario expressed that, it is very difficult to follow a program that has no director, and they do what teachers can despite the lack of assigned resources for their courses. Moreover, the government does not pay teachers well and it is trying to lower retirement pensions.

The bureaucracy and politics in Puerto Rico's DOE make the environment at schools harder and more overwhelming for teachers.

...here in Puerto Rico, anything that has to do with central headquarters and bureaucracy, you must deal with people owing political favors. They get brought into the Department of Education, and what happens? Maybe the person running the physical education department there knows everything about the structure and the way things are done, but they belong to the wrong political party. So, this person gets pulled out and the next person will now have to become familiar with the environment. It is not that they will be unable to do it, but it will take them time.

And then four years later, the next political party will gain dominance, and this person who just learned the ropes will get switched out again, and the whole thing starts all over again. Nothing ever gets done like that. (Mr. Ángel Rosario, Second Interview)

In Mr. Rosario's view, the centralization, and the routes that they used to provide resources to teachers did not always reach them on time or when they need it the most. Also, government changes every four years have a negative effect on physical education programs because the person in charge changes because they are politically appointed positions.

Another external circumstance that negatively contributes to teachers' feelings that they work in overwhelming environment is the amount of class and administrative tasks workload they must undertake with few resources available. *"The workload is too much. Here in Puerto Rico, teachers must take a lot of their work home with them"* (Mr. Luis Santiago, Second Interview). Mr. Santiago discussed how teachers are exhausted by the amount of administrative work they must do in addition to teaching without the basic tools to do it since the Department of Education does not provide them. As if the lack of materials, equipment, sports and recreational facilities, low salary, and so on were not enough, now teachers in Puerto Rico are dealing with the new policy of closing schools (Chavez, 2018) and are constantly being relocated to different schools, even in different cities or towns.

Participants reported how school closings not only affected teachers but also parents and students, creating an overwhelming environment that was difficult to manage. *"I worked the elementary grades for 17 years, and my school was closed down. Then I was moved to high school"* (Mr. Marcos Ortíz, Second Interview). Based on what Mr. Ortíz expressed, without considering the opinion of the teachers, feelings or years of service, Puerto Rico's DOE deliberately and unilaterally decided to close hundreds of schools in Puerto Rico. The Department of Education used undisclosed methods for selecting the schools to close, often closing recently built schools while leaving severely outdated schools open. However, the teachers interviewed could not understand if the Puerto Rico's Department of Education was saving money in operational expenses, since the money that is ostensibly being saved is not reaching them. No money has been invested in repairing the remaining schools and getting them up to speed in terms of materials and equipment. There have been no raises in their salaries, no upgraded or updated facilities.

Yes, because there are things that you as a teacher do not understand. Why are they closing schools and opening them again as charter schools? I am not against private schools, but if the population is going down, why are we closing a public school and opening a private one? Why not keep that school open? There are things you cannot find the logic for. In my opinion, the modus operandi of the Department of Education and the government is to create a fake crisis so they can justify certain actions. (Mr. Luis Santiago, Second Interview)

Mr. Santiago asserted that, the government seemed to work closely with other internal entities to generate crises which turn out to be very lucrative to certain parties close to the government. This has had an unprecedented negative impact on the mental and emotional health of teachers. Many teachers developed a sense of belonging in their workplace that was taken away.

A teacher there who is a very good friend of mine, she calls me, and she is crying, I had to comfort her. They went to the website to look for transfer options, and it will not let them log in. They were basically told, 'No, you are here in this school, you are doing this. Sign the contract.' And when you sign that contract, you're waiving all your rights, you lose your permanence, you are a teacher by contract, you lose your retirement, you lose everything. (Ms. Adriana Rivera, Second Interview)

Ms. Rivera insisted that, many teachers were negatively affected by the closure of schools, and this was yet another stressor which was not attended to the way it should have been.

One of the consequences of the public policy of the school closures in Puerto Rico was the overpopulation in the classrooms of the schools that remained open. Many physical education teachers now had overcrowded classrooms that included students with special needs. The special needs students sometimes made up more than half the class, and this is expected to be handled by a single teacher, often without the support of a special education teacher.

This caused the groups to be bigger. Often, in a group of 30 students, 15 will be from the special education program. And then the Department wants you to individualize the attention for each student. One teacher, with 30 students, half of them from special education, and that is not counting the ones who have been misdiagnosed or who have never been looked at. (Ms. Corally Mart ínez, Second Interview)

Ms. Mart ínez explained that there is a problem of overpopulation in classrooms currently in Puerto Rico because of the public policy of the closure of schools. In her experience, more than half of the students are often students with special needs. The teacher does not have the expertise or the resources to teach them and develop an inclusive environment responding to the unique needs of each student. Therefore, the quality of physical education classes is adversely affected every day.

Participants also reported that Puerto Rico's DOE did not provide teachers with the necessary tools, materials, or equipment for them to complete their work. The lack of computers and internet in classrooms are clear examples of this lack of support and resources, as teachers must upload their work online.

Because right now, the faculty room has internet, but not the classrooms. We do not have computers in the classrooms, only in the library. They demand that we do attendance online, that we submit grades online, and according to them, it is up to us to find a way to do it. In other words, 'Figure it out yourselves, because we are telling you how we want things done. You guys do it however you can.' I do not think that is the way to do it, because if they are asking you that everything should be online, then every classroom should have internet at least. If it is a tool that teachers must use, how come I must come in here and use my cellphone as a Wi-Fi hotspot? (Ms. Adriana Rivera, Second Interview)

Ms. Rivera proclaimed that, the classrooms in her school did not have internet services. Teachers at Escuela Superior (high school) Efrain Soto in Arecibo had only one room available with internet to do their work. However, the limitations in the number of computers also contribute to an overwhelming environment.

Participants also reported that officials in the Department of Education did not have realistic expectations with the current circumstances of the schools in Puerto Rico. The teachers said that in Puerto Rico they did not have the same facilities and circumstances compared to schools in the United States.

Really all I can say is that they are setting up these expectations as if everything was perfect. As if our circumstances were the same as in the United States, with all the necessary facilities. That is how they are expecting us to work. But that is not real. It is not the day-to-day reality. (Ms. Corally Mart ínez, Second Interview)

Ms. Mart ínez believed that the disconnection between Puerto Rico's DOE and the school exists because they try to follow the educational system of the United States without considering the realities of the public education system of Puerto Rico. There is a popular phrase in Puerto Rico that people say often, "If the United States sneezes, here we get the cold".

4. Discussion, Implications, and Conclusions

Answers to the Research Questions

In this study, nine veteran physical education teachers in Puerto Rico were interviewed 14-months and again 18-months post-Hurricane Mar ía. The following three major, interrelated themes emerged from the data analyses: (a) fear, uncertainty, and anger; (b) coping; and (c) overwhelmed. The study's findings are used to answer the two research questions and the answers are supported by themes and subthemes.

Research Question 1. Do physical education teachers consider themselves resilient post-Hurricane Mar ía in Puerto Rico? If so, to what do they ascribe their resilience?

Findings in this study indicate that all nine physical education teachers felt they were resilient post-Hurricane Mar ía, the teachers credited their resiliency to coping in spaces and safe places within

their culture, schools, and their communities. This finding is exposed within the second major theme, Coping. Theme 2, Coping was supported by three subthemes, which were: coping in community, coping as individual, and coping in culture.

Supported by Theme 2. Coping heightens our understanding of the resilience these physical education teachers ascribe to their surviving and thriving in the face of troubling circumstances. It is common knowledge that before Hurricane Mar á made landfall, the government in Puerto Rico faced a financial crisis because of years of corruption, mishandling of financial budgets, loans defaults, and much more. Findings in this current study support the argument that Hurricane Mar á exacerbated the preexisting difficult economic situation in Puerto Rico, making it even more difficult to find or retain a job, for example. Before hurricanes Irma and Mar á, the government started the closing of public schools, and people were leaving for the continental U.S. looking for better job opportunities and improved quality of life. The hurricanes' effects triggered devastating consequences in the population of Puerto Rico. For example, in 2018, poverty levels in Puerto Rico reached 43.5%; and after the hurricane, it may have reached 52.3%, while unemployment was at 10.3% compared to 4% unemployment in the continental U.S. (Benach et al., 2018). The destructive repercussions of recent Hurricanes Harvey, Irma, Rita, and Mar á has made understanding of coping spaces and places of mutual support necessary in supporting at-risk communities and individuals (Prost et al., 2018).

Coping as a community, Puerto Rican teachers mentioned how they got involved in their communities and helped each other to overcome difficult situations. Teachers who lost their houses stayed with family members together until they received help from the government. These individuals also were well organized in their communities. They took roles to make preventive (safety and security) patrols in their communities overnight to provide a safe environment for them and their neighborhoods. Some of the teachers would get together among neighbors to play dominos, (traditional Puerto Rican board game) and to carry conversations to decompress or release the stress suffered during that time. They also cooked meals for each other in their communities to waste less food. As a community, they came together to recover in psychologically safe spaces and places of mutual support.

Not only did community coping emerge from our findings as a salient recurrent theme but coping as individuals was reflected in this research with substance use that emerged during the interviews, specifically alcohol. After facing a natural disaster, not all coping strategies are positive or necessarily healthy for individuals. Alcohol consumption was one strategy that some teachers used. The findings in this study are quite consistent with previous findings regarding the consumption of alcohol and drugs to cope with natural disasters (Garcia-Reyes & Cova, 2013). However, there are some positive coping strategies that physical education teachers also used as individuals. For example, they took the initiative to collect different articles to cover basic needs such as clothes, water, cans of food, batteries, and so on, to provide those to their students and families. This finding is unique in that the teachers took the initiative to collect items to cover basic needs for the students. Further, physical education teachers took initiative to clean and remove debris from their classrooms and school buildings post-Hurricane Mar á. However, previous research supports how important the role of the teacher is after a natural disaster. Supportive actions the teachers took after the hurricane provided emotional support, physical activity, and recreation to their students through sports and games to help the students decrease stress levels and trauma after the hurricane. The current findings are consistent with teachers who took on responsibility to provide emotional support to their students after Hurricane Andrew (Prinstein et al., 1996). Arguably, teachers are in well-placed and unique positions to offer crucial support to students following natural disasters (Le Brocque et al., 2017).

Coping occurred not only at the individual level but also collectively as a culture in spaces and places for mutual support. The findings in this study concur with previous researchers' findings and academic articles in terms of teachers coping in culture (Flory et al., 2008; Hechanova & Waelde, 2017; Moore, 2007). Logically, teachers should seek to create inclusive, supportive, and safe environments that are culturally responsive post-hurricanes. It is imperative to take into consideration cultural influences in conducting post-disaster research.

Previous research shows that African American people encounter higher negative outcomes than others (Lawson & Thomas, 2007), more representative groups post-natural disasters involving traumatic

mental health impacts, as well as emotional and financial devastation (Prost et al., 2018). Without a doubt, the devastating effects of Hurricane Mar ía made the teachers feel like they lived in an overwhelming environment (D íaz, 2018). After Hurricane Mar ía passed through Puerto Rico, there were also personal circumstances that influenced teachers to feel overwhelmed, such as losing their homes, living in shelters, dealing with health afflictions, and losing their loved ones.

The findings in this study concur with previous researchers' findings and academic articles in terms of teachers being overwhelmed as individuals (Flory et al., 2008; Shelby & Tredinnick, 1995). For example, because of Hurricane Andrew, 200,000 individuals were homeless in south Florida. A primary goal was to restore some sense of dignity and control to the victims of this hurricane because people in Florida experienced not only physical loss but social and emotional losses as well (Shelby & Tredinnick, 1995).

Likewise, not only did the physical education teachers in Puerto Rico feel overwhelmed as individuals, but they also felt overwhelmed in the milieu. Findings in this current study support previous assertions that teachers felt overwhelmed in their milieu after hurricanes (Meyer, 2006). Particularly in Puerto Rico, salient factors that made teachers feel overwhelmed was the government policy to close schools, lack of materials, and low salary post-hurricane Mar ía. Low income is one of the causes of psychological burnout in teachers (Al-Adwan & Al-Khayat, 2017). The lack of school supplies, materials, and resources cause frustration and burnout in teachers (Kaufhold et al., 2006).

Research Question 2. Were physical education teachers stressed post-Hurricane Mar ía? If so, what do they attribute their stress to? What were their coping mechanisms or strategies to counter their stress?

The current study's findings reveal that all the teachers were stressed post-Hurricane Mar ía. They were stressed to the point of feeling overwhelmed in the milieu and as individuals. Further, these teachers felt that their family households were compromised, their work as educators was compromised due to a lack of resources and, they felt abandoned by both the local and federal governments. They used different coping mechanisms and strategies to counter their stress in the community, as individuals, and in their culture.

Captured in *Theme 1. Fear, Uncertainty, and Anger*, we have a better understanding of the fears, uncertainties, and moments of anger as well as stress these teachers experienced immediately and months post-Hurricane Mar ía. The first emergent theme, *fear, uncertainty, and anger* exposed the nine teachers' life and work experiences Post-Hurricane Mar ía in Puerto Rico. This thematic finding concurs with previous research; for example, previous findings showed that the people in New Orleans experienced fear and anger in uncertain times due to 2005 Hurricane Katrina (Giarratano et al., 2008). Likewise, Geisz-Everson et al. (2012) reported themes such as uncertainty and anger emerged from research with people who experienced Hurricane Katrina in New Orleans. In the current inquiry, the physical education teachers expressed fear, uncertainty, and anger due to their individual experiences with their families, disruption of their work environment, and feelings of abandonment by the local and federal governments. Of particular concern, these teachers felt that their safety and households were compromised because of Hurricane Mar ía and its aftermath, which is consistent with previous findings because of a hurricane aftermath (Galea et al., 2008; Rose et al., 2011). Researchers have reported how families struggle with disaster recovery; particularly, not having access to resources, those essential elements for community development. Financial instability and economic hardship are additional stressors to families struggling to overcome a disaster (Seidenberg, 2009).

The Instituto de Estad ística de Puerto Rico (2018) reported that, in order of priority, Puerto Ricans rank family ahead of work, religion, politics and/or friends. The anguish physical education teachers, along with most citizens, experienced in Puerto Rico because of their inability to provide for their families after Hurricane Mar ía caused high levels of anxiety, fear, uncertainty, and frustration that negatively impacted their emotional and physiological health (Laracuenta, 2018). People who experience a hurricane face increasing levels of behavioral and emotional problems (Shaw et al., 1996).

Teachers, in this current study, reported that they not only felt they were not able to provide the basic needs of their families, but they also felt that they were not able to provide a good educational experience to their students; as such, they felt that the education they were providing was compromised.

The photographic images and teachers' testimonies depict the powerful impact that Hurricane María left on physical education facilities. The damages encountered compromised the quality of physical education classes because the teachers were not able to use these facilities for classes or otherwise. The physical education teachers in Puerto Rico believed that education overall was compromised and their programs specifically for multiple reasons, such as structural damage, lack of materials, lack of transportation, and so on. The current findings support claims that schools are complex community environments that involve transportation, and structures, such as classrooms and recreational areas, and equipment that may be vulnerable after a natural disaster. For example, school materials were also damaged during Hurricane Harvey in Pasadena Independent School District (van Hamersveld, 2019).

The feeling of a jeopardized education after a natural disaster has been reported in the literature, particularly after hurricanes. Previous studies have shown that because of hurricanes, for instance, damage to community infrastructure has been reported (van Hamersveld, 2019). Thus, resulting in high unemployment, uninhabitable family dwellings, population exodus, and lack of electricity, telecommunications, and logistical support systems (Shaw et al., 1996). All the challenges were exposed in the current study as well. Likened to the current findings, when Hurricane Harvey made landfall in 2017 in the states of Texas and Louisiana, one of the school districts affected by this hurricane was the Pasadena Independent School District (van Hamersveld, 2019), which faced a devastating situation. The lack of school materials due to damage and structural damage resulted in the disruption of daily life for teachers and students.

As a result of Hurricane María, it would have been expected that the families in Puerto Rico affected would have received support from local and federal authorities. However, this was not the perception of the nine teachers in this study. They all expressed feelings of abandonment by the Puerto Rican government and by the U.S. federal government. Similar feelings of abandonment have been reported in the literature because of hurricanes (O'Boyle et al., 2006). However, the findings of this study are contradictory to those reported in Texas during Hurricane Harvey, where families received financial and emotional support from governmental authorities.

Interestingly, the findings in this inquiry differed from previous research regarding government responses to hurricanes as efficient (e.g., fast). For example, in Florida, after Hurricane Irma in September 2017, pharmacy operations started a week after the storm (Nitzki-George et al., 2018). The current researcher grapples with the question, "Why was the response to Hurricane María in Puerto Rico delayed and significantly different from the government's much more immediate and powerful responses to the states of Florida and Texas, following Hurricanes Irma and Harvey, respectively?" Previous research establishes evidence of ethnic/racial and socioeconomic injustices after Hurricane Harvey in 2017 in Houston, Texas that may influence public health implications, putting Black and Latinx residents' neighborhoods in high risk, when compared to other ethnic groups affected (Chakraborty et al., 2019).

The response of both the local and federal governments has been perceived as inadequate, very slow, and irresponsible, which made people in Puerto Rico experience a generalized reaction of disappointment and anger. Fear and anger are some of the feelings or emotions that people may experience after a hurricane (Nina-Estrella, n.d). In this current study, the teachers, perhaps due to the marginalized and colonized status of the U.S. territory, which is comprised mostly of Latinx residents, felt that the inaction from the local and federal governments was a key contributor to their anger. In other studies, researchers have reported that accurate attribution of obligation for the government operation in a federalist system is challenging but necessary for democratic responsibility. Natural disasters capture the interest of the public and the media, emotionally involving them, and directing their attention to the quality of leadership throughout the response and the reason for the catastrophe (Birkland, 2006; Maestas et al., 2008).

Study's Key Findings Explained through the Social Ecology Model (SEM)

The social ecological theory (Bronfenbrenner, 1979) helps in understanding the findings of the current study regarding the interaction of the physical education teachers with the environment in the different levels of the system. Each level of the system is discussed below: (a) *microsystem*, (b) *mesosystem*, (c) *exosystem*, (d) *macrosystem*, and later (e) *chronosystem*.

Microsystem level. This level represents the teachers' immediate environment (The Psychology Notes Headquarters, 2020). The daily life of physical education teachers in Puerto Rico was impacted mostly negatively, but also positively post-Hurricane Mar á. Life, as they previously knew it, had changed. The teachers expressed fear, uncertainty, and anger at the individual level. This was the first theme that emerged from the analysis of the interviews, with subthemes such as: family household compromised, education compromised, and abandoned. As previously mentioned, for Puerto Ricans, family comes first (Ahearns, 1979; Hernández-Acosta, 2019). Families throughout Puerto Rico were negatively impacted by the hurricane, including the teachers under study; for example, Ms. Corally Martínez in Toa Baja, experienced these feelings when her daughter was unable to return to Puerto Rico until long after Hurricane Mar á. Further, the effects of Hurricane Mar á convinced many families to leave the island looking for better opportunities, causing a sharp decrease in the island's population.

In some cases, this meant leaving behind parents and grandparents, making the elderly (i.e., older parents and grandparents) the largest population group in Puerto Rico, since the younger, working-class population continues to leave Puerto Rico in significant numbers. This exodus has, in turn, increased the poverty levels throughout the island (Instituto del Desarrollo de la Juventud, 2019).

Many teachers accepted the misfortune (e.g., the destruction of the island's infrastructure as well as worsening health issues because of Hurricane Mar á) from a fatalistic perspective, as merely the will of God (Ahearn, 1979). For example, the case of Ms. Adriana Rivera from Arecibo who received a diagnosis of cancer post-Hurricane María. In fact, she stated that this was God's will, and she took this situation with positivism and great faith, which brings us to consider that religion is heavily engrained in Puerto Rican culture (Pew Research Center, 2014). It is essential to point out that many festivities in Puerto Rico have their origins in saints and the church, giving further evidence that religion is an integral part of the Puerto Rican culture. Also, at the individual level, the teachers felt abandoned by both the local and federal governments. The lack of immediate help after Hurricane Mar á resulted in disaster. The mismanagement of federal funds by the local government, the lack of aid, or the hiring of fraudulent companies to restore the island's electrical system fueled the physical education teachers' fears, uncertainties, and anger. Also, the filing of federal charges (for bribery and misuse of funds) to former FEMA Region II administrator Ahsha Nateef Tribble exacerbated the feelings of fear, uncertainty, and anger. All the issues and concerns discussed above made the Puerto Rican teachers felt abandoned by both the federal and local authorities.

However, all these injustices experienced by the physical education teachers of Puerto Rico and the destruction by Hurricane Mar á was not enough to weaken their resilience. Physical education teachers used their cultural identity and religion as coping mechanisms that made them resilient in the face of these many adversities.

Mesosystem level. The mesosystem represents connections teachers may have to their environment (The Psychology Notes Headquarters, 2020). At this level, the teachers' use of social networks, family relationships, and family support systems was reflective of the Puerto Rican culture as well (Ahearns, 1979). Of relevancy here, Ahearns (1979) discussed the *compadrazgo*, explained by the narrative of teacher Mr. Ángel Rosario, in Humacao, whose brother-in-law and *compadre* would get him water, food, and ice because he worked in a supermarket. Privilege and protection were provided for this teacher by his *compadre*, but not everybody in Puerto Rico had that privilege. However, family relationships were not always positive in the case of the teachers; for example, Ms. Adriana Rivera, from Arecibo, lost her home and had to move to the home of relatives from her husband's side of the family. She reported how this coexistence was difficult because of depleted resources, as well as the abuse of some family members towards her, when she was, in essence, homeless. Ms. Rivera and her husband had to move to a temporary homeless shelter. This experience was, however, the only one reporting a negative family experience. The remaining eight teachers under study stated that the support of their family was vital for them to recover emotionally, physically, and financially.

Exosystem level. This level represents indirect environments the teachers experienced (The Psychology Notes Headquarters, 2020). For example, the teachers were not just coping individually; they were also coping at the community level through community restoration activities (e.g., cleaning away debris). All nine physical education teacher mentioned that the Puerto Rican culture made them resilient. For

example, some teachers spent nights together with neighbors without electricity (no lights) playing Dominos (a typical Puerto Rican board game) using flashlights for illumination; and they had good conversations with neighbors as if they were extended family members. They also helped each other clean up their communities and schools, they helped organize preventive rounds (i.e., security patrols), and they even shared food between neighbors. Ahearns (1979) also mentioned the *machismo* as part of the culture in Puerto Rico, which also emerged from the current findings with physical education teachers. For example, Ms. Natalia Cacho, from Yabucoa, was forced by her husband to stay at home even though she wanted to be with her parents and sister in their home because she was scared to be alone, mostly at night.

Macrosystem level. This level reflects teachers' social and cultural values, which are influenced by social institutions (The Psychology Notes Headquarters, 2020), such as social institutions, educational systems (i.e., Puerto Rico's Department of Education), sports facilities, health care facilities, and public schools. In the current study, findings reveal that many schools closed after the hurricane, while teachers took the initiative to help clean the ones that remained open because the government failed to do so. Some teachers expressed fear that their schools would be closed; nonetheless, they were motivated to help with their schools' restoration efforts (e.g., cleaning their workplace). Teachers whose schools closed had to adjust to new students, new coworkers, and a new environment due to relocation.

Moreover, many of them had to change from elementary to secondary level and vice versa without having the preparation to work with children at different grade levels. For instance, Mr. Samuel Medina was relocated and had to teach middle school instead of elementary school, where students behave differently, and physical education pedagogy is different as well.

Also, the island's health system collapsed, and many residents were unable to receive health care on time; as a result, many people died. This situation was reflected by Ms. Carolyn López's story, who lost her father due to the lack of health care services and resources in the hospitals that complicated her father's health condition.

Chronosystem level. The chronosystem reflects changes the teachers had experienced over time (The Psychology Notes Headquarters, 2020). This system helps to understand how the physical education teachers felt over the time with the issues that they faced in the environment. For example, one of the teachers lost her that after hurricane Mar á, so how she felt now about that situation will be better explain under chronosystem level in the Ecological Model. In particular, the local government's public policies post-Hurricane Mar á were unacceptable and inadequate. For example, the local government manipulated statistics from people who died after the hurricane, providing wrong information to the people in Puerto Rico and around the world (Santos-Burgoa et al., 2018). The government in Puerto Rico also failed to provide immediate help to save lives after the hurricane. The local government reported only six deaths it was evident that many more people had died because of the lack of medicines, gasoline to transport the sick, and the lack of electricity to receive the services they needed (Santos-Burgoa et al., 2018). Some reports estimated thousands of Puerto Ricans died in the aftermath of Hurricane Mar á (Santos-Burgoa et al., 2018).

It is also important to point out and remember that similar emergency mismanagement happened in New Orleans after Hurricane Katrina, where most of its population were African American residents. In Puerto Rico, the people are predominantly Latinx. The federal government did not move as quickly in Puerto Rico or New Orleans as it moved to address the emergencies in Texas and Florida, where most of the residents of these two states are White (Buras, 2015; Chakraborty et al., 2019). Studies support the notion that many underrepresented populations are marginalized following natural disasters (Buras, 2015; Chakraborty et al., 2019). Despite the allocation of billions of dollars in federal funds for the recovery efforts in Puerto Rico, two years later, not even half of these funds have been received (Delgado, 2019). Symbolic of these concerns, physical education teachers still do not have safe areas to provide physical education classes due to Hurricane María's destruction of physical education facilities (from massive flooding and heavy damaging winds).

In some cases, the physical education teachers used their own money to buy and replace equipment and materials for their classes. The disconnection that exists at the government level forces them to carry out their online administrative work without considering that many schools do not have internet access.

Computer centers at schools also do not provide enough computers for the faculty.

Consequently, teachers used their own money to support their school programs, which hurt their financial stability. On average, teachers in Puerto Rico earn only \$2,000.00 monthly. Nonetheless, they had to buy materials and use their personal phones' internet service to communicate with the students to accomplish daily school tasks. Like New Orleans, the public policy of the Puerto Rico Department of Education of closing schools after the hurricane also affected many teachers and their families, leaving them without jobs and benefits, such as vacations and retirement (Weixler et al., 2018).

Today's Culture in Puerto Rico

There is a renewed sense of pride post-Hurricane Mar á. This renewed pride can be seen in the display of the Puerto Rican flag across the island from place to place and mounted on buildings or painted on walls and many other surfaces. Puerto Rico's culture is characterized by a variety of foods; friends and families sharing love and support; fashionable styles and colors; festivities and celebrations; as well as dance (e.g., Salsa) and musical genres (*reggaetón*) often highlighting the drum, guitar, and percussion instruments as the people of Puerto Rico share their cultural expressions. There is so much to Puerto Rico's vibrant and beautiful people and culture.

5. Conclusions

In conclusion, each physical education teacher we interviewed faced struggles and challenges living and working in Puerto Rico long before and still years after Hurricane Mar á. For instance, they have been burdened by the economic crisis that has impacted Puerto Rico over the years and the on-going political uprising. This means that Puerto Rican teachers have been fighting to overcome challenges and struggles that begin long before Hurricane Mar á devastated the island. Hurricane Mar á simply aggravated even further the lives of these nine physical education teachers in Puerto Rico with the side effects that natural disasters bring most of the time, such as lack of resources, financial crisis, death, negative impacts on mental health, and so on. There are certainly many more variables that affect teacher's health in Puerto Rico. However, coping spaces and places of mutual support were used by teachers among themselves and family and friends to overcome difficult situations, not just as a response to the hurricane but over the years in Puerto Rico. Culture has a powerful influence on the recovery efforts in Puerto Rican teachers and there is a renewed sense of pride post-Hurricane Mar á. This renewed pride can be seen in the display of the Puerto Rican flag across the island from place to place and mounted on buildings or painted on walls and many other surfaces.

References

- Ahearn, F. L. (1979). Puerto Ricans and mental health: Some socio-cultural considerations. *Urban and Social Change Review*, 12(2), 4-9.
- Al-Adwan, F. E. Z., & Al-Khayat, M. M. (2017). Psychological burnout in early childhood teachers: Levels and reasons. *International Education Studies*, 10(1), 179-189.
- Alzahrani, S. (2018). New Orleans educational system in public schools pre/post Hurricane Katrina as perceived by special education teachers. *World Journal of Education*, 8(2), 88-94.
- American Psychological Association. (2014). *The road to resilience: What is resilience?* Retrieved from <http://www.apa.org/helpcenter/road-resilience.aspx>
- Benach, J., Díaz, M. R., Muñoz, N. J., Martínez-Herrera, E., & Pericás, J. M. (2019). What the Puerto Rican hurricanes make visible: Chronicle of a public health disaster foretold. *Social Science & Medicine*, 238, 112367.
- Birkland, T. A. (2006). *Lessons of disaster: Policy change after catastrophic events*. Georgetown University Press.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American psychologist*, 32(7), 513.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

- Buras, K. L. (2015). Frederick Douglass High School in New Orleans: School closings, race, and the dangers of policy without history. *Souls*, 17(3-4), 143-161.
- Chakraborty, J., Collins, T. W., & Grineski, S. E. (2019). Exploring the environmental justice implications of Hurricane Harvey flooding in Greater Houston, Texas. *American Journal of Public Health*, 109(2), 244-250.
- Chavez, N. (2018, April 6). Puerto Rico closing 283 schools over sharp drop in enrollment. Retrieved from <https://www.cnn.com/2018/04/06/us/puerto-rico-schools-closing/index.html>
- Chemtob, C. M., Nakashima, J., & Carlson, J. G. (2002). Brief treatment for elementary school children with disaster-related posttraumatic stress disorder: A field study. *Journal of Clinical Psychology*, 58(1), 99-112.
- Delgado, J. A. (2019, May 6). *Trump insiste en alegar falsamente que Puerto Rico ha recibido \$91,000 millones*. Retrieved from <https://www.elnuevodia.com/noticias/eeuu/nota/trumpinsistenalegarfalsamentequepuertoricoharecibido91000millones-2492189/>
- DeVaney, T. A., Carr, S. C., & Allen, D. D. (2009). Impact of Hurricane Katrina on the educational system in Southeast Louisiana: One-year follow-up. *Research in the Schools*, 16(1), 32-44.
- D áz, N. (2018). Continua la crisis educativa en Puerto Rico tras el huracán Mar á. *El Planeta.com*. Retrieved from <http://m.elplaneta.com/news/2018/sep/07/continua-la-crisis-educativa-en-puerto-rico-tras-e/>
- Flory, K., Kloos, B., Hankin, B. L., & Cheely, C. A. (2008). Clinical research after catastrophic disasters: Lessons learned from Hurricane Katrina. *Professional Psychology: Research and Practice*, 39(1), 107.
- Galea, S., Tracy, M., Norris, F., & Coffey, S. F. (2008). Financial and social circumstances and the incidence and course of PTSD in Mississippi during the first two years after Hurricane Katrina. *Journal of Traumatic Stress*, 21(4), 357-368.
- Garcia-Reyes, A. & Cova, F. (2013). Severidad del trauma, optimismo, crecimiento postraumático y bienestar en sobrevivientes de un desastre natural. *Universitas Psychologica*, 13(2), 575-584.
- Geisz-Everson, M. A., Dodd-McCue, D., & Bennett, M. (2012). Shared experiences of CRNAs who were on duty in New Orleans during Hurricane Katrina. *AANA journal*, 80(3), 205.
- Giarratano, G., Orlando, S., & Savage, J. (2008). Perinatal nursing in uncertain times: the Katrina effect. *MCN: The American Journal of Maternal/Child Nursing*, 33(4), 249-257.
- Government Development Bank of Puerto Rico. *Puerto Rico population*. Retrieved from <https://tradingeconomics.com/puerto-rico/population#:~:text=In%20the%20long%2Dterm%2C%20the,according%20to%20our%20econometric%20models.&text=The%20population%20of%20Puerto%20Rico,a%20resident%20of%20Puerto%20Rico>
- Green, B. L., Lewis, R. K., & Bediako, S. M. (2005). Reducing and eliminating health disparities: a targeted approach. *Journal of the National Medical Association*, 97(1), 25.
- Hechanova, R., & Waelde, L. (2017). The influence of culture on disaster mental health and psychosocial support interventions in Southeast Asia. *Mental Health, Religion & Culture*, 20(1), 31-44.
- Hernández-Acosta, J. (2019). Encuesta mundial de valores para Puerto Rico. *Instituto de Estadística de Puerto Rico*. Retrieved from https://estadisticas.pr/files/Publicaciones/Encuesta_Mundial_de_Valores_para_Puerto%20Rico_20190617.pdf
- Hoffman, S. M., & Oliver-Smith, A., (2000). Catastrophe and culture: The anthropology of disaster. *School of American Research Press*.
- Instituto de Estadística de Puerto Rico. (2018). *97 mil personas emigraron a Estados Unidos en el 2017*. Retrieved from <https://censo.estadisticas.pr/Comunicado-de-prensa/2018-09-13t175013>

- Instituto del Desarrollo de la Juventud. (2019, March 4). "Puerto Rico's Well-Being Index" Retrieved May 28, 2019, from <http://juventudpr.org/en/data/well-being-index/puerto-ricos-well-being-index/>
- Katz, L. G. (1972). Developmental stages of preschool teachers. *The Elementary School Journal*, 73, 50-54.
- Kaufhold, J. A., Alvarez, V. G., & Arnold, M. (2006). Lack of school supplies, materials and resources as an elementary cause of frustration and burnout in South Texas special education teachers. *Journal of Instructional Psychology*, 33(3), 159-162.
- Lawson, E. J., & Thomas, C. (2007). Wading in the waters: Spirituality and older minority Katrina survivors. *Journal of Health Care for the Poor and Underserved*, 18, 341-354.
- Le Brocque, R., De Young, A., Montague, G., Pocock, S., March, S., Triggell, N., & Kenardy, J. (2017). Schools and natural disaster recovery: The unique and vital role that teachers and education professionals play in ensuring the mental health of students following natural disasters. *Journal of Psychologists and Counsellors in Schools*, 27(1), 1-23.
- Laracuent, L. A. (2018). *EL trauma tras el paso del huracán mar á se puede superar*. Retrieved from <http://www.pordentro.pr/salud/nota/el-trauma-tras-el-paso-del-huracan-maria-se-puede-superar/>
- Maestas, C. D., Atkeson, L. R., Croom, T., & Bryant, L. A. (2008). Shifting the blame: Federalism, media, and public assignment of blame following Hurricane Katrina. *Publius: The Journal of Federalism*, 38(4), 609-632.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. Jossey-Bass.
- Meyer, R. J. (2006). Parallel Journeys: Teaching, learning, and hurricanes. *Voices from the Middle*, 14(1), 8.
- Moore, A. L. (2007). Guess who's coming to dinner: The importance of multiculturalism in the aftermath of Hurricane Katrina. *Multicultural Education*, 15(2), 24-30.
- National Oceanic and Atmospheric Administration, U.S. Department of Commerce. (2018). What is a Hurricane? Retrieved from <https://oceanservice.noaa.gov/facts/hurricane.html>
- Nina-Estrella, R. (n.d.). La experiencia del Huracán Mar á desde la óptica puertorriqueña.
- Nitzki-George, D., Palowitz, L., Sowerby, K., Fusselman, K., & Borro, A. (2018). Dealing with the unexpected during and after Hurricane Irma. *The Bulletin of the American Society of Hospital Pharmacists*, 75(4), 170-171.
- Nuestro Puerto Rico. (2014a, September 17). *Arecibo*. Retrieved from <http://nuestropuertorico.com/municipalities/en-arecibo/>
- Nuestro Puerto Rico. (2014b, September 17). *Toa Alta*. Retrieved from <http://nuestropuertorico.com/?s=Toa+Alta&searchsubmit=OR>
- O'Boyle, C., Robertson, C., & Secor-Turner, M. (2006). Nurses' beliefs about public health emergencies: Fear of abandonment. *American Journal of Infection Control*, 34(6), 351-357.
- O'Toole, V. M. (2018). "Running on fumes": Emotional exhaustion and burnout of teachers following a natural disaster. *Social Psychology of Education*, 21(5), 1081-1112.
- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Sage.
- Pew Research Center. (2014). *Religi3n en Am3rica Latina: Cambio generalizado en una religi3n hist3ricamente cat3dica*. Retrieved from <https://www.pewresearch.org/wp-content/uploads/sites/7/2014/11/PEW-RESEARCH-CENTER-Religion-in-Latin-America-Overview-SPANISH-TRANSLATION-for-publication-11-13.pdf>
- Phillips, R., Beer, O., Maleku, A., Rodriguez, M., & Kaiser, M. (2018, January). Conceptualizing and operationalizing community resilience: a scoping review of the social & health sciences literature. Society for Social Work and Research 23rd Annual Conference. San Francisco, CA. Retrieved

- from <https://sswr.confex.com/sswr/2019/webprogram/Paper36511.html>
- Policía de Puerto Rico. (2019). *División de Estadística de la criminalidad*. Retrieved from <https://policia.pr.gov/division-estadisticas-de-la-criminalidad/>
- Prinstein, M. J., La Greca, A. M., Vernberg, E. M., & Silverman, W. K. (1996). Children's coping assistance: How parents, teachers, and friends help children cope after a natural disaster. *Journal of Clinical Child Psychology*, 25(4), 463-475.
- Prost, S. G., Appel, H. B., & Ai, A. L. (2018). Coping and post-traumatic stress after Hurricanes Katrina and Rita: Racial disparities in social work student-practitioners. *Journal of Social Service Research*, 44(4), 459-469.
- Rosario, F. (2018a, October 29). Maestros acechados por el estrés. *Primera Hora*. Retrieved from <https://www.primerahora.com/noticias/puerto-rico/nota/maestrosacechadosporelestres-1309496/>
- Rosario, F. (2018b, October 30). Teachers stalked by stress: Statistics reveal the mental health problems of educators in the public education system. *Primera Hora*. Retrieved from <https://www.primerahora.com/noticias/puerto-rico/notas/maestros-acechados-por-el-estres/>
- Rose, D., Bodor, J. N., Rice, J. C., Swalm, C. M., & Hutchinson, P. L. (2011). The effects of Hurricane Katrina on food access disparities in New Orleans. *American Journal of Public Health*, 101(3), 482-484.
- Santana-Miranda (2018, November 1) Preocupa salud mental del magisterio. *Metro* Retrieved from <https://www.metro.pr/pr/noticias/2018/11/01/preocupa-salud-mental-del-magisterio.html>
- Santos-Burgoa, C., Goldman, A., Andrade, E., Barrett, N., Colon-Ramos, U., Edberg, M., Garcia-Mesa, A., Goldman, L., Roess, A. Sandberg, J., & Zeger, S. (2018). Ascertainment of the estimated excess mortality from Hurricane María in Puerto Rico. Retrieved from https://hsrc.himmelfarb.gwu.edu/sphhs_global_facpubs/288
- Seidenberg, J. (2009). The lessons of hurricane Katrina for serving marginalized communities. In V. M. Brennan (Ed.), *Natural disasters and public health: Hurricanes Katrina, Rita, and Wilma*, 282-304. Johns Hopkins University Press.
- Shaw, J. A., Applegate, B., & Schorr, C. (1996). Twenty-one-month follow-up study of school-age children exposed to Hurricane Andrew. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(3), 359-364.
- Shelby, J. S., & Tredinnick, M. G. (1995). Crisis intervention with survivors of natural disaster: Lessons from Hurricane Andrew. *Journal of Counseling & Development*, 73(5), 491-497.
- Stringer, E. (2004). *Action research in education*. Pearson Merrill Prentice Hall.
- The Dialogue*. (2019, February 1). *Re: What lies ahead? Puerto Rico 2019*. Retrieved from <https://www.thedialogue.org/events/puerto-rico-2019-what-lies-ahead/>. The U.S. Office of
- The Psychology Notes Headquarters. (2020). *What is Bronfenbrenner's Ecological Systems Theory?* Retrieved from <https://www.psychologynoteshq.com/>
- U.S. Census Bureau. (2020a). *2020 Decennial Census. How many people live in Toa Alta Municipio, Puerto Rico*. Retrieved from <https://data.sj-r.com/census/total-population/total-population-change/toa-alta-municipio-puerto-rico/050-72135/>
- U.S. Census Bureau. (2020b). *Current Toa Baja, Puerto Rico population, demographics and stats in 2020, 2019*. Retrieved from <https://suburbanstats.org/population/puerto-rico/how-many-people-live-in-toa-baja>
- U.S. Census Bureau. (2020c). *Current Yabucoa, Puerto Rico population, demographics and stats in 2020, 2019*. Retrieved from <https://suburbanstats.org/population/puerto-rico/how-many-people-live-in-yabucoa>

- U.S. Census Bureau, Vintage 2018 Population Estimates. (2018). *Puerto Rico | 2018 population estimates*. Retrieved from <https://www.census.gov/quickfacts/fact/table/pr/PST045218>
- van Hamersveld, C. (2019). Rethinking K-12 library services after Hurricane Harvey-Pasadena ISD. *Knowledge Quest*, 47(4), 28-33.
- van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy*. The Althouse Press.
- Weixler, L. B., Harris, D. N., & Barrett, N. (2018). Teachers' perspectives on the learning and work environments under the New Orleans School reforms. *Educational Researcher*, 47(8), 502-515.
- World Population Review. (2020a). *Arecibo, Puerto Rico population 2022*. Retrieved from <https://worldpopulationreview.com/us-cities/arecibo-pr-population>
- World Population Review. (2020b). *Dorado, Puerto Rico population 2022*. Retrieved from <https://worldpopulationreview.com/us-cities/dorado-pr-population>
- World Population Review. (2020c). *Humacao, Puerto Rico population 2022*. Retrieved from <https://worldpopulationreview.com/us-cities/humacao-pr-population>
- World Population Review. (2020d). *Toa Alta, Puerto Rico population 2022*. Retrieved from <https://worldpopulationreview.com/us-cities/toa-alta-pr-population>
- World Population Review. (2020e). *Toa Baja, Puerto Rico population 2022*. Retrieved from <https://worldpopulationreview.com/us-cities/toa-baja-pr-population>
- World Population Review. (2020f). *Yabucoa, Puerto Rico population 2022*. Retrieved from <https://worldpopulationreview.com/us-cities/yabucoa-pr-population>

Endnotes

1. *Natural disaster*. A process or event combining a potentially destructive agent or force from the natural, modified or built environment, and a population in a socially and economically state of vulnerability, resulting in a disruption of the customary relative satisfactions of individual and social needs for physical survival, social order, and meaning (Hoffman & Oliver-Smith, 2000).
2. According to the National Oceanic and Atmospheric Administration (2018), a hurricane is a tropical cyclone, which is “a rotating low-pressure weather system that has organized thunderstorms but no fronts (a boundary separating two air masses of different densities)” (para.1). Hurricanes are large, swirling storms. They produce winds of 119 kilometers per hour (74 mph) or higher. Heavy rain and storm surge from a hurricane can cause flooding. There are five types, or categories, of hurricanes. The categories are based on wind speed (National Aeronautics and Space Administration, 2014) as follows: (a) Category 1, winds 119-153 km/hour (74-95 mph); (b) Category 2, winds 154-177 km/hour (96-110 mph); (c) Category 3, winds 178-208 km/hour (111-129 mph); (d) Category 4, winds 209-251 km/hour (130-156 mph); and (e) Category 5, winds more than 252 km/hour (157 mph).
3. Resilience is “the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress” (American Psychological Association, 2014, para. 4).