2018

Coping and Meaning Making in Teachers Affected by Hurricane Sandy

Jennifer Valentine
Long Island University, Jennifer.Valentine@my.liu.edu

Coping and Meaning Making in Teachers Affected by Hurricane Sandy

An Honors Program Thesis

By

Jennifer Valentine

Spring 2018

Psychology Department

_____

Dr. Thomas Demaria, Advisor

_____

Dr. Nancy Frye, Reader

Table of Contents

Abstract

School staff play a momentous role in the recovery of students following a disaster. Students

spend a generous portion of their school years interacting with teachers that set a path for

psychological and mental growth. When teachers struggle with coping, meaning making and

wellness, they may not be adequately able to model resiliency skills for their students. A sample

of 39 teachers completed an anonymous online survey about their experiences four years after

Hurricane Sandy. The results of this sample of teachers was compared with responses by 25

teachers about their coping who responded to a similar survey immediately after the disaster

occurred. How teachers engaged in wellness, coping and meaning making in terms of activities

selected and amount of time devoted during the different time periods will be presented. Gender

and previous exposure to trauma as notable predictors on resiliency were also examined.

Implications for the support of teachers following disasters will be discussed.

Objective

      Disasters affect all members of a community by diminishing available resources, causing

mental health, societal and social issues. Disasters have been broken up into two categories:

man-made and natural disasters.   Natural disasters are caused by nature and include but are not

limited to hurricanes, tsunamis, earthquakes, etc. Man-made disasters are caused by people on

purpose, such as acts of terrorism and mass shootings for example. The focus of the current

study is on a particular type of natural disaster; hurricanes, and the impact of hurricanes as they

pertain to teachers. This research study focused on teachers' own personal coping, meaning-

making and wellness, since they serve as models of resiliency for their students. Examining the

coping strategies used by teachers that either facilitated or hindered their recovery following a

natural disaster provides insight on how to better prepare and support teachers in future crisis

situations. In the following sections, the paper will discuss research conducted on the impact of

hurricanes on communities in general, individuals and then more specifically the effects of

Hurricane Sandy on teachers. Teachers' reactions to disaster, school-based interventions

succeeding a disaster, and the role of teachers in students' recovery and post-disaster mental

health will also be presented. Individual coping strategies of teachers affected by disasters and

crisis will be considered also before teachers' coping and meaning making processes in the wake

of Hurricane Sandy.

Coping and Meaning Making in Teachers Affected by Hurricane Sandy

Disasters in Communities

The influence of a disaster on a community can be temporary or long-lasting depending on a plethora of factors; the level of preparedness, response and rebuilding of the community; the financial and economical standing; financial support received by a community; the sense of connectedness between members of the community; intervention programs available; the meeting of basic needs; etc. One of the world's leading disaster response and recovery organizations, The American Red Cross, approaches disaster response with the goal of "preventing and alleviating human suffering in the face of emergencies by mobilizing the power of volunteers and the generosity of donors." Similar to Maslow's hierarchy of needs, ensuring the safety and health of members of a community is completed before addressing the other community components.

Disaster Relief Services

The responsibility of meeting basic human needs is instrumental in disaster response and in the recovery of a community. Restoration of resources such as clean water, ample food supply, first-aid and health services, sanitary living conditions, housing and shelters as well as reliable and sufficient income must be taken care of before all other disaster-related concerns. The protection of community residents' health and safety come first when providing disaster relief services and needs to be done as soon as possible. Fast response not only provides an accurate assessment the effects of a disaster, but is necessary to prevent potential harm from being inflicted onto community residents. In addition to the destruction of property, community

resources become compromised or missing altogether. It is then up to the community itself to regain these resources themselves or seek assistance from an outside source. Fortunately, there are many organizations that will provide relief to communities affected by disaster. However, not all communities receive the same level of assistance as each other. Despite the necessity to satisfy the basic needs of community residents, a community's socioeconomic status has been linked to the degree of disaster response. Members of low-income communities have reported greater concerns of attaining and maintaining resources necessary to meet their basic needs. This occurrence may be caused in part by poor disaster preparation. Many communities that face financial instability have been shown to disregard the importance of disaster preparedness. Community budgets may be to blame for not dispensing sufficient funds for disaster preparedness programs. Additionally, communities that lack an education in disaster preparedness may not realize the available support systems. Communities that have outdated and faulty emergency systems are vulnerable to potential physical harm and even death of residents. Socioeconomic status not only plays a role on the physical relief services provided to a community, but also the psychological and mental health services.

In lower class communities, a disaster may present a challenge of maintaining a stable income and sufficient funds. People living in areas with limited resources and high rates of unemployment in the aftermath of a disaster have reported higher rates of post-traumatic stress and disaster related stressors in their lives. These community members are not provided with adequate financial support, which takes a toll on community members' mental health. Poor mental health in communities has also been linked to higher rates of chronic illnesses and unemployment. Disaster relief organizations such as the American Red Cross, provide

psychological first aid to assess community members for any concerning psychological distress. The problems that arise from psychological first aid are that the assessments are not always performed by professionals in the mental health field, assessments are conducted almost immediately after a disaster, and the purpose of psychological first aid is to identify community residents experiencing distress and refer them to a clinician. In lower economic classes, mental health services may either not be covered under the community member's insurance, or the individual does not even have insurance. Without proper mental health services, disaster-related distress can develop into much more serious mental distress and/or illness. Socioeconomic status is amongst many other factors that determine the degree of assistance a community receives and the degree to which the community is affected by the disaster.

Characteristics of the community are also important to consider when examining disaster relief. The location of a community in relation to the most heavily affected zones of a disaster can too be a determinant in the community's readjustment.   Shorter distance from the leading affected areas of a disaster has been linked to higher instances of distress, post-traumatic stress and other mental health illnesses. Individuals living in areas with the greatest amount of damage; whether it be physical, economic and/or social; have greater exposure to events that could be perceived as traumatic. Therefore, those living in these distressed locations may report significant numbers of adverse post-traumatic mental health symptoms. Although these specific areas have experienced the highest levels of destruction from a disaster, sometimes communities outside these zones experience the most destruction. Since fast response is needed in disasters, assistance is led to the areas most heavily affected, sometimes called "hot zones", followed by surrounding areas moving outwards. These zones that extend past the hot zones are often left

without much assistance in recovery because their damages seem almost insignificant when compared to the condition of the hot zones. Having to fend for themselves, these communities can be faced with a whole array of obstacles such as, economic strain, unemployment and psychological distress.

Taking all these factors into consideration, psychologists can dive even deeper into community components, all the way down to an individual level. Despite significant advancement in modern technology, the forces of nature are still out of the scope of human's control and cannot be avoided. Not every storm is the same and similarly, not every community response will follow an exact set plan either. Similarly, not every community member experiences the same events during a disaster. Even perception of the same event can vary amongst people affected by disaster. To provide support to these people, psychologists can look at the effects of a disaster on a single person and how this individual can grow and heal from his or her experience.

Individual level

Natural disasters affect communities on both collective and individual levels. Individual characteristics of survivors such as an one's own perception of an event, pre-existing and/or co-occurring mental illness, trauma experience and previous exposure to trauma can influence the individual response to a natural disaster. A person's individual perception influenced by his or her understanding and learned social constructs of how he or she interprets significant stressors can determine if the person views the event as traumatic. In other words, disaster experiences vary from person to person despite how similar their actual experience was. This phenomena is

also seen in everyday life stress. Similar to everyday situations, stress can original from a real

threat or perceived threat. Perhaps in reality, a branch fell on an individual's car, but the driver

had believed he could have lost his life and the passenger had a branch fall on their car before

and was not too bothered by this event. An individual's perspective can shape the ways in which

the person begins his or her recovery process resiliency for future events. It is important to look

at the impact of characteristics belonging to an individual have on his or her comprehension of a

disaster.

One explanation for variability in perception of a disaster is gender. Social constructs

such as the association between masculinity and restriction of emotional expression are offered

as a possible explanation for some distinct differences in reaction to a traumatic event between

women and men. Posttraumatic stress symptoms, recollections of previous national disasters,

fears of future life events, self-disclosure, seeking help and sources of assistance have been

shown to differ in both male and female genders. Women have shown higher instances of

turning to social media outlets or communal resources to seek out disaster-related news. Women

have also reported disaster-related distress in higher numbers than men in some instances.

Despite these findings, it is difficult to study gender differences in self-reported measures of

psychological distress because studies have shown that women are more likely to self-disclose

than men. To further investigate how disaster is perceived from person to person, other factors

must be taken into account.

Experience with disasters has been found to influence the recovery process. People with

a history of past traumatic exposure are more likely to develop disaster-related post-traumatic

stress symptoms than those with no prior traumatic encounters. A study conducted on the post-

traumatic mental health of tsunami survivors, found that those who reported a previous trauma before the age 12 had the highest rates of post traumatic distress out of all other demographic groups. Previous traumatic experience has been linked to the awakening of post-traumatic stress disorder in individuals when exposed to disaster related images, video and news coverage. Many times, individuals experience a traumatic event and have psychological trauma that either goes unnoticed or untreated. A subsequent disaster experience can trigger a much more intense psychological distress or even disorder. A study conducted on individuals reporting post-traumatic stress symptoms following a hurricane showed that the same individuals had previously experienced a traumatic event many years prior. The initial distress caused by a trauma had gone untreated and laid latent until the the individual was subjected to a similar situation in which they experienced the same feelings of helplessness, fear, danger, etc. Additionally, often when evaluating individuals for post-traumatic distress, a concurrence of Post-Traumatic Stress Disorder and another mental illness and/or substance use disorder is discovered. Pre-existing mental conditions and co-occurring mental illness of individuals have been linked to higher reports of disaster related distress. The presence of another mood or psychiatric disorder affect how an individual copes and recovers following a disaster. Distorted or unhelpful thinking can lead an individual almost helpless in coping with the stress of his or her everyday life. If these inhibitions are present when experiencing a disaster, it leaves the individual even more vulnerable to suffering from post-traumatic distress. Distorted thinking can also lead an individual to perceive a disaster to be much more dangerous or much less serious than reality.

Not all individual survivors and communities experience a disaster in the same way. This emphasizes the complexity and extensive impact of disasters on the psychological well-being of individuals. Support systems had been found to mitigate the impact of disasters. For children, schools offer a setting where children can receive support from both school staff and their peers.

Schools

When a disaster strikes a community, all life seems to temporarily stop for an amount of time before life can return to normalcy. Children often time do not receive the amount of support that they may require, as their parents may be struggling with their own emotional concerns and return to work as soon as they can to obtain stability. The return of children to classrooms becomes a necessary element for success in recovery of a community. Schools hold a critical role in satisfying the physical needs, emotional, social and psychological needs of a community. Before a disaster even strikes, schools are tasked with thorough preparation. A school often serves as a shelter; providing people with food, clean water, sanitation, a place to sleep, some level of medical attention, electricity, and protection from outside forces. Once the basic physical needs of the people staying there are met, a school can then satisfy the emotional, social and psychological needs of its occupants. Suggested by the American Red Cross, mental health services for those who need emotional support should be considered when setting up a shelter. The school can either provide these mental health services themselves through community-based programs or the school can refer individuals experiencing distress to a county program. One of the resources available is the Psychological First Aid for Schools Field Operations Guide that may be used to assist children, adolescents, adults and families in the

aftermath of disaster. This resource is an evidence-informed approach to providing psychological first aid using eight core actions that cover the immediate disaster response to the long-term coping practices and psychological services. Often the most important level of support is provided in classrooms by teachers.

School-Based Disaster Interventions

Preparedness & Training

School-based intervention programs are a way of addressing, mitigating and resolving community distress following a disaster. These programs are designed to better educate, prepare and assist students and faculty in disaster preparation and response.

An important component of these interventions is prior training, as it has been found that individuals that do not receive disaster management training have an increased likelihood of developing post-traumatic stress. For example, a study on people who were involved in relief for the World Trade Center Attacks on September 11th, 2001 found that those who lacked disaster management training exhibited the highest numbers of post-traumatic stress symptoms than all other occupations. In a school setting, teachers who have not received or participated in disaster relief are at a higher risk for post-traumatic distress than teachers that did participate in this training. As a matter of fact, almost all public schools require regular disaster preparedness drills as a means of ensuring safety and adequate preparation. The problem with these drills is that they prepare students and faculty with plans of evacuation or security rather than education on disaster relief and preparation. Additionally, many schools are at a fault due to inaccurate reporting of disaster planning and response.

The idea of school-based intervention programs for teachers is not a new concept; many schools require a certain degree of preparation as monitored by the school's administrator. However, many schools lack both disaster preparation and recovery despite having reported the contrary. The amount of training required to prepare teachers in times of crisis is often underestimated, leaving teachers with non-specific instructions and limited resources. Past studies have shown that top leadership roles play an integral role in the overall crisis preparedness and management of a school. Similar to larger communities, schools are affected by disasters on multiple levels. It is important for the recovery of school members that all levels are receiving adequate preparation and assistance. Principals and other administrators can strongly influence the recovery of a school after a natural disaster.

 A principal's opinion on support of teachers and set plans of action can provide valuable insight into how a school is operating. A study conducted on 113 full-time principals regarding their school's plan of action and maintenance in times of crisis had the goal of sparking attention for teachers and how they cope with crisis. The study found that principles had reported disaster preparation and response plans that were either not entirely accurate or put into practice at all. Principals serve as advocates of disaster preparedness that impact the entire school's disaster response and preparation. School principals are not the only school members that can facilitate disaster preparedness and recovery; parents hold a vital role in advocating for interventions.

Parents are important partners in school based disaster interventions. Inadequate disaster preparedness of schools can be reflected in the lack of knowledge of such plans by parents of students. Communication with parents about evacuation plans, crisis teams, emergency utilities and equipment available at a school are all necessary in creating a comprehensive system disaster

response within a community. If parents are properly informed and educated, they may educate

their own children on disaster preparedness and response; this leaves less pressure on teachers to

educate students on the subject. In addition, parents should be aware of the available

intervention programs if their child is experiencing disaster or trauma related distress.

Intervention

      Once a disaster hits, a school must initiate intervention programs to assist and maintain

the well-being of its students. Research has shown that students exposed to trauma have reported

lower post-traumatic stress symptoms in the time following their participation in school-based

intervention programs. School-based intervention programs have promoted coping, prosocial

behavior and the building of resiliency in participating students, leading to recovery from

traumatic experiences. Long term effects of intervention programs implemented by schools

show increased levels of adaptive functioning and lower post-traumatic stress symptoms, grief

and dissociation in participating students**.** Contrasting, students who did not participate in a

school-based intervention program reported higher instances of post-traumatic stress, grief and

dissociative symptoms. School-based intervention on an individual level has also been proven to

be effective in reducing trauma symptoms over time in children exposed to natural disaster.

Students are not the only school members that may need intervention for disaster related distress,

as teachers are vulnerable as well.

Effects of a Disaster on Teachers

The return of children to classrooms becomes a necessary element for success in recovery of a community. Teachers are often faced with the burden of returning to the classroom with the responsibility of educating and tending to distressed students despite their personal disaster-related stressors.

Following a disaster, teachers assume responsibility of disaster response and recovery in children regarding mental health first aid. Along with the acceptance of that role, teachers experience the psychological stress similar to a disaster recovery worker such as burnout, compassion fatigue and secondary. Normal stressors for teachers include being attuned to students; identifying students who are experiencing behavioral, developmental, psychological and/or social challenges.   In a post-disaster context this obligation is amplified, as teachers are tasked with being highly attentive to ongoing psychosocial challenges of their students. The role of mental first aid worker is difficult to balance with the tasks required of teachers already. Adding in another responsibility for teachers that are experiencing disaster related distress themselves can lead to higher instances of burnout due to task overload. Other problems arise within teachers when working with students suffering from traumatic distress or disaster related distress.

 When exposed to the disaster-related post-traumatic stress of their students, teachers are vulnerable to secondary trauma. Secondary trauma occurs when an individual experiences trauma indirectly through the firsthand experiences of another individual. The symptoms of secondary trauma are seemingly identical to that of Post-Traumatic Stress Disorder and can be experienced at the same time as symptoms of firsthand post-traumatic stress. Similar to disaster response and relief workers and psychological first aid workers, teachers can too experience both

burnout and compassion fatigue. Burnout occurs when an individual experiences high levels of

stress for an extended period of time and can ultimately lead to physical and emotional

exhaustion. Compassion fatigue occurs when an individual experiences secondary

traumatization and can lead to similar symptoms to that of secondary traumatization. Role

overload from the responsibilities of teaching and providing disaster relief have led teachers to

claim higher levels of emotional exhaustion and increased levels of burnout. The screening of

post-traumatic symptoms, burnout and compassion fatigue in teachers can help prevent the

worsening of these symptoms.

Teachers' Disaster Response/Intervention

Without the proper training of teachers for crisis situations, teachers may respond to

classroom distress and with inadequate, even hindering, strategies that can negatively affect their

students. One of the leading factors in teachers' lack of confidence responding to bereavement

and grief in students was absence of training for crisis-like events. Higher degrees of unrest have

been linked to unsupportive and suppressive responses from teachers that did not receive the

proper crisis management training. Regardless of age or years of teaching experience, teachers

have collectively agreed that crisis knowledge and management are both critical tools to have as

a teacher . Specialized training programs designed for the personal development of educators are

the ideal programs, concluded one study. A group of teachers suffering from both post-traumatic

stress and secondary trauma were randomly selected to participate in either a generic post-

traumatic intervention program or a specialized program created by the authors of the study

specifically for the sample. Teachers belonging to the specialized program decreased their post-

traumatic distress and secondary trauma and reported increased levels of professional self-efficacy, optimism about the future, sense of hope and positive coping skills in greater numbers than the generic intervention program. Enabling teachers with instruments of crisis management and disaster response can provide them with the necessary tools for efficient coping and meaning making strategies that can be demonstrated in the classroom.

The use of coping with the disaster-related psychological distress and related stressors is an important aspect of teacher disaster intervention. Teachers must be educated on coping methods that can be used by their students to begin the recovery and resiliency building process. Teachers must be able to assist students with identifying applicable coping methods and how to utilize these methods with the resources available. In addition to tending to the needs of their students, teachers' self-awareness of their own reactions to a disaster must be addressed as well. Education of self-care, recognizing personal health care needs and how to ask for additional support should be considered when preparing teachers to lead disaster intervention.

Coping

A popular working definition for "stress" is the imbalance between demands on an individual and the available resources the individual possesses. Therefore, a person becomes stressed when the pressure put on him from his demands exceeds his capability to handle these demands. Similar to traumatic experience, an individual's perception of his stress experience is more significant than and may not accurately reflect the reality of the situation. This can lead a person to view an event as far more stressful than another individual experiencing the same event. A universally used instrument for measuring stress is the "Transactional Model of Stress

and Coping" designed by Dr. Richard Lazarus and Dr. Susan Folkman. The model is based on

the concept of Cognitive Appraisal, the process in which individuals evaluate a stress experience

based on its threat to their well-being. Cognitive Appraisal is then separated into types; Primary

Appraisal and Secondary Appraisal. Primary Appraisal occurs when an individual considers his

or her own relevance to the situation and the personal ramifications of this situation. The

stressful situation can either have no effects, positive effects (benign-positive) or negative and/or

harmful effects on the individual. Secondary Appraisal as defined by Lazarus and Folkman, is

the behavioral and/or cognitive methods in which an individual mediates the effects of the

stressful event, using either problem-focused or emotion-focused coping strategies. An

individual can use Problem-Focused Coping, when he or she feels the problem at hand can be

managed through the implication of his or her own strategies. These strategies can include but

are not limited to creating and evaluating possible solutions to remove the stressor, learning new

coping skills to manage the stressor or prioritizing the stressor over competing activities.

Emotion-focused coping occurs when an individual feels unable to manage the source of the

stressor alone and seeks emotional support. Using emotion-focused coping, an individual uses

strategies for regulating the emotional distress that he or she is feeling that can include but are

not limited to acceptance, emotional support from peers, avoidance or selective attention.

Coping with Disaster

Community Level

        Community coping following a natural disaster can facilitate the recovery of a

community and its members despite the obstacles they face.   Residents of a disaster-stricken

community may find themselves without outside assistance for an extended period of time following a disaster. The dependence on one another for survival can promote communal coping and a sense of human connectedness.   The Theoretical Model of Communal Coping examines the fusion of individual coping within a community and its effects on the coping of community members. This model claims that community members who express their post-traumatic stress with one another can collaboratively overcome their stress and create a sense of mental hardiness that leads them to believe they are capable of recovering from the traumatic event. Determinants of a resilient community are dependent on the social, environmental and economical levels of the community. A sense of community is a critical element of a community's ability to cope with disaster . Sense of community can be broken down to four fundamentals; membership, influence, integration and fulfillment of needs and shared emotional connection . All four factors lead to an establishment of self and community-efficacy in community members which is chiefly responsible for community resiliency. Communal coping fosters the emotional hardiness of a community, allowing for recovery following a disaster. The individual members belonging to a community have their own unique characteristics that narrow the extent of coping with a disaster to an individual level.

Individual level

Despite having experienced the same natural disaster, the distinctive ways in which individuals cope with trauma demonstrate the significance of individual coping. Attempts to resolve distress and monitor emotions can be made through problem-focused and emotion-focused coping strategies.

Problem-focused coping methods tend to result with more instances of positive adjustment and recovery than emotion-based coping. However, multiple studies have proven emotion based coping to be effective in reducing psychological distress and increasing resiliency.

Emotional-focused coping methods such as emotional regulation, mindfulness, and healthy adult attachment methods have all been linked to the reduction of post-traumatic stressors. There are a large number of emotion-based coping strategies that can either positively or negatively affect the individual practicing them.

Characteristics of an individual may make him or her more likely to employ specific problem-solving or emotion-based coping strategies that are maladaptive rather than using adaptive methods. Avoidance may be one type of strategy used that is categorized as maladaptive in recovery. Following a disaster, some individuals may choose to avoid any images, videos or news coverage of the event because of the possibility of a negative psychological reaction. A study conducted on parents affected by natural disasters found that parents often restricted their child's exposure and awareness of a disaster as a way of mediating their child's psychological disaster-related distress. With this strategy, parents were then able to use problem-focused coping methods such as, disaster preparedness activities and recovery activities with their children that led to positive adjustment and acceptance of the disaster. However, the avoidant coping strategy may not always create a positive impact on the psychological well-being of those affected by disaster. Behavioral problems in adults such as the internalization and externalization of emotions have resulted from avoidant coping.

There may be some disadvantages in using emotional coping. When using emotion-based coping, the person experiencing the stress believes he or she is out of control of the situation; this can lead to the use of coping strategies that are explicitly harmful to himself and the people around him. Substance-abuse, denial, wishful-thinking, disengagement and self-blame are all examples of emotion-based coping strategies that elicit negative outcomes.   In the realm of traumatic experience, the implementation of these specific coping methods have correlated with depression, grief, anxiety, and psychological dysfunction in individuals. Those suffering from post-traumatic psychological distress may use alcohol and controlled substances as a means of coping with the overwhelming distress they feel. Regardless of the uniformity of the effects of a disaster the ways in which people cope in different ways from one another illustrates the level of individual coping that occurs following a natural disaster.

Differences in gender and cultural influences can also attribute to the differences in coping styles utilized by individuals after a disaster. For example, greater usage of emotion-based coping and self-disclosure have been reported by women more so than men. One's culture can influence the ways in which one copes as compared to another individual experiencing the same event. Mothers belonging to tight-knit villages who survived an earthquake emphasized culturally specific coping rituals that correlated with low post-traumatic psychological distress. Personal coping strategies are seen in instances of individuals turning to religious and spiritual coping as a means of managing their own private post-traumatic stress.

Teachers' Use of Emotion-Focused and Problem-Focused Coping

This paper focuses on the impact of Hurricane Sandy on Teachers with the intent of providing insight on how teachers can effectively cope and make meaning following a natural disaster. A teacher that can exemplify both of these skills can demonstrate coping skills of their students. However, in situations that teachers struggle with coping, meaning making and wellness, their students are not provided with a sufficient model to follow.

Teachers who have experienced a natural disaster must cope with the post-traumatic stress of their own experience and the secondary trauma caused by their distressed students. Teachers must use coping methods for their own post-traumatic growth and the well-being of their students. When returning to the classroom, teachers should recognize that their own successful management of their personal traumatic experiences can help their students who experienced the same trauma. In a longitudinal study on teachers and students who survived an earthquake, teachers were better able to empathize with students who experienced the same disaster. Numerous stressors, intense emotions and the pressure of retaining one's professional identity has led teachers to believe the most effective and efficient coping strategy to be suppression. The use of suppression as a means of emotional regulation has been determined as a key factor in creating teacher burnout. Suppression is a type of emotion-focused coping that has been proven counterintuitive in recovery training of people exposed to a traumatic event. In fact, teachers that implemented suppression strategies in response to challenging classroom situations had higher levels of disobedience, behavior misconduct and rebellion of their students.

With the use of problem-focused coping, teachers can focus on mediating the causes of stress in their own lives and sequentially in the classroom. Teachers using problem-focused coping have been able to reduce the burnout they experience from the emotional challenges of

the job. Problem-focused coping methods employ teachers to create and evaluate available

solutions and learn new stress managing skills that can be applied when working in a post-

disaster context. Teachers can employ problem-focused coping methods as means of

posttraumatic recovery in children. Teachers can use problem-based coping by brainstorming

possible solutions to mediate or resolve distress resulting from the natural disaster. Teachers that

experienced their own disaster-related distress were able to educate students on how to acquire

resources, how to relocate other disaster preparedness information in order to inform students

and alleviate the fear of future natural disasters. Teachers educated and reflected with students

on ways to reestablish their everyday routines after the disruption caused by the disaster.

Problem-focused coping can encourage teachers to learn new stress managing skills which they

can then model to their students through their self-disclosure of their own personal experience.

The use of stress management in teachers can also reduce the levels of burnout in teachers.

The successful ways in which teachers use problem and emotional-focused coping for

their personal recovery after a disaster influence the recovery of their students. Teachers must be

aware of their own emotions and attitudes and how these influence the success of students' post

traumatic growth and recovery. Teachers that effectively use these coping strategies can then

educate their students the available coping methods and how to make use of them.

Teacher Coping Interventions

Teachers can create intervention programs for their students by using problem-focused

coping methods. Emotional regulation, mindfulness and self-efficacy in a disaster-context are all

strategies of coping that teachers can educate and model for their students. Using these tools,

teachers are able to tailor a specific intervention for the post-disaster distress that their students have experienced.

Emotional regulation used by teachers has led to fewer personal inhibitions that would otherwise prevent a teacher from achieving their ideal classroom setting. Emotional regulation be defined as one's capability to recognize, regulate and modify her emotions with intent of achieving a set goal. Without the use of emotional regulation, teachers cannot monitor their emotions and make accurate judgements on their external world. Teachers may then believe they are to blame for the post-traumatic stress experienced by their students. The inability eliminate the distress a student feels can arise an overwhelming amount of negative emotions such as helplessness, insecurity, disappointment, anxiety, confusion, anxiety and despair to name a few. The blame that teachers put on themselves can increase the risk of their neglecting both their professional and personal needs.

Teachers can use mindfulness to accurately view the effects of a disaster on in their personal life with an objective view, accepting the reality of the situation. With this coping skill, teachers can acknowledge their troublesome emotions and begin to devote effort to their post-traumatic growth and reduction of post-traumatic stress. A teacher modeling mindfulness in a post-disaster context can demonstrate to students how to be aware of the reality of the disaster and how to use this awareness to effectively accept the distress they feel with unbiased judgement. Students may then begin to recognize their internal discomfort as an obstacle in which they can overcome and advance forward. Mindfulness can reduce post-traumatic stress in students and empower them with a positive coping skill to use in future stressful situations. Self-efficacy is defined as one's belief in one's ability to succeed in executing a task in order to

achieve a desired outcome. Teachers exhibiting high self-efficacy for disaster recovery despite

the challenges they face have higher levels of effective classroom communication and increased

numbers of positive working relationships with their students. Teachers displaying high self-

efficacy in their classrooms can effectively exhibit positive coping methods for their students and

succeed in efficient classroom behavior management. Students can use self-efficacy in their

post-disaster recovery, academic pursuits and future life goals. Observation of a teacher's

coping skills and strategies can show students how to implement these skills in their own

personal lives. If a teacher is demonstrating maladaptive coping methods, her students will

remain uneducated on how to begin their post-traumatic growth.

The ways in which an individual can make sense of a disaster and accept the

consequences of the disaster promote recovery. Teachers can help their students move forward

after a disaster has occurred by educating students on how to make meaning from the event.

Meaning making is a tool used to facilitate post traumatic growth in survivors of disasters.

Meaning Making

Meaning making is an effective tool used in coping with adverse life events.

Meaning making can be described as the ability for an individual to accept and give reason to

why an event occurred based on personal beliefs and the situational context. Meaning making

exists on a global level and a situational. Global meaning is a person's enduring core beliefs and

expectations of oneself, the world, one's place in the world. Situational meaning is when an

individual uses their global meaning and the context of a situation in their reaction of to the

event.   The combination of global and situational meaning allows people reacting to stressful

events to appraise the events in a positive manner, focusing on how their personal development.

Meaning Making in Disasters

Meaning making can facilitate the post-traumatic growth of people coping with disaster.

The use of meaning making allows survivors to view the ramifications of a disaster as less

harmful and able to overcome. Using global meaning, one's lasting beliefs of oneself and one's

purpose in life rises a desire to endure the challenges emerging from disaster. Multiple studies

on disaster survivors found those who believed their lives and life goals mattered were better

able to persist and derive a sense of closure from the traumatic event. Survivors who found

meaning in their disaster experiences were able to cope with disaster despite the obstacles in

their way had lower levels of avoidance coping, post-traumatic stress and overall distress.

Contrastingly, people that maintained a pessimistic view of the world and about the disaster

limited their ability to cope.

A disaster can temporarily or permanently augment multiple aspects of one's ordinary

life, thus altering one's global meaning. In response to a disaster, one must make use of the

situational factors in order to make meaning and accept as to why an event occurred.

Teachers Meaning Making in Disasters

Teachers that use meaning making are better able to personally recover following a

disaster and can then model behavior with the intent of promoting coping skills in their students.

There is a lack of extensive research on the use of meaning making in teachers following in a

post-traumatic context. Existing research on meaning making in the context of disaster and the effectiveness of coping strategies of teachers provides insight on the possible effects using this tool. Meaning making is used by teachers in the learning experience with their students. Meaning making can help students apply the course material to their interests, ambitions, and lived experiences outside of the classroom. The appraisals of teachers having experienced a stressful or disturbing event can affect the future educational methodologies of the teacher. A study conducted on teachers viewing a holocaust museum concluded that the meanings made by teachers could shape their instructional practices and henceforth, shape the learning of their students. The absence of research conducted on the use of meaning making by teachers as a means of coping with a disaster supports the significance of the current study.

Hurricane Sandy Background

Brief economic and ecological effects

Hurricane Sandy struck the eastern coast of the United States in late October 2012. Powerful winds reached up to 80 miles an hour and torrential rain both caused a wide variety of ecological damage such as dangerous flooding, land erosion and uprooting of trees. These ecological damages disrupted and permanently altered the lives people living in affected areas. Destruction of homes and businesses left many people homeless, with their entire life's work gone. Flooded transportation ways and cancelled flights left many stranded wherever they were at the time Hurricane Sandy hit. In addition, food shortages and unsanitary living conditions led many to seek help from shelters and non-profit organizations. Due to the flooding and debris in the roadways, oil companies had difficulty transporting gas to homes and gas stations. People

waited on long lines in the cold for hours at gas stations for gas to power their cars and

generators. Many gas stations ran out of oil and were forced to shut down until more was

delivered. Power outages and these gas shortages left many east coast residents without heat in

the dark. The storm was so powerful that close to 150 people died throughout the East Coast,

Canada and the Caribbean. Many people were injured and hospitals were packed with patients

already in care and newcomers, all while using massive generators. The damage of the storm

reached a substantial economic level, having over $29 billion in insured loss and over $68 billion

in total loss. The storm is dubbed one of the most costliest hurricanes in the United States from

years 1989-2005, second to Hurricane Katrina.

 Other Important Information

        Close to a week after Hurricane Sandy hit the east coast, a snowstorm landed and brought

over a foot of snow in some places. Many areas were still without power and then became

blanketed in snow, in freezing temperatures. This snowstorm in particular was classified as a

Nor'easter, which means that there were unusually high winds. Many residents along the east

coast finally had their power restored only to lose it again in the snowstorm, less than two weeks

after Hurricane Sandy.

 Psychological Effects of Hurricane Sandy

                The damages caused by Hurricane Sandy reached individuals in the affected areas

on a psychological level. Most heavily affected areas by Hurricane Sandy were New York and

New Jersey. When assessing the mental health of distressed individuals from these areas, New York specifically, the role of past traumatic experiences must be considered.

An influencing factor in post-traumatic stress related mental illness is previous exposure to trauma. A large number of New York residents were present for both Hurricane Sandy and the terrorist attacks on the World Trade Center on September 11th, 2001. Those who experienced World Trade Center related post-traumatic stress were vulnerable to perceiving Hurricane Sandy as traumatic and experiencing high levels of adverse mental health. Young adults with high exposure to the World Trade Center attacks had an increased likelihood of experiencing Hurricane Sandy related post-traumatic distress. World Trade Center responders were susceptible to experience Major Depressive Disorder symptoms and Post-Traumatic Stress Disorder related to Hurricane Sandy. Previous exposure to trauma that caused psychological distress can lead individuals to experiencing more events as traumatic, especially if the original trauma goes untreated. Another factor that affected the mental health of Hurricane Sandy survivors was social cohesion.

Social cohesion appears to have mediated post-traumatic stress symptoms in those affected by Hurricane Sandy.   A study conducted on communities affected by Hurricane Sandy found that high levels of community cohesion had influences families to stay in their damaged communities rather than accept home buyout plans.   A separate study on people who experienced the WTC attacks and had high exposure to Hurricane Sandy found decreased levels of post-traumatic distress in the presence of social cohesion. This idea of social cohesion as a mediator of post-traumatic distress was seen in a study looking into the recovery of earthquake

survivors. The study found that most participants that reported post-traumatic growth had emphasized the role of human connectedness in their recovery.

Other factors appear to also impact the recovery process. Low socioeconomic status and high rates of unemployment were shown to produce higher instances of hurricane related post-traumatic stress. A rise in substance use occurred after Hurricane Sandy as a means of coping for individuals suffering from post-traumatic stress disorder symptoms. A study conducted on New York City residents 13-16 months and 25-28 months after Hurricane Sandy found that over a third of participants reported coping with their experience through alcohol and/or non prescription drug use. In the wake of Hurricane Sandy, not all individuals were equipped with the resources necessary for adaptive coping.

The present paper aims to better understand the methods in which teachers can cope and make meaning following a natural disaster in order to provide insight on how to support and advise teachers in similar situations. The main research assumption of this paper was that teachers that employed adaptive coping and meaning making methods were better able to recovery from the post traumatic distress of Hurricane Sandy than those who did not employ these methods. To explore this relationship, the current study compared the reported lasting self-care practices of teachers approximately a one and a half years after Hurricane Sandy to the reported lasting self-care practices of teachers five years after Hurricane Sandy.

To directly obtain knowledge on how teachers recovered in the time following Hurricane Sandy, the current study was designed around the self-reported experiences of teachers. This study's three hypotheses were (1) There will be a greater number of reported hours of self-care in the long-term study than the short-term study, (2) The short-term study will greater numbers of

reported barriers of teacher self-care than the long-term study, and (3) There will be a greater

number of reported meaning making methods in the long-term study than the short-term study.

All three hypotheses were not let known to participants in the study and were later analyzed for

statistical significance.

Method

Participants

This study used two different, unrelated samples of school teachers in New York . The

first sample was collected in May, 2014 and was comprised of 25 school teachers at Long Island

University (15 females and 10 males). This sample was collected as a part of a survey provided

to help with the development of a presentation. The second sample was collected in September

of 2017 with a total of 39 participants (37 female and 2 males). Participants belonging to the

second sample were recruited through email and/or Facebook. Both samples were convenience

samples, as they selected participants close in proximity to the researchers. Convenience

samples, sometimes referred to as non-probability samples, occur when either the probability

every respondent included in the sample cannot be determined because it is up to the respondent

to participate in the survey. The samples were solely comprised of teachers from the New York

area, ensured through the recruitment of teachers belonging to New York school districts only.

Participant Characteristics

Participants taught students of all ranges, from preschool to college level and had years of

teaching experience that ranged from a year to over thirty years. Participants were not asked

information on the type of institution, student population size or other distinguishable student or

school demographics which is discussed in the limitations section of this paper. The survey was

designed to remain anonymous which was reflected in the absence of demographical assessment.

Materials

      Participants were given a link to an online survey that could be completed on any device

with access to the internet. Participants were given contact information of school faculty if they

had any questions or needed a referral after completing the survey. Both sets of participants

were not recruited in the same way as their involvement was requested for different studies.

Recruitment

      Subjects of both samples were sent a message either through email or Facebook that

included the survey link, brief description of the study and contact information of the project's

faculty advisor for any questions or concerns.   The first sample was collected through Long

Island University email only by a faculty member who needed the information to prepare a

presentation to the school staff about their initial recovery following Hurricane Sandy.

Participants in the second sample were collected through their work email, personal email and/or

Facebook Messenger. Teachers belonging to two separate elementary schools were recruited

through their work email were contacted by their school's principal. Both principals reviewed the

objective of the study and the survey content before contacting faculty. Statements from the

schools' principals briefly described what the survey would be used for, where and to whom the

responses would be sent, assurance of the anonymity and privacy of all responses and the

principals' approval.   These statements requested faculty participation but in no way suggested

that participation was mandatory. All other participants in the second survey received the same

explanation of purpose of the study, where responses would be sent and who had access to them

and confidentiality statement.

Survey Design

The survey was created using SurveyMonkey, an online surveying website. The original survey

sent out in 2014 was designed for another purpose. The objective of the original survey was to

assess the general well-being of teachers in the aftermath of Hurricane Sandy which could be

used in a presentation to these teachers. . It was later decided that the first survey would be used

in a study to compare and examine short-term and long-term coping and meaning making

methods of teachers affected by Hurricane Sandy. The designs of both surveys were almost

identical to secure the greatest amount of consistency. A brief statement describing the purpose

of the study and instructions about how to complete the survey were presented to participants

before the survey questions appeared. The statement included information about participant

confidentiality and anonymity, consent to be a part of the study and contact information of the

faculty researcher if any participants had questions, comments or concerns. Those participating

in the study were also informed that if they wished, they could include personal information in

the open response choices. Of the six open ended questions, two asked about demographic

information. These were years of teaching experience and gender. Another question that asked

participants if they had experienced a traumatic event or disaster prior to Hurricane Sandy and if

so, to briefly describe the experience. It is noted that it was not required of participants to

disclose their experiences nor was "traumatic event" operationally defined, as later addressed in the limitations section of this paper. Participants' amounts and frequencies of self-care were gathered through a question asking how many hours were spent each week on personal health and wellness before and after Hurricane Sandy. There were not distinctions in start and end points in both time periods other than the happening of Hurricane Sandy. The methods in which teachers promoted their own wellness and personal health were recorded in another survey question. The survey question listed 34 different activities and asked participants to choose as many activities that they engaged in. There was also an open-response option to include any self-care/wellness/personal health activities of participants that were not included in any of the listed choices. Similar to the previous self-care question, participants were asked to answer distinguish their responses based on their activities engaged in before and after Hurricane Sandy. The remaining question in the survey asked about existing factors in participants' lives that prevented them from committing more time to self-care/wellness and personal health. There were 17 different choices to choose from and an open-response option to add any barriers not listed.

Participants of the survey were informed in the introductory statement that their submission of responses served as their consent to participate in the study. As discussed in the limitations section of this paper, participants could skip questions if they wished and submit the incomplete survey. This original survey gathered all responses in a one week long period and were used to help teachers understand their coping and meaning making methods. To gather information for the long-term survey group, and the original survey was copied and slightly augmented to accommodate changes in the objectives of the study which will be used to help

students in a Trauma Psychology class understand the long-term impact of disasters (Refer to

Appendix). The introductory statement was changed to include the purpose of the current study

and contact information for the faculty researcher. Although not considered as a variable in the

study, current grade level being taught by each participant was recorded. This question was

added in the second survey to record demographic information on the participants. These grade

levels ranged from preschool to 12th grade and included an open-response choice for any unlisted

student populations such as college students or special education. The other change made was

the addition of a choice option to the amount of hours of self-care activities each week to include

individuals reporting 12 or more hours as otherwise not included in the original survey.

Teachers Coping Methods

To assess how teachers were coping after Hurricane Sandy, the survey gathered

information on self-care methods of participants both before and after Hurricane Sandy. The

survey did not directly ask for the ways in which participants coped and instead recorded self-

care activities. This method was chosen due to the fact that the survey was self-reported and if

the word "coping" was used, further explanation of the term would be required to gain a

universal understanding by all those participating. The survey provided a list of various

wellness and personal health activities that participants engaged in before and after Hurricane

Sandy. Although they were stated as self-care/ wellness and personal health activities, the list

was actually comprised of adaptive coping methods. The list included problem-focused coping

methods, such as adult education classes, organizing and removing clutter and time management

to name a few. Emotion-focused coping methods were present as well, such as quality

family/partner time, psychotherapy and meditation. Maladaptive coping methods were not

intentionally included, however, certain choices such as shopping, travel/vacation and turning off

all electronic communications could be used as either adaptive or maladaptive depending on the

individual. The amount of self-care activities and hours spent each week before and after

Hurricane Sandy were used instead of recording maladaptive coping methods. Rather than

looking at the harmful and/or hindering ways in which teachers coped, the amount of time spent

each week and number of self-care activities reflected if the participant was adequately coping.

Barriers in Self-Care

       Without explicitly asking participants in the study what their maladaptive coping

methods were, the study looked at the obstacles that stood in the way of devoting more time each

week to self-care. These obstacles, also referred as to as barriers, included both internal beliefs

and thoughts as well as external environmental factors. Examples of personal beliefs that served

as barriers were low self-esteem and overwhelming thoughts. External environmental factors

include family obligations and work requirements. Participants were also able to submit any

obstacles they faced in an open-response choice. Assessing both internal and external barriers in

self-care also shows if the individual's own personal beliefs are predominately responsible or if

it's out of the scope of control. These barriers could also be considered when assessing why an

individual reported certain levels of emotion-focused or problem-focused coping. The

combination of number and frequency of self-care activities and barriers served to show if

teachers were able to cope positively or negatively with Hurricane Sandy.

Teachers' Meaning Making Methods

The survey did not directly ask teachers what meaning making methods they used. The term "meaning making" would require an operational definition that would need to be universally understood by all participants in the study. Instead, meaning making methods were included in the self-care practices for participants to choose from; psychotherapy, journaling and/or spiritual and religious activities. These methods were part of the original survey which was designed for another purpose and needed to remain identical in the second survey. Out of all the self-care methods, these three were chosen because they reflect the definition of Meaning Making as discussed earlier in this paper. Meaning Making was measured using the number of reported cases of each of the three activities after Hurricane Sandy. However, comparing the reported number of cases of each individual both before and after Hurricane Sandy illustrated how the event of Hurricane Sandy may have caused the introduction or removal of meaning making methods.

Comparing Short-Term and Long-Term Trends

The current study used two almost identical surveys to gather the shorter-term and longer-term coping and meaning making practices of teachers. The original survey was conducted in May 2014, nearly a year and a half after Hurricane Sandy, and represented the shorter-term survey group. In September 2017, the same survey was sent out to gather the longer-term practices of teachers. The same participants of the original survey group were not used again in the long-term survey group which could have possibly skewed the results of the study as discussed in the limitations section of this paper. Despite this disparity, requesting

participants to report their practices before and after Hurricane Sandy made it possible to study the short-term and long-term trends of teachers in general.

Procedure

    Researchers used either email or Facebook to contact participants. Participants were sent a link to the survey, study purpose, instructions on how to complete the survey and faculty researcher contact information. The survey was open only to individuals that had the link. Participants were requested to fill out the entire survey before submitting it, but incomplete surveys were still accepted. Participants were informed of the anonymity of the survey and confidentiality of their answers. Participants were also informed that their submission of answers would suffice as their consent to be a part of the study. The first survey was conducted in May 2014 and had a total of six questions. As reported by SurveyMonkey, participants of the first survey took on average four minutes to complete it. All responses were gathered a week after the survey was sent out, used for purpose presentation to these teachers and archived. The second survey was sent out in September 2017 and was left open for nearly one month before results were gathered for analyses. As reported by SurveyMonkey, the second survey took on average three minutes to be completed. Once both surveys were closed, individual responses of participants were manually entered into SPSS, a statistic software. Independent T-Tests were performed to test the statistical significance of time elapsed after Hurricane Sandy (Short-Term and Long-Term) on either Number of Barriers, Hours of Teacher Self-Care and Number of Meaning Making Methods. Data trends of the survey responses were examined.

Results

  The present study was designed to identify the ways in which teachers affected by Hurricane Sandy were able to successfully recover. These methods could provide important knowledge on teachers' coping and meaning making methods that could lead to the design of a model for teacher recovery from natural disasters. It was later decided that examining the lasting coping and meaning making methods of teachers in the five years in comparison to one and a half years after Hurricane Sandy would produce helpful information on effective, long-term recovery methods.

  Three hypotheses were created to be tested when analyzing survey responses of the short-term and long-term studies. One of these hypotheses was, (1) Teachers that participated in the long-term survey five years after Hurricane Sandy were better able to utilize more coping methods than teachers that belonged to the short-term survey a year and a half after Hurricane Sandy during the time elapsed after the hurricane. Another hypothesis to be tested was (2) Teachers in the long-term survey would be more equipped to employ coping methods after Hurricane Sandy than teachers in the short-term survey. The third hypothesis to be tested was (3) Teachers that participated in the long-term survey would report a higher average number of meaning making methods used after Hurricane Sandy than the teachers in the short-term survey. The ways in which these hypotheses were tested are explained in greater detail in the following section.

Teachers' Coping

The current study aimed to test the hypothesis that teachers in the long-term survey were able to use more coping methods than teachers that participated in the short-term survey. For this hypothesis to be supported, it was predicted that long-term survey responses would show a greater number of average reported hours of teacher self-care after Hurricane Sandy than the short-term survey responses. An Independent Samples T-Test was performed to assess if there was a significant difference in average reported number of hours of teacher self-care after Hurricane Sandy between the short-term and long-term studies.

The most effective way of testing this specific hypothesis was with an Independent Samples T-Test because the test evaluates if the means for two independent or unrelated groups are significantly different from each other. Power analysis determined the p-value ($p < .05$) to reduce the likelihood of Type 1 and Type 2 errors.

There was not a significant difference in the means for the short-term survey group ($M = 3.67$, $SD = 1.66$) and long-term survey group ($M = 3.20$, $SD = 1.65$); $t(52) = 1.031$, $p = .307$.

Table 1
Survey Group Differences on Number of Reported Hours of Self-Care After Hurricane Sandy ($N_{short-term} = 24$, $N_{long-term} = 30$)

	Survey Group	N	M	SD	SEM	t	df	p
Hours of Self-Care After Sandy	Short-Term	24	3.67	1.66	0.34	1.031	52	0.307
	Long-Term	30	3.20	1.65	0.30			

Continuing this specific hypothesis testing, it was decided that the average number of reported self-care practices before Hurricane Sandy should be studied as well. Another

Independent Samples T-Test was conducted to see the results of reported number of hours of

teacher self-care before Hurricane Sandy between the long-term and short-term studies which

also resulted without any statistical significance.

Table 2
Survey Group Differences on Number of Reported Hours of Self-Care Before Hurricane Sandy ($N_{short\text{-}term} = 25$, $N_{long\text{-}term} = 39$)

	Survey Group	*N*	*M*	*SD*	*SEM*	*t*	*df*	*p*
Hours of Self-Care Before Sandy	Short-Term	25	3.32	1.89	0.38	0.714	62	0.478
	Long-Term	39	2.92	2.33	0.37			

There was not a significant difference in means for the short-term survey group (M =

3.32, SD = 1.89) and long-term survey group (M = 2.92, SD = 1.89); t(62) = 0.714, p = .478.

However, the means of number of hours of self-care before Hurricane Sandy ($M_{both} = 3.12$) in

both studies were slightly less than those after Hurricane Sandy ($M_{both} = 3.435$).

To further examine this finding, a Paired Samples T-Test was performed to see the

overall difference in average reported hours of teacher self-care before and after Hurricane

Sandy in participants regardless of which survey the participant belonged to. This specific

statistical testing was chosen as a post hoc analysis to test if the means of before and after

Hurricane Sandy self-care were statistically significant. The Paired Samples T-Test showed no

significant findings because both averages of reported hours of teacher self-care before and after

Hurricane Sandy were equal. Identical means signifies that participants of both studies

combined were generally reporting the same amount of reported hours of self-care for before and

after Hurricane Sandy.

Table 3
Overall Survey Differences on Number of Reported Hours of Self-Care Before and After Hurricane Sandy ($N_{overall} = 54$)

	Hours of Self-Care	*M*	*N*	*SD*	*SEM*	*t*	*df*	*p*
Pair 1	Before Sandy	3.44	54	2.14	0.29	0	53	1.00
	After Sandy	3.44	54	1.74	0.24			

There was not a significant difference in means of hours of self-care before Hurricane

Sandy (M = 3.44, SD = 2.14) and after Hurricane Sandy (M = 3.44, SD = 1.74); t(53) = 0, p =

1.00.

Since the Paired Samples T-Test was conducted on the combination of both the short-

term and long-term studies, the new direction for statistical analyses was aimed towards looking

at the studies separately for this hypothesis's post hoc probes. A Paired Samples T-Test was

conducted on just the short-term survey to look for differences in self-care before and after

Hurricane Sandy.

Table 4
Short-Term Survey Differences on Number of Reported Hours of Self-Care Before and After Hurricane Sandy ($N_{short-term} = 24$)

	Hours of Self-Care	*M*	*N*	*SD*	*SEM*	*t*	*df*	*p*
Pair 1	Before Sandy	3.46	24	1.79	0.37	-1.735	23	0.096
	After Sandy	3.67	24	1.66	0.34			

There was not a significant difference in means of hours of self-care before (M = 3.46, SD =

1.79) and after Hurricane Sandy (M = 3.67, SD = 1.66) for the short-term survey group; t(23) = -

1.735, p = 0.96.

Another Paired Samples T-Test used for post hoc investigation was used to look at just

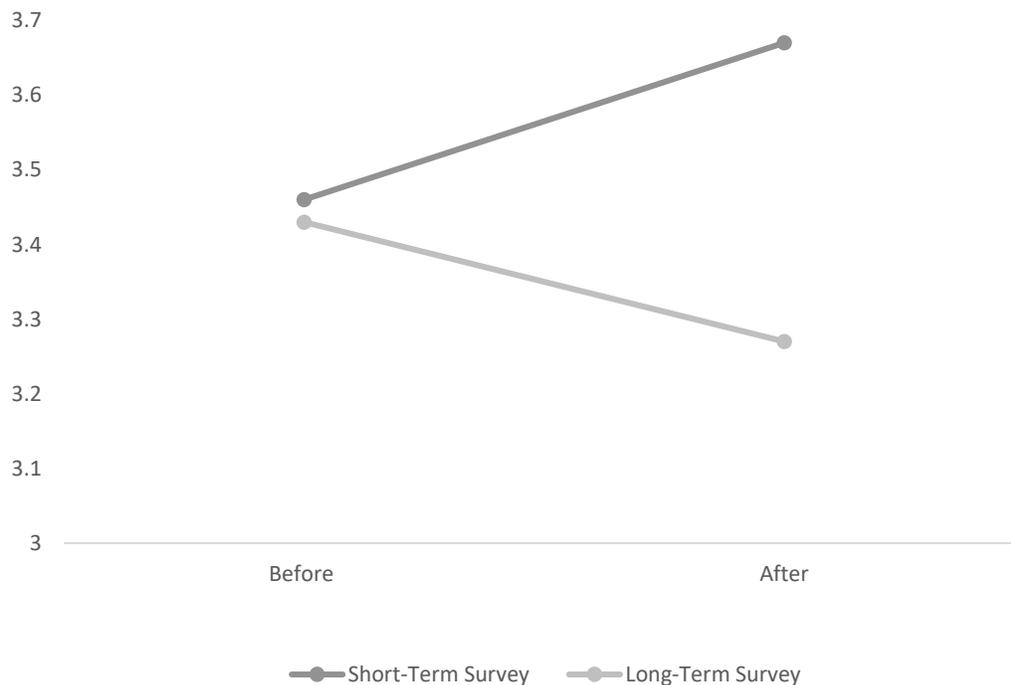the long-term survey's differences in self-care before and after Hurricane Sandy.

Table 5
Long-Term Survey Differences on Number of Reported Hours of Self-Care Before and After Hurricane Sandy (N$_{long-term}$ = 30)

	Hours of Self-Care	*M*	*N*	*SD*	*SEM*	*t*	*df*	*p*
Pair 1	Before Sandy	3.43	30	2.42	0.44	0.37	29	0.714
	After Sandy	3.27	30	1.82	0.33			

There was not a significant difference in means of hours of self-care before (M = 3.43,

SD = 2.42) and after Hurricane Sandy (M = 3.27, SD = 1.82) for the long-term survey group;

t(29) = 0.37, p = 0.714.

Although the findings of both tests were not statistically significant, the p-value was

much lower in the short-term survey, p = .096, than in the long-term survey, p = .714. Although

insignificant, a trend occurred in both the short-term and long-term surveys. On average,

participants in the short-term survey reported a slightly higher number of reported hours of self-

care after Hurricane Sandy ($M_{\text{short-term after}} = 3.67$, $SD_{\text{short-term after}} = 1.66$) than before the hurricane

($M_{\text{short-term before}} = 3.46$, $SD_{\text{short-term before}} = 1.79$). Participants in the long-term survey on average

reported a slightly lower number of hours of self-care after ($M_{\text{long-term after}} = 3.27$, $SD_{\text{long-term after}} = 1.82$) than before ($M_{\text{long-term before}} = 3.43$, $SD_{\text{long-term before}} = 2.42$) Hurricane Sandy. These findings

suggest that results may have been statistically significant with more precise reports of number

of hours of teacher self-care and is discussed in greater detail in the limitations section of this

paper. Figure 1 expresses this specific trend.

Figure 1
*Survey Group Differences on Number of Reported Hours of Self-Care
Before and After Hurricane Sandy*

Teachers' Barriers

The second hypothesis to be tested was that teachers in the long-term survey would have

greater ability to cope with Hurricane Sandy than the teachers that participated in the short-term

survey. It was assumed that few reported barriers in devoting more time to self-care each week

would signify a greater ability to cope with Hurricane Sandy. For this hypothesis to be

supported, the average number of reported barriers was predicted to be lower in the long-term

survey than the short-term survey. An Independent Samples T-Test was conducted and resulted

with no statistically significant difference in means of the short-term survey (M = 5.08, SD =

1.41) and long-term survey (M = 4.85, SD = 1.87) in number of barriers of teacher self-care;

t(62) = 0.534, p = .572.

Table 5
Survey Group Differences on Number of Reported Barriers of Self-Care After Hurricane Sandy
$(N_{short-term} = 25, N_{long-term} = 39)$

	Survey Group	*N*	*M*	*SD*	*SEM*	*t*	*df*	*p*
Number of Barriers	Short-Term	25	5.08	1.41	0.28	0.534	62	0.572
	Long-Term	39	4.85	1.87	0.30			

Teachers' Meaning Making

The last hypothesis belonging to this study predicted that teachers in the long-term survey were able to make more meaning following Hurricane Sandy more so than the teachers belonging to the short-term survey. To test this hypothesis, the number of reported meaning making methods, as selected from the self-care survey questions, were examined. For this hypothesis to be proven true, the average number of reported meaning making methods would be greater in the long-term survey than the short-term survey. To test this, an Independent Samples T-Test was performed and found no significant difference means between the means of the short-term survey ($M = 0.40$, $SD = 0.71$) and long-term survey ($M = .36$, $SD = 0.54$) ; $t(62) = 0.263$, $p = .793$.

Table 6
Survey Differences on Number of Meaning Making Methods After Hurricane Sandy ($N_{short-term} = 25$, $N_{long-term} = 39$)

	Survey Group	N	M	SD	SEM	t	df	p
# of Meaning Making Methods	Short-Term	25	0.40	0.71	0.14	0.263	62	0.793
	Long-Term	39	0.36	0.54	0.09			

Discussion

The current study was designed to recognize and differentiate the ways in which teachers were able to successfully cope and make meaning with the effects of Hurricane Sandy. There is a lacking of knowledge and research on how teachers react to natural disaster, specifically hurricanes. Identifying helpful methods in which teachers were able to recover can supply important information that can further advance research and adds onto the knowledge of how

teachers can manage and recover from natural disaster related distress. Examining these specific methods can also lead to the design of a model for teachers recovery from natural disasters that can be implemented around the world in multiple settings. Equipping teachers with a recovery model can facilitate positive post traumatic growth in teachers. If these teachers can cope and make meaning in their own personal lives, they will be able to model these skills for their students to learn. Therefore, the addition of these programs in schools for teachers will not only benefit teachers but also students.

The present study also aimed to examine and compare the short-term and long-term coping and meaning making methods used by teachers to promote their post traumatic growth from a natural disaster. There is little information available the lasting recovery strategies of teachers. Findings from the current study suggest that there are few differences in amount of used coping and meaning making practices of teachers after Hurricane Sandy. As seen through the high amount of barriers that limit time spent on self care, this study supports the idea that teachers require support in their post-disaster recovery initially after the event and many years following. Findings of this study that showed low numbers of hours of self care and self care activities are caused by a high number of barriers. This study can be used to show the need for support for teachers in balancing their work lives with their personal lives. Teachers should be supplied with resources to manage their psychological distress, even if it is not affecting their classroom directly.

Teachers Coping

Findings from this study showed that time elapsed after Hurricane Sandy was not an accurate predictor of teachers' coping. Regardless if a teacher participated in either the short-term study or the long-term study, the average amount of number of reported hours devoted to self-care was virtually the same, between three to six hours each week. These findings are not unusual as supported by past research on the roles teachers assume after a disaster occurs. After a disaster, teachers are often faced with the burden of returning to their classrooms with the responsibility of educating and tending to distressed students despite their own personal stressors. Assuming that a teacher is working full-time, at least one third of their 24 hour day is spent putting their personal stressors and emotions to the side to fulfill their work responsibilities.

A study conducted on teachers recovering from a disaster showed teachers experiencing role overload from the amount of responsibilities of teaching and proving disaster relief.   The role overload teachers experience can lead to increased levels of burnout and emotional exhaustion due to the lack of time available. Burnout and emotional exhaustion can affect a teacher's performance in providing education for their students as well as being emotionally supportive of students.

Research conducted on long-term effects of trauma on teachers found if these trauma related distress symptoms go untreated, the likelihood of improvement in post-traumatic growth decreases with time. Findings from this current study support this past research as teachers in the short-term and long-term survey groups both reported on average between three to six hours devoted to self-care practices each week. Lack of post traumatic growth can affect a teacher's ability to teach not only initially after a traumatic event, but in the many years to come. The

effects of untreated traumatic psychological distresses can persist for the entire duration of a teacher's career, affecting students that did not experience the disaster themselves. These students may then be unable to develop proper coping and meaning making skills, creating unhelpful coping methods.

Teachers' Barriers

The results of this study were contrary to the hypothesis that teachers in the long-term survey group would report less barriers than teachers that participated in the short-term survey group. Time elapsed after Hurricane Sandy was not an accurate predictor in the number of reported barriers in devoting more time to self-care after Hurricane Sandy. However, the findings of this study did show that teachers still face obstacles in devoting more time to self-care activities. With these findings, it can be suggested that teachers require education on both problem-focused and emotion-focused coping methods that can assist teachers in mediating or resolving their stressors. It is important that teachers know when returning to the classroom after a natural disaster that their own successful stress management can be used to assist their students also experiencing stress.

Teachers' Meaning Making

The current study's results showed that teachers were rarely using the three meaning making methods selected. These findings in number of meaning making methods, number of barriers and amount of time devoted to self-care align with past research on post disaster recovery. Survivors of natural disasters that were able to find meaning in their disaster experiences were able to cope despite the obstacles in their way (Park, 2016). Findings of this

study show that teachers reported little hours devoted to self-care, multiple barriers and little to

no meaning making methods used.

Study Limitations

      This study has a number of limitations. Sampling an entirely new group introduced a

wide variety of possible extraneous variables that could have affected participants' survey

responses. This study design is known as a "between-subjects design", which means that two

different populations were subjected to two different independent variables. The independent

variable in this study was time elapsed after Hurricane Sandy. For one, a longitudinal study

following the same group of teachers that participated in the short-term survey (N = 25)

conducted in May 2014 to survey again instead of selecting an entirely new long-term survey

group (N = 39) would have been a more effective way of examining the lasting coping and

meaning making practices of teachers affected by Hurricane Sandy. A study that uses the same

population exposed to different variables is known as a "within-subjects design". Another

limitation associated with the samples surveyed was the varying grade levels taught by teachers

and type of institution. The workload of teachers is not uniform throughout all grade levels

which could lead to a variance in job demands/requirements that can affect amount of hours

devoted to self-care and barriers in devoting more time to self-care. The study may have been

more affective in examining the barriers to devoting more time to teacher self-care activities and

practices if a specific grade level taught by teachers was selected (e.g. first grade teachers). Type

of institution taught at can also affect the amount of hours devoted to self-care and barriers to

devoting more time to self-care because different educational institutions have varying school

population numbers, ages and other demographic characteristics. For example, a first grade

teacher at a public school with a class number of 28 students may report differently than a first grade teacher at a riveted school with a class size of 12 students. Aside from sample populations surveyed, there were a number of limitations in the survey design itself.

The survey design alone was flawed in many ways. One of the limitations of the survey was that it did not directly ask teachers about their coping and meaning making methods. The survey wanted to remove any discrepancies that could arise from having to operationally define both coping and meaning making. This phenomena is called "priming", and occurs when exposure to one stimulus influences a response to a subsequent stimulus. In this particular instance, exposure to the terms "coping" and "meaning making" could have had effects on the participant's attitude towards answering the survey. In this pursuit, the study indirectly tested these measures by looking at teacher self-care. To assess the coping of teachers affected by Hurricane Sandy, the study measured amount of hours each week devoted to self-care to see if teachers were effectively implementing coping strategies into their weekly lives. This measure was flawed in that the self-care activities were subjective, not every participant necessarily used them for the purpose of coping with the distress they felt from Hurricane Sandy. Number of barriers to devoting more time to self-care was used to assess what obstacles teachers still faced after Hurricane Sandy that inhibited them from implementing more coping strategies. Similar to the self-care methods, these barriers were subjective and could have affected the recovery of teachers in different ways. These barriers included external factors of a teacher's environment, such as community obligations and internal factors, such as low self-esteem. Difference in type of barrier could not assess if a teacher was unsuccessfully coping with Hurricane Sandy, or

facing increased workload. Additionally, the survey lacked a means of measuring the degree to which each barrier interfered participants from devoting more time to self care activities.

Limitations existed in the assessment of meaning making methods of teachers. The survey avoided directly asking participants about the ways in which they were able to make meaning with Hurricane Sandy. Instead, this study looked at three specific self-care activities that are considered meaning making methods. This study would have been more effective in measuring meaning making methods if it had directly asked participants how they were able to make meaning from Hurricane Sandy. Also, these specific meaning making methods used were subjective and flawed in that a teacher may have sought therapy or counseling not considered to be psychotherapy and the spiritual & religious practices of teachers may have already existed before Hurricane Sandy.

Other limitations in survey arose in the way the questions were asked. For one, the survey introduced the issue of memory and recall errors when asking participants to report on their self-care practices before Hurricane Sandy. These reports relied solely on the memory of participants that could lead to inaccuracies in report. The survey asked participant to report the amount of time devoted to self-care activities each week which also created recall issues. Perhaps the survey would have been more effective in assessing these measures if instead of reporting on weekly scale, participants would report their daily self-care practices.

In addition, the survey did not require that all sections of a question be completed for the survey to be submitted. This led to incomplete survey responses that needed to be removed in the statistical analysis, thus, fewer participants could be included in the study.

Another limitation present was the experience of teachers affected by Hurricane Sandy. The survey did not specifically ask teachers what experiences they had with Hurricane Sandy. The hurricane caused a greater destruction of neighborhoods closer to the coast rather than areas further inland. Participants could have all lost electricity, however, the blackouts could have lasted a few days for one participant and several months for another.   There was no way included in the survey that assessed the impact of Hurricane Sandy on teachers. This created a major issue as some participants may have experienced a large influence in their lives from the hurricane, while others did not. In addition, personal adjustment after Hurricane Sandy was not asked of participants either. Had the survey requested the teachers' adjustment, maybe receptivity would had been greater and produced significant findings in the results.

Many of these limitations could have been eliminated if the survey was designed specifically to examine the coping and meaning making practices of teachers affected by Hurricane Sandy. However, this study used data collected from a previously conducted survey that had a different purpose. With the goal of comparing the data from the original survey to data belonging to a more recent survey, there would need to be the least amount of inconsistencies. If the two surveys did not match up almost entirely, new variables would be introduced as well as interaction effects. Therefore with the introduction of these fallacies, the data from the most recent survey would be unusable for the purpose of be compared to the original survey. Perhaps, if this study had focused only on the long-term, most recently surveyed group, participants could have been directly asked how Hurricane Sandy affected their lives throughout the subsequent years. Although heavily flawed, this study can be used to direct research in the response and recovery of teachers affected by natural disaster.

Directions for Future Research

In studying the ways in which teachers cope and make meaning with natural disaster, it would be beneficial to study the effects of grade level taught and type of institution taught. Do job obligations of varying grade levels affect the demands of teachers, thus affecting their recovery from a natural disaster? In addition, it would be interesting to look at the affects that teaching experience have on a teacher's coping and meaning making methods used to recover from a natural disaster. Would a teacher with over 25 years of teaching experience use different coping and meaning making methods than a teacher with a year of teaching experience? Testing the effects of varying demographical characteristics of teachers on the coping and meaning making methods they used can produce a wealth of knowledge to further advance the knowledge on teacher recovery from a natural disaster.

Another direction of future research can be to design a model for teachers to utilize to promote their post-disaster recovery. The effects on teachers' post traumatic growth could be studied with the implementation of varying models. A study like this can better develop a universal method that can be slightly modified and used by teachers across the world in different settings.

Final Remarks

Given the findings of this study, it can be concluded that teachers require assistance in their recovery from a natural disaster. Teachers should be equipped with training on how to identify and utilize coping methods to mediate the disaster-related distress they feel. Teaches

should also receive education on how they can make meaning with the consequences of a natural disaster to promote their post traumatic growth and move forward. Lastly, teachers require instruction on how to implement coping and meaning making practices in their own lives which they can use in their classrooms to help the recovery of their students. A program tailored to assist teachers with their added role of disaster mental health worker for their students can provide teachers with the necessary tools for the successful recovery of their students. Insight provided from the current study combined with future research can create a better understanding of teacher recovery from natural disasters.

Acknowledgements

Works Cited

1. Afifi, W. A., Felix, E. D., & Afifi, T. D. (2012). The impact of uncertainty and communal coping on mental health following natural disasters. *Anxiety, Stress & Coping: An International Journal*, *25*(3), 329-347. doi:10.1080/10615806.2011.603048

2. American Red Cross Missions and Values. (2017). Retrieved from http://www.redcross.org/about-us/who-we-are/mission-and-values

3. American Red Cross Shelter Fundamentals. (2017). Retrieved from http://ready.alaska.gov/Preparedness/Conferences/Materials/Shelter%20Fundamentals 02015%20Preparedness%20Conference.pdf

4. Andre-Dupuy, M. G. (2017). Haitian teachers' perceptions of self-efficacy following the January 2010 earthquake. *Dissertation Abstracts International Section A*, *77*,

5. Berger, R., Abu-Raiya, H., & Benatov, J. (2016). Reducing primary and secondary traumatic stress symptoms among educators by training them to deliver a resiliency program (ERASE-Stress) following the Christchurch earthquake in New Zealand. *American Journal Of Orthopsychiatry*, *86*(2), 236-251. doi:10.1037/ort0000153

6. Binder, S. B., Baker, C. K., & Barile, J. P. (2015). Rebuild or relocate? Resilience and postdisaster decision-making after Hurricane Sandy. *American Journal Of Community Psychology*, *56*(1-2), 180-196. doi:10.1007/s10464-015-9727-x

7. Brennen, D. P., Barnes-Eley, M., & Poirier, M. P. (2014). Disaster preparedness in schools. In I. L. Rubin, J. Merrick, I. L. Rubin, J. Merrick (Eds.) , *Environmental health: Home, school and community* (pp. 79-93). Hauppauge, NY, US: Nova Biomedical Books.

8. Brown, R. (2017). Teacher self-efficacy, dispositional optimism, resiliency, and student behavior management in the high school classroom in Puerto Rico. *Dissertation Abstracts International Section A*, *78*,

9. Brophy, C. M., Maras, M. A., & Wang, Z. (2015). Preparing for school crises: Administrator perceptions on supports for teachers. *Advances In School Mental Health Promotion*, *8*(2), 71-86. doi:10.1080/1754730X.2015.1009131

10. Caramanica, K., Brackbill, R. M., Stellman, S. D., & Farfel, M. R. (2015). Posttraumatic Stress Disorder after Hurricane Sandy among Persons Exposed to the 9/11 Disaster. *International Journal of Emergency Mental Health*, 17, 356-362.

11. Chang, M. (2010). Teacher emotion management in the classroom: Appraisal, regulation, and coping. *Dissertation Abstracts International Section A*, *70*, 3785.

12. Chesman, H. A. (2017). Novice and veteran teachers' perceptions of crisis management training concerning school fights. *Dissertation Abstracts International Section A*, *77*,

13. Currier, J. M., Holland, J. M., Rojas-Flores, L., Herrera, S., & Foy, D. (2015). Morally injurious experiences and meaning in Salvadorian teachers exposed to violence. *Psychological Trauma: Theory, Research, Practice, And Policy*, *7*(1), 24-33. doi:10.1037/a0034092

14. Ehring, Thomas, et al. "Prevalence and predictors of posttraumatic stress disorder, anxiety, depression, and burnout in Pakistani earthquake recovery workers." *Psychiatry Research*, vol.185, no. 1-2, 2011, p. 161+. Psychology Collection,

15. Folkman, S. (2011). Stress, health, and coping: Synthesis, commentary, and future directions. In S. Folkman, S. Folkman (Eds.) , *The Oxford handbook of stress, health, and coping* (pp. 453-462). New York, NY, US: Oxford University Press.

16. Fu, C., & Underwood, C. (2015). A meta-review of school-based disaster interventions for child and adolescent survivors. *Journal Of Child And Adolescent Mental Health*, *27*(3), 161 171. doi:10.2989/17280583.2015.1117978

17. Gil-Rivas, V., & Kilmer, R. P. (2016). Building community capacity and fostering disaster resilience. *Journal Of Clinical Psychology*, 72(12), 1318-1332. doi:10.1002/jclp.22281

18. Goldberg, D. R. (2013). Museum-based teacher education: Teacher meaning-making at a Jewish heritage museum. *Dissertation Abstracts International Section A*, *73*,

19. Goodwin, R., Palgi, Y., Hamama-Raz, Y., & Ben-Ezra, M. (2013). In the eye of the storm or the bullseye of the media: Social media use during Hurricane Sandy as a predictor of post traumatic stress. *Journal Of Psychiatric Research*, *47*(8), 1099-1100. doi:10.1016/j.jpsychires.2013.04.006

20. Graham, R. A., Osofsky, J. D., Osofsky, H. J., & Hansel, T. C. (2017). School based post disaster mental health services: Decreased trauma symptoms in youth with multiple traumas. *Advances In School Mental Health Promotion*, *10*(3), 161-175. doi:10.1080/1754730X.2017.1311798

21. Groman, J. L. (2016). From calling to crisis: The growth process of teachers through crisis-like incidents. *Dissertation Abstracts International*, *77*,

22. Hamama-Raz, Y., Palgi, Y., Shrira, A., Goodwin, R., Kaniasty, K., & Ben-Ezra, M. (2015). Gender differences in psychological reactions to Hurricane Sandy among New York Metropolitan Area residents. *Psychiatric Quarterly*, *86*(2), 285-296. doi:10.1007/s11126 014-9333-3

23. Henderson, T. L., & Hildreth, G. (2011). Experiences in the face of disasters: Children, teachers, older adults, and families. *Journal Of Family Issues*, *32*(10), 1277-1284. doi:10.1177/0192513X11412488

24. Jaffe, Anna & DiLillo, David & Hoffman, Lesa & Haikalis, Michelle & Dykstra, Rita. (2015). Does it Hurt to Ask? A Meta-Analysis of Participant Reactions to Trauma Research. Clinical Psychology Review. 40. . 10.1016/j.cpr.2015.05.004.

25. Jeon, L., Hur, E., & Buettner, C. K. (2016). Child-care chaos and teachers' responsiveness: The indirect associations through teachers' emotion regulation and coping. *Journal Of School Psychology*, *59*83-96. doi:10.1016/j.jsp.2016.09.006

26. Kahn, G. S. (2014). Bereavement in the classroom: How teachers respond to grief at school. *Dissertation Abstracts International Section A*, *74*,

27. Kottler, J. A., & Chen, D. D. (2011). *Stress management and prevention: Applications to daily life., 2nd ed*. New York, NY, US: Routledge/Taylor & Francis Group.

28. Kuntz, J. C., Näswall, K., & Bockett, A. (2013). Keep calm and carry on? An investigation ofteacher burnout in a post-disaster context. *New Zealand Journal Of Psychology*, 42(2), 57-68.

29. 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. doi:10.1017/jgc.2016.17

30. Long, D., & Wong, Y.-L. R. (2012). Time bound: The timescape of secondary trauma of the surviving teachers of the Wenchuan Earthquake. *American Journal of Orthopsychiatry, 82*(2), 241-250

31. Lowe, S. R., Sampson, L., Gruebner, O., & Galea, S. (2016). Mental health service need and use in the aftermath of Hurricane Sandy: Findings in a population-based sample of New York City residents. *Community Mental Health Journal*, *52*(1), 25-31. doi:10.1007/s10597 015-9947-4

32. Lowe, S. R., Sampson, L., Gruebner, O., & Galea, S. (2016). Community unemployment and disaster-related stressors shape risk for posttraumatic stress in the longer-term aftermath of hurricane sandy. *Journal Of Traumatic Stress*, *29*(5), 440-447. doi:10.1002/jts.22126

33. Mahoney, K. R. (2017). Making meaning with multimedia in secondary English language arts: A multiple case study. *Dissertation Abstracts International Section A*, *77*,

34. Makowski, E. M. (2015). From challenging behaviors to caring classroom communities: Reimagining the teacher's role in classroom management. *Dissertation Abstracts International Section A*, *76*,

35. Miller, P. A., Roberts, N. A., Zamora, A. D., Weber, D. J., Burleson, M. H., Robles, E., & Tinsley, B. J. (2012). Families coping with natural disasters: Lessons from wildfires and tornados. *Qualitative Research In Psychology*, *9*(4), 314-336. doi:10.1080/14780887.2010.500358

36. Most expensive natural disasters in the United States as of September 2017, (2017). Retrieved from https://www.statista.com/statistics/744015/most-expensive-natural-disasters-usa/

37. M. O'Toole, Veronica & D. Friesen, Myron. (2016). Teachers as first responders in tragedy: The role of emotion in teacher adjustment eighteen months post-earthquake. Teaching and Teacher Education. 59. 57-67. 10.1016/j.tate.2016.05.012.

38. Mutch, C. (2016). Schools as communities and for communities: Learning from the 2010–2011 New Zealand earthquakes. *The School Community Journal*, *26*(1), 115-138.

39. Neria, Y., & Shultz, J. M. (2012). Mental health effects of Hurricane Sandy: Characteristics, potential aftermath, and response. *JAMA: Journal Of The American Medical Association*, *308*(24), 2571-2572. doi:10.1001/jama.2012.110700

40. Newness, Kerry. (2017). Stress and Coping Style: An Extension to the Transactional Cognitive Appraisal Model. .

41. North, C. S., & Pfefferbaum, B. (2013). Mental health response to community disasters: A systematic review. *JAMA: Journal Of The American Medical Association*, *310*(5), 507 518. doi:10.1001/jama.2013.107799

42. Pantin, H. M., Schwartz, S. J., Prado, G., Feaster, D. J., & Szapocznik, J. (2003). Posttraumatic stress disorder symptoms in Hispanic immigrants after the September 11th attacks: Severity and relationship to previous traumatic exposure. *Hispanic Journal Of Behavioral Sciences*, *25*(1), 56-72. doi:10.1177/0739986303251695

43. Park, C. L. (2016). Meaning making in the context of disasters. *Journal Of Clinical Psychology*, 72(12), 1234-1246. doi:10.1002/jclp.22270

44. Park, Crystal & Folkman, Susan. (1997). Meaning in the Context of Stress and Coping. *Review of General Psychology*. 1. 115-144. 10.1037/1089-2680.1.2.115.

45. Perrin, M. A., DiGrande, L., Wheeler, K., Thorpe, L., & al, e. (2007). Differences in PTSD prevalence and associated risk factors among world trade center disaster rescue and recovery workers. *The American Journal of Psychiatry*, 164(9), 1385-94.

46. Pizzi, M. A. (2015). Hurricane Sandy, disaster preparedness, and the recovery model. *American Journal Of Occupational Therapy*, *69*(4), p1-p10.

47. Pow, A. M., & Cashwell, C. S. (2017). Posttraumatic stress disorder and emotion-focused coping among disaster mental health counselors. *Journal Of Counseling & Development*, *95*(3), 322-331. doi:10.1002/jcad.12146

48. Powell, T., & Thompson, S. J. (2016). Enhancing coping and supporting protective factors after a disaster: Findings from a quasi-experimental study. *Research On Social Work Practice*, 26(5), 539-549. doi:10.1177/1049731514559422

49. Prost, S. G., Lemieux, C. M., & Ai, A. L. (2016). Social work students in the aftermath of Hurricanes Katrina and Rita: Correlates of post-disaster substance use as a negative coping mechanism. *Social Work Education*, *35*(7), 825-844. doi:10.1080/02615479.2016.1187720

50. Prati, G., Pietrantoni, L., & Cicognani, E. (2011). Coping strategies and collective efficacy as mediators between stress appraisal and quality of life among rescue workers. *International Journal Of Stress Management*, *18*(2), 181-195. doi:10.1037/a0021298

51. Proulx, T., & Inzlicht, M. (2012). The five "A"s of meaning maintenance: Finding meaning in the theories of sense-making. *Psychological Inquiry, 23*(4), 317-335.

52. Psychological First Aid for Schools (PFA-S), 2017. Retrieved from http://www.nctsn.org/content/psychological-first-aid-schoolspfa

53. Quincer, M. A. (2017). Teacher referral following natural disasters. *Dissertation Abstracts International*, *78*,

54. Rzeszutek, M., Partyka, M., & Gołąb, A. (2015). Temperament traits, social support, and secondary traumatic stress disorder symptoms in a sample of trauma therapists. *Professional Psychology: Research And Practice*, *46*(4), 213-220. doi:10.1037/pro0000024

55. Ruzek, J. I., Polusny, M. A., & Abueg, F. R. (1998). Assessment and treatment of concurrent posttraumatic stress disorder and substance abuse. In V. M. Follette, J. I. Ruzek, F. R. Abueg, V. M. Follette, J. I. Ruzek, F. R. Abueg (Eds.) , *Cognitive-behavioral therapies for trauma* (pp. 226-255). New York, NY, US: Guilford Press.

56. Salkovsky, Merav & Romi, Shlomo & Lewis, Ramon(Rom. (2015). Teachers' coping styles and factors inhibiting teachers' preferred classroom management practice. *Teaching and] Teacher Education*. 48. 56-65. 10.1016/j.tate.2015.01.016.

57. Schepis, T. S., & McCabe, S. E. (2016). Trends in older adult nonmedical prescription drug use prevalence: Results from the 2002–2003 and 2012–2013 National Survey on Drug Use and Health. *Addictive Behaviors*, *60*219-222. doi:10.1016/j.addbeh.2016.04.020

58. Schwartz, M. J. (2007). The modeling of moral character for teachers: Behaviors, characteristics, and dispositions that may be taught. *Journal Of Research In Character Education*, *5*(1), 1-28.

59. See, S. (2013). Rediscovering community—Reflections after Hurricane Sandy. Annals Of Family Medicine, 11(6), 571-573. doi:10.1370/afm.1585

60. Seyle, D. C., Widyatmoko, C. S., & Silver, R. C. (2013). Coping with natural disasters in Y