Perceived Barriers Affecting Extension Agents' Personal Resilience Post-Hurricane

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Abstract
Related disaster stresses such as employee burnout negatively influences effective disaster response. The prevalence of hurricanes and other natural disasters impact Extension agents around the world. This research explored barriers affecting UF/IFAS Extension agents' ability to effectively engage in post-hurricane response. Resilience and burnout literature led to a researcher-developed conceptual model. A basic qualitative research design facilitated face-to-face and telephone interviews with UF/IFAS Extension agents engaged in hurricane-response efforts. Results showed mental and physical stress, performance deficits, and perceived lack of motivation negatively affected agents' ability to engage in post-disaster response. Overall recommendations were to: (a) strengthen communication between Extension administration and county agents, (b) inform agents of ongoing disaster developments to clarify professional disaster expectations, and (c) provide trainings on mental health and coping strategies in disasters. Results of this research suggest this phenomenon should be examined in other Extension systems..

Keywords: barriers, Extension, hurricane, personal resilience, post-disaster response

Introduction

Over the past decade, severe hurricanes and storms frequently affected countries including the United States (U.S.), China, India, and Japan (Center for Research on the Epidemiology of Disasters, 2019). In the U.S., the Extension Disaster Education Network (EDEN) facilitate collaborations among Cooperative Extension Services across all states. EDEN's role is to provide research-based information to reduce the impact of natural disasters and improve Extension services to those affected by natural disasters (EDEN, 2018).

The U.S. state of Florida, surrounded by the Gulf of Mexico and the Atlantic Ocean, is highly vulnerable to hurricanes. Ideally, Extension agents should be prepared to engage in recovery efforts as they are a trusted source of information (Kistler et al., 2006).

In disasters, communities tend to trust local sources for information more than outside sources (Norris et al., 2008). As such, trust developed from long-term collaborations between Extension agents and communities can help promote successful disaster information dissemination (Eighmy et al., 2012). Furthermore, Telg et al. (2008) found UF/IFAS agents who were involved in disaster relief and personally affected by hurricanes were not prepared to deal with clients' needs. Agents reported feeling pulled between balancing personal stress and professional demands. Although this study occurred in Florida, results could inform other Extension systems of effective disaster response strategies.

Like EDEN, Agricultural Extension in South Asia (AESA) is the disaster collaboration network in that region. Aiding affected communities is the primary role of AESA and Extension advisory services. After the 2018 floods in Kerala, India, Extension agents visited farmers to assess crop losses and provided specific advice on regaining soil fertility (AESA, 2019a). However, training support was needed to aid Extension agents when responding to disaster events (AESA, 2019b). In the Caribbean region, hurricanes are often the worst occurring disasters (Ganpat et al., 2018). These small islands are particularly vulnerable to hurricanes given their geographic location and topography (Kirton, 2013). Supporting Extension agents in disaster response is important given the extent of hurricane impacts occurring in these islands (Ganpat et al., 2018).

The stress of dealing with natural disasters can negatively affect responders' abilities to assist effectively in disaster situations (Burnett Jr. & Wahl, 2015). This may result in burnout, which stems from emotional exhaustion and lower levels of personal accomplishment (Maslach & Jackson, 1984). Stress, performance deficits, and perceived lack of motivation and courage to adapt likely hinder the process of improving coping abilities and personal resilience – defined as strategies for coping and problem solving, positive social support networks, and personal well-being (Maddi, 2013).

Burnout among county Extension agents is a gradual process occurring over an extended period resulting from work overload, stress, and lack of self-care (Ensle, 2005; Igodan, 1984). When coping abilities are low, disaster responders may experience burnout in stressful circumstances (Igodan & Newcomb, 1986). Furthermore, job responsibilities in post-disaster response can contribute to additional stress (Ensle, 2005; Telg et al., 2008). Telg et al. (2008) found that disasters affecting Extension agents potentially limit their ability to respond to clients when dealing with personal losses, hardships, and emotional stress.

Minimizing burnout can help responders cope better with disasters and support affected populations. As such, a need exists for robust disaster response efforts to help communities recover from natural disasters (Fath et al., 2018; Kirton, 2013). Factors found to reduce the effects of burnout included age, gender, training, perceived coping abilities, social support, and

self-care (Sprang et al., 2007). The research reported here explored barriers affecting UF/IFAS agents' ability to respond to clients' needs post-hurricane.

Literature Review

Burnout relates to an individual's coping behavior (Fetsch & Kennington, 1997). Individuals have different perspectives when coping with stressful situations as each has their own personality, ideals, and levels of work commitment (Igodan & Newcomb, 1986). Ensle (2005) asserted Extension offers agents flexible work schedules but requires many night and weekend meetings. The position requires a person with a high energy level who is well-organized and a good communicator. However, the rate of Extension employee turnover increases as burnout continues to affect agents' physical and mental health (Ensle, 2005).

Harder et al. (2009) found employee turnover was a challenge facing UF/IFAS Extension. The demands of Extension agents coupled with a lack of retention led to work-life imbalance. Burnout, stress, and frustration resulted from a "do more with less" philosophy (Harder et al., 2009. p. 15). Fetsch and Kennington (1997) found it is increasingly difficult for Extension agents to balance family and work-life given work-related stress, long hours, and resulting symptoms of burnout. Benge et al. (2015) found that reduced job demands, and provision of resources could lessen work-related stress and burnout in agents. In developing countries, poor working conditions often contribute to burnout among Extension agents (Agunga et al., 1997), which likely increases when engaging in disaster response.

Extension agents assume many roles, including educator, counselor, and researcher, while working within county, state, and federal systems (Ensle, 2005). Reporting to various supervisors within these systems is very stressful and possibly accounts for feelings of anxiety and tension (Ensle, 2005). Therefore, fulfilling day-to-day job responsibilities can become more stressful when agents are activated during emergencies and dealing with personal disaster impacts. The flooding crisis in St. George, Utah in 2005 displaced 50 families, and destroyed farmlands, roads, and telecommunication infrastructure (Washburn, 2006). Although the county had an emergency plan in place for earthquakes, it was unprepared for excessive rainfall that led to the overflow of the Santa Clara and Virgin rivers. This unknown danger coupled with delayed responses led to the isolation of one community from the rest of the county. Extension agents were unprepared to deal with the disaster and "unaware of what [their] role should be and how best to assist the county" (Washburn, 2006, Extension and Natural Disasters section, para. 1).

Another flooding crisis occurred in North Dakota in 2009 and affected eight rural counties (Eighmy et al., 2012). Community members sought flood-related educational information and emergency services contact information from the North Dakota State University Extension. However, Extension staff had difficulty in responding to community members due to: (a) limited educational material developed for flood disasters, (b) ambiguity about their role in a flood-related disaster, and (c) confusion about the role of other county and state response agencies (Eighmy et al., 2012).

A critical role of Extension in disaster preparedness and recovery is the coordination of activities (Miller et al., 2006). Klamath Falls, Oregon experienced a community crisis in 2001. Given prolonged periods of drought, farmers in Oregon and California experienced crop losses from water shortages for irrigation (Cartwright et al., 2002). The Klamath County Extension Office responded to the crisis by collaborating with their state's Office of Personnel and Organizational Development (OPOD) to address community needs and possible solutions (Cartwright et al., 2002). The partnership between the local county office and the OPOD resulted
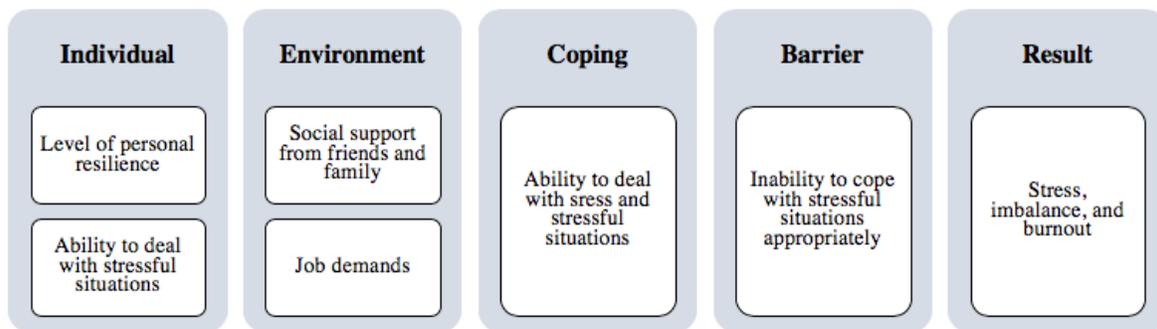
in collective action. Extension's role as a facilitator was important in helping communities recover from the water shortage crisis (Cartwright et al., 2002).

In most county Extension offices in Florida, agents' disaster roles may be twofold – to the county and/or to the state (Murray, 2017). The Dean of UF/IFAS Extension noted that Extension faculty have dual roles with county government and are a part of emergency support functions in disasters (Murray, 2017). As such, they can be activated to provide support to other disaster agencies to deal with specific disaster situations.

Theoretical Framework

Elements of Igodan's and Newcomb's (1986) adapted burnout model (see Figure 1), Maddi's (2002) hardy attitudes and hardy strategies, and the seven dimensions of resilience (Resilience Alliance, 2013) led to a researcher-developed resilience conceptual framework (see Figure 2). The hardy attitudes are commitment (an inclination to connect and be present with others), challenge (desire to continuously learn), and control (striving to gain influence over the stressful situation). The hardy strategies are problem-solving, positive social interactions, and beneficial self-care (Maddi, 2013).

Figure 1
Burnout Model Adapted to Include Personal Resilience

Individual	Environment	Coping	Barrier	Result
Level of personal resilience	Social support from friends and family	Ability to deal with sress and stressful situations	Inability to cope with stressful situations appropriately	Stress, imbalance, and burnout
Ability to deal with stressful situations	Job demands			

Note. Adapted from "Are You Experiencing Burnout" by C. O. Igodan and L. H. Newcomb, 1986, *Journal of Extension, 24*(1), p. 3.

With strength in all three hardy attitudes, an individual possesses the courage and motivation to engage in hardy strategies and coping abilities. The seven dimensions of resilience are flexible social, flexible thoughts, focused, organized, positive self, positive world, and proactive (Resilience Alliance, 2013). The hardy attitudes, hardy strategies, and dimensions of resilience together form the resilience attributes in the resilience conceptual framework. Mental and physical stress, performance deficits, and perceived lack of motivation and courage to adapt lowered personal resilience, as described in the burnout and resilience literature (Igodan & Newcomb, 1986; Maddi, 2013; Unger, 1980). Extension agents' hardy attitudes, hardy strategies, and seven dimensions of resilience influence their overall personal resilience helping to reduce perceived barriers to engagement in hurricane response. This model informed the study's interview guide.

Based on the burnout literature, Figure 2 shows that mental and physical stress leads to job performance deficits resulting in perceived lack of motivation and courage to adapt to the stressful situation. Low levels of perceived motivation and courage to engage in the hardy

strategies likely result in low levels of personal resilience. The potential for Extension agents to engage in effective disaster response comes from strengthening personal resilience by reducing perceived barriers to engagement.

Figure 2
Researcher-developed Resilience Conceptual Framework for Determining Extension Agents'
Level of Personal Resilience in Post-Disaster Response
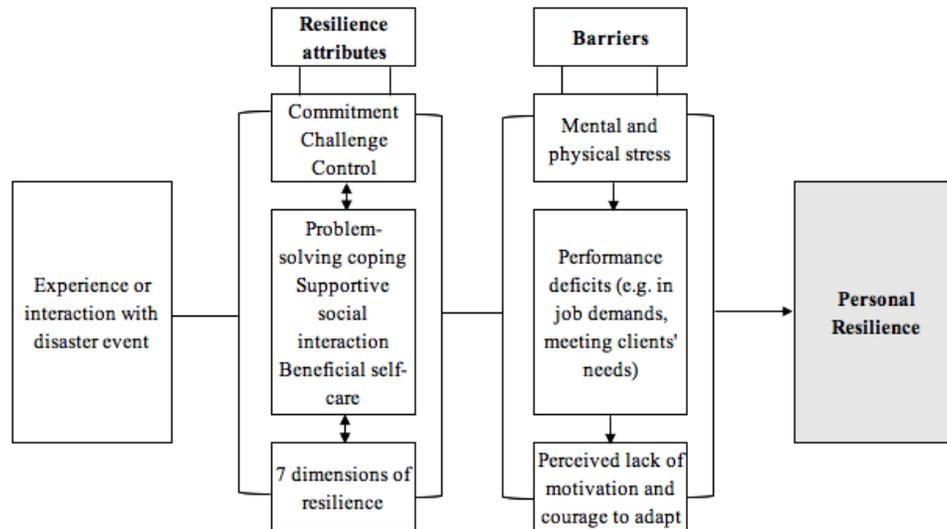
Purpose and Objective

The purpose of this study was to explore difficulties facing Extension agents in post-hurricane response. The specific objective was to describe perceived barriers affecting UF/IFAS Extension agents' ability to respond to clients' needs post-disaster. The researchers theorized the potential to improve Extension agents' coping ability when responding to clients' needs post-disaster.

Methodology

This study used a basic qualitative design to examine: "(a) how people interpret their experiences, (b) how they construct their worlds, and (c) what meaning they attribute to their experiences" (Merriam & Tisdell, 2016, p. 24).

Researcher Reflexivity Statement

Accounting for researcher bias is important when conducting qualitative studies (Merriam & Tisdell, 2016). The lead researcher engaged in data collection and analysis and had no previous experience with Extension or knowledge of agents' roles in disaster relief efforts. The lead researcher used a guide while conducting interviews and professionally engaged with participants. The researcher was knowledgeable of the overall category labels from the second coding analysis process as labels were predetermined from the resilience and coping literature (Maddi, 2002, 2013; Resilience Alliance, 2013). Other members of the research team had extensive experience working with Extension and hurricane disasters, agricultural communication, and applying qualitative methods to Extension research. Therefore, the lead researcher conducted all analysis to reduce the likelihood of bias.

Population and Sample

The target population was UF/IFAS Extension agents who fit the sampling criteria: agents from any program area affected personally or professionally by a hurricane event. The point of contact for EDEN at the University of Florida provided a list of agents involved in post-hurricane response following Hurricane Irma. Initial email messages sent to five Extension agents (four females and one male) described the purpose of study. The lead researcher contacted three agents to schedule interviews because they were interested in participating in the study. Face-to-face was the preferred method of administering interviews given that participants had to recall sensitive information. However, telephone calls allowed interviews with participants located in distant counties or those unable to meet face-to-face.

Agents were interviewed from various counties across Florida. However, the sample was predominantly female as those county Extension offices had mostly female agents (M. Edmonson, personal communication, January 29, 2019). Literature on coping in disasters showed men and women deal with stress in different ways. Men tend to engage in self-control coping and problem-solving strategies while women seek information, social support, and distractive activities (Slusarcick et al., 1999; Spence et al., 2007). Thus, male engagement in post-hurricane response may vary from female engagement, and this may influence overall levels of personal resilience and coping abilities.

Participants were either involved with disaster response after Hurricane Irma or during a past hurricane occurrence. Agents new to their jobs had their first hurricane encounter and engagement with disaster response following Hurricane Irma. Participants' program areas included 4-H, sea grant, agriculture, and family and consumer sciences. Participants also sharing their hurricane experiences in this study were current UF/IFAS Extension employees. However, past agents may have had different hurricane experiences.

Sampling Methods

Nonprobability purposive sampling and sampling criteria were appropriate for selecting suitable individuals to participate in this study. According to Hobfall (2001) and Paul et al. (2013), personal losses affect coping abilities resulting in psychological stress. The sampling criteria used in this study were agents professionally or personally affected by a hurricane.

To define the term "impacted or affected by hurricanes," personal losses included loss of valued objects e.g., physical possessions, personal conditions (employment issues), energies e.g., sleep deprivation, financial difficulties, and personal characteristics such as low self-esteem and coping abilities (Hobfall, 2001; Paul et al., 2013). Agents in the sample were those who experienced losses in any of the four areas of personal losses due to hurricanes.

A snowball sampling technique was also used to further recruit participants. Snowball sampling is a type of purposive sampling which allowed recruitment of additional participants by asking current participants for appropriate references (Merriam, 1998; Patton, 1990). Data saturation then determined when to conclude data collection (Mason, 2010), resulting in interviews with nine Extension agents.

Instrumentation and Study Variables

The resilience conceptual framework (see Figure 2) guided a researcher-developed interview guide. Questions concerning perceived barriers asked participants about their level of stress (mental and emotional) and motivation while engaged in post-disaster response. Other questions asked about participants' ability to cope with stress, their ability to balance personal

and professional demands, and their levels of engagement in post-disaster response. Answers to these questions potentially identified barriers affecting motivation and courage to engage in coping strategies (Maddi, 2004). Lack of motivation and courage to engage in coping strategies hinder the process of improving personal resilience (Maddi, 2004, 2013).

Preliminary feedback provided by UF/IFAS Extension faculty resulted in initial revisions to the interview guide. A pilot test with a past Extension agent not included in the sample allowed for changes to the interview guide – adding new questions and clarifying existing ones. The pilot test was also beneficial in estimating the length of the interview, averaging about 45 minutes. Permission obtained from the Institutional Review Board at the University of Florida occurred prior to data collection. As a courtesy, the research team communicated the purpose of this study with the UF/IFAS Extension administration prior to data collection.

Data Collection

A structured interview format was appropriate for this study as participants recalled their hurricane experiences. Data collection occurred during August and September 2018 and Extension agents from various counties in Florida participated in face-to-face and telephone interviews. Three interviews occurred in person and six by telephone. Face-to-face participants met with the researcher at their county Extension offices. Agents received an informed consent form which requested their voluntary participation and indicated their rights to withdraw from the interview at any time. For telephone interviews, the lead researcher verbally informed agents of their rights as a participant. The researcher noted tonal variations in participants' answers to questions during the telephone interviews.

Saturation occurred by the fifth interview. At the researcher's discretion, two additional interviews were conducted which revealed new information in the seventh interview. Two additional interviews revealed no new information, which resulted in a total of nine interviews with Extension agents. After transcription, the lead researcher double-checked that each transcript matched its audio file for accuracy. After summarizing transcriptions, member checking began in October 2018 and concluded in January 2019 to verify accurate interpretations of participants' experiences. Eight of the nine participants responded to member checks and a few revisions were made for clarification. To protect participants' identities, the lead researcher used aliases in place of participants' actual names.

Data Analysis

This study used a two-cycle coding process. First cycle coding applied structural coding which split the data into smaller coded segments (Saldaña, 2013). The lead researcher identified pieces of information relevant to the study's research objective and generated structural codes. These codes were then arranged in hierarchies that highlighted emerging relationships and any duplication of codes (Gibbs, 2007). Having generated the structural codes, the next step was to develop initial interpretations of the data.

Initial interpretations of data consisted of four steps (Harding, 2013): (a) identifying relevant pieces of data, (b) determining which pieces of information aligned to objectives, (c) deciding and omitting unnecessary data, and (d) creating brief notes. Pattern coding used in the second cycle coding process identified overall category labels and added meaning to the data (Saldaña, 2013). The analysis used predetermined codes developed in the resilience conceptual framework (see Figure 2). Peer-debriefing with another member of the research team helped ensure the likelihood of impartial results, as derived from data collection and analysis.

Burnout literature was used to operationalize high, medium, and low levels of stress, performance deficits, and lack of motivation and courage (Ensle, 2005; Igodan & Newcomb, 1986; Maddi, 2004, 2013; Unger, 1980). Indicators such as the inability to cope with stress, alienation, and feelings of powerlessness were considered highly stressful. Other indicators of high, medium, and low levels of performance deficits and motivation included physical exhaustion such as headaches, insomnia, or depression; and behavioral changes such as job turnover, low job performance, or withdrawal.

Trustworthiness

To ensure credibility, the researcher engaged in member checking to verify that interpretations matched participants' intended meanings (Schwandt et al., 2007). Participants had the opportunity to review and verify accurate interpretation of their viewpoints (Christensen et al., 2015). Detailed data collection methods and common elements emerging from the dataset described the context of the study helping to increase transferability of results (Merriam, 1998). Field notes and observations recorded throughout the face-to-face interviews provided detailed information to further help increase transferability of results. Documented journal notes throughout this research helped ensure confirmability and transparency of results by use of audit trails.

Results and Discussion

Stress, performance deficits, and motivation and courage were pre-determined themes in the resilience conceptual model. These were the overall categories under barriers of the study's resilience conceptual framework (see Figure 2). Table 1 presents a summary of the results, consistent with burnout symptoms of physical exhaustion and psychological stress (Igodan & Newcomb, 1986).

Table 1
An Overview of Results for Perceived Barriers

Structural Codes	Pattern/Category Labels
Fatigue	
Anxiety	
Personal trauma	
External stress	Stress
Overall devastation	
Single parent	
No personal preparedness	
Some things not in your control	
Concerned for family abroad	
Absence from the office	
Unrealistic university demands	Performance deficits
University and county responsibilities clashed	
Distracted	
Unfocused	Motivation and courage
Overwhelmed	

Cycle of grief

Post-exhaustion

Perceived Barriers Affecting Participants' Personal Resilience

Stress

　　　　Mental and emotional stress was the common pattern for the overall theme, stress. Participants generally experienced fatigue. Several factors contributed to Jenny's stress: poor communication among county departments, vague information concerning how to report damage assessments, unclear roles in disaster relief, and difficulty connecting with others for support. Jenny expressed a general sense of fatigue as she reported to the Emergency Operations Center (EOC) days before the hurricane hit, committed to lockdown during the event, worked 12-hour shifts, then stayed after the event.

　　　　While activated for disaster response, Jenny still had her Extension duties. She said:

　　　　During a training, they tried to call me into the EOC to work and I begged to be able to finish the training, so I could get certification. The day I came back from the training, I went immediately into the call center to work 12-hour days and I worked the day shift. I didn't have time to prepare my own property.

　　　　Jenny also indicated external stressors such as the influx of people coming to her county after Hurricane Maria. In this case, her Extension building facilitated several events, but poor communication led to difficulties in trying to reschedule venues for her classes and events to get back on track. In trying to deal with this, Jenny gave up on some things and let her health go, putting off some issues she needed to address. However, she had supportive family and friends and they tried to take care of one another.

　　　　Emily was emotionally stressed when she received calls from people who wanted to find out about their family members. Furthermore, Emily worried about her family in her home country that experienced another natural disaster at about the same time. Emily had no communication with her family abroad for some time and could not concentrate or come in to work. She said: "I had to take days off because I knew how hard it is in a hurricane, and we were without communication for seven days." She felt she became one of those people calling into the EOC to find out about their families. She described her emotional state: "It was really bad, and I cried a lot, and it was awful."

　　　　Lynsey shared a similar experience: "As a single parent, having to leave my kids to fulfill my role, it's a little bit stressful." Leaving her family behind to take care of her responsibilities within the county was tough, especially with no family nearby. Carol did not experience significant mental or emotional stress but noted: "All of us get a little bit of anxiety when there's a hurricane coming. It's the fear of the unknown, you don't know how it's going to impact you."

　　　　Lynsey also worked in the EOC and indicated it was a very stressful role because a lot of people reach out for assistance. In addition, Lynsey's family residing abroad experienced another disaster. She was worried about them, which added an additional layer of stress. She wondered how she would be able to assist them while still carrying out her responsibilities. Julia was also concerned about her friends in another country impacted by a hurricane.

　　　　Cindy felt physically and emotionally fatigued from preparing for 16-hour workdays, for four or five days, to dealing with the disaster's aftermath. She said: "It's hard to be on high alert for so long." Sue's mental and emotional stress resulted from the overall destruction in her county. Although Sue evacuated, she worried about her friends who stayed. Sue's house was damaged, and she had friends and neighbors who experienced complete losses. She said: "It's

not easy. It's very, very hard. It's still hard. It's a year later." Hurricane Irma affected Julia and she felt as though she experienced considerable stress. Julia's personal impacts and the stress of the hurricane left her feeling hazy in the months after the hurricane.

Performance deficits

Balancing personal and professional demands was a common category under performance deficits. For Julia, work tasks such as field assessment reports became burdensome and added stress, especially because she was concerned about her safety on the roads with no power. She added: "The guidance sheet that we were given was so broadly interpretable that it was extraordinarily challenging to focus on that." Julia found it difficult to balance daily professional demands and what was essential post-hurricane. She further felt as though university requirements post-hurricane were unrealistic. She focused instead on addressing her community's needs.

For Cindy, balancing personal and professional demands overlapped as her children were out of school and many professional demands pressured her. Though she did not experience an imbalance, she indicated it was important to be realistic about roles and acknowledged difficulties existed in trying to accomplish everything all the time. Jenny expressed an inability to balance personal and professional demands. Her overall feelings of being stressed and fatigued contributed to this imbalance. In addition to poor communication in the EOC, her roles were unclear, and she worked long hours. As a result, she was frustrated being unable to help clients. To this point, she shared: "You know you're supposedly in a role to be able to help but not being able to provide them information because you haven't got the information yet."

Lynsey indicated that balancing personal and professional demands was challenging at times, especially when university and county responsibilities clashed. She said: "I have my responsibility with the county, but I needed to be at a conference right after the hurricane. I needed to be there as I was presenting. So, definitely a conflict of what do I do." Lynsey also described that some things were out of her control and she could not address all clients' needs. Emily was unable to balance her Extension professional demands as she worked in the EOC during and after Hurricane Irma. As a result, she could not fulfill those roles, but she indicated receiving help from others.

Motivation and courage

Desire to act was the common category label under motivation and courage. Julia felt unmotivated to professionally engage in disaster response, which was attributed to "the stress that was being put on me by people who hadn't gone through the same thing." Julia's lack of motivation resulted from her overall personal trauma and stress. She noted a lack of acknowledgement concerning the emotional stress of those who experienced a hurricane. She explained: "To me, expecting agents who just suffered a direct hit from a hurricane to go out and then do an inventory is not reasonable." Jenny was distracted because there were many things she needed to address. She said: "It just takes some time to be able to feel like you're accomplishing things again." Cindy shared a similar sentiment and described herself as unfocused and ineffective because of the amount of work to be done. She described her situation: "I wouldn't say unmotivated. I would say divided, just not being as effective because there's this to do over here. [I] definitely felt unfocused."

Sue was extremely exhausted and needed a break about three months after Hurricane Irma. She attributed those feelings to the cycle of grief where she did what she could during

emergencies and dealt with the stress afterwards. She said: "When things settle down, it catches up with you, and you kind of feel exhausted." Carol described feeling similarly about post-exhaustion. She was not unmotivated to engage in work tasks throughout Hurricane Ivan in 2004 but indicated feeling overwhelmed and exhausted afterwards. Lynsey also did not feel a lack of motivation to engage in her work tasks. Rather, she was motivated to help because she related to what people were going through having experienced hurricanes in the past. Lynsey added: "Experiencing what my family experienced during a hurricane, I think this motivates me here, so we don't go through the same thing. It's a way to help the community." Despite their resulting levels of stress, performance deficits, and varying levels of motivation and courage, most participants felt able to address clients' needs.

Conclusion, Implications, and Recommendations

Burnett Jr. and Wahl (2015) reported that disaster stress such as employee burnout affected disaster response efforts. Most participants were fatigued and expressed medium to high levels of mental and emotional stress based on their hurricane experiences. While all participants were female, this study recognized that males and females respond to stress differently. As such, male engagement in post-hurricane response could influence overall levels of resilience and coping abilities (Slusarcick et al., 1999; Spence et al., 2007). As many county Extension offices in Florida have predominantly female agents, it is important to recognize how personal responsibilities could potentially add to work-related stress especially when dealing with disaster-response.

Participants were also stressed about the safety of friends and family experiencing other hurricanes locally and abroad. As a result, some participants found it difficult to engage in disaster response given delayed communication to check-in with family abroad. This further resulted in an inability to balance personal and professional demands. A few participants were also single-parents and the inability to connect with family further amplified their stress and ability to respond to a disaster. Such is consistent with findings by Telg et al. (2008) and Ensle (2005).

Regardless, most participants had the motivation to engage in disaster relief. The desire existed to assist with response efforts despite feeling distracted or unfocused. Some agents were new at the time of their first hurricane experience. Others were already involved with Extension but did not experience a hurricane until Hurricane Irma in 2017. As such, results showed differing levels of stress and performance deficits when compared to those who previously experienced a hurricane event. Agents experiencing hurricanes for the first time found it difficult to fulfill their Extension responsibilities while providing disaster relief.

Not knowing roles in post-disaster response can increase stress and performance deficits, and lower motivation and courage to adapt to the situation. Disaster training and mentoring geared toward new county agents could help prepare them for post-disaster relief efforts. The participants not knowing disaster their roles were similar to findings by Telg et al. (2008). For new agents, disaster training provides an opportunity to be prepared at home as they are aware of their roles in hurricane response efforts. Such disaster training can also benefit agents without a direct role in disaster relief (non-essential employees) by reducing stress and improving management of personal and professional demands. Disaster training and mentoring could also be beneficial in other Extension systems where agents require additional support to deal with disasters (AESA, 2019b). Furthermore, it is important that Extension professionals be prepared

to cope with disaster-response stresses. given predictions for increased intensity and frequency of weather-related disasters (National Climate Assessment, 2018).

While engaged in disaster response, some Extension agents still assumed their day-to-day job responsibilities. In other cases, agents who reported to their county's EOC could not engage in their regular responsibilities. This created an additional layer of stress which could worsen if those agents experienced a hurricane for the first time or were new to the job. Having realistic reporting timelines for damage assessment reports was also important. Although these reports were important immediately after a hurricane, it posed a risk to agents conducting the assessments. Some participants indicated physical challenges to access areas given damaged roads or flood warnings. Providing accurate and timely information became problematic. This added another level of stress because reporting procedures were unclear to some participants.

Coupled with mental and physical exhaustion, some participants found it difficult to engage in professional demands. In Figure 3, medium to high levels of mental and emotional stress, and medium levels of performance deficits likely resulted in a reduced ability to engage in hardy strategies and coping. This is consistent with Igodan and Newcomb's (1986) and Maddi's (2013) results. However, most participants were motivated to engage in work tasks during periods of stress. According to the resilience literature, individuals with high levels of motivation and courage can engage in hardy strategies and coping abilities (Maddi, 2013). This result was consistent with findings by Sprang et al. (2007) about factors reducing burnout. Taken together, participants' stress, performance deficits, and motivation and courage indicated low to medium levels of overall personal resilience to address clients' needs. As such, opportunities exist to reduce perceived barriers and increase agents' levels of personal resilience.

Figure 3
Overall Results for Perceived Barriers Affecting Extension Agents' Abilities to Respond to Clients' Needs Post-Disaster
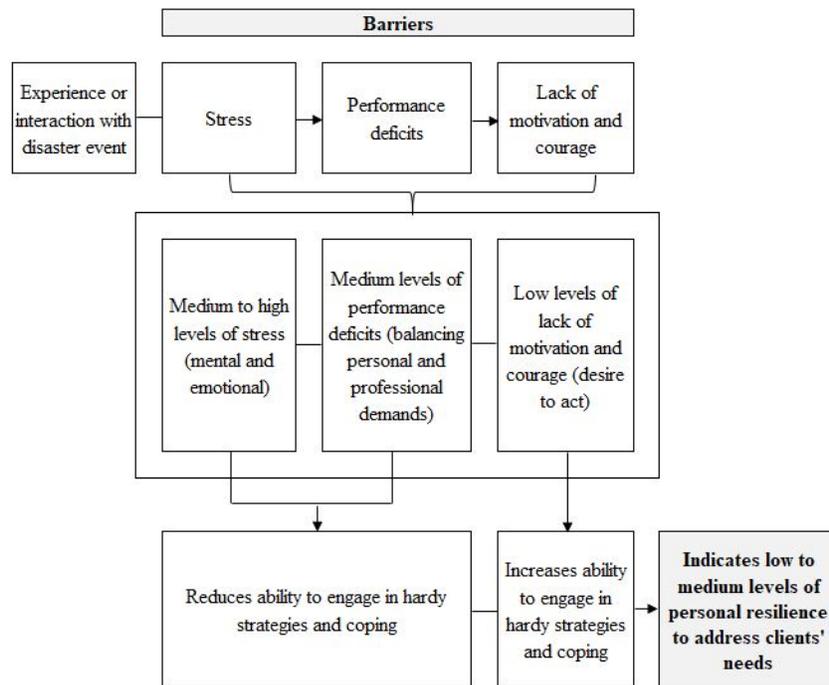
To deal with stress associated with working in the EOC, some participants expressed the need for professional training which could better support meeting their clients' needs. UF/IFAS is currently working on disaster trainings and professional development to assist agents in coping with disaster-related stress. Such professional development would include workshops on mental health and dealing with people to help agents' cope better during disaster response (UF/IFAS Center for Public Issues Education, 2018).

UF/IFAS is also making progress toward supporting agents' personal and professional disaster needs. However, it seemed participants were unaware of these developments. This might imply some disconnect between policy and practice. As such, this study recommends strengthening communication between Extension administration and county agents. This can be done through social media, webinars, or workshops to keep agents informed of new disaster developments. A future study could investigate effective communication methods between UF/IFAS Extension administration and agents for specific disaster updates.

Other hurricane prone states may benefit from conducting a similar study to determine stressors affecting agents' response efforts. The conceptual framework (see Figure 2) presented in this study worked well to highlight the level of perceived barriers UF/IFAS Extension agents faced when responding to clients' needs. Although this study focused on hurricanes, the framework can be revised to assess Cooperative Extension's response to other natural disasters. The framework could also be revised to compare differences in responses for male and female agents related to disasters. There may be additional factors that could influence personal resilience and coping abilities.

In addition, other Extension systems in hurricane-prone countries may benefit from implementing similar strategies. For example, the impact of severe floods in India highlighted the need for improved disaster training and better collaborations among disaster organizations (AESA, 2019b). The study's framework (see Figure 2) could be revised to apply to Extension advisory services in other countries to inform disaster trainings and assess agents' coping abilities in meeting clients' needs. Furthermore, there is an opportunity for international collaborations among disaster agencies. For example, partnerships with the Global Forum for Rural Advisory Services (GFRAS) could be beneficial for developing universal disaster trainings across varying Extension systems.

This current study could also be replicated with Extension agents in small islands to help reduce burnout and other factors affecting their abilities to respond to clients' needs post-disaster. Findings can be used by Extension advisory services to inform targeted mental health trainings or mentoring programs to help agents cope during disaster response. For example, the Caribbean Community (known as CARICOM) is an organization that promotes economic development in the Caribbean region. Part of their mandate is help build resilient communities and mitigate disaster impacts. Extension systems within this region can collaborate with CARICOM as a resource to deliver Extension trainings targeted toward coping abilities for Extension agents related to disaster events.

Future research could employ the case study method to compare results among small islands, which may aid in strengthening overall efforts in post-hurricane response. In addition, partnerships across different Extension systems may prove beneficial for implementing effective strategies. Although Extension systems differ, information-sharing between Extension Disaster Education Network (EDEN), Agricultural Extension in South Asia (AESA), the Caribbean Community (CARICOM), and the Global Forum for Rural Advisory Services (GFRAS) may

help inform disaster trainings and best practices to assist agents who experience disaster events across the world.

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