



Communication Behaviors of County Extension Directors Post-Hurricane

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Communication Behaviors of County Extension Directors Post-Hurricane

Abstract

In disaster crises, communication among stakeholders and response organizations are important. In Florida, the role of the County Extension Director (CED) is threefold – educational programming, leadership of a county extension program, and county office administrative responsibilities. However, their primary role in disaster emergencies is to facilitate collaborations with state and federal partners. During Hurricane Irma in 2017, UF/IFAS CEDs assisted in response efforts. However, communication efforts can become challenging in such chaotic and stressful situations. This research explored communication challenges among CEDs, clients, and statewide partners in hurricane events. Insights into the communication role of CEDs could enhance UF/IFAS Extension’s communication plan for effective information dissemination post-disaster. The Uses and Gratifications Theory guided this qualitative study. Interviews occurred with nine CEDs from various counties across Florida. Results showed CEDs used numerous communication channels to connect with clients, staff, and statewide partners, mainly for the purposes of information dissemination. The main reasons for selecting these communication channels depended on its accessibility, reliability, and whether it was a usual form of communication. Some participants were unaware of available resources which resulted in duplicate efforts. Thus, they required additional information from statewide partners. Some participants also had difficulty connecting clients with people who could assist them with insurance information and aid. As such, this study recommended a central communication system to avoid redundant efforts, strengthening relationships with disaster agencies to promote information-sharing and avoid miscommunication, and developing a list of resources and contacts for CEDs’ first engagement in disaster response.

Keywords

communication behaviors, county Extension directors, hurricane, post-disaster response, uses and gratifications

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Communication Behaviors of County Extension Directors Post-Hurricane

Introduction

Effective communication channels used during and after a natural disaster are important in post-disaster response (Collins et al., 2016). Kistler et al. (2006) found a unified disaster plan was important for consensus among disaster agencies. During the 2004 hurricanes in Florida, Extension's relief efforts used mass media and interpersonal communications to reach out to local communities (Kistler et al., 2006). Telg et al. (2007) found Extension faculty in Florida used word-of-mouth and telephones for information dissemination throughout the 2004 hurricane season. That study found interpersonal communication was effective in connecting with clients.

Furthermore, collaborations among disaster response organizations aid in reducing gaps in disaster information dissemination (Medford-Davis & Kapur, 2014). Extension's focal role in preparing for disasters stimulate "the need for Extension offices to provide current, accurate emergency information and services to mitigate loss to communities" (Washburn, 2006, Abstract section, para. 1). In disaster crises, communication among stakeholders and response organizations are important (Coombs, 2010). According to Medford-Davis and Kapur (2014), collaborative information dissemination aids in cohesive response efforts among all organizations involved in disaster preparedness and relief.

The County Extension Director (CED) plays a crucial role in leading county-level extension programming. Job responsibilities for CEDs in Florida are threefold: educational programming, leadership of a county extension program, and county office administrative responsibilities (UF/IFAS, 2007). The CED "has a basic program delivery role in one of the seven Extension program areas; leads, coordinates, and manages a total county Extension program; and administers operations of the county Extension office" (UF/IFAS, 2007, Major responsibilities: County Extension Director (CED) section, para. 1). Administrative responsibilities include personnel supervision and establishing relations with public officials.

County Extension directors are also UF/IFAS essential employees which means they are required to work in an emergency, such as a hurricane. While CEDs are not always responsible for reporting disaster information after a hurricane (e.g. damage assessment reports), most assume this responsibility. This is because their district Extension directors (DEDs) usually follow-up with them for this information. In many cases, it is common for the agricultural Extension agent and/or the natural resources Extension agent to conduct data collection for damage assessment reports. Usually, the role of the CED in a disaster emergency facilitates collaborations with state and federal partners.

In most county Extension offices in Florida, agents' disaster roles are twofold – either to the county and/or to the state (Grenrock, 2017). In many cases, the CED holds the disaster communication and collaboration position. This study explored communication challenges among CEDs, clients, and statewide partners post Hurricane Irma. Insights into the communication role of CEDs could enhance UF/IFAS Extension's communication plan for effective information dissemination post-disaster.

Theoretical Framework

The Uses and Gratifications Theory (UGT) became popular during the 1950s and 1960s to understand short-term effects and audience interactions with mass communications (Blumler, 1979). Early communication research sought to determine gratifications (satisfaction) influencing audience selection of media type and content that satisfied an environmental or

social need (Levy & Windahl, 1984). According to Katz (1987), audiences were selective; their self-awareness to satisfy a desire motivated information-seeking behavior. The UGT premised why audiences selected certain communication mediums (e.g. newspapers, television, and internet) and explained the gratifications they received from using those mediums (Ruggiero, 2009). The UGT assumes audiences are active participants of mass media information and are goal oriented (Blumler, 1979; Ruggiero, 2009). The theory considered how media engagement provided gratification to basic needs such as self-esteem and social connections.

To understand audience uses and gratifications from mass media communications, the UGT accounted for the type of information sought, selection of communication channels, and sources of influence. Four typologies developed from the UGT categorizing social and psychological needs: surveillance, personal identity, social utility, and diversion (Ruggiero, 2009). Surveillance surrounded information-seeking for knowledge gain to satisfy curiosity or task accomplishment. Media selection to reinforce one's own beliefs, values, and life represented personal identity. Studies showed media engagement for this purpose justified and increased the importance of some situation in an individual's life (Blumler, 1979). Social utility entailed information acquisition for personal relationships, bonds, and social connections (Blumler, 1979; Ruggiero, 2009). Information acquisition facilitated dialogues with others and promoted interpersonal relationships (Ruggiero, 2009). Diversion in its truest definition is relief from boredom and the mundane of one's own reality, allowing for emotional release and entertainment (Blumler, 1979).

Based on the UGT (Blumler, 1979; Ruggiero, 2009), selected communication channels, reasons for selected communication channels, information requested, and desire for information (gratification) can help in understanding the communication behaviors of CEDs. After a hurricane, Extension clients request certain types of information concerning food safety and insurance assistance. The channels used by CEDs to pass along this information to clients can help inform immediate communication strategies. Communication channels used by CEDs to coordinate with staff and statewide partners can also contribute to effective and timely information dissemination among disaster response organizations. Understanding CEDs' communication role as a response agent during natural disasters aids in effective disaster response to clients' needs.

Literature Review

Communication trends evolved with increases in communication mediums (Moore et al., 2015). Social media platforms are popular and used frequently compared to traditional media outlets such as newspapers (Collins et al., 2016). Based on a 2017 report, 69% of U.S. adults used social media platforms, 77% owned a smartphone, and 88% used the internet (Pew Research Center, 2017). With various forms of social media interactions (e.g. Facebook, Twitter, LinkedIn, Instagram), opportunities exist for social connections (Moore et al., 2015) through online activities (Kietzmann et al., 2011).

In terms of news sources, results of a 2018 study showed that 49% of Americans used television for news, while 33% used news websites, and 16% used newspapers (Pew Research Center, 2018). Those 50 years or older preferred television, while those 30-49 years old preferred news websites, and those 18-29 preferred social media (Pew Research Center, 2018). While communication trends tend toward social media platforms, different audiences may prefer different communication channels and sources for information.

Crucial for disaster assistance and relief is timely information-sharing and clear communication among disaster response organizations (Medford-Davis & Kapur, 2014). Efficient collaborations among disaster response organizations reduce gaps in information dissemination and coordination of activities (Miller et al., 2006). Miscommunication and gaps in critical disaster response information potentially results in secondary disasters exacerbating social disorder (Medford-Davis & Kapur, 2014; Sellnow et al., 2012). Thus, selecting the right communication channels to connect with clients, staff, and statewide partners is important in effective post-disaster communication.

Source credibility is also an important consideration in effective post-disaster response (Peters et al., 1997). Zakaria and Mustafa (2014) found several factors that contributed to source credibility. While these factors varied according to audiences, increases in public perception of knowledge and expertise led to high levels of trust and credibility. Establishing trust between audiences and information providers in the communication process contributes greatly to source credibility (Kulich, 2014).

In disasters, communities tend to trust local sources more than outside sources for information (Norris et al., 2008). However, credibility in information dissemination throughout a natural disaster can be challenging given multiple sources and information overload (Zakaria & Mustafa, 2014). According to Longstaff (2005) the main strategy for communicating about known dangers is public education and awareness which helps increase community resilience.

Local communication and accurate information are important as people “rely heavily on reports about what is working for others near them” (Longstaff, 2005, p. 55). Alkon (2004) noted most human communication occur as stories about some experience given as a narrative. Communal narratives “that give the experience shared meaning and purpose” (Norris et al., 2008, p. 140) are informal ways to provide disaster information in communities. These narratives help connect individual experiences, creating a sense of place and social support among community members.

Purpose and Objectives

This study sought to explore communication challenges faced by Extension after a hurricane. The specific objective was to describe the communication behaviors of UF/IFAS CEDs with clients, staff, and statewide partners post-disaster.

Methodology

Basic qualitative studies describe how people interpret their experiences and the meanings they assign to those experiences (Merriam & Tisdell, 2016). This study focused on uncovering the meaning behind CEDs’ communication behaviors during and after hurricane events. Thus, a basic qualitative research design was appropriate (Merriam & Tisdell, 2016). Data collection occurred through nonprobability purposive sampling. The sample size in purposive sampling is based on the information sought. For example, if the aim is to achieve the most amount of information possible, then sampling ends when no new information is obtained from additional samples (Lincoln & Guba, 1985). The ultimate sample size for this study was determined by data saturation (Mason, 2010). Saturation refers to redundancy where interviews begin to reveal no new knowledge about the experiences investigated.

Researcher bias is also an important consideration in qualitative research (Merriam & Tisdell, 2016). The lead researcher interviewing participants had no prior experience with UF/IFAS Extension or with agents’ roles in responding to disaster situations. Throughout

interviews, the researcher used a structured interview guide and waited for participants to completely answer questions before proceeding. Prior to data analysis, the lead researcher was aware of category labels or themes, determined a priori from the Uses and Gratifications Theory. Questions in the interview guide reflected these communication variables. Other team members had considerable experience working in Extension, hurricane-response, agricultural communication, conducting Extension related research, and implementing qualitative research methods. Since this can potentially bias results, the lead researcher conducted all data analysis and interpretation of results.

Population and Sample

The target population were those who fit the criteria – CEDs from any program area who experienced a hurricane event. Ultimately, nine CEDs participated in the study, seven were female and two were male. Participants' program areas included agriculture, horticulture (commercial and residential), family and consumer sciences, and 4-H. All participants were involved in disaster response during Hurricane Irma and/or past hurricanes. However, Irma was a first hurricane experience for some participants who were in their Extension role for some time.

The lead researcher only had access to CEDs currently employed with UF/IFAS Extension. Although there were two male participants, this study recognizes that men and women respond differently to stressful events (Slusarcick et al., 1999), and the inclusion of additional male participants could potentially influence results. Also noteworthy is that there was no employee turnover for CEDs since September 2017 when Hurricane Irma occurred (M. Edmonson, personal communication, January 29, 2019).

The point of contact for the Extension Disaster Education Network at the University of Florida provided a brief list of CEDs involved in post-disaster response in districts hit by Hurricane Irma. First-contact emails sent to sixteen CEDs explained the purpose and objective of this research. CEDs willing to participate responded to these emails and the lead researcher followed-up with eight individuals to schedule interviews. Snowball sampling provided one additional participant which resulted in data saturation.

Total interviews resulted in nine UF/IFAS CEDs from various counties across Florida. Face-to face interviews was the preferred method for data collection as participants revealed sensitive information about their hurricane experiences. However, phone calls facilitated interviews with those unable to meet face-to-face. Distant participants also had the option for Zoom video-conferencing calls, however each favored telephone interviews.

Instrumentation, Study Variables, and Trustworthiness

The UGT (Blumler, 1979; Ruggiero, 2009) guided the development of a researcher-generated interview guide. The guide consisted of two sections: external communication with clients and internal communications with staff and statewide partners post-disaster. Questions related to external and internal communication asked participants about their ability to contact clients/statewide partners after a hurricane, communication channels, reasons for selected communication channels, desire for information (gratification), and information requested by clients/statewide partners. Answers to these questions provided an overall impression of the communication network between CEDs and stakeholders post-disaster.

Initial feedback from UF/IFAS Extension faculty aided in preliminary changes to the interview guide. After revising several questions, the lead researcher tested the interview guide with a CED not included in the sample. The trial run allowed rewording questions for

clarification and determining the length of the interview. Member checking ensured credibility by verifying interpretations matched participants' intended meanings (Schwandt et al., 2007). Personal and detailed notes recorded throughout this research helped ensure confirmability as independent audit trails can be conducted. Additionally, the lead researcher provided detailed descriptions of the coding and data analysis process which allows for clarity.

Detailed descriptions described the context of the study, which provided in-depth information to help increase transferability of results (Merriam, 1998). This study provided a detailed description of data collection methods and the decision-making process throughout interviewing participants (Merriam, 1998). Prior to data collection, the Institutional Review Board at the University of Florida approved this study. The research team also communicated with UF/IFAS Extension administration about this study as a courtesy.

Data Collection

Cross-sectional data collected at a single point in time (Field, 2013) occurred in August 2018. The lead researcher referred to the interview guide when asking questions. Six interviews occurred face-to-face at county Extension offices, while three occurred over the phone with participants unable to meet face-to-face. All interviews were scheduled at participants' convenience, and no distracting events disrupted the interview process. All interviews occurred within business hours. There were no differences between data collected face-to-face and over the phone as participants answered questions thoroughly. The interview process was consistent for all participants.

CEDs from various counties participated in this study. Each face-to-face and telephone interview lasted about 45 minutes. Participating individuals received informed consents outlining their rights to participate in the interview and their voluntary participation. Interview notes documented throughout face-to-face interviews provided additional information to help increase transferability of results. For telephone interviews, the researcher noted tonal variations while participants answered questions about their hurricane experiences, which indicated implicit attitudes. During face-to-face and phone interviews, all participants were attentive and willing to answer questions. Saturation for this study occurred at the sixth interview. At the lead researcher's discretion, two additional interviews conducted for certainty revealed new information throughout the seventh interview. Two more interviews conducted after the seventh revealed no new information; data collection concluded at nine interviews with CEDs.

Upon full transcription, the lead researcher ensured each text matched its associated recording for accuracy. Member checks occurred in November 2018 to verify interpretations of participants' experiences and concluded in January 2019. Eight of the nine participants in this study responded to member checks and few revisions were made for clarification. The lead researcher also used aliases to protect participants' identity.

Data Analysis

A two-cycle coding process was used for data analysis. First cycle coding are initial coding processes reducing qualitative data into smaller fragments (Saldaña, 2013). The elemental method is a category of first cycle coding that includes various first coding processes such as structural coding. Structural coding uses a conceptual phrase to break up and sort the data into categories (Saldaña, 2013).

Organizing initial sub-codes into hierarchies helped categorize data, and identified relationships and duplications (Gibbs, 2007). Developing initial interpretations from transcripts

followed four steps (Harding, 2013): select most relevant sections that apply to research objectives, identify relevant and irrelevant information as related to research objectives, omit repetitive details, and create brief summaries.

Second cycle processes compare and reorganize codes into categories as occurs with pattern coding (Saldaña, 2013). Pattern coding further assigns meanings to the organization of codes into categories (Saldaña, 2013). The sub-codes generated from structural coding led to the development of overall category labels. A priori variables predetermined in the UGT guided the generation of overall category labels or themes in the data analysis process. Then, meanings were derived from overall themes. Regular peer-debriefing occurred with another member of the research team to ensure accurate methods of data collection and analysis.

Results and Discussion

Results were organized based on communication with external and internal audiences. Through pattern coding, there were four overall categories for communicating with clients, staff, and statewide partners (external and internal communication): selected channels of communication, reasons for selected communication channels, information requested, and desire for information/gratification.

External Communication – Clients

Table 1 summarizes the results for CEDs' communication behaviors with clients.

Selected channels of communication. Communication with clients ranged from immediately to two weeks after the hurricane and depended on the severity of damages. Participants used cell phones, face-to-face, social media, and email to communicate with clients. Most participants communicated with clients by phone given that cell towers still worked in their counties. As Lynette indicated the day after the hurricane, "I could still reach my clients and talk to them by phone, everybody's cell tower and everything worked at that point."

According to Wendy, she communicated by phone with clients because she knew they did not use email. Donna agreed with this statement when she said, "If we had clients that we anticipated having issues, then we either went out there to see them or attempted to contact them by phone." Similarly, because Lynette's clients were older producers, she knew they would faster respond to phone calls over texts.

Other participants engaged in face-to-face communication if their counties lost power. Greg suggested that the best way to contact clients was to drive out to their farms. He said, "Phone communication was haphazard, sporadic. Email was very sporadic. It was largely a little bit of Facebook and only a few farmers do that, so it was mostly going out to farms." In some cases, participants had no communication with clients until a few days after the hurricane.

Donna said two weeks after the hurricane, clients had no power and cell service was down. Much of her immediate communication after the hurricane was face-to-face. Wendy also shared a similar experience as she met with clients face-to-face for those she could not contact. However, this was dependent on road damages and accessibility to get to clients. Lily also communicated one-on-one with her clients for one week before power was restored.

Lily had a different experience recognizing she could not reach out to everyone, so she used her networks to disseminate information. "We knew we couldn't reach everyone because people weren't in their homes. But they knew to get with their local groups, and maybe not necessarily think of us" (Lily). Lily targeted communication through Facebook, handouts, and emails with major organizations.

Wendy elaborated, “At that two-week mark, we began to use our contacts, our relationships with these different groups to kind of expand our reach. About two weeks after the hurricane, social media (Facebook), email, and county websites were other channels used to reach out to clients. However, it was not a primary form of communication with clients as ‘it’s about knowing your clientele and what had happened throughout the county’” (Wendy).

Reasons for selected communication channels. Reasons varied for selecting different types of communication channels. In many cases, participants used easy and accessible channels. Lynette said, “The simplicity of having every contact that you need is in that phone, whereas if I had a landline I don’t even know where I’d get the phone numbers if I didn’t have my cell.” She also noted everyone had cell service two weeks after the hurricane, so it was easy to reach out to clients this way. Natalie indicated Facebook was a quick and easy way to connect with clients. She said, “For people that had their cellphones, they were actively using social media, so that was a quick way, using Facebook.”

Greg said Facebook worked reliably after the hurricane. However, because he knew few of his clients used Facebook, he mostly visited farms. Lily found being strategic about getting information out to people was most important given power outages. Thus, she selected communication channels she knew her clients responded to.

Eric tended toward the accessibility of communication channels when he shared, “We had 24 inches of rain in the agricultural part of the county, so, you know, if we were talking with anybody, it was mostly by phone.” Tina felt similarly as she noted the use of phones, social media, and email to contact clients as they worked after the storm.

Information requested. In most cases, participants found that their clients needed information on applying for disaster aid and assistance, dealing with contaminated water wells, and dealing with mold. Lynette’s clients needed similar information on whether they were in a disaster area, and how to apply for aid and assistance. Because Lynette was new to dealing with disasters, she found out about qualifying as a disaster area and provided agricultural producers with a checklist of what they needed to apply for Federal Emergency Management Agency (FEMA) funding. Natalie also indicated agricultural producers in her county wanted information on assistance first, so she worked with Farm Service Agency (FSA) to get that information.

Eric said two weeks after the hurricane, clients were interested in FSA meetings that dealt with obtaining aid. Greg’s experience was similar as he indicated his clients wanted assistance with insurance claims, so he advised them to properly document their damages. Wendy’s clients wanted information on who to contact for information on damage assistance (e.g. FSA, United States Department of Agriculture (USDA), or FEMA). She provided the information, but it was difficult to obtain this information to inform clients of who to call for assistance.

Wendy’s clients had issues with water quality and needed help in identifying contaminated water wells. She said, “Some of the hardest parts was just getting them connected to the right people.” For example, she reached out to regional specialized agents to source information on water quality and contamination. Lynette’s clients needed assistance in fixing broken water dykes which flooded some of their farms. Another common issue was dealing with mold. Donna’s clients requested information on mold and wet insulation removal. Anna’s clients needed similar information on mold removal, but also on how to treat faulty wires and mitigate salt-water intrusion.

Desire for information/ gratification. Disaster information dissemination is a requirement of Extension essential employees in disaster emergencies. Clients dealt with a range of issues, both primary and secondary damages from Hurricane Irma. Thus, the primary goal for

providing this information to clients was information dissemination. According to the UGT, CEDs’ desire for seeking disaster information falls under the typology surveillance and satisfies the goal of task accomplishment. As a result, CEDs’ desire to provide disaster information to clients motivated their information-seeking behaviors. Their desire to provide disaster information was further compounded by accessible, fast, and reliable communication channels.

Table 1
An Overview of Results for External Communication with Clients

Structural codes	Pattern/ Category labels
Phone Face-to-face Facebook Email County website Through other organizations Handouts	Selected channels of communication
Accessible and working Contact information stored in one place Usual form of communication Reliability Easy to get information out Fastest way to reach out to people Knowledge of how to contact clients	Reasons for selected communication channels
Well-being of other producers Eligibility for aid and assistance/insurance Dealing with mold, marine debris, salt-water intrusion Fixing broken water dykes Handling faulty wires/ home repairs Food safety Nursery and grove damages Water quality and contamination in wells Residential horticulture (tree removal)	Information requested
Information dissemination	Desire for information/gratification

Internal Communication – Staff and Statewide Partners

Tables 2 and 3 provide an overview of results for communication with staff and statewide partners outside the county (e.g. Florida Department of Health, UF/IFAS Extension, Florida Department of Agriculture and Consumer Services (FDACS), State Agricultural Response Team (SART), Farm Service Agency Florida (FSA), and Natural Resources Conservation Service Florida).

Selected channels of communication. Participants communicated with staff members by text and phone. Some offices had a phone tree and participants used this resource to reach out to staff. Respondents also indicated their Extension office was small, so communicating by text or phone was easy. Emails and face-to-face were also used to communicate with staff. Participants primarily used email and phone to communicate with statewide partners.

There was a group text messaging system for statewide communication with Extension. According to Eric, “They would put all the directors in the Southeast region, nine or ten of us on a text site. So, if I texted and sent it out, everybody in the District would get that text.” However, Wendy indicated it was too much information, either irrelevant or unimportant at that time. This became chaotic and Wendy wondered if there was important information coming through that she needed to know. It was then time-consuming to filter through all those messages.

Reasons for selected communication channels. Participants indicated several reasons for choosing to communicate with staff and statewide partners by email, text, phone, and face-to-face. They suggested communication channels available to others, accessible communication channels that worked after the hurricane, usual forms of communication, and documentation. Two weeks after the hurricane, “everything was back online” (Lynette). Thus, it was easy for Lynette to access email to reach out to staff. Anna agreed when she suggested access to these communication resources, and used phone, text, and email equally. Wendy shared a similar sentiment about using text, “It was easy. It was working, and for several days I had no way to be on the phone.”

Participants’ use of communication channels also dealt with its accessibility and availability to others. Natalie said, “It [email] still worked and it was easy, and it seemed as though people were not having problems getting messages that way.” Wendy felt the same way when she referred to email being accessible after the hurricane and everyone had access to it. Greg shared a similar experience. Certain forms of communication such as email were documentation for important pieces of information. Lily agreed email was the fastest way to reach out to multiple partners and was a paper trail of documenting assessment reports sent to statewide partners. Donna also shared this sentiment.

Information requested. Staff members needed to know when to return to work, what was expected of them when they returned to work, and the well-being of other colleagues. Staff obtained information about returning to work from their county. Information about expectations for conducting damage assessments came from participants (CEDs) as they were responsible for placing staff in specific roles. Respondents indicated staff members were also concerned about the well-being of their colleagues. As Eric said, they wanted to know, “Were there any employees that might need some help with their house.”

Information needed from statewide partners. Staff members’ ability to obtain specific information to respond to clients’ requests entailed reaching out to their CED. In turn, participants communicated with statewide partners to source information on disaster aid and assistance. Participants needed to know how to conduct damage assessment reports. Wendy shared, “We had never been trained on how to do it, and we didn’t have any forms of anything.”

Additionally, there were differing views between participants’ roles to the county and to UF/IFAS Extension. Wendy continued, “UF/IFAS wants communication with stakeholders, solving problems, pushing out information, helping where at all possible, doing assessments, reporting back.” However, disaster roles to the county entail social media updates, working shelters, and community engagement. “It’s a very different look, what the county wants and what UF/IFAS wants” (Wendy).

Lynette felt similarly as she too never experienced a hurricane prior to Irma in her professional position. She said, “I would have liked a little bit more communication from them, Florida Department of Agriculture and Consumer Sciences and State Agricultural Response Team before the hurricane. While I had been to a SART conference, they did not educate me on where my resources were or who was my local point of contact.” As a result, there was substantial learning on the job.

Information requested by statewide partners. Statewide partners mainly requested information about damage assessment reports from participants. These assessment reports included details on agricultural losses and damages to physical infrastructure (e.g. barns). Damage assessment reports or flash assessment reports were requested within a few days after the hurricane. “Just three days after the hurricane we were sending those” according to Lynette. Tina elaborated they worked together with the Farm Service Agency of USDA to finish reports.

Lily’s experience was somewhat different as she highlighted a challenge in collaborating with several partners. She indicated it became repetitious providing the same information multiple times to different partners. This might imply little collaboration among statewide partners. Statewide partners also wanted to know the status of Extension offices and the well-being of employees. “They were wanting to know if our offices were up and running, if we had internet. It was just checking in with people and seeing where they’re at” (Lynette).

Desire for information/ gratification. In disasters, essential employees report to the Emergency Operations Center in their county and are responsible for disaster information dissemination. Staff and statewide partners required varying information from participants, and participants required varying information from statewide partners. This exchange of information extended towards information dissemination and task accomplishment.

In the UGT, information dissemination and task accomplishment are elements of surveillance. CEDs’ desire to obtain disaster related information satisfied clients’ requests. Their desire to provide damage assessment reports to statewide partners satisfied task accomplishment. These desires motivated CEDs’ information-seeking behaviors. Accessibility and usual forms of communication further influenced the channels of communication participants selected. It is important to note CEDs no longer with UF/IFAS Extension may have had different communication experiences in a hurricane event.

Table 2

Summary Results for Internal Communication with Staff Members

Structural codes (Staff)	Pattern/ Category labels
Text Phone Email Face-to-face	Selected channels of communication
Accessible and working Usual form of communication	Reasons for selected communication channels
Return date to work Expectations Well-being of other colleagues Information for clients	Information requested
Information dissemination	Desire for information/gratification

Table 3

Summary Results for Internal Communication with Statewide Partners

Structural codes (Statewide partners)	Pattern/ Category labels
Email Phone Text Face-to-face	Selected channels of communication
Accessible and available to others Quick and efficient Form of documentation Usual form of communication	Reasons for selected communication channels
Information for clients Agency logistics and strategic information Expectations for conducting disaster assessments	Information needed from statewide partners
Damage assessment reports Well-being/ assistance	Information requested by statewide partners
Information dissemination	Desire for information/gratification

Conclusion, Implications, and Recommendations

Literature on the Uses and Gratification Theory explained audience-selection of certain communication channels and elaborated the gratifications received from using those channels (Ruggiero, 2009). Overall, participant engagement with various communication channels (phone,

email, text, face-to-face, and social media) revolved around disaster information dissemination, consistent with the role of Extension in disasters (Washburn, 2006).

Participants' desire or gratification for choosing certain communication channels centered on information dissemination and task accomplishment. Overall, participants had little difficulty in reaching out to clients, staff, and statewide partners two weeks after the hurricane. However, participants could not contact clients, staff, or statewide partners immediately after the hurricane in counties experiencing power outages. In some counties, communication strategies varied for information dissemination. This was as a result of knowing clientele's communication behaviors and the best way to reach out to them. Partnering with other organizations used by clients was strategic in disseminating disaster information. Such partnerships can help increase public trust and awareness of Extension services in disaster situations.

Accessibility to certain communication channels such as email, phone, and websites varied by county according to the damages caused by Hurricane Irma. Few participants indicated clients with cell service were active on social media (Facebook). However, social media was not commonly used to communicate with clients, staff, or statewide partners. The use of social media in this study was different to findings by Collins et al. (2016). Participants did not rely heavily on social media for information dissemination.

Another result of this study was knowledge of available resources. In some cases, participants were new to engaging in post-disaster response. They were unaware of who to connect clients with for specific information. Secondary disasters arising from Hurricane Irma required connecting clients with the right people for effective disaster-response and collaboration (Medford-Davis & Kapur, 2014; Sellnow et al., 2012). Participants unaware of available resources required additional information from statewide partners to avoid miscommunication.

Results of this study highlighted various channels of communication for clients, staff, and statewide partners. Selected channels were based on the level of damage caused by Hurricane Irma. This implies the need for alternate means of communication such as printed information or designated social media platforms for disaster information. Participants had some difficulty in connecting clients to people who could assist them. This finding implies the potential for training on the inter-workings of federal agencies such as USDA or FEMA. Participants can then faster inform clients of their eligibility for disaster assistance. Overall recommendations of this study are to: (a) have a central communication system to avoid resending the same information to multiple statewide partners, (b) strengthen collaborative relationships among disaster agencies to promote information sharing, and (c) develop a list of resources and contacts for CEDs' first engagement in disaster response.

Future research can explore clients' willingness to use social media for disaster information given its availability post-hurricane. Although participants communicated with clients mostly by phone, promoting social media interactions can stimulate social connections (Moore et al., 2015) especially related to disaster information dissemination. It may also be beneficial to create a timeline to track changes in communication behaviors with clients, staff, and statewide partners. Understanding such differences may help identify solutions to miscommunication and gaps. Finally, a future study can replicate this methodology in other states to understand the communication network among clients, staff, and statewide partners for any disaster.

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