

# University Students' Disaster Preparedness: A Focus Group Study

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*The purpose of this study was to explore university student perceptions, attitudes, and behaviors with respect to disaster preparedness, with specific regard for natural hazards (e.g., tornadoes and floods) as well as incidents of violence (e.g., an active shooter on campus) and pandemic (e.g., influenza). A qualitative design was employed using moderated focus groups to collect data. The constant comparative method was the method of analysis. Fifty-four university students participated in ten focus groups focusing on three different themes (natural hazards preparedness, n = 20; preparedness for incidents of mass violence and pandemic, n = 16; and quantitative pilot survey results, n = 18). Generally, students reported a lack of concern about the occurrence of disasters, as well as a lack of motivation toward disaster preparedness. Despite a reported lack of preparedness for multiple disaster types, participants generated suggestions for increasing the preparedness of students on campus. Strategies will be discussed with the goal of engaging students and creating a climate that encourages preparedness as a university value. Based on our findings, practical recommendations for universities will be provided, such as the importance of each university conducting its own research to inform educational efforts, shape policies, and guide the distribution of resources.*

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## **Disaster Preparedness**

A disaster is “a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or

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environmental losses that exceed the community's or society's ability to cope using its own resources" (International Federation of Red Cross and Red Crescent Societies, 2019). Disasters may be related to natural hazards, such as tornadoes, hurricanes, floods, and earthquakes (Chmutina, Von Meding, Gaillard, & Boshier, 2017; Tkachuck, Schulenberg, & Lair, 2018; Weber, Schulenberg, & Lair, 2018). They may be technological or man-made in origin, such as aviation disasters, fires, explosions, chemical/oil spills, the result of an accident, or a domestic/international act of terrorism (Drescher, Schulenberg, & Smith, 2014; Weber et al., 2018). Disaster preparedness is any action that "reduce[s] the risk of injury and damage . . . and facilitate[s] a capability for coping with temporary disruption associated with [disaster-related] activity" (Paton, 2003, p. 210). It involves gathering resources, preparing a plan in the event of a disaster, and practicing that plan (Becker, Paton, Johnston, & Ronan, 2013; Mitroff, Diamond, & Alpaslan, 2006). Recent natural hazards, particularly Hurricanes Katrina (Fox, White, Rooney, & Cahill, 2010; Schulenberg et al., 2008) and Sandy (Powell, Hanfling, & Gostin, 2012; Redlener & Reilly, 2012), have prompted growing research on natural hazard preparedness. Similarly, incidents of mass violence, such as the Columbine and Virginia Tech mass shootings (Alba & Gable, 2011; Fox & Savage, 2009) and the terrorist attacks of September 11, 2001 (Boscarino, Figley, & Adams, 2003), have stimulated an increase in research on preparedness for these kinds of events. Comparable concern has also been expressed about pandemics, with influenza outbreaks serving as a prime example (Moen, Kennedy, Cheng, & MacDonald, 2014).

Drawing from their case studies on the 2004 Tsunami in Sri Lanka and from a literature review, Palliyaguru, Amaratunga, and Baldry (2014) outlined six types of vulnerability that increase the risk inherent to natural hazards and incidents of mass violence, one of which is social vulnerability. Social vulnerability entails individuals' lack of preparedness, including lack of information or education. When individual preparedness is prioritized, the impact can be mitigated. For example, increased preparedness efforts at the Boston Marathon bombings resulted in fewer lost lives and served as a model for future efforts (Walls & Zinner, 2013). However, despite increased attention in research, disaster preparedness remains a low priority for many individuals (Becker et al., 2013; Lovekamp & McMahan, 2011; Wachinger, Renn, Begg, & Kuhlicke, 2013) or a task seen as the responsibility of others (Paton, 2003).

### University Student Disaster Preparedness

University students are particularly vulnerable during natural hazards and incidents of violence for several reasons. They typically do not have critical resources such as emergency food supplies and flashlights on hand (Lovekamp & McMahan, 2011). One in five students chooses not to sign up for disaster-related text messages (Simms, Kusenbach, & Tobin, 2013), and many students who choose to sign up for these text messages ignore them while in class or when otherwise occupied (McGee & Gow, 2012). One study found that fewer than one in ten university stu-

dents (8%) in a hurricane-prone area had plans for responding to a hurricane (Simms et al., 2013). Likewise, qualitative research suggests that many university students are unsure where they would go if advised to seek shelter off campus due to an on-campus threat (McGee & Gow, 2012).

Most administrators of higher education institutions across the United States reported that their universities have plans for natural hazards and incidents of violence, but only a quarter of them said that university students understand their school's disaster-related procedures (Seo, Torabi, Sa, & Blair, 2012). Furthermore, a majority of administrators (75%) suspected that students would not know what to do if a school shooting occurred (Seo et al., 2012). Even when guidelines are in place, university students are generally unprepared, often depending on authority figures for guidance (Lovekamp & McMahan, 2011), and their responses may be characterized by reactance. For example, in the case of an influenza outbreak, Mitchell and colleagues (2014) found that university students simply did not comply with the recommendations of their institutions. They reported believing that the university was overreacting, with many individuals displaying cavalier attitudes toward their risk of infection. Furthermore, Decker and Slawson (2012) found that many university students expressed fear of an influenza pandemic, but still did not prepare appropriately by seeking a vaccination.

Similarly, university students often perceive natural hazard risk as being low or believe that if there were an impact it would be minor (Simms et al., 2013). Moreover, a survey by Sobrio, Bayas, Castro, and Bitgue (2016) at a university in the Philippines suggested that many students believe themselves to be prepared and capable of responding to natural hazards affecting their campus. In particular, male students tended to believe that they are more capable of responding to natural hazards than female students believe themselves to be (Tkachuck et al., 2018). However, perceived preparedness is not the same as actual preparedness (Tkachuck et al., 2018; Weber et al., 2018). Thus, overall many university students tend to believe that their risk from natural hazards is low, if there is an occurrence the impact will be minor, and if there is a need to respond they are prepared, which is potentially problematic because perceived preparedness and actual preparedness are not synonymous.

Clearly, university students are generally underprepared for natural hazards, mass violence, and pandemics. Immediate communication to students and effective response on their part are imperative to reduce potential injuries, fatalities, and psychological consequences such as depression, anxiety, and symptoms of posttraumatic stress. Lack of preparedness among university students suggests a need to increase awareness, knowledge of disaster-related mitigation plans, and training programs to ensure that effective responses are learned and practiced.

### **The Current Study**

This study's purpose was to generate information to develop effective policies and inform training and educational efforts as a means of improving the disaster preparedness of university students, with particular attention paid to the cultural

climate and individual perceptions that undervalue preparedness. Because of the exploratory goals of this study, a focus group method was selected to facilitate open conversation between university students about their experiences and perceptions of preparedness. Prior to the current study, an initial quantitative pilot survey assessed university students' perceptions about the likelihood of disasters, their attitudes toward preparedness, and their perceptions of preparedness for different kinds of events including natural hazards, mass violence, and pandemics (Baczwaski et al., 2013). To identify university students' prior experience with natural hazards (as well as mass violence and pandemics), training expectancies, and perceptions of preparedness, the previous pilot survey was supplemented with qualitative data obtained via focus groups. Because of the exploratory nature of this study, no hypotheses were generated beforehand.

## **Methods**

### Participants

Fifty-four students from a medium-sized university located in a natural hazard-prone region of the United States participated in the study. Natural hazards prevalent in the region include tornadoes (Ashley, 2007; Boruff et al., 2003; Sherman-Morris, Wax, & Brown, 2012), floods (Sherman-Morris et al., 2012), and earthquakes (Frankel, Applegate, Tuttle, & Williams, 2009).

### Sample Characteristics

Females comprised about three-quarters of the sample (74.1%,  $n = 40$ ). One participant was a graduate student and all other students ( $n = 53$ ) were undergraduate students. Students ranged in age from eighteen to sixty-one ( $M = 22.08$ ,  $SD = 9.20$ ). Of the participants who identified their race/ethnicity ( $n = 53$ ), 71.7 percent ( $n = 38$ ) identified as white, 18.9 percent ( $n = 10$ ) as black, 3.8 percent ( $n = 2$ ) as Hispanic/Latino, 3.8 percent ( $n = 2$ ) as Asian, and 1.9 percent ( $n = 1$ ) as Native American Indian. Of the sample, 55.6 percent ( $n = 30$ ) identified as freshmen, 11.1 percent ( $n = 6$ ) as sophomores, 18.5 percent ( $n = 10$ ) as juniors, 13 percent ( $n = 7$ ) as seniors, and 1.9 percent ( $n = 1$ ) as a graduate student. Approximately half of the participants (51.9%;  $n = 28$ ) identified as in-state students. More than a quarter of the sample (27.8%;  $n = 15$ ) reported being psychology majors, which was unsurprising because some participants were recruited via a psychology course.

### Procedure

The university's institutional review board approved the study protocol and procedures. Students were recruited from a senior-level psychology course being taught by one of the researchers and from a central location on campus using flyers and other informational aids. Recruitment occurred during the 2013 spring academic semester. Students who contacted the researchers about participating

were randomly assigned to a group based on the order in which they responded (first student assigned to the natural hazards group, second student assigned to the mass violence and pandemic group, etc.). This method ensured that students were not assigned to groups on the basis of interest or knowledge about the topics to be discussed.

Ten focus group sessions were conducted. Each focus group discussed one of three disaster preparedness topics: (1) natural hazards preparedness (four sessions;  $n = 20$ ), (2) on-campus preparedness relating to mass violence and pandemic (two sessions,  $n = 16$ ), and (3) the results of the initial quantitative pilot survey (four sessions,  $n = 18$ ).

Psychology students received extra credit for participation, and all participants, including those recruited via other methods, received snacks and drinks at the focus group sessions. Focus groups, administered by two graduate student research assistants, took place in a conference room on the university campus. One assistant moderated the discussion using questions from a script (see the "Focus Groups" section and the appendix), and a second took notes and managed an audio recording of the session for subsequent coding. After informed consent was obtained at the outset of the study, participants completed the brief questionnaire. Students were given ground rules for the conversation. They were asked to participate, but not to overshadow others (to respect the perspectives of other participants even if they disagreed with their views). The group discussions tended to last approximately an hour and a half. At the end, students were thanked for their participation and given the opportunity to ask questions.

## Measures

### *Questionnaire*

A brief written self-report questionnaire asked about demographic information, including gender, age, race/ethnicity, academic classification, international student classification, and academic major. Additionally, university students reported perceptions of disaster preparedness by responding to the question "When you think about disaster preparedness, what comes to mind?" Students were also asked to indicate any disasters they had experienced and to describe the nature of the event (e.g., natural hazard, mass violence, or pandemic). Focus groups were organized by three different themes: natural hazards, mass violence and pandemic, and reactions to the initial quantitative pilot survey results.

### *Focus Groups*

**Natural Hazards.** First, a moderator alerted participants that they would be discussing natural hazards and gave examples of events in the category. The moderator guided the dialogue using questions devised to facilitate discussion of participants' motivation to be concerned about natural hazards, ways to motivate students, possible training avenues the university might employ to inform students, and participants' perceptions of the university's preparedness for disaster-related

events (see appendix). Following responses to these questions, participants posed and discussed additional topics that emerged from the discussion.

***Mass Violence and Pandemic.*** Focus groups on incidents of mass violence and pandemic considered events such as a school shooting (i.e., an active shooter on campus), a bomb threat, a terrorist attack, or a health-related pandemic such as an influenza outbreak. The format of the discussions was approximately the same as that used for the natural hazards focus groups (see appendix). Additionally, students in these focus groups were asked whether they had viewed a recent video made by the university concerning what to do in the event of an active shooter on campus.

***Reactions to the Pilot Survey Results.*** The goal of the third type of focus group was to allow students to give their opinions on the results of a prior quantitative pilot study assessing university student attitudes toward natural hazards and incidents of mass violence on campus (Baczwaski et al., 2013). In these focus groups, research assistants presented the results from the pilot survey, focusing on such areas as students' lack of preparedness, low levels of perceived risk, and reliance on faculty for guidance in disaster-related situations. Following the presentation of the results, students were asked if anything surprised them, whether they had any confusion about the questions or results, and whether they had any suggestions to improve the pilot survey prior to dissemination campus-wide. Next, they were asked many of the same questions in a fashion similar to that used for the other focus groups (see appendix).

### **Data Reduction and Analysis**

For qualitative data analysis, research assistants first transcribed audio recordings of the discussions. They excluded information not relevant to the topic. Subsequently, four research assistants developed broad themes using the constant comparative method (Glaser & Strauss, 2009). With this method, the first few quotes are used to generate categories; then each subsequent quote is compared to the previous quotes included within that category. After several quotes are added to a general category, the theme is titled, and criteria are defined for inclusion of subsequent quotes. Inter-rater reliability of the coders is reviewed to ensure appropriate inclusion within themes and their subcategories. After quotes were coded into each category, three independent coders rated selected quotes as being positive (coded as 2), negative (coded as 0), or neutral (coded as 1) toward disaster preparedness. There was a high degree of reliability between coders (ICC = .86 [.84–.88]) on the valence of participants' quotes.

Quantitative data analysis was conducted using SAS software, version 9.4. Linear regressions and one-way analyses of variance (ANOVAs) were conducted to determine whether participants' valence of responses regarding disaster preparedness differed as a function of age, gender, or focus group type. Tests of homo-

ogeneity of variance were also conducted to determine appropriateness of ANOVA tests for the current study.

## Results

### Qualitative Results

Seven general themes, listed below in order of the frequency with which they were discussed, emerged from the coding process:

1. Role of institution versus student in preparedness efforts (38% of quotes/discussion content; 96% of students spoke on this theme)
2. Attitudes toward preparedness (20% of content; 96% of students spoke on this theme)
3. Raising awareness (20% of content; 83% of students spoke on this theme)
4. Delivery of information (17% of content; 78% of students spoke on this theme)
5. Relevance of disasters (4.4% of content; 37% of students spoke on this theme)
6. Ways to prepare (1.2% of content; 17% of students spoke on this theme)
7. Importance of preparedness (0.2% of content; less than 4% of students spoke on this theme)

Research assistants coded 867 distinct quotes into these seven general themes.

#### *Role of Institution versus Student*

The role of institution versus student theme was defined as discussion of the responsibility of the university and/or the students when preparing for and responding to disasters. Perceptions of the university's preparedness and steps that could be taken to improve it were also included. Students tended to hold the view that the university should inform them about impending disasters and provide instructions for how best to respond. Similarly, most students expressed the opinion that they were responsible only for complying with procedures. For example, one student said, "If the school makes us aware of it, then it would be our part when it came to actually do what they said. . . . I do think it's largely the school though." However, some students believed that individuals are ultimately responsible for their own preparedness:

I think it's up to individual[s] whether or not they . . . want to be prepared. You can give them all the requirements, but if they're in denial that there is nothing that's going to happen to them, they're never going to learn because it's up to the individual to get their own mind set.

Although most students believed that they should be listening to authority figures in the event of a disaster, they often perceived professors as unprepared or

indicated that their instructors were more concerned with teaching class than with safety. One student described this: "A lot of times, our teachers definitely care more about us paying attention than our safety." Another student agreed, recalling a recent classroom situation involving a fire alarm:

I feel the university is very concerned about educating students [about preparedness], and they need to be more concerned about educating professors and staff and making sure they carry [those plans] out. There's a girl I'm friends with who said . . . the fire alarm started going off . . . and her teacher said, "what do we do?" You [the professor] are the one in charge, you should be telling us to get out of here. She said they just . . . kept teaching. What is a kid going to do? Get up and walk out?

Students acknowledged the university's current efforts at informing and preparing them, but many still agreed that more should be done, including sending warnings and school closure information earlier. Students also agreed that utilizing popular people on campus for preparedness campaigns could improve the university's efforts.

#### *Attitudes toward Preparedness*

The attitudes toward preparedness theme was defined as discussion of topics of implied attitudes or perceptions about disaster preparedness, characteristics of people who are or are not prepared, reasons for complacency in preparedness efforts, and participants' opinions about disaster preparedness. Students tended to have nonchalant attitudes about preparedness and agreed that their focus tended to be elsewhere. For example, one student said, "There's too much else to think about, like classes, social life; there's too much to think about [rather than] something that may or may not happen." Another said, "I think a lot of people think, 'oh that will never happen to me,' so they are just kind of oblivious." Many students also held negative opinions about individuals who are prepared for disasters, describing them as paranoid or overly careful. For example, one student said, "[People concerned with disaster preparedness are] paranoid a little. . . . I find that my concerns are more about my future. I don't tend to worry about . . . matters like that, or about other people, it's all about me at the moment." Most students could identify with students who are not prepared for disasters:

They're all worried about material things: their papers, or their work, and their job, which would be me. I'm not worried about me having to go sit in a basement because something's going to happen to me. I'm more worried about, okay I need to pay my bills, I need to write this paper.

This focus on school at the expense of disaster preparedness was a common perspective expressed in the focus groups. Students did agree that those who were prepared had certain positive skills, like leadership and conscientiousness. They



seemed to admire these qualities, but few students aligned themselves with these descriptions, instead talking about themselves as unprepared. [See the "Quantitative Analysis" section for more specifics about the valence (positive or negative) of students' attitudes toward preparedness.]

### *Raising Awareness*

The raising awareness theme was defined as discussion surrounding barriers and motivations for student concern and preparedness, as well as techniques to convey information about what to do in the event of a disaster (good and bad techniques). This topic tended to involve student opinions about posters, flyers, and e-mails related to disaster preparedness. Most students agreed that e-mails were the least favored method for raising awareness. One student said, "They send text messages, and I would read them, but if they had sent the [information] in emails, I would not have known [about it]." Another student echoed this view: "A good way to not do it is sending emails, because when I see them, I will be honest, I delete them almost immediately." On the other hand, students' opinions varied concerning displaying posters in buildings and handing out informational flyers. Students typically preferred posters to flyers, agreeing that flyers tended to be thrown away before being read. Some students said that they read posters in buildings, whereas others ignored them. However, students overwhelmingly supported the use of text messages to inform them about disasters or disaster-related preparedness efforts. One student said, "Everybody's always on their phone, everybody, and so if you can get to somebody's phone, you've got their attention, because as soon as my cell phone buzzes I'm looking at it."

### *Delivery of Information*

The delivery of information theme was defined as discussion of suggested methods for trainings, techniques for conveying information about what to do in the case of a disaster, and awareness of safety/preparedness measures the campus is implementing. Unlike posters, e-mails, and other awareness techniques categorized under raising awareness, preparedness efforts categorized as delivery of information involved a time commitment on the part of students (e.g., training programs). Participants also discussed who should be delivering information to students about preparedness. They expressed high levels of trust and respect for community assistants and other student leaders, suggesting that these individuals should be the ones delivering information about disaster preparedness.

Most participants felt that efforts to deliver information to students about disaster preparedness should be interactive and student focused. For example, one student remarked, "If there is a class on it, with someone just lecturing, I probably would be on my phone, but if it's more a hands-on situation where you actually get up and participate, then it will be more effective." Another student agreed that training was important for student preparedness: "Physical participation is that next level that it's going to have that impression on you more than reading and more than listening." Although most students preferred interactive learning

processes, a few students thought mandatory classes or online quizzes covering disaster preparedness were feasible routes. One student expressing this opinion said, "Maybe something in the . . . class for freshman; not all freshman took them, but most of them [did] . . . it is a small group setting so it can be more practical." However, the idea of additional mandatory classes or online quizzes frustrated many of those in the focus groups; the majority of students preferred a learning method involving interaction or simulation of disasters.

#### *Relevance of Disasters*

The relevance of disasters theme was defined as discussion of perceptions of the likelihood that a disaster would affect students, as well as knowledge about how often disasters occurred. Students spoke infrequently about the relevance of disasters in their own lives. Those students who spoke on the topic generally described having a sense of safety at the university that made disasters on campus seem improbable. For example, one student said, "It's just a little happiness bubble. You don't really have to worry about natural [hazards] here." Another student who shared this perception said, "You go about each day thinking about how this school is the safest school. . . . You wouldn't think something would happen." Students also discussed reasons why other areas or universities might have problems with incidents of mass violence or natural hazards, but they perceived their school as being at a safe distance from these kinds of events and therefore they did not perceive disaster preparedness as a high priority.

#### *Ways to Prepare*

The ways to prepare theme was defined as discussion of how students know what to do in the event of a disaster. Students rarely discussed this theme, and when they did, their comments involved a sense of uncertainty. Some students discussed learning about ways to prepare from parents or teachers. One student discussed the impact her family's planning had had for her: "We [my family] would practice going to a room without any windows and what we do is fill up the bathtub with water in case there was a water shortage [due to an outage]." Another student talked about the role of videos and training at lower levels of education: "Those videos that they make you watch in elementary school [show you how to prepare]." Most students did not have such specific examples, however, and spoke in general terms of what they knew about preparedness. Furthermore, almost all of the students' ways of knowing how to prepare involved relying on authority figures for guidance, showing the crucial role that universities have in informing students.

#### *Importance of Preparedness*

The importance of preparedness theme was defined as discussion of materials to have in order to be prepared, factors influencing students' inclination to read about disasters or heed warnings, and what participants knew with respect to adaptively responding to disasters. In keeping with their sense of safety, students

rarely discussed the importance of disaster preparedness. Students who discussed this topic focused on the importance of having materials and a plan in place for immediate action in the event of a disaster. For example, one student said, "I always have a flashlight with me . . . not specifically for a tornado or a certain [hazard], but just in case."

### Quantitative Results

Levene's test for homogeneity of variance indicated equal variances for males and females [ $F(1,840) = .29, p = .59$ ], suggesting that the ANOVA test was appropriate. On average males had slightly more positive responses throughout the focus groups ( $M = .93, SD = .75$ ) than females ( $M = .88, SD = .75$ ). However, this difference between males and females was not statistically significant [ $t(840) = .85, p = .39$ ].

Levene's test indicated equal variances across ages [ $F(1,801) = 1.05, p = .31$ ]. A simple linear regression showed that the age of participants predicted the valence of responses [ $F(1,801) = 5.83, p = .02$ ], with older participants being more likely to express positive responses regarding disaster preparedness. For example, an eighteen-year-old student spoke about earthquake drills, saying her peers "just wouldn't take procedures seriously." Another eighteen-year-old student said, "people think [a disaster is] just something that happens to other people. It doesn't really apply to them, but then if it actually were to [happen], then they would be a little lost." In contrast, a twenty-two-year-old student said, "I experienced [Hurricane] Katrina firsthand, and we didn't have power, we didn't have water. That sort of thing. So, you think about having supplies that will help you get through until life turns back to normal."

A one-way ANOVA revealed differences among the three focus group types (survey results, preparedness for natural hazards, and preparedness for incidents of mass violence and pandemics) in the valence of responses. Levene's test indicated equal variances [ $F(1,801) = .92, p = .40$ ]. The survey results groups expressed the most negatively valenced responses [ $M = .79, SD = .74$ ] and the natural hazards preparedness groups endorsed the most positive responses [ $M = .98, SD = .76; F(2,841) = 4.38, p = .01$ ]. Post hoc tests revealed that the survey results groups had significantly more negatively valenced responses than the natural hazards preparedness groups ( $p = .01$ ), whereas differences between the natural hazards and mass violence and pandemic preparedness groups were not statistically significant ( $p = .40$ ). Similarly, differences in the valence of responses between the mass violence and pandemic preparedness groups and the survey results groups were not statistically significant ( $p = .26$ ).

### Discussion

Our study aimed to gather information about university student attitudes and experiences with respect to their own individual disaster preparedness as well as the preparedness of the university. Accordingly, students provided useful

suggestions for policies and training programs on campus, discussed reasons why preparedness is not a priority for many students, offered ideas about how to motivate students with respect to emergency preparedness, and expressed their perceptions regarding the university's preparedness.

This study corroborated previous research regarding the complacency and lack of preparedness among university students (Lovekamp & McMahon, 2011; Seo et al., 2012). Students tended to perceive the university as a place of safety removed from the possibility of a disaster. A sense of safety is beneficial when it coincides with reduction of avoidance behaviors such as students staying home at night or not walking alone on campus (Ratti, 2010), but it may also contribute to complacent attitudes toward preparedness. If students have an overly strong sense of safety such that they do not consider the potential threat of a disaster, then preparedness efforts may be less of a priority than other responsibilities and activities.

In addition, university students had little knowledge about what to do in the event of a disaster, and most said they did not have access to disaster preparedness materials. With regard to pandemics, such as a flu outbreak, students expressed little concern and seemed confident in their ability to prepare, a finding that differed from some prior research suggesting students' lack of skill in this area of preparedness (Decker & Slawson, 2012). Students generally reported that university efforts in this area were sufficient, noting various signs and posters that they had seen preparing them to deal with influenza pandemic. As for incidents of violence, they typically reported a lack of experience. However, most had experienced a natural hazard, such as a tornado. Corroborating previous research (Boscarino et al., 2003; Simms et al., 2013), students were most fearful of incidents of violence on campus, although they reported being uncertain about their plans in the event of a natural hazard as well. Despite their fear of incidents of mass violence, students did not have plans in place for these events. Furthermore, many students who had experienced natural hazards had not experienced severe impact; they reported that these events left them with the view that natural hazards would not severely affect them in the future and therefore preparedness was not a high priority. Instead, with respect to the range of disaster-related scenarios discussed, students largely reported perceiving themselves as having a secondary role in which they merely comply with authority figures rather than actively taking initiative to prepare themselves.

Despite university students' general lack of preparedness, the focus groups provided an opportunity to generate ideas to increase preparedness. Students suggested increasing awareness and accessibility of disaster preparedness strategies through active shooter trainings and fire simulations and use of the campus-wide public address system to broadcast directions in the event of a disaster. Students also suggested using well-liked and accepted campus personalities (e.g., community assistants, student leaders, and student athletes) to appeal to them about preparedness efforts and to change the cultural climate that associates preparedness with paranoia. Because students have high levels of trust and respect for these

individuals, they see themselves as more likely to listen to them instead of instructors or administrators.

## **Implications**

Understanding university students' perceptions of barriers to preparedness and consideration of their suggestions to improve preparedness are crucial to changing the cultural climate from one in which people are reactive to one in which people are proactive. By determining what factors stand in the way of increased levels of student preparedness for disasters, universities can target these barriers and work to eliminate or reduce them. In addition, the use of student suggestions may help make disaster preparedness more appealing.

The results of this study suggest that methods of informing and preparing university students for disasters must change. Preparedness efforts at the university level should not strictly involve laying out a set of rules for students to follow. Based on the students' perspectives in the focus groups, in order for preparedness programs to be appealing, useful, and memorable, educational strategies should be interactive rather than static lectures or online courses. Furthermore, because students reported the greatest fear and least preparedness for incidents of mass violence, initiatives targeting preparedness along these lines would be an effective starting point.

In addition to improvement of disaster-related educational and training efforts, there is a need for more effective distribution of information, particularly disaster-related response plans and alerts when disasters occur. Because students prefer text messages to other forms of communication (like e-mails or flyers), information should be distributed via text message when at all possible. Ideally, information would be presented via multiple channels (e.g., texts, e-mails, and Twitter). In addition, current research suggests that those involved in the distribution of information may play an essential role in students' reception of the information. For instance, based on student suggestions, the use of accepted or well-liked campus figures, such as student athletes, student leaders, and residential staff, emphasizes disaster preparedness as a university value. Such individuals could be involved in the dissemination of disaster-related preparedness plans, procedures, and recommendations to increase the likelihood that students will be open to the information, recognize its importance, and think about it in a positive and proactive manner.

Students participating in the focus groups pointed to the significance of the university in informing and guiding them during a time of disaster. However, it should be emphasized that the institution should not accept sole responsibility for this role. Indeed, many students leave too much to the university, sacrificing the initiative that they could take with respect to disaster-related circumstances. Simply stated, students must take a more active role in their own preparedness. For example, students are urged to obtain basic disaster-related supplies (e.g., a

first aid kit and a weather radio), develop general response plans (e.g., determine the most efficient route for leaving the buildings they frequent), and encourage others to do the same. Indeed, preparedness as a value could be incorporated into a university creed or motto.

Ultimately, the climate must change to allow for the value of disaster preparedness to take root and to grow throughout the university culture. In this respect, the idea is to change student attitudes from negative stigmatizing ones (e.g., thinking of those who value preparedness as being paranoid) toward more positive empowering ones (e.g., thinking of those who value preparedness as embodying university values, such as safety and citizenship). As perceptions change, it is anticipated that students will become increasingly motivated, thereby being more inclined to respond adaptively. Therefore, the findings of the current study are regarded as an essential foundation for galvanizing positive cultural change (attitudinal and behavioral) in terms of disaster preparedness efforts at the university level.

Finally, quantitative findings regarding age differences suggest that older students are more likely to have positive attitudes toward disaster preparedness. Such variations are not necessarily unusual. When awareness and training interventions are implemented, it is important to ensure that demographic variables such as age are considered.

### **Strengths, Limitations, and Directions for Research**

The current study expanded upon previous research by integrating a broad range of disasters into the methodology (natural hazards, mass violence, and pandemic). This allowed for more general discussion and an assessment of the students' and university's strengths and weaknesses in preparedness in broad strokes. Unlike most previous studies on disaster preparedness among university students, this study was not conducted in the aftermath of a disaster. Therefore, perceptions and attitudes about preparedness expressed in the focus groups likely reflect students' views when disasters are not especially salient (Becker et al., 2013; Powell et al., 2012). It is also noteworthy that the sample size was relatively large compared to that of previous qualitative studies on the disaster-related preparedness of university students (e.g., Becker et al., 2013; McGee & Gow, 2012; Mitchell et al., 2014).

Motivating students to prepare will facilitate better outcomes in the event of a disaster-related event; therefore, continued research on this topic among university student populations is crucial. The information generated from this qualitative study informed subsequent quantitative survey development in the area of disaster preparedness, producing better measures to assess student attitudes. Subsequent studies should assess staff and faculty perceptions of preparedness in order to determine if they are prepared to guide the students who rely on them in the event of a disaster. There are some data indicating that faculty and staff may not be comfortable in this role (Weber et al., 2018). Additionally, future research should examine the effect of potential demographic differences—including age,

gender, race/ethnicity, year in school, social organization affiliation (e.g., Greek life), and international student status—on preparedness attitudes and behaviors. This information could help identify groups most in need of targeted educational efforts.

These data, although informative, were collected at one university located in the United States. Disasters are sociocultural-political events. That is, each disaster takes place in a unique social, cultural, and political context. No two disasters are alike (Tkachuck et al., 2018; Weber et al., 2018). No two universities have identical resources. Each university, regardless of region or country, has its own unique risk profile. Thus, it is our perspective that each university should conduct its own research to determine the attitudinal perspective, informational gaps, and behavioral needs of its student body (its own protective profile). Research on student preparedness should continue to assess multiple disaster types, determining the most effective methods for informing and motivating students in view of the unique sociocultural-political climate of the university. As this study and others suggest (Lovekamp & McMahan, 2011; McGee & Gow, 2012; Seo et al., 2012; Tkachuck et al., 2018), university students are generally lacking in knowledge about disasters and preparedness, but these attributes may vary based on the population and the context. In this study, our data point to the need for research to further examine effective ways to increase knowledge about disasters and preparedness strategies, as well as methods to minimize barriers to preparedness motivation and behavior. Thus, although this study does have limitations, it is a useful step toward the development of increasingly effective university-level policies, emphasizing the importance of data in guiding the distribution of resources.

## References

- Alba, D. J., & Gable, R. (2011). *Crisis preparedness: Do school administrators and first responders feel ready to act?* Paper presented at Northeastern Educational Research Association Annual Conference, Rocky Hill, CT. Retrieved from [http://digitalcommons.uconn.edu/cgi/viewcontent.cgi?article=1006&context=nera\\_2011](http://digitalcommons.uconn.edu/cgi/viewcontent.cgi?article=1006&context=nera_2011)
- Ashley, W. S. (2007). Spatial and temporal analysis of tornado fatalities in the United States: 1880–2005. *Weather and Forecasting*, *22*, 1214–1228.
- Baczowski, B. J., Aiena, B. J., Florez, I. A., Tkachuck, M., Smith, C. V., & Schulenberg, S. E. (2013). Informing disaster-preparedness efforts on a college campus. Poster presented at the 47th Annual Convention of the Association for Behavioral and Cognitive Therapies, Nashville, TN.
- Becker, J. S., Paton, D., Johnston, D. M., & Ronan, K.R. (2013). Salient beliefs about earthquake hazards and household preparedness. *Risk Analysis*, *33*, 1710–1727.
- Boruff, B. J., Easoz, J. A., Jones, S. D., Landry, H. R., Mitchem, J. D., and Cutter, S. L. (2003). Tornado hazards in the United States, *Climate Research*, *24*, 103–117.

- Boscarino, J. A., Figley, C. R., & Adams, R. E. (2003). Fear of terrorism in New York after the September 11 terrorist attacks: Implications for emergency mental health and preparedness. *International Journal of Emergency Mental Health, 5*(4), 199–209.
- Chmutina, K., Von Meding, J., Gaillard, J. C., & Bosher, L. (2017, 14 September). Why natural disasters aren't all that natural. *openDemocracy*. Retrieved from <https://www.opendemocracy.net/ksenia-chmutina-jason-von-meding-jc-gaillard-lee-bosher/why-natural-disasters-arent-all-that-natural>
- Decker, J. F., & Slawson, R. M. (2012). An evaluation of behavioral health compliance and microbial risk factors on student populations within a high-density campus. *Journal of American College Health, 60*, 584–595.
- Drescher, C. F., Schulenberg, S. E., & Smith, C. V. (2014). The Deepwater Horizon oil spill and the Mississippi Gulf Coast: Mental health in the context of a technological disaster. *American Journal of Orthopsychiatry, 84*, 142. doi:10.1037/h0099382
- Fox, J. A., & Savage, J. (2009). Mass murder goes to college: An examination of changes on college campuses following Virginia Tech. *American Behavioral Scientist, 52*, 1465–1485.
- Fox, M. H., White, G. W., Rooney, C., & Cahill, A. (2010). The psychosocial impact of Hurricane Katrina on persons with disabilities and independent living center staff living on the American Gulf Coast. *Rehabilitation Psychology, 55*, 231–240.
- Frankel, A. D., Applegate, D., Tuttle, M. P., & Williams, R. A. (2009, August 3). Earthquake hazard in the New Madrid seismic zone remains a concern (U.S. Geological Survey fact sheet 2009–3071). Retrieved from <http://pubs.usgs.gov/fs/2009/3071>
- Glaser, B. G., & Strauss, A. L. (2009). *The discovery of grounded theory: Strategies for qualitative research*. New Brunswick, NJ: Transaction Publishers.
- International Federation of Red Cross and Red Crescent Societies (2019). *What is a disaster?* Retrieved from <https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/what-is-a-disaster>
- Lovekamp, W. E., & McMahon, S. K. (2011). I have a Snickers bar in the trunk of my car: Student narratives of disaster risk, fear, preparedness, and reflections on Union University. *International Journal of Mass Emergencies and Disasters, 29*, 132–148.
- McGee, T. K., & Gow, G. A. (2012). Potential responses by on-campus university students to a university emergency alert. *Journal of Risk Research, 15*, 693–710.
- Mitchell, T., Massoudi, M., Swerdlow, D. L., Dee, D. L., Gould, H., . . . Fishbein, D. B. (2014). Swine Flu in college: Early campus response to outbreak control measures. *American Journal of Health Behavior, 38*, 448–464.
- Mitroff, I. I., Diamond, M. A., & Alpaslan, M. C. (2006). How prepared are America's colleges and universities for major crises? *Change, 38*, 61–67.



- Moen, A., Kennedy, P. J., Cheng, P. Y., & MacDonald, G. (2014). National inventory of core capabilities for pandemic influenza preparedness and response: Results from 36 countries with reviews in 2008 and 2010. *Influenza and Other Respiratory Viruses*, 8, 201–208.
- Palliyaguru, R., Amaratunga, D., & Baldry, D. (2014). Constructing a holistic approach to disaster risk reduction: The significance of focusing on vulnerability reduction. *Disasters*, 38, 45–61.
- Paton, D. (2003). Disaster preparedness: A social-cognitive perspective. *Disaster Prevention and Management*, 12, 210–216.
- Powell, T., Hanfling, D., & Gostin, L. O. (2012). Emergency preparedness and public health: The lessons of Hurricane Sandy. *Journal of the American Medical Association*, 308, 2569–2570.
- Ratti, C. L. (2010). Student perceptions of campus safety at the University of Mary Washington (Unpublished doctoral dissertation). University of Mary Washington, Fredericksburg, VA.
- Redlener, I., & Reilly, M. J. (2012). Lessons from Sandy—Preparing health systems for future disasters. *New England Journal of Medicine*, 367, 2269–2271.
- Schulenberg, S. E., Dellinger, K. A., Koestler, A. J., Kinnell, A. M. K., Swanson, D. A., Van Boening, M. V., & Forgette, R. G. (2008). Psychologists and Hurricane Katrina: Natural disaster response through training, public education, and research. *Training and Education in Professional Psychology*, 2, 83–88. doi:10.1037/1931-3918.2.2.83
- Seo, D. C., Torabi, M. R., Sa, J., & Blair, E. H. (2012). Campus violence preparedness of US college campuses. *Security Journal*, 25, 199–211.
- Sherman-Morris, K., Wax, C. L., & Brown, M. E. (2012). *Mississippi weather and climate*. Jackson, MS: University Press of Mississippi.
- Simms, J. L., Kusenbach, M., & Tobin, G. A. (2013). Equally unprepared: Assessing the hurricane vulnerability of undergraduate students. *Weather, Climate, and Society*, 5, 233–243.
- Sobrio, C., Bayas, K. C., Castro, N., & Bitgue, K. A. V. (2016). Holy Cross of Davao College criminology students' crisis and disaster response preparedness: Basis for designing a college crisis response program. *UIC Research Journal*, 19, 183–196.
- Tkachuck, M. A., Schulenberg, S. E., & Lair, E. C. (2018). Natural disaster preparedness in college students: Implications for institutions of higher learning. *Journal of American College Health*, 66, 269–279. doi:10.1080/07448481.2018.1431897
- Wachinger, G., Renn, O., Begg, C., & Kuhlicke, C. (2013). The risk perception paradox—implications for governance and communication of natural hazards. *Risk Analysis*, 33, 1049–1065.
- Walls, R. M., & Zinner, M. J. (2013). The Boston Marathon response: Why did it work so well? *Journal of the American Medical Association*, 309, 2441–2442.

Weber, M. C., Schulenberg, S. E., & Lair, E. C. (2018). University employees' preparedness for natural hazards and incidents of mass violence: An application of the extended parallel process model. *International Journal of Disaster Risk Reduction*, 31, 1082–1091. doi: 10.1016/j.ijdrr.2018.03.032

### **Appendix. Discussion Questions**

For natural hazards focus groups: questions 1, 7–16

For incidents of violence/pandemic focus groups: questions 2, 7–16

For survey results focus groups: questions 3–6, 9–16

1. We will now ask questions regarding disaster preparedness. As you answer these questions we would like you to refer to natural hazards such as tornadoes, hurricanes, earthquakes, fires, and blizzards/ice storms.
2. We will now ask questions regarding disaster preparedness. As you answer these questions we would like you to refer to such events as school shootings, terrorist attacks, and pandemics.
3. We will now show you some data from a disaster preparedness survey we conducted this past fall. We want to know what you think of this survey and the results. (Results shown.)
4. Were any of the results surprising? What did you find surprising? Why did the results surprise you?
5. Are there any other questions that the survey should ask? What else would you like to know from the survey?
6. Why do you think students in general are not very concerned about the occurrence of disasters?
7. When you think about disaster preparedness, what comes to mind?
8. Are students thinking about disaster preparedness and, if so, to what degree?
9. When you think about a person who is concerned with/thinking about disaster preparedness, what types of qualities or characteristics do you think he or she has?
  - a. When you think about students who are not concerned with/thinking about disaster preparedness, what qualities or characteristics are keeping them from preparing?
  - b. For those students who are not concerned with/thinking about disaster preparedness, what would make them more interested/engaged in disaster preparedness?
10. What do you think are some good ways of delivering information about impending disasters?
  - a. How should messages be worded?
  - b. Who should deliver messages?
11. What is the university's role regarding disaster preparedness?

12. What is your role regarding disaster preparedness?
13. How can we raise awareness of the importance of disaster preparedness at the university?
  - a. What specific components should a program/training/class on disaster preparedness have for it to be effective?
14. What steps is the university taking to better prepare for disasters?
15. What steps can the university take to better prepare for disasters?
  - a. Prioritize a list of steps the university can take.
    - (1) Provide required disaster preparedness trainings each semester
    - (2) Frequent mandatory weather drills
    - (3) Send information through UMToday e-mails
    - (4) Send text messages about disaster preparedness
    - (5) Hand out informational flyers in front of the student union
    - (6) Hang up informational posters about disaster preparedness in buildings on campus
    - (7) Show videos on what to do in a disaster-related situation
16. Please indicate any questions, concerns, or comments relevant to the topic of this focus group. (Participants complete this question individually on a blank sheet of paper).

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