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Characterizing Household Preparedness and Emergency Supply Kit Possession in the United States -- 2020-2021

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Amy Helene Schnall

Abstract

BACKGROUND: Disasters devastate US communities every year, leading to increased morbidity and mortality among the population. During a disaster, household members may be on their own for a period of time because of the ongoing response efforts, size of the affected area, loss of communication, and impassible roads. Therefore, household preparedness is essential to a successful response and can help mitigate loss of life, injuries, and illnesses immediately after impact.

METHODS: To understand current behavior and level of preparedness, we analyzed data collected through Porter Novelli's (PN) *ConsumerStyles* surveys (Fall 2020 n=3,625; Spring 2021 n=6,455). We conducted weighted analysis to examine distributions and estimate associations of emergency supply kit possession, items, and preparedness levels of each survey separately. Chi-square tests estimated the associations of preparedness levels and emergency supply kit ownership with demographics, disaster experience, and perceptions of preparedness. Multivariable logistic regression on *SpringStyles* data helped explain the relationship between key factors and emergency supply kit ownership and overall preparedness

RESULTS: Currently, less than half of US adults are prepared for a disaster; 64% of adults do not have an emergency supply kit and 52% have no preparedness plans. In addition, 43% do not feel confident in how to prepare for a disaster. Respondents were less likely to have an emergency supply kit if they were female, 75 years or older, lived in the Midwest or Northwest, or had less than a high school education. Beliefs play an important role. Those who are confident they know how to prepare for a disaster are more than four times as likely to have a kit and two times as likely to be prepared. Those that believe that an emergency supply kit will improve their chance of survival were more than three times as likely to have a kit.

CONCLUSION: Overall, these data show that we have work to do in terms of preparedness. Focused and dedicated effort on increasing preparedness must be tackled on several levels with dedicated funding and staff. These data are an essential starting point in characterizing current preparedness levels and emergency supply kit ownership and can be used to help guide our public messaging and work with state, local, tribal, and territorial partners.

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Table of Contents

Tables & Figures

Abbreviations

Agency for Toxic Substances and Disease Registry (ATSDR)

American Community Survey (ACS)

Assistant Secretary for Preparedness and Response (ASPR)

Behavioral Risk Factory Surveillance System (BRFSS)

Community Assessment for Public Health Emergency Response (CASPER)

Centers for Disease Control and Prevention (CDC)

Community Emergency Response Team (CERT)

Current Population Survey (CPS)

Federal Emergency Management Agency (FEMA)

Georgia State University (GSU)

Institutional Review Board (IRB)

National Center for Environmental Health (NCEH)

National Household Survey (NHS)

Porter Novelli (PN)

Public Health Emergency Preparedness (PHEP)

State, local, tribal, and territorial (STLT)

Social Vulnerability Index (SVI)

Background

Natural disasters, such as wildfires, floods, and hurricanes, devastate United States (US) communities every year, leading to increased morbidity and mortality among the population.[1-5] The year 2020 was no exception with a record-breaking 30 named storms during the Atlantic hurricane season, wildfires burning more than 8.8 million acres, and heavy rain leading to flooding in several areas of the country; all on top of the global COVID-19 pandemic.[6-11] Unfortunately, these disasters do not impact society equitably with certain groups facing greater risk before, during, and after disasters, including, but not limited to, access to resources as well as exposure to disasters themselves.[1,12-13] For example, low-income and communities of color may have access to fewer resources, higher social vulnerability, and less access to healthcare; they also are more likely to live in areas prone to natural disasters.[14-15] Once a disaster strikes, these pre-existing gaps are often exacerbated. Therefore, it is essential that preparedness policies and practices account for social, economic, and health disparities.

Millions of dollars are allocated each year on US hospital preparedness, and yet a large portion of disaster-related morbidity and mortality occurs before individuals ever have the opportunity to be transported to a hospital.[16] Further, much of the disaster-related morbidity and mortality that occurs is indirectly related to the disaster (e.g., is associated with living in damaged or destroyed infrastructure).[17-19] Therefore, household preparedness is essential to a successful response and can help mitigate loss of life, injuries, and illnesses immediately after impact. During a disaster, household members may be on their own for a period of time because of the ongoing response efforts, size of the affected area, loss of communication, and impassible roads.[20] Therefore, a common recommendation is to promote preparedness through the preparation of an emergency supply kit as well as making emergency plans as outlined on Ready.gov and CDC websites.[21-22] In fact, emergency preparedness is now recognized as a priority in Healthy People 2030 with an objective to "increase the proportion of adults whose household has an emergency plan that includes instructions for household members, including at-risk persons, about where to go and what to do in the event of a disaster."[23]

The goal of this research is to characterize household emergency preparedness and emergency supply kit possession on a national level to help the Centers for Disease Control and Prevention (CDC) guide next steps to better prepare for and respond to disasters and emergencies. These data will help inform more targeted studies, response planning, and update

communication resources such as websites, fact sheets, and other materials to reach a wide audience of disaster epidemiologists, emergency managers, and the general public. Data may also help target an emergency supply kit campaign based on the information gathered as there has not been a major push by CDC since the "Zombie Apocalypse" in 2011.[24]

To reach this goal, we assessed a nationally representative sample within the United States to characterize preparedness, specifically emergency supply kit possession. The following are key objectives of this work:

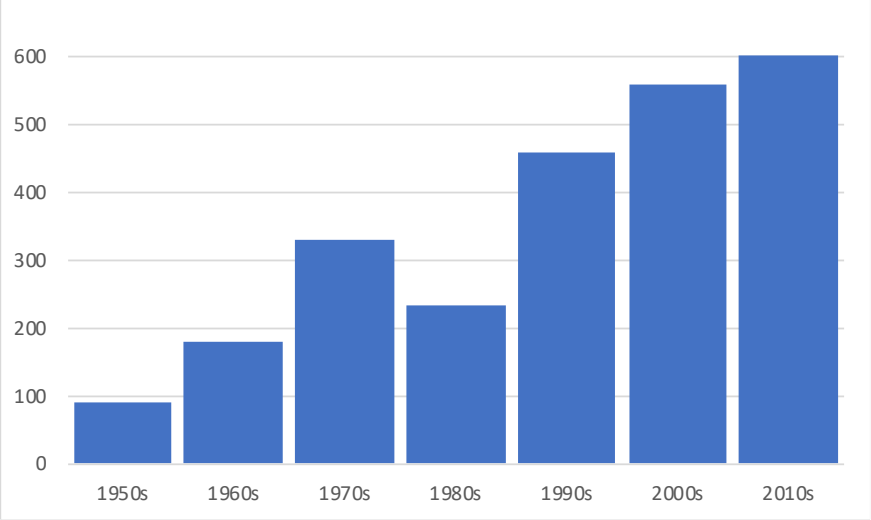
- Describe the proportion and distribution of preparedness and emergency supply kit ownership in a nationally representative sample
- Explore regional differences with the expectation that the Southern region is more prepared than others because of their propensity to experience hurricanes
- Examine how social determinants of health (e.g., race, ethnicity, income, education) impact preparedness and emergency supply kit ownership
- Determine whether those who have experienced a disaster previously are more likely to have an emergency supply kit
- Identify whether those that are prepared in one area (e.g., have a preparedness plan) are more likely to be prepared in others (e.g., have an emergency supply kit)
- Assess if those who feel confident in preparing for a disaster also have an emergency supply

Literature Review

Disasters in the United States

While there are typical disaster seasons (e.g., hurricane season from June through November, wildfires over dry summer months, tornadoes during spring), disasters may occur at any time, and within every US state and territory. Despite efforts to control, prevent, or mitigate disasters, they will continue to occur and impact many people. In fact, research shows that factors such as climate change are making disasters, such as hurricanes, stronger and more frequent, with no signs of slowing

Figure I. FEMA major disaster declarations by decade



down.[25-26] This is further corroborated by the steady increase in the Federal Emergency Management Agency (FEMA)'s major disaster declarations since the 1950s for natural disasters (Figure I).[27] This, of course, is on top of potential terrorist incidents and global pandemics; all of which can happen concurrently.

Regardless of the type of disaster, the public health consequences are numerous and include increased morbidity and mortality, environmental hazards, displaced populations, and disruption of public health infrastructure. Direct effects caused by the actual environmental forces of the disaster or direct consequences of those forces, and indirect effects caused by the unsafe or unhealthy conditions that the disaster creates, can have a lasting impact on the community. Research shows being prepared can help reduce stress and anxiety and help recovery from the trauma faster with fewer long-term effects.[28] Therefore, it is vital that households are prepared for a disaster to help mitigate such negative impacts by keeping the community safe, allowing first responders to focus on life-threatening emergencies, and lessening the psychological effects of the disaster.

Household preparedness is key to reducing the impacts. The first goal in FEMA's 2018-2022 Strategic Plan, build a "culture of preparedness," departs from the agency's past goals focusing mainly on response capabilities.[29] Households are often on their own after a disasters impact because of other ongoing response efforts (e.g., life-threatening emergencies, search and rescue), the geographical region of the disaster (e.g., size of the area, roads potentially cutoff or impassible), loss of communication, and other hazards that may impact the ability to safely leave home.[21] Therefore, having concrete emergency plans and an emergency supply kit can aid in short-term survival by providing essential items for use during a disaster or emergency, thus limiting the need to rely on emergency services or leave a safe structure into a hazardous environment to secure necessary items. An emergency supply kit is a collection of basic items that a household may need in a disaster that is stored together in a manner that can be easily accessed, such as in large boxes, bins, or bags.

While an emergency supply kit is essential for everybody, it is even more essential for those who cannot (or will not) evacuate from their home. This often may be those in low-income or minority communities, persons with disabilities, and/or those with chronic medical conditions who may lack mobility (e.g., no transportation, rely on others to be physically mobile) and be less able to evacuate from a disaster area on short notice. Yet, as emergency supply kits can be costly

and require additional storage space within the home, the same households that may be unable or unwilling to leave may also face barriers in assembling and storing an emergency supply kit.

General Preparedness & Emergency Supply Kits

A review of published literature on the use of emergency supply kits following a disaster found that data tend to focus on general emergency supply kit ownership, including prevalence, factors associated with ownership and interventions to increase ownership (Appendix I). Data often focus on specific populations and, therefore, it is difficult to generalize across studies because of the variable groups and questions researched. In general, emergency supply kit ownership varies based on the population assessed. The most comprehensive data are from FEMA's National Household Survey (NHS) which surveys approximately 5,000 adults yearly to track progress in personal disaster preparedness.[30] And, while people often express optimism about having ample supplies to endure three days without electricity or running water, studies suggest that even with regional variation, low percentages (less than half) of households actually assemble dedicated emergency supply kits.[31-32]

Preparedness plan and emergency supply kit ownership estimates vary greatly with some estimates of supply kit ownership as low as 22% while others are upward of 80%.[33-34] The most complete data are from FEMA's NHS which has asked respondents if they have enough supplies within their home to get through three days or more without power or running water, if they have supplies packed to evacuate easily, and several questions regarding preparedness plans following their Ready.gov guidance. In 2019, 80% of respondents reported they have gathered supplies; comparable to the 81% and 71% reported in 2018 and 2017, respectively.[31,34-35] These numbers display an increase from that reported between 2007 and 2012 when estimates ranged between 52%-57% and dropped an average of 23 percentage points lower (26%-35%) if including only those who updated their supplies within the past year.[36]

The Community Assessment for Public Health Emergency Response (CASPER) is an epidemiologic technique designed to quickly provide evidence-based information for decision-making at any point during the disaster cycle.[37] Several have been conducted to assess preparedness. Among 31 CASPERs[i] conducted between 2011 and 2020, 54.2%–92.7% of households reported having a 3-day supply of food, 54.2%–97.4% a 3-day supply of water, and

[i] Not all CASPERs asked all preparedness and emergency supply kit questions (range 6-23 CASPERs per variable).

36.1%–95.9% reported a 3-, 5- or 7-day supply of medication for all household members taking prescribed medicines.[38-60] Preparedness planning was similarly varied with 43.9%–67.9% of households reporting multiple routes away from their home in case evacuation was necessary, 18.2%–67.9% citing having an emergency communication plan, 19.3%–57.7% indicating a designated meeting plan outside of their neighborhood, and 12.6%–64.1% reporting a designated meeting place outside their home. In addition, emergency supply kit ownership estimates ranged from 22.3%–70.0%. Yet, while many surveys ask generally about "emergency supply kits," little is known about the populations' understanding of what that entails (e.g., what items are in their kit).

Owning a kit may also be linked to personal experiences, whether through education, employment, or exposure to a disaster.[31,34,60-64] Among CDC employees participating in an internal study (CDC Ready) between 2013 and 2015, those with advanced knowledge of emergency preparedness were more likely to have assembled an emergency kit.[62] According to FEMA's NHS, less than half of respondents in 2019 reported having made an emergency plan with those in hurricane-prone areas more likely to do so (61%) than other hazard areas (35%-56%) or the nation as a whole (48%).[34] In 2017, of those who experienced a disaster, 85% indicated they had gathered emergency supplies while only 15% reported they had not.[31] This was also found in a survey that assessed preparedness levels before (2010) and after (2012) a 2011 tornado outbreak. After the April 2011 tornado outbreak, 86.0% of respondents reported they had thought more about personal and family preparedness with 59.7% reporting they had taken actions to increase their level of preparedness. This included a significant increase in having an emergency supply kit (37.1% to 61.5%), 3-day supply of water (58.9% to 81.8%), 14-day supply of food (64.7% to 93.5%), and first aid kit (53.0% to 75.1%).[62]

Not only does experience potentially affect preparedness levels, but social determinants of health may impact readiness as well. A study in Jefferson County, Alabama found that 39% of residents had a complete emergency supply kit, with married individuals and those making more than $25,000/year more likely to have a complete kit.[65] In addition, the 2017 FEMA NHS found that respondents who identified as white were significantly more likely than Blacks, Asians, and Hispanics to report having a household plan and having enough supplies for 3+ days.[31] Similar

results were found in an analysis of the Behavioral Risk Factor Surveillance System (BRFSS)[ii] results between 2010 and 2016 with Hispanics significantly less likely than all other races and ethnicities to have a 3-day supply of food, 3-day supply of medicine, battery-operated radio, or flashlight.[66] Further, they found that men were significantly more likely than women to report their household was prepared. Like results were also found in a survey of older adults (50 years or more) with more males than females reporting having an emergency supply kit and race significantly associated with supply kit ownership.[67]

Health status itself may also impact preparedness. Fourteen states implemented the BRFSS general preparedness survey optional module at least one time between 2004 and 2013.[68] In one study, six states (Delaware, Georgia, Louisiana, Montana, Nevada, and Tennessee) found that 42% of households had an emergency supply kit including four preparedness items (water, food, battery-operated radio, and flashlight with batteries), with respondents who cited worse health status being less likely to have all four preparedness items.[69] The most common preparedness kit item was a flashlight with batteries (94.3%) and slightly more than half (55.6%) of respondents had a 3-day supply of water. A similar study reviewing BRFSS data in five states (Arizona, Connecticut, Montana, Nevada, and Tennessee) found comparable results with 59.2% citing they had a 3-day supply of water, and those categorized as prepared (missing no more than one measure of preparedness per the BRFSS module) being more likely to have the 3-day supply of water than those categorized as unprepared (91.5% vs 32.6%, respectively).[70] And, in Oregon in 2013, they found that adults with disabilities reported they were less likely to feel prepared to handle a large-scale disaster or emergency than those without disabilities. However, they were more likely to have a 3-day supply of water and medication.[71] While adults with disabilities were also more likely to have a written evacuation plan, they were less willing to evacuate than adults without disabilities and less likely to have necessary supplies like a working flashlight and radio with batteries. These are important data to understand as disasters pose additional challenges to those with disabilities.

A recent review article in the *American Journal of Public Health* concluded that additional research is needed to demonstrate the effectiveness of emergency supply kits on public health during critical post-disaster impact periods.[72] For example, if a household had an emergency

[ii] BRFSS is a yearly telephone survey that collects state data about residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services.

supply kit, was it useful, what items were needed, and did the kit allow the household to safely shelter at home. The only published data related to this topic are from 2017 during the response to hurricanes Irma and Maria response in the US Virgin Islands. Although food, water, and medication estimates were similar before and after the hurricanes, significantly fewer households reported having an emergency supply kit during the storms (47.9%) than reported approximately three months prior (67.0%).[39] And, of those with an emergency supply kit, only 64.3% used their kit during the storms and 44.6% reported they needed supplies not in their kit, such as medical supplies (e.g., adhesive bandages) and batteries, which are CDC and FEMA recommended items. While these data are helpful in filling a major gap in knowledge, they are limited in scope and generalizability and did not consider key factors such a race, socioeconomic status, disability status, or other social determinants of health that impact preparedness.

Limitations & Current Climate

While several assessments and studies have asked about emergency supply kits and preparedness over the years, the majority of these data are at least a decade old. The current COVID-19 pandemic has had a major impact on many aspects of life, directly and indirectly, including preparedness. The pandemic has affected the ways we prepare for emergencies in several ways, such as how supplies are gathered, the items to include in emergency supply kits (e.g., masks, hand sanitizer), disaster shelter operations, and the way people seek care and preventive services. Because of this, many knowns about behavior and preparedness before 2020 may no longer be the same as behaviors have changed (e.g., people staying at home, hoarding of supplies).

To understand how the COVID-19 pandemic may affect preparedness during disasters, in June 2020, CDC surveyed a sample of 500 adults from across the country. The survey asked respondents how the pandemic may affect their plans to shelter for disasters, including hurricanes, tornadoes, and wildfires. Fifty-two percent (52%) of respondents said worries about getting COVID-19 could keep them from going to a shelter during an extreme weather incident and 23% worried they would not be able to frequently wash their hands. Changes in supply kits were also noted, with 64% reporting they would bring a mask in their shelter go bag.[72]

CDC explored these concerns further with an online survey of 3,000 adults in eight states along the Atlantic and Gulf Coasts in October 2020. Twenty-eight percent (28%) of respondents said they had changed their emergency response plans because of the COVID-19 pandemic and

people listed fears about going to a shelter such as other people not wearing masks, being unable to keep distance from those outside their households, and concern about older family members getting COVID-19.[73-74] These data show how the current climate can affect preparedness and response behaviors among households. With more households potentially staying at home during a disaster, emergency supply kits become even more essential. However, there is a lack of current national data on emergency supply kit ownership.

Therefore, the goal of this research is to characterize emergency preparedness and emergency supply kit possession on a national level to help CDC guide next steps to better prepare for and respond to disasters and emergencies. Specifically, describing the proportion and distribution of preparedness and emergency supply kit ownership, exploring any regional differences, and examining how factors such as social determinants of health, previous experience, and beliefs may impact preparedness and emergency supply kit ownership.

Methodology

To examine and understand current behavior and level of preparedness, we worked with secondary data collected through Porter Novelli's (PN) *ConsumerStyles* surveys. Each year, *ConsumerStyles* surveys are conducted as cross-sectional market surveys of a random sample of adults (aged 18 years or older) from Ipsos' KnowledgePanel®, a panel of ~60,000 men and women that represents the non-institutionalized U.S. population.[75] KnowledgePanel® is the oldest and largest probability-based online panel in the U.S. To address self-selection bias, panel members are randomly recruited by mail using probability-based sampling by address to reach respondents regardless of whether they have landline phones or Internet access. Panelists must be invited to join through a series of mailings (i.e., initial invitation letter, reminder postcard, follow-up letter), they cannot volunteer. Approximately five weeks after the initial mailing, telephone refusal-conversation calls are made to nonresponding households for which a telephone number is matched. Quarterly survey samples are selected from the panel using a stratified sampling methodology that aims to retain the representativeness of the full panel, ensuring representation from many hard-to-reach populations (e.g., low income, lower education, African American). If needed, households are provided with a laptop or tablet and a mobile data plan for Internet access as all surveys are online only. Respondents receive cash-equivalent reward points for their participation which can be redeemed online for gift cards and prizes.

Each year, there are multiple waves of *ConsumerStyle* surveys: *SpringStyles* (March/April), *SummerStyles* and *YouthStyles* (June), and *FallStyles* (September/October). In 2020, *SpringStyles* was sent to 11,097 KnowledgePanel® panelists[iii] between 19 March and 9 April with 6,463 adults completing the survey (58.2%). The 2020 *FallStyles* was subsequently sent to a sample (n=4,548) of panelists who answered the 2020 *SpringStyles* survey between 24 September and 10 October. Email reminders were sent to non-responders on days 3, 7, and 13. Those who completed the survey received 5,000 cash-equivalent reward points (worth approximately $5) and were eligible for a sweepstakes, while those who did not answer at least half of the questions, or completed the survey in 5 minutes or less, were removed from the data as incomplete (n=8). A total of 3,625 adults (79.7%) completed the *FallStyles* survey.

In 2021, the first wave, *SpringStyles,* was sent to 10,919 panelists[iv] between 23 March and 13 April with 6,455 adults (59.1%) completing the survey. As with all *ConsumerStyles* surveys, reminders were sent to non-responders and those who completed the survey received cash-equivalent reward points. While sampled from the same KnowledgePanel® pool, the 2020 *FallStyles* and 2021 *SpringStyles* are two separate samples; there is no way of knowing if any respondents participated in both surveys.

We included 10 questions related to preparedness and emergency supply kits in the 2020 *FallStyles* and 2021 *SpringStyles* (Appendix II). In addition, general demographic variables were collected with each survey including age, sex, education level, race/ethnicity, housing structure, home ownership, location (e.g., zip, county, region, urbanicity), marital status, number of people within the household, household income, and employment status of the respondent. While the specific questions related to preparedness and emergency supply kits remained the same, there were changes to some demographic variables between Fall 2020 and Spring 2021. These include a modification to income categories; the combination of mobile home with boat, RV, and van into one variable; the elimination of "living with partner" under marital status; and a change in response options for employment.[v] All modifications were accounted for to create matching

[iii] The 11,097 invites included a random sample of 7,932 panelists ages 18 or older and a supplemental sample of 3,165 panelists with children ages 12-17 to ensure sufficient dyad cases for the summer survey.
[iv] The 10,919 invites included a random sample of 7,791 panelists ages 18 or older and a supplemental sample of 3,128 panelists with children ages 12-17 to ensure sufficient dyad cases for the summer survey.
[v] *FallStyles* employment options include "working – paid employee, working – self-employed, not working – on temporary layoff, not working – looking for work, not working – retired, not working – disabled, not working – other" while *SpringStyles* response options were "work full-time, work part-time, not working"

variables between 2020 *FallStyles* and 2021 *SpringStyles,* except for employment which could not be aligned and is noted as such in the tables. In addition, the *FallStyles* survey included an additional question on potential barriers to going to a shelter during COVID-19 not included in *SpringStyles* (Appendix III).

We conducted weighted analysis of the *ConsumerStyles* data using SAS version 9.4 to examine distributions and estimate associations of emergency supply kit possession, items, and preparedness levels of each survey separately. *FallStyles* weights are based off the previous *SpringStyles* and adjusted for eight factors according to the U.S. Current Population Survey (CPS) proportions: gender, age, household income, race/ethnicity, household size, education, census region, and metro status (Appendix IV).[76] In 2021, *SpringStyles* data were weighted using nine factors – sex, age, household income, race/ethnicity, household size, education, census region, metro status, and parental status of children 11-17 years old – to match the 2019 Census' American Community Survey (ACS) proportions.

Descriptive analysis examined distributions of demographic characteristics, preparedness, and emergency supply kit possession and items. Preparedness is defined by having one or more of the following five FEMA recommended plans: emergency communication plan, designated meeting place outside of home, meeting place outside the neighborhood, stored copies of important documents, and multiple evacuation routes away from home. An "easy to get to emergency supply kit" is not included in the preparedness analysis as it is asked in a separate question and analysis was done independently. Missing data were minimal in both surveys for all variables (<5%). Chi-square tests estimated the associations of preparedness levels and emergency supply kit ownership with demographics, disaster experience, and perceptions of preparedness, emergency supply kits, and disaster risk. Data are presented with Fall 2020 first followed by Spring 2021 unless otherwise noted. Because *FallStyles* and *SpringStyles* data were similar in terms of descriptive statistics and significant associations, we ran multivariable logistic regression on *SpringStyles* only to help explain the relationship between key variables (e.g., race, ethnicity, income, education) and emergency supply kit ownership and overall preparedness.

All data presented within this report, including the tables, are weighted. Data are presented within the text with fall values first followed by spring. However, data are presented as one value if they were the same for the two surveys. If the two data points had less than 1% difference, they are reported as one value with an approximate (~) sign. This research is exempt

from Georgia State University (GSU) Institutional Review Board (IRB) review under Category 4 (secondary research for which consent is not required) as determined by CDC's National Center for Environmental Health's (NCEH) Office of Science on 14 August 2020.

Results

Survey Sample

A total of 3,625 adults completed the 2020 *FallStyles* survey and 6,455 adults completed the 2021 *SpringStyles.* Overall, the Fall and Spring weighted demographics were comparable (Table I). Approximately 7% of respondents were aged 75 years or older and 51.6% were female. Educational attainment was distributed across categories with ~10% with less than high school education, ~28% with a high school degree, and a third (33.8%, 31.8%) with a bachelor's degree or higher. Roughly 63% self-identified as White with ~11% Black, ~16% Hispanic, and less than 2% multiracial. Most live in single-family homes (73.1%, 71.7%), with ~15% in apartment homes, ~8% in townhomes or duplexes, and ~4% in mobile homes, RVs, boats, or vans. The majority (73.7%, 72.5%) own their homes with a quarter (24.4%, 25.6%) renting and 1.9% living in their home without payment.

The South had the most representation with ~38%, followed by the West (~24%), Midwest (~21%), and Northeast (~17%) with the majority living in metro areas (86.6%) compared to non-metro (13.4%). Less than 15% live alone and about a third (31.9%, 33.1%) of households have children aged 17 years or younger. Household income is distributed relatively even with roughly 30% making less than $50k, ~31% between $50k and $100k, and ~38% with a household income of $100k or more. In Fall 2020, 64.1% were considered employed and 30.9% unemployed or retired. In the Spring 2021, 43.5% were employed full-time, 17.5% employed part-time, and 39.1% unemployed or retired but these cannot be compared directly since the question changed.

Overview of National Preparedness and Emergency Supply Kit Ownership

Table II describes preparedness levels and previous disaster experience. Most respondents (69.0%, 63.5%) have experienced a disaster with severe weather with power outages being the most common (55.1%, 50.3%) followed by a tropical storm or hurricane (29.2%, 23.4%). A tornado; earthquake, mudslide, or landslide; or flood was experienced by roughly 15% for each disaster type. Only 5% have experienced wildfires. Several (16.4%, 19%) responded that they, or somebody in their household, worked, volunteered, or trained in disaster

response or recovery. When asked if public authorities announced a mandatory evacuation because of a large-scale disaster, ~57% reported there would be no reason to prevent them from evacuating. However, ~20% reported a concern of leaving pets, 20% were concerned about leaving their property, and roughly 10% to 15% (14.6%, 11.5%) said they had nowhere to go. Few (5.5%, 5.3%) cited health problems or a lack of transportation (3.8%) as a barrier. *FallStyles* specifically asked about reasons preventing sheltering during an extreme weather incident in 2020 with 46.7% reporting concern about getting COVID-19, 39.7% the lack of social distancing in shelters, 33.4% concerned about leaving their pets or valuables in the home, and 24.7% had no information about the shelter locations or hours of operation. Inadequate availability of handwashing (12.7%), inadequate availability of medical care (12.7%), and lack of public transportation (5.1%) were also reported.

Half (51.1%, 52.4%) reported none of the FEMA recommended preparedness plans and one-quarter (21.5%, 24.3%) reported having only one plan. Of those who reported having only one plan, stored copies of important documents was the most popular (50.2%, 42.5%), followed by an easy to get to emergency supply kit (22.6%, 28.1%), and a designated meeting place outside of the home (11.1%, 13.1%). Less than 3% had all recommended preparedness plans and items. Overall, a third (34.6%, 32.4%) indicated they had stored copies of important documents, ~27% with an easy to get to emergency supply kit, and less than 20% with a designated meeting place outside the home. Few (13.4%, 15.4%) have emergency communication plans. When given the definition of an emergency supply kit in a separate question, approximately a third (33.8%, 36.3%) reported having one. This difference in response could be because of the definition provided or the lack of “easy to get to” in the question. Of those who had an emergency supply kit based on the latter question (i.e., with the definition provided), almost all (95.4%, 93.6%) reported having a flashlight with batteries, ~85% reported medical supplies, ~80% reported having water, almost 70% had food, and roughly 60% had a radio. Household cleaning supplies were present in approximately a third (32.6%, 29.3%) of emergency supply kits.

When asked whether an emergency supply kit would help their chance of surviving a disaster, three-quarters (78.1%, 73.0%) agreed while few (~4%) disagreed (Table III). The cost of an emergency supply kit does not seem to be a barrier for almost half (49.6%, 47.8%), but slightly more than 20% agreed that an emergency supply kit costs a lot of money. More than half (56.0%, 57.1%) agreed they felt confident they knew how to prepare for a disaster, roughly 27% were

neutral, and ~16% did not feel confident. When asked whether the risk of their household being affected by an infectious disease was greater than that of a disaster, narrowly more agreed in the fall (44.3%) than the spring (41.4%).

Individual Factors Associated with Preparedness and Emergency Supply Kit Ownership

Tables IV and V describe emergency supply kit ownership and preparedness levels by demographic and household characteristics. Based on chi-square tests, there is a significant association between both preparedness levels and emergency supply kit ownership and race/ethnicity, region, and household income for both surveys. In addition, emergency supply kit ownership is associated with age as well as housing structure and ownership status in *FallStyles* and education in *SpringStyles.* Preparedness levels, on the other hand, are associated with housing structure, ownership status, and household size as well as age in *FallStyles* and education, marital status, and children within the home in *SpringStyles.*

Preparedness, disaster experience, and beliefs are also associated with emergency supply kit ownership (Table VI). All preparedness plan items and disaster types experienced are significantly associated with an increased likelihood of having an emergency supply kit. Of those who do not have a kit, ~63% also do not have any preparedness plans and less than 0.5% have all five. However, of those who do have an emergency supply kit, most have either some plans (65.2%, 62.4%) or all five plans (7.9%, 6.7%). Experience through work, volunteering, or training in disaster response or recovery is also associated with emergency supply kit ownership. However, numbers remain low with roughly a quarter (26.7%, 27.1%) of those who own a kit also identifying as themselves or a household member having experience in the response and recovery field. As far as beliefs, being confident in knowing how to prepare for a disaster and agreeing that emergency supply kits will improve chance of survival are significantly associated with having an emergency supply kit; approximately three-quarters of those who have a kit agree they are confident compared to less than half who do not have a kit and, similarly, ~85% of those who have an emergency supply kit believe it will improve their chance of surviving a disaster. Additionally, the belief that emergency supply kits cost a lot of money is associated with kit ownership with those who agree or disagree more likely to have a kit than those who are neutral. However, there is some discrepancy between *FallStyles* and *SpringStyles* with regards to the perception that the risk of an infectious disease is greater than that of a disaster. While there is no significant association in the Fall data (χ^2 = 0.543) there is a significant association in

SpringStyles with 43.6% of those who do not have a kit agreeing that infectious disease is a greater to risk to their household than a disaster.

As with emergency supply kits, experiencing a disaster (any type) increases the likelihood of being prepared as does being employed, having volunteered, or taken training in disaster response or recovery (Table VII). For example, in Spring 2021, of those who were fully prepared (i.e., all five plans) more than half (52.3%) were employed or volunteered in the field compared to 11.3% who worked or volunteered in disaster response or recovery among those not prepared. In addition, of those who are considered prepared, the majority (89.6%, 94.7%) also have an emergency supply kit. Those who reported being confident in knowing how to prepare for a disaster and believing emergency supply kits will help improve the chance of survival also reported higher levels of preparedness. Similar to emergency supply kit ownership, this is a discrepancy (albeit on a lesser scale) between *FallStyles* and *SpringStyles* when it comes to believing an infectious disease is a greater risk than that of a disaster with 19.2% disagreeing in the fall versus 32.7% in the spring. Again, while there is no significant association in the Fall data, there is a significant association in *SpringStyles*.

As beliefs play an important role in action and are often linked to certain characteristics, we explored the associations between demographic characteristics and beliefs regarding disasters and preparedness. We found an association between age, sex, education, race/ethnicity, housing type, ownership status, region, urbanicity, marital status, and household income with confidence in knowing how to prepare for a disaster (Table VIII). Of those who are confident, more than half (51.1%, 50.3%) are males, live in single-family homes (77.3%, 74.6%), and own their home (77.9%, 75.2%). With regards to believing an emergency supply kit will improve their chance of survival (Table IX), attaining a higher education level, one's race/ethnicity, living in a metro area, and earning a higher household income all have significant associations in both surveys. And, almost all variables are associated with believing that emergency supply kits are expensive (Table X). For example, females were more likely than males (~57% versus ~43%) to agree that an emergency supply kit is expensive. In addition, of those with a household income of less than $25,000, ~29% agree supply kits are expensive compared to ~15% of those with a household income of more than $150,000 annually; ~19% of those who own their home agree they are expensive compared to ~28% of those who rent their homes; and ~28% households with kids agree kits are expensive compared to ~19% of homes without kids.

Finally, age, education level, ownership status, region, urbanicity, and household income all have significant associations with the belief that risk of infectious disease greater than risk of disaster (Table XI).

Relationship between Multivariable Analysis of Factors and Emergency Supply Kit ownership and Overall Preparedness

As *FallStyles* and *SpringStyles,* in general, were comparable in most regards, detailed analysis was conducted only on the most recent *SpringStyles* data. The only notable difference between the two surveys was with regards to the belief that an infectious disease was more likely to affect their home than a disaster. We used multivariable logistic regression to explore the aforementioned associations in more detail and provide a better picture of how the multiple determinants interact for preparedness for spring 2021 *SpringStyles* data. As with the other analysis, we weighted all variables within the models. We used a backward stepwise elimination procedure, beginning with all variables in the model (either all demographic factors, all disaster experience variables, or all beliefs) and eliminating those that did not statistically predict ($p<.05$) the dependent variable (emergency supply kit ownership or preparedness level) one by one. Only the final model is presented in the text, the first models for demographic factors, which included all significant ($p<.05$) variables from the chi-square analysis, are presented in Appendix V.

Age, sex, education level, and region of the country remain significant predictors of preparedness in the final model after adjusting for all variables with region being the most influential (Table XII). Adults aged 35-54 years and 55-74 years have a 32.0% and 37.8% increased odds of having an emergency supply kit compared to older adults aged 75 years or more. In addition, there is an 10.9% decreased odds that females will have a kit (compared to males). As mentioned, region plays an important role with those in the Midwest and Northeast being close to half (44.6% and 40.4%, respectively) as likely to have a kit than those in the South. The South and the West were comparable.

Those who are fully prepared (i.e., have all five FEMA recommended plans), are ~63 times as likely to have an emergency supply kit (Table XIII). But, having any plans increases the likelihood of also having an emergency supply kit with emergency communication plans being the largest predictor (OR=3.618). When it comes to disaster experience, experiencing a previous disaster increases the odds of having an emergency supply kit by 57% (OR=1.6) with wildfires and hurricanes being the largest predictors with an 86.2% (OR=1.9) and 59.3% (OR=1.6) increase,

respectively (Table XIV). Working, volunteering, or having training (e.g., Community Emergency Response Team [CERT]) increases the likelihood of having a kit more than twofold (OR=2.1).

Our analysis of preparedness levels produced similar results. Preparedness was defined as having at least one of the five FEMA-recommended plans while not prepared was having no plans at all. Being older, having more than a high school degree, identifying as White or multiracial, living in a single-family home, owning their residence, living in the South or West, being married, having children within the home, and earning a higher household income all remained significant predictors of increased odds of being prepared in the final adjusted model (Table XV). While those aged 35-54 years old had an increased odds of having an emergency supply kit compared with older adults (75 years or older), they had a 24.4% decreased likelihood of being prepared (OR = 0.8). Non-Hispanic Blacks and those classified as other both had roughly a 20% decrease in odds of reporting being prepared compared to non-Hispanic Whites. Compared to those in detached single-family homes, those living in mobile homes, RVs, vans, or boats reported approximately half (OR 0.6) the odds of having at least one of the five recommended plans. Those who own their homes had a 34.6% increased likelihood of being prepared compared to those who rented (OR=1.3). Not being currently married (OR 0.8), having children within the home (OR 1.5), and having an income of $150,000 or more (OR 1.2) all impact preparedness levels.

Similar to experience and emergency supply kit ownership, those who experienced a previous disaster had increased odds of being prepared (OR=2.1, Table XVI). This pattern remained true regardless of the type of disaster experienced with wildfires, again, being the top predictor (OR=1.9). However, unlike with emergency supply kits, hurricanes were the lowest predictor with only 44.3% increased odds of having all five preparedness plans (OR=1.4).

Tables XVII and XVIII examine the odds of emergency supply kit ownership and preparedness by beliefs and attitudes of the respondents. Those who are confident (i.e., agree with the statement) that they know how to prepare for a disaster have almost 4.5 times the odds of having a kit (OR 4.4) as those who disagree and almost 3 times the odds of being prepared (OR=2.8). Furthermore, those who believe that an emergency supply kit will improve their chance of surviving a disaster are also more than 3 times as likely to have a kit as those who disagree with that sentiment (OR=3.0). They are also 73.0% more likely to be prepared overall (OR=1.7). When it comes to beliefs about the cost of emergency supply kits, those who agree they cost a

lot of money are more likely to have a kit than those who disagree (OR 1.3) but those who are neutral are 17.8% less likely to have a kit (OR=0.8). Finally, those who believe the risk of their household being affected by an infectious disease is greater than that of a disaster, are 28.7% less likely to have an emergency supply kit (OR=0.7) and 12.5% (0.9) less likely to be prepared.

Discussion

This analysis reflects the first reported data since the start of the COVID-19 pandemic to characterize preparedness, specifically emergency supply kit possession, in the United States through a nationally representative sample. Overall, the fall and spring samples are comparable. However, while data are weighted to match population estimates and provide representativeness (gender, age, region, household income, race/ethnicity, education, urbanicity, and household size), not all factors potentially associated with disaster preparedness are included in the weighting structure. Household structure, home ownership, marriage, living with others, and having children within the home are all higher in the survey samples than the national average according to US Census data (2018-2020).[77-79] For example, the most recent data on housing structure estimates that 68.1% of households are in detached single-family homes, 23% in apartments, and 6.2% in mobile homes. However, these data report between 71%-73% single-family homes, 14% apartments, and less than 4% in mobile homes. In addition, home ownership among the sample is higher than the national average at ~72% compared to the 65.6% estimated during the third quarter of 2021. And, although data were weighted based on 2019 Census estimates, household income weights were based on a category of $60k or more for *FallStyles* data.[vi] Therefore, the sample household incomes could be slightly higher than the US average as recent estimates range from 18.5% (2019 CPS data) to 19.9% (2019 ACS data) for households with an income of $150k or more. However, *FallStyles* weighted data showed 20.5% which is comparable to the 2019 ACS. Despite these small areas of variance, these data are still reasonably representative of the population and estimates can be generalized with caution.

Overall Preparedness Levels & Emergency Supply Kit Ownership

These data show that current preparedness levels of the population are extremely low; less than 3% have all the recommended plans, less than 10% have four or more plans, and almost half have no plans at all. This is well below FEMA's performance measure targets for community-

[vi] *SpringStyles* data matched our categorization of $150k or more

level citizen preparedness[vii] which aims to increase the percentage of citizens who are prepared to 80%.[80] Individual preparedness plans range from a low of 7.2% (having a designated meeting place outside the neighborhood) to a high of 34.6% (having stored copies of important documents). And, while having copies of important documents (the most reported preparedness plan) is important, this is less important than others in terms of public health and safety. Therefore, there is currently a large gap in national preparedness levels that must be addressed. These data help demonstrate such a need at the national level, but would be beneficial as well as the local level to tailor and target specific interventions. By understanding the gaps, agencies on all levels (e.g., federal, state, local, tribal, and territorial [STLT], community) can understand their target population and focus efforts appropriately.

Therefore, the first step to address such preparedness gaps is understanding the community. Disasters are local, and so must be preparedness interventions. Knowledge of potential evacuation behaviors is a key aspect to understand as it can help frame messages and provide a starting point for interventions. Those who do not evacuate will stay within the home, making preparedness even more important. Based on these data, only about 60% of people would evacuate even if told to do so. Top concerns of those reporting they would not evacuate were leaving pets and property. This is consistent with data from a number of CASPERs conducted prior to the COVID-19 pandemic and is important to recognize as a consistent barrier to safe evacuation behaviors.[39,81-83] On top of these more traditional barriers, the fall 2020 data also demonstrated specific pandemic-related concerns about evacuation during an incident such as concern about getting COVID-19, lack of social distancing, and inadequate sanitizing and medical care access. This is similar to other survey data from the pandemic.[73] Importantly, almost 15% of respondents reported nowhere to go as a barrier, in spite of shelters being available for free and often accounting for concerns such as pets by providing pet shelters. One potential explanation could be a lack of awareness of shelter locations, safety measures, and/or the availability of pet-friendly shelters. In addition, while lack of transportation was cited by less than 5% of respondents, this is an important issue to address. It is essential for public health to work with emergency management to ensure that all those who want to evacuate can safely do so, whether it is through better communication about the availability of safe sheltering, providing

[vii] Defined as percent of households that "conduct pre-incident preparation–to include maintaining a communication plan, disasters supplies, and a practicing evacuation/shelter-in-place, and maintaining skills"

transportation to those in need, or developing creative solutions for those who are concerned about leaving their property behind. For example, for those who are concerned about leaving their large pets or livestock behind, a potential solution would be to allow for controlled, escorted (e.g., by local police) re-entry to feed such animals and check on property at a specific time each day provided the roads are safe. Of those who said they would not evacuate, roughly two-thirds also report not having an emergency supply kit. This is a group that must be targeted through intervention efforts as they are the most vulnerable to potential negative health impacts. While not included in this report, initial analysis found several individual factors (e.g., age group, race/ethnicity, household type, ownership status, region and urbanicity, marital status, household income, perceptions and beliefs, previous disaster experience) are associated with evacuation. Further analysis into the factors associated with evacuation is necessary. This will allow for more targeted messaging to the specific groups who are less likely to evacuate.

Like preparedness, emergency supply kit ownership is also lacking across the country. Overall, while the majority of respondents believed that an emergency supply kit would help their chance of survival, only a third have one. Of note, for those respondents only reporting one preparedness plan or item, an emergency supply kit was the second most popular (after copies of important documents). This shows that, while low, emergency supply kits are still one of the top preparedness items among households.

Results highlighted that there seems to be some confusion about with what comprises an emergency supply kit. The question was asked twice within the survey (as part of the preparedness plans and separately) and answers varied by roughly 10%. Of those who reported *not* having an emergency supply kit when asked directly, roughly 8% reported having an "easy to get to emergency supply kit" in the previous question. While the wording differed (one specifying "easy to get to" and the other providing a definition) the varied responses are concerning and indicate a further need for communication efforts to clearly define emergency supply kits to the general population. Despite this confusion, of those who reported having an emergency supply kit, the most common item was a flashlight with batteries, followed by medical supplies, water, food, and a radio; all of which are recommended on both FEMA and CDC websites. However, because the question did not define medical supplies (e.g., it included a 7-day supply of prescription medication) or the amount of food and water (i.e., a 3-day supply), it is unclear if the

emergency supply kit would be adequate for the household during an emergency response. Money was cited as a barrier for roughly a quarter of respondents.

Therefore, it is vital to provide clear guidance on the essential components of a household emergency supply kit. While there are suggested items on FEMA, CDC, American Red Cross, and several other agency (both local and federal) websites, there is little consistency among these lists and several have over 20 items, which can cost hundreds of dollars to prepare depending on the size of the family.[84] In fact, an environmental scan synthesizing items recommended identified 36 common items (defined as listed on at least a third of lists) among the 196 emergency supply kit lists around the United States.[84] While no single item was listed on all 196 lists, the most common item was a flashlight (83%), followed by a radio (82%), batteries (81%), and medications (80%). While emergency supply kits should have some items tailored to regional or local needs (e.g., sunscreen, mylar thermal blankets), there should be a core set of common items recommended on all lists (e.g., food, water). In addition, creative solutions must be implemented to ensure that cost is not a barrier to preparedness. This could include campaigns which encourage purchasing one item each month to reduce cost burden, making home-made kit items, or providing kits to low-income households in need.

Determinants of Preparedness & Supply Kit Ownership

The identified gaps in preparedness and emergency supply kit are not equitable across the nation. Several social determinants of health show important associations with being prepared. Those with a bachelor's degree or higher have roughly 30% increased odds of being prepared than those with less than a high school education. In addition, owning one's home increases the likelihood of being prepared by 35%, having children increases the odds of preparedness by roughly 53%; and earning a household income of more than $150,000 (compared with less than $25,000) increases the likelihood by 24%. In contrast, being Hispanic; living in a mobile home, RV, boat, etc.; not being currently married; and living in the Midwest or Northeast all decrease the likelihood of preparedness. These are extremely important factors in terms of targeting populations that need to be more prepared. Many of the populations with a decreased likelihood of being prepared, are also more likely to be more vulnerable to disasters (e.g., higher social vulnerability, more likely to live in disaster-prone areas). Therefore, once a disaster strikes, the pre-existing gaps among these vulnerable populations may be exacerbated by the lack of preparedness. To address this, it is essential that preparedness policies and

practices are tailored and targeted to specific subpopulations. For example, emergency managers and public health leaders can work together to develop a Community Outreach Information Network (COIN) – a grassroots network of community members and trusted leaders who can assist with emergency planning and the delivery of information to at-risk groups before, during, and after an emergency.[85] At the societal level, they can use CDC's Social Vulnerability Index (SVI) to locate segments of the community that are most vulnerable and least likely to be prepared.[86-87] This would then allow for targeted efforts within those areas.

Like preparedness, a number of social and demographic factors were also associated with emergency supply kit ownership. Age, gender, education level, and region of the country with region having the greatest increased odds of owning a kit. Interestingly, race, income, housing structure type, and home ownership status were not significant within the multivariable models. This could potentially be because these factors are overlapping with the other components (e.g., education level) or are modifiers of the relationship, which has been found in other research.[88] Those who believe an emergency supply kit costs a lot of money are 28.9% more likely to have a kit than those who disagree, while those who are neutral on the matter are less likely. While income may not be a barrier to having an emergency supply kit, the fact that roughly a quarter cited that emergency supply kits cost a lot of money remains something to consider as a potential barrier. Those who think it costs a lot are more likely to have a kit so their perception could be based on their experience in purchasing items. Further analysis into this relationship between cost (or perception of cost) and possession of an emergency supply kit is warranted. There are also several promotion efforts that could be done to help mitigate this potential barrier such as campaigns that suggest gathering supplies over time to reduce the financial burden or using preparedness funds to help provide kits to those in need, especially older adults and females.[89-90]

Of particular concern are older adults (those 75 years or more) who were less likely than every other age group to have a kit. Older adults tend to be those with more chronic conditions, mobility issues, or other factors that may impact their health and safety during a disaster. It will be important to target messaging toward this group, while also further assessing the barriers. It may also be efficacious to provide emergency supply kits to such specific high-risk populations through preparedness funding. This could potentially be done with grant money from FEMA, CDC, the Assistant Secretary for Preparedness and Response [ASPR], or other response agency;

donations to non-profits such as American Red Cross, Salvation Army, or AmeriCorps; insurance reimbursements or health savings account; federal programs such as MEDICARE or MEDICAID; or other creative funding solutions. This could ensure that those who are both most in need and also least likely to have a kit have a basic level of preparedness.

Males are more likely than females to have an emergency supply kit as well as be confident in preparing for a disaster. In addition, those who completed at least some college were more likely than those with just a high school education to have a kit. This could potentially tie into the "survivalists" or "preppers" who are often portrayed as middle-aged, White males on shows such as National Geographics *Doomsday Preppers*.[91] However, there are limited data on these groups, so the true demographics are unknown. One market research analysis found that preppers tend to be married male homeowners with college or advanced degrees who earn over $100,000.[92] Regardless, this group tends to be active on social networks (e.g., Facebook, YouTube) and targeted marketing has been created (e.g., special "prepper supplies" categories on Amazon,). While it is unknown if ultimately prepping actually reduces the impact of a disaster, these are venues that CDC could potentially use to reach these individuals and possibly learn from their motivations about committing to preparedness and how this can be leveraged toward other groups.

Despite their importance, social determinants were not the only factors that mattered in terms of preparedness and emergency supply kit ownership. As expected, being prepared in one area increased likelihood of being prepared in another. In fact, those who had all five recommended FEMA plans were almost 64 times more likely to have an emergency supply kit. Even having some plans increased the odds of having a kit by almost 3.5 times. This is important in terms of people's mindset and is consistent with previous research on preparedness and several theories on behavior modifications (e.g., Health Belief Model, Transtheoretical Model, Theory of Planned Behavior).[93-95] Self-efficacy, intentions, and perceptions are common themes in these models and all tie into what people think. The survey data is consistent with this as well, showing that beliefs played a significant part in preparedness. Those who felt confident in preparing for a disaster had over four times the odds of having an emergency supply kit and had almost three times the odds of being prepared. And, those who believe that emergency supply kits will improve their chance of surviving a disaster were three times more likely to have a kit and had over 73% increased likelihood of also having preparedness plans than those who did not

believe a kit would help them during a disaster. Believing that a disaster is not the greatest threat to the household also has an impact. Those who believe the risk of an infectious disease is greater than that of a disaster were also less likely to have a kit and be prepared. This is important to recognize in terms of communication efforts to households and targeting messages. For example, if someone is confident in their preparedness for a disaster or does not believe that a disaster will affect their home, they may not listen to standard approaches to messaging. This has been found with regards to pandemic influenza when communicating risk to the public; subjective judgement about risk affects level of preparedness and thus education strategies must address expectations, the social context, and health agency empowerment and trust.[96-97] It also has been explored with regards to the Transtheoretical Model which suggests that messaging must be tailored to the different stages (precontemplation, contemplation, preparation, action, maintenance).[94]

While studies have shown that local media communication is a critical source of information regarding disasters, and thus emergency preparedness,[88] changes in message may be necessary based on the results of our survey. The first step would be to demonstrate what preparedness really means (as there was some confusion even about what an emergency supply kit entails) and that disasters can, and do, happen everywhere and to anybody. CDC's approaches could be informed by the Health Belief Model, which addresses individuals' perceptions of the threat (susceptibility, severity), the benefits of avoiding the threat, and factors influencing the decision to act (barriers, cues to action, and self-efficacy), to support perception changes that advance behavior changes for increased preparedness.[93] Similar to the current COVID-19 vaccination efforts, local trusted leaders (e.g., religious leaders, local personalities, popular business owners or community organizers) and community members should be leveraged to target specific groups. These trusted individuals can help change social norms and understanding about preparedness and encourage planning and supply kit ownership.

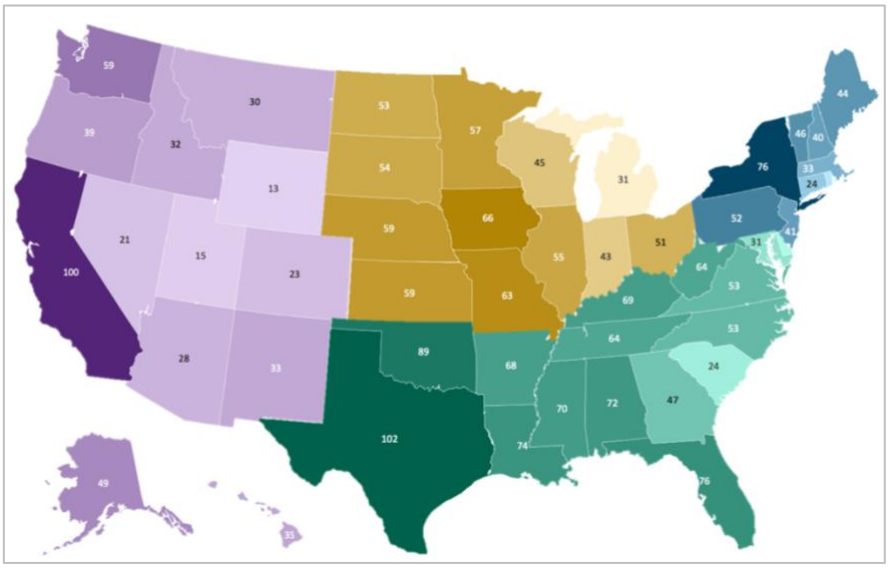
In addition, the personal experience of respondents played a key role. Most respondents had experienced some type of disaster. This factored into their level of preparedness with those experiencing any disaster, regardless of type, having increased odds of having an emergency supply kit and being prepared. The effect of this experience was amplified when it came to experience working or volunteering in disaster response or recovery. Those who had such experiences had more than 100% increased odds in having a kit and almost 200% increased odds

of being prepared. Interestingly, experiencing a hurricane or tropical storm had only a 44.3% increased odds of being prepared (the lowest within the model). A possible reason could be related to fatigue or being confident (or overconfident) in their previous experience (e.g., normalcy bias).[98-99] However, those who have experienced wildfires were the most prepared and most likely to have an emergency supply kit. This is important since wildfires can occur without warning and in unpredictable ways; causing necessary evacuations to happen quickly. This could be related to region since the West, specifically California, has the most wildfires and these data show they are also one of the most prepared regions.[27]

Therefore, the disaster type associations could be linked to regional associations as geographic region significantly impacts preparedness and emergency supply kit ownership. The South and West were the most prepared, in terms of both plans and emergency supply kits. Texas and California are the two most disaster-prone states in the US with 102 and 100 federal major disaster declarations since 1950, respectively (Figure II).[27] However, while the South had the most disaster declarations in that timeframe (n=989), the Midwest had the second most disaster declarations with 576, and New York (in the Northeast) is ranked fourth. Therefore, while true that Southern states have the most experience and therefore could be more prepared based on such experience, disasters can (and do) happen in all regions.

State investment in preparedness and related policies could also potentially play a role, however, data on such investments are limited as there are often multiple streams and multiple agencies involved. A survey of emergency managers by the Pew Charitable Trusts regarding spending on state-funded disaster assistance programs between 2012 and 2016 found that most states do not comprehensively track natural disaster spending and, when they did, the spending was highly variable.[88] In addition, limited funding was spent on mitigation efforts and much of what was spent was required by

Figure II. Number of FEMA major disaster declarations by State since 1950



federal programs, such as FEMA's Hazard Mitigation Grant program. CDC also provides states with money to build public health preparedness and response capabilities via the Public Health Emergency Preparedness (PHEP) cooperative agreement.[89] In 2020, over $622 million in funds were awarded to 62 jurisdictions ranging from $374,474 to Palau to over $42 million to California. Such state investment in preparedness could have an impact on the community and household preparedness. However, this is not a metric that is commonly or consistently tracked through the cooperative agreement. It is important that we continue to work with STLT agencies and policymakers regarding preparedness activities, including at the household level. With the COVID-19 pandemic highlighting a number of gaps in our overall public health infrastructure and preparedness, there is a potential policy window to focus on a wholistic, all-hazard approach to preparedness, including household- and community-level efforts, that could bring about much needed change. Our survey results, which highlight the regional differences as well as population-level factors such as education, gender, and age, that impact preparedness, can be used as a starting point for STLT jurisdictions to collaborate with communities to address household preparedness. Such interventions can include using state funding to provide emergency supply kits to vulnerable community members who are less likely to own one and develop public health preparedness campaigns that focus on specific populations. For example, these data report that the Northeast is less likely to be prepared, however New York and several other states in the region are extremely disaster-prone. Therefore, there seems to be a gap and this region may first need to understand their risk. On the other hand, the South overall is prepared, however specific populations (e.g., less education) are less likely to be prepared and own a kit. In this region, STLTs can focus on targeting such populations through new and innovative approaches as current methods do not appear to be working.

Summary of Recommendations

Focused and dedicated preparedness efforts will be necessary to achieve the targeted goal of 80%. This must be tackled on several levels with dedicated funding and staff to support such efforts. For example, at the federal level, messaging can be tailored based on these data to target specific regions and populations while at the local level, STLTs can work with community leaders to target specific populations less likely to be prepared and have an emergency supply kits. Therefore, the following recommendations are suggested to improve preparedness and emergency supply kit ownership within the United States:

1. Develop a core list of items to include in emergency supply kits that includes only essential items. This will help reduce some of the confusion and, ideally, make emergency supply kits more manageable. Additional suggested items based on region or to enhance the kit should also be developed. However, there should be a basic, affordable, core list that is consistent across the nation and readily available for purchase in most stores.
2. Provide emergency supply kits to specific vulnerable populations who are less likely to own a kit. While income was not significantly associated with kit ownership, cost was cited as a barrier. Money should not be a barrier to preparedness.
3. Ensure that all households know of the location of safe shelters for evacuation, including COVID-19 prevention measures be taken, availability of pet-friendly shelter options, and transportation to such shelters. While preparedness plans and emergency supply kits are essential; the primary goal should remain safe evacuation when recommended. Therefore, all potential barriers should be acknowledged and when possible accounted for and the public should understand the safe measures and practices taken within shelters.
4. Explore innovative models for dedicated and consistent funding for preparedness policies and programs. Preparedness is all-encompassing and funding (and staff) are necessary for success. This funding should encourage cross-sectional partnerships to encourage preparedness, promote mitigation efforts for an all-hazard approach at the household level, and include metrics to track preparedness levels.
5. Tailor messaging regarding preparedness and emergency supply kit ownership. Based on these data, messages should be tailored using guidance from health behavior models to increase preparedness and supply kit ownership. These messages should vary by region and population (e.g., education level, age, sex) in both mode and method of communication. This work should be in collaboration with community

Limitations

This research is not without its limitations. *ConsumerStyles* surveys are cross-sectional and limited to only those within the panel. Therefore, while we have two surveys, they are only two snapshots in time and do not represent a longitudinal analysis. Also, eventhough KnowledgePanel® works to ensure representativeness of the respondents on several key aspects, as described above, there are some potential differences in areas that have traditionally mattered in disaster preparedness and response such as household structure, home ownership, persons within the home (e.g., marital status, living with others, having kids). However, none of these determinants were found to be significant in our modeling. Further, the panel only

represents those within the 50 US states and does not include panel members from the territories. The US territories are prone to disasters and should be included in all disaster research. However, as previous data have shown, the island territories may have different preparedness needs as, for example, the traditional 3-day supply of food and water may not be enough for such harder-to-reach geographies. As far as the survey questions, the demographic categories changed between fall 2020 and spring 2021, making it impossible to compare employment and limiting the analysis of household type by combining mobile homes with boats, RVs, and vans. Finally, because of the limited number of questions allowed and the specific format in which questions could be asked, we were unable to assess social determinants of health in a more meaningful manner, which limited our analysis of health equity issues. Further, all questions were closed-ended and therefore no explanations were provided for "other" options and any reasoning for certain responses had to be inferred. It also lacked specific checks that a more comprehensive survey could capture such as the different responses to the two emergency supply kit questions.

Conclusion

Overall, these data show that, as a nation, there is much work to be done in terms of preparedness. An all-hazards approach, taking advantage of the current policy window from the COVID-19 pandemic, could be advantageous to promoting policies that could impact preparedness within the community, specifically household preparedness. While disaster preparedness funds are available, these vary greatly among the states and much of this still focuses on hospitals, rather than community- or household-level, preparedness. Increasing our public health workforce, developing policies that help reduce vulnerability, and raising awareness at the community-level would help increase preparedness on a broader scope. While these data are important to provide a national picture to federal agencies, the significant regional differences also highlight the known fact that all disasters are local. Therefore, efforts must continue to be made at the local level to both inform and address preparedness.

This research is the first step in acquiring knowledge on the possession of emergency supply kits and preparedness levels. However, it does not address the gap in knowledge regarding actual use and effectiveness of emergency supply kits during a disaster. Therefore, a needed step is to explore in detail the actual effectiveness of emergency supply kits with more granular data. This would require an immediate post-impact survey after assessing whether households had an

emergency supply kit, what they did (and did not) use within the kit, what items were missing or needed that required them to leave the home or call for emergency services, and related questions. It would also be beneficial to look further into the social determinants of health that impact preparedness and create focus groups for clarity on barriers and beliefs on preparedness and ways to enhance the access and behavior change needed to increase preparedness. These data are an essential starting point in characterizing current preparedness levels and emergency supply kit ownership and can be used to help tailor our public messaging, work with STLT partners, and guide future research.

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Tables

Table I. Weighted demographics of respondents

	Fall 2020 (N=3625)		Spring 2021 (N=6455)	
	Frequency	**Percent**	**Frequency**	**Percent**
Age				
18-34 years	1035.4	28.6	1819.9	28.2
35-54 years	1200.3	33.1	2146.4	33.3
55-74 years	1138.2	31.4	2046.1	31.7
75+ years	251.1	6.9	442.7	6.9
Sex				
Male	1756.1	48.4	3121.6	48.4
Female	1868.9	51.6	3333.4	51.6
Education				
Less than high school	365.2	10.1	688.0	10.7
High school	1022.7	28.2	1768.8	27.4
Some college	1010.5	27.9	1948.4	30.2
Bachelor's or higher	1226.6	33.8	2049.8	31.8
Race/Ethnicity				
White, Non-Hispanic	2316.1	63.9	4099.9	63.5
Black, Non-Hispanic	414.4	11.4	747.2	11.6
Hispanic	582.2	16.1	1049.2	16.3
Mixed Race	52.9	1.5	119.4	1.9
Other	259.4	7.2	439.4	6.8
Housing Structure				
Single family home	2650.1	73.1	4626.0	71.7
Townhome/Duplex	300.4	8.3	575.9	8.9
Apartment	529.9	14.6	990.1	15.3
Mobile home, boat, RV, van	144.6	4.0	263.1	4.1
Ownership Status				
Owns	2671.5	73.7	4681.1	72.5
Rents	883.3	24.4	1654.6	25.6
Occupy w/o payment	70.3	1.9	119.3	1.9
Region				
South	1361.64	37.7	2447.6	37.9
West	868.4	24.1	1547.2	24.0
Midwest	747.4	20.7	1344.3	20.8
Northeast	633.1	17.5	1115.9	17.3
Urbanicity				
Metro	3137.6	86.6	5592.9	86.6
Non-Metro	487.4	13.4	862.1	13.4
Household Size				
Lives alone	522.1	14.7	911.5	14.1
Lives with others	3091.9	85.3	5543.5	85.8
Marital Status				
Married/With partner	2306.4	63.6	3665.4	56.8
Single	1318.6	36.4	2789.6	43.2
Children				
Household has kids	1155.0	31.9	2136.3	33.1
No kids in home	2470.0	68.1	4318.7	66.9
Household Income				
<$25,000	485.4	13.4	796.9	12.4
$25,000 < $50,000	646.0	17.8	1128.2	17.5

$50,000 < $75,000	602.8	16.6	1119.2	17.3
$75,000 < $100,000	508.0	14.0	908.8	14.1
$100,000 < $150,000	639.9	17.7	1207.7	18.7
$150,000 or more	742.9	20.5	1294.2	20.1
Employment Status*				
Employed	2324.0	64.1	2805.2	43.5
Unemployed/Retired	1118.7	30.9	2522.1	39.1
Other	182.4	5.0	1127.8	17.5

**Fall 2020 "Employed" includes all currently employed persons and "Other" includes those who are temporarily out of work; Spring 2021 "Employed" is employed full time only and "Other" are those who are employed part-time. Therefore, these are separate categories and should not be compared.*

Table II. Weighted preparedness levels and disaster experience

	Fall 2020 (N=3625)		Spring 2021 (N=6455)	
	Frequency	**Percent**	**Frequency**	**Percent**
Experienced previous disaster				
Yes	2491.5	69.0	4089.5	63.5
No	1119.4	31.0	2346.1	36.5
Type of disaster experienced				
Severe weather with power outages	1988.4	55.1	3235.2	50.3
Tropical storm or hurricane	1054.1	29.2	1504.1	23.4
Tornado	567.4	15.7	888.6	13.8
Earthquake, mudslide, or landslide	559.1	15.5	913.9	14.2
Flood	513.9	14.2	785.8	12.2
Wildfire	205.1	5.7	347.5	5.4
Employment in disaster response/recovery				
Yes	593.3	16.4	1220.5	19.0
No	3018.6	83.6	5212.0	81.0
Type of response/recovery employment				
Volunteered for disaster response	212.2	5.9	481.9	7.5
Work in disaster response or recovery	160.0	4.4	293.2	4.6
Taken CERT training	159.9	4.4	353.0	5.5
Work in emergency management	110.1	3.1	203.7	3.2
Volunteer with American Red Cross	102.3	2.8	180.0	2.8
Other	143.1	4.0	285.8	4.4
Barriers to evacuation				
Nothing, I would evacuate	2065.9	57.2	3724.0	57.9
Concern about leaving pets	745.3	20.6	1264.6	19.7
Concern about leaving property	791.7	21.9	1222.6	19.0
Nowhere to go	528.9	14.6	740.0	11.5
Health problems	200.3	5.5	341.7	5.3
Lack of transportation	138.1	3.8	246.4	3.8
Other	162.0	4.5	305.7	4.8
Has the following preparedness plans/items				
Stored copies of important documents	1247.6	34.6	2080.5	32.4
Easy to get to emergency supply kit	989.6	27.4	1744.3	27.2
Designated meeting place outside the home	672.2	18.6	1237.7	19.3
Multiple evacuation routes away from home	640.1	17.7	816.7	12.7
Emergency communication plan	485.0	13.4	987.0	15.4
Meeting place outside the neighborhood	342.5	9.5	463.4	7.2
Preparedness level				
No plans	1845.2	51.1	3366.2	52.4
Some plans	1659.0	46.0	2898.5	45.2
All 5 FEMA-recommended plans	106.3	2.9	155.0	2.4
Emergency supply kit				
Has an emergency supply kit	1160.1	33.8	2201.3	36.3
Does not have an emergency supply kit	2276.0	66.2	3864.1	63.7
Emergency supply kit items				
Flashlight with batteries	1106.3	95.4	2053.9	93.6
Medical supplies	981.4	84.6	1872.9	85.4
Water	926.6	79.9	1803.9	82.2
Food	803.2	69.2	1503.6	68.5
Radio	709.4	61.2	1291.8	58.9
Household cleaning supplies	378.1	32.6	643.6	29.3
Other	84.3	7.3	210.3	9.6

Table III. Weighted beliefs about disasters and preparedness

	Fall 2020 (N=3625)			Spring 2021 (N=6455)		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree
How much do you agree with the following…						
Supply kit will improve chance of surviving a disaster	2823.6 (78.1)	633.0 (17.5)	160.0 (4.4)	4700.1 (73.0)	1471.1 (22.8)	270.0 (4.2)
I feel confident that I know how to prepare for disasters	2026.2 (56.0)	977.0 (27.0)	612.4 (16.9)	3681.9 (57.1)	1769.4 (27.5)	992.4 (15.4)
Risk of household being affected by an infectious disease is greater than that of a disaster	1602.4 (44.3)	1396.1 (38.6)	616.9 (17.1)	2662.9 (41.4)	2502.1 (38.9)	1274.2 (19.8)
An emergency supply kit costs a lot of money	843.4 (23.3)	980.0 (27.1)	1793.0 (49.6)	1406.3 (21.8)	1961.7 (30.4)	3078.6 (47.8)

Table IV. Emergency supply kit ownership by demographic characteristics (weighted)

	Fall 2020				Spring 2021			
	Has Kit (N=1160)	No Kit (N=2276)	Total (N=3436)	p-value	Has Kit (N=2201)	No Kit (N=3864)	Total (N=6065)	p-value
Age								
18-34 years	287.3 (24.8)	663.2 (29.1)	950.5 (27.7)		554.1 (25.2)	1073.6 (27.8)	1627.8 (26.8)	
25-54 years	423.8 (36.5)	718.3 (31.6)	1142.1 (33.2)	0.0067	768.6 (34.9)	1277.7 (33.1)	2046.3 (33.7)	0.0068
55-74 years	375.8 (32.4)	727.5 (32.0)	1103.3 (32.1)		748.1 (34.0)	1223.9 (31.7)	1972.0 (32.5)	
75+ years	73.2 (6.3)	166.9 (7.3)	240.1 (7.0)		130.4 (5.9)	288.9 (7.5)	419.3 (6.9)	
Sex								
Male	582.0 (50.2)	1090.7 (47.9)	1672.8 (48.7)	0.2130	1101.3 (50.0)	1821.7 (47.2)	2923.0 (48.2)	0.0308
Female	578.1 (49.8)	1185.2 (52.1)	1763.3 (67.2)		1100.1 (50.0)	2042.4 (52.9)	3142.4 (51.8)	
Education								
Less than high school	105.8 (9.1)	222.7 (9.8)	328.5 (9.6)		212.0 (9.6)	387.8 (10.0)	599.8 (9.9)	
High school	295.8 (25.5)	661.4 (29.1)	957.1 (27.9)	0.1043	544.4 (24.7)	1094.0 (28.3)	1638.4 (27.0)	0.0019
Some college	334.9 (28.9)	624.6 (27.4)	959.6 (27.9)		731.1 (33.2)	1122.1 (29.0)	1853.2 (30.6)	
Bachelor's or higher	423.6 (36.5)	767.3 (33.7)	1190.8 (34.7)		713.8 (32.4)	1260.3 (32.6)	1974.0 (32.6)	
Race/Ethnicity								
White, Non-Hispanic	692.2 (59.7)	1533.3 (67.4)	2225.5 (64.8)		1361.8 (61.9)	2540.6 (65.8)	3902.5 (64.3)	
Black, Non-Hispanic	143.5 (12.4)	241.0 (10.6)	384.5 (11.2)		269.8 (12.3)	401.5 (10.4)	671.3 (11.1)	
Hispanic	197.7 (17.0)	326.7 (14.4)	524.4 (15.3)	<.0001	364.2 (16.5)	616.4 (16.0)	980.7 (16.2)	0.0155
Mixed Race	13.7 (1.2)	37.4 (1.6)	51.1 (1.5)		48.4 (2.2)	61.6 (1.6)	110.1 (1.8)	
Other	113.0 (9.7)	137.5 (6.0)	250.4 (7.3)		157.1 (7.1)	243.9 (6.3)	980.7 (16.2)	
Housing Structure								
Single family home	875.6 (75.5)	1637.9 (72.0)	2513.5 (73.2)		1631.7 (74.1)	2760.0 (71.4)	4391.6 (72.4)	
Townhome/Duplex	105.1 (9.1)	117.7 (7.8)	282.8 (8.2)	0.0008	177.2 (8.1)	357.0 (9.2)	534.2 (8.8)	0.1463
Apartment	130.9 (11.3)	372.9 (16.4)	503.8 (14.7)		311.2 (14.1)	594.4 (15.4)	905.6 (14.9)	
Mobile home, boat, RV, etc.	48.5 (4.2)	87.5 (3.8)	136.0 (4.0)		81.2 (3.7)	152.7 (4.0)	233.9 (3.9)	

Ownership Status								
Owns	906.8 (78.2)	1644.8 (72.3)	2551.6 (74.3)	0.0007	1632.2 (74.2)	2816.7 (72.9)	4448.9 (73.4)	0.5707
Rents	232.2 (20.0)	587.9 (25.8)	820.1 (23.9)		533.3 (24.2)	981.5 (25.4)	1514.7 (25.0)	
Occupy w/o payment	21.0 (1.8)	43.3 (1.9)	64.3 (1.9)		35.9 (1.6)	65.9 (1.7)	101.8 (1.7)	
Region								
South	497.5 (42.9)	800.2 (35.2)	1297.7 (37.8)	<.0001	938.4 (42.6)	1360.6 (35.2)	2298.9 (37.9)	<.0001
West	312.3 (26.9)	508.4 (22.3)	820.7 (23.9)		601.5 (27.3)	837.3 (21.7)	1438.8 (23.7)	
Midwest	183.0 (15.8)	520.9 (22.9)	703.8 (20.5)		354.4 (16.1)	924.5 (23.9)	1279.0 (21.1)	
Northeast	167.3 (14.4)	446.4 (19.6)	613.8 (17.9)		307.0 (14.0)	741.7 (19.2)	1048.7 (17.3)	
Urbanicity								
Metro	146.3 (12.6)	307.7 (13.5)	453.9 (13.2)	0.4559	1925.3 (87.5)	3327.3 (86.1)	5252.6 (86.6)	0.1374
Non-Metro	1013.8 (87.4)	1968.3 (86.5)	2982.1 (86.8)		276.0 (12.5)	536.7 (13.9)	812.8 (13.4)	
Household Size								
Lives alone	147.3 (12.7)	350.9 (15.4)	498.2 (14.5)	0.0321	329.2 (15.0)	513.8 (13.3)	843.1 (13.9)	0.0727
Lives with others	1012.8 (87.3)	1925.0 (84.6)	2937.8 (85.5)		1872.1 (85.0)	3350.2 (86.7)	5222.3 (86.1)	
Marital Status								
Married/With partner	757.9 (65.3)	1446.9 (63.6)	2204.8 (64.2)	0.3094	1311.3 (59.6)	2207.5 (57.1)	3518.8 (58.0)	0.0641
Single	402.2 (34.7)	829.0 (36.4)	1231.2 (35.8)		890.0 (40.4)	1656.6 (42.9)	2546.6 (42.0)	
Children								
Household has kids	382.3 (33.0)	702.2 (30.9)	1084.5 (31.6)	0.2107	744.8 (33.8)	1241.4 (32.1)	1986.2 (32.8)	0.1732
No kids in home	777.8 (67.1)	1573.8 (69.2)	2351.5 (68.4)		1456.5 (66.2)	2622.6 (67.9)	4079.1 (67.3)	
Household Income								
<$25,000	150.7 (13.0)	287.5 (12.6)	485.4 (13.4)	<.0001	253.2 (11.5)	448.0 (11.6)	701.3 (11.6)	0.0314
$25,000 < $50,000	172.5 (14.9)	435.7 (19.1)	608.1 (17.7)		368.2 (16.7)	685.2 (17.7)	1053.5 (17.4)	
$50,000 < $75,000	191.4 (16.5)	376.6 (16.5)	567.9 (16.5)		376.1 (17.1)	681.0 (17.6)	1057.2 (17.4)	
$75,000 < $100,000	159.3 (13.7)	321.8 (14.1)	481.1 (14.0)		282.7 (12.8)	582.4 (15.1)	865.1 (14.3)	
$100,000 < $150,000	209.9 (18.1)	414.3 (18.2)	624.1 (18.2)		451.8 (20.5)	689.6 (17.8)	1141.5 (18.8)	
$150,000 or more	276.3 (23.8)	440.1 (19.3)	716.5 (20.9)		469.2 (21.3)	777.8 (20.1)	1247.0 (20.6)	
Employment Status*								
Employed	798.0 (66.2)	1458.1 (64.1)	2226.1 (64.8)	0.4588	952.9 (43.3)	1729.2 (44.8)	2682.1 (44.2)	0.1788
Unemployed/Retired	338.7 (29.2)	709.2 (31.2)	1047.9 (30.5)		847.5 (38.5)	1501.4 (38.9)	2349.0 (38.7)	
Other	53.4 (4.6)	108.6 (4.8)	162.0 (4.7)		400.9 (18.2)	633.4 (16.4)	1034.3 (17.1)	

**Fall 2020 "Employed" includes all currently employed persons and "Other" includes those who are temporarily out of work; Spring 2021 "Employed" is employed full time only and "Other" are those who are employed part-time. Therefore, these are separate categories and should not be compared.*

Table V. Preparedness level* by demographic characteristics (weighted)

	Fall 2020					Spring 2021				
	Prepared (N=106)	Somewhat (N=1659)	Not (N=1845)	Total (N=3610)	p-value	Prepared (N=155)	Somewhat (N=2898)	Not (N=3366)	Total (N=6420)	p-value
Age										
18-34 years	35.8 (33.7)	405.7 (39.3)	590.5 (57.2)	1032.0 (28.6)	<.0001	39.4 (25.4)	767.9 (26.5)	999.6 (29.7)	1806.9 (28.2)	0.0280
35-54 years	32.2 (30.3)	545.5 (32.9)	615.0 (33.3)	1192.7 (33.0)		54.3 (35.0)	979.9 (33.8)	1099.3 (32.7)	2133.4 (33.2)	
55-74 years	35.7 (33.6)	592.8 (35.7)	507.8 (27.5)	1136.3 (31.5)		57.3 (36.9)	939.2 (32.4)	1041.3 (30.9)	2037.8 (31.7)	
75+ years	2.6 (1.0)	114.9 (46.1)	131.9 (52.9)	249.4 (6.9)		211.4 (7.3)	4.1 (2.7)	226.0 (6.7)	441.6 (6.9)	
Sex										
Male	50.3 (47.4)	767.3 (46.3)	926.6 (50.2)	1744.3 (48.3)	0.0625	76.6 (49.4)	1372.3 (47.4)	1657.3 (49.2)	3106.3 (48.4)	0.3177
Female	56.0 (52.7)	891.7 (53.8)	918.6 (49.8)	1866.2 (51.7)		78.4 (50.6)	1526.2 (52.7)	1708.9 (50.8)	3313.4 (51.6)	
Education										
Less than high school	4.8 (4.5)	127.8 (35.5)	227.2 (63.1)	359.7 (10.0)	<.0001	15.2 (9.8)	259.3 (9.0)	413.5 (12.3)	688.0 (10.7)	<.0001
High school	44.8 (42.2)	380.8 (37.3)	594.6 (58.3)	1020.2 (28.3)		36.1 (23.3)	688.1 (23.7)	1031.0 (30.6)	1755.3 (27.3)	
Some college	29.0 (27.2)	504.4 (50.1)	473.9 (47.1)	1007.3 (27.9)		57.2 (36.9)	919.7 (31.7)	961.3 (28.6)	1938.2 (30.2)	
Bachelor's or higher	27.7 (26.1)	646.1 (38.9)	549.5 (29.8)	1223.3 (33.9)		46.5 (30.0)	1031.4 (35.6)	960.3 (28.5)	2038.2 (31.8)	
Race/Ethnicity										
White, Non-Hispanic	44.7 (42.1)	1102.5 (66.5)	1161.0 (62.9)	2308.2 (63.9)	<.0001	99.0 (63.8)	1919.6 (66.2)	2057.4 (61.1)	4075.9 (63.5)	0.0002
Black, Non-Hispanic	22.1 (20.8)	177.8 (10.7)	211.2 (11.4)	411.0 (11.4)		21.2 (13.7)	294.3 (10.2)	426.6 (12.7)	742.1 (11.6)	
Hispanic	21.9 (20.6)	264.3 (15.9)	292.9 (15.9)	579.0 (16.0)		17.5 (11.3)	442.2 (15.2)	583.1 (17.3)	1042.9 (16.2)	
Mixed Race	2.4 (2.3)	19.2 (1.2)	31.4 (1.7)	52.9 (1.5)		6.5 (4.2)	59.1 (2.0)	53.8 (1.6)	119.4 (1.9)	
Other	15.2 (14.3)	95.3 (5.8)	148.8 (8.1)	259.4 (7.2)		10.8 (7.0)	183.3 (6.3)	245.3 (7.3)	439.4 (6.8)	
Housing Structure										
Single family home	83.4 (78.4)	1268.1 (76.4)	1294.6 (70.2)	2646.1 (73.3)	<.0001	111.8 (72.1)	2218.1 (76.5)	2267.0 (67.3)	4596.9 (71.6)	<.0001
Townhome/Duplex	8.0 (7.5)	146.4 (8.8)	141.3 (7.7)	295.8 (8.2)		17.6 (11.4)	226.5 (7.8)	327.3 (9.7)	571.4 (8.9)	
Apartment	7.1 (6.7)	180.8 (10.9)	336.1 (18.2)	524.1 (14.5)		20.5 (13.2)	368.9 (12.7)	599.1 (17.8)	988.4 (15.4)	
Mobile home, RV, etc.	7.8 (7.3)	63.7 (3.8)	73.2 (4.0)	144.6 (4.0)		5.2 (3.3)	85.0 (2.9)	172.9 (5.1)	263.1 (4.1)	
Ownership Status										
Owns	78.3 (73.6)	1327.5 (80.0)	1258.7 (68.2)	2664.4 (73.8)	<.0001	116.2 (75.0)	2247.6 (77.5)	2291.0 (68.1)	4654.8 (72.5)	<.0001
Rents	27.0 (25.4)	313.7 (18.9)	535.1 (29.0)	875.8 (24.3)		35.7 (23.0)	607.0 (20.9)	1003.9 (29.8)	1646.6 (25.7)	
Occupy w/o payment	1.0 (1.0)	17.8 (1.1)	51.5 (2.8)	70.3 (1.9)		43.9 (1.5)	3.1 (2.0)	71.3 (2.1)	118.3 (1.8)	
Region										
South	54.8 (51.5)	651.4 (39.3)	655.5 (35.5)	1361.6 (37.7)	0.0028	68.2 (44.0)	1097.3 (37.9)	1269.4 (37.7)	2434.9 (37.9)	0.0020
West	27.4 (25.8)	391.3 (23.6)	449.8 (24.4)	868.4 (24.1)		42.7 (27.5)	737.7 (25.5)	760.9 (22.6)	1541.2 (24.0)	
Midwest	16.2 (15.3)	323.2 (19.5)	407.4 (22.1)	747.4 (20.7)		19.5 (12.6)	607.1 (21.0)	706.6 (21.0)	1333.2 (20.8)	
Northeast	7.9 (7.5)	293.1 (17.7)	332.0 (18.0)	633.1 (17.5)		24.7 (15.9)	456.3 (15.7)	629.3 (18.7)	1110.4 (17.3)	
Urbanicity										
Metro	99.9 (94.0)	1413.0 (85.2)	1612.7 (87.4)	3125.5 (86.6)	0.0118	138.1 (89.1)	2507.0 (86.5)	2917.6 (86.7)	5562.8 (86.7)	0.6494
Non-Metro	6.4 (6.0)	246.1 (14.8)	232.5 (47.9)	485.0 (13.4)		16.9 (10.9)	391.4 (13.5)	448.6 (13.3)	856.9 (13.4)	

Household Size										
Lives alone	60.7 (57.1)	1129.4 (68.1)	1108.4 (60.1)	2298.6 (63.7)	<.0001	16.5 (10.7)	339.4 (11.7)	551.8 (16.4)	907.7 (14.1)	<.0001
Lives with others	45.6 (42.9)	529.6 (31.9)	736.8 (39.9)	1312.0 (36.3)		138.5 (89.3)	2559.1 (88.3)	2814.4 (83.6)	5512.0 (85.9)	
Marital Status										
Married	60.1 (56.5)	1044.3 (63.0)	974.3 (52.8)	2078.7 (57.6)	<.0001	91.5 (59.0)	1794.4 (61.9)	1754.7 (52.1)	3640.6 (56.7)	<.0001
Not married	46.2 (43.5)	614.7 (37.1)	870.9 (47.2)	1531.8 (42.4)		1104.1 (38.1)	63.6 (41.1)	1611.5 (47.9)	2779.1 (43.3)	
Children										
Household has kids	40.4 (38.1)	533.8 (32.2)	576.4 (31.2)	1150.7 (31.9)	0.3199	56.7 (36.6)	1077.2 (37.2)	994.3 (29.5)	2128.3 (33.2)	<.0001
No kids in home	65.8 (61.9)	1125.2 (67.8)	12688 (68.8)	2459.8 (68.1)		98.3 (63.4)	1821.2 (62.8)	2371.9 (70.5)	4291.4 (66.9)	
Household Income										
<$25,000	11.8 (11.1)	183.3 (10.5)	292.7 (15.9)	477.7 (13.3)	<.0001	12.2 (7.9)	296.7 (10.2)	486.7 (14.5)	795.5 (12.4)	<.0001
$25,000 < $50,000	17.2 (16.2)	259.4 (15.6)	366.9 (19.9)	643.5 (17.8)		33.3 (21.5)	414.6 (14.3)	674.9 (20.1)	1122.9 (17.5)	
$50,000 < $75,000	23.2 (21.8)	264.5 (16.0)	314.3 (17.0)	602.1 (16.7)		15.7 (10.1)	510.4 (17.6)	588.4 (17.5)	1114.5 (17.4)	
$75,000 < $100,000	14.3 (13.5)	239.9 (14.5)	253.8 (13.8)	508.0 (14.1)		27.1 (17.5)	421.6 (14.5)	458.0 (13.6)	906.7 (14.1)	
$100,000 < $150,000	11.5 (10.8)	329.8 (19.8)	297.9 (16.2)	638.5 (17.7)		36.5 (23.6)	587.0 (20.3)	571.0 (17.0)	1194.5 (18.6)	
$150,000 or more	28.4 (26.7)	392.8 (23.7)	319.5 (17.3)	740.7 (20.5)		30.2 (19.5)	668.3 (23.1)	587.1 (17.4)	1285.7 (20.0)	
Employment Status**										
Employed	74.5 (70.1)	1064.9 (64.2)	1179.8 (63.9)	2319.1 (64.2)	0.0752	62.0 (40.0)	1243.4 (42.9)	1484.3 (44.1)	2789.6 (43.4)	0.1379
Unemployed/Retired	28.8 (27.1)	525.1 (31.7)	555.2 (30.1)	1109.0 (30.7)		38.5 (24.8)	507.9 (17.5)	573.6 (17.0)	1120.0 (17.5)	
Other	3.0 (2.9)	69.1 (4.2)	110.3 (6.0)	182.4 (5.1)		54.5 (35.2)	1147.2 (39.6)	1308.3 (38.9)	2510.0 (39.1)	

**Prepared is considered having all five recommended plans (emergency communication plan, designated meeting place outside of home, meeting place outside the neighborhood, stored copies of important documents, & multiple evacuation routes away from home); Somewhat prepared is considered having 1-4 plans, and Not prepared is having none of the above plans*

***Fall 2020 "Employed" includes all currently employed persons and "Other" includes those who are temporarily out of work; Spring 2021 "Employed" is employed full time only and "Other" are those who are employed part-time. Therefore, these are separate categories and should not be compared.*

Table VI. Emergency supply kit ownership by preparedness, disaster experience, and beliefs (weighted)

	Fall 2020				Spring 2021			
	Has Kit (N=1160)	No Kit (N=2276)	Total (N=3436)	p-value	Has Kit (N=2201)	No Kit (N=3864)	Total (N=6065)	p-value
Has the following preparedness plans/items								
Copies of important docs	608.0 (52.5)	596.4 (26.3)	1204.4 (35.2)	<.0001	1049.0 (47.9)	966.9 (25.2)	2015.9 (33.4)	<.0001
Easy to get to ESK	755.4 (65.2)	196.1 (8.6)	951.5 (27.8)	<.0001	1396.9 (63.8)	298.7 (7.8)	1695.5 (28.1)	<.0001
Meeting place outside home	381.8 (33.0)	271.5 (12.0)	653.3 (19.1)	<.0001	714.7 (32.7)	487.4 (12.7)	1202.1 (19.9)	<.0001
Multiple evacuation routes	379.2 (32.7)	233.8 (10.3)	613.0 (17.9)	<.0001	529.9 (24.2)	262.5 (6.8)	792.4 (13.1)	<.0001
Emergency comms plan	342.6 (29.6)	125.4 (5.5)	468.0 (13.7)	<.0001	695.7 (31.8)	258.4 (6.7)	954.0 (15.8)	<.0001
Meeting place outside of the neighborhood	242.4 (20.9)	88.2 (3.9)	330.6 (9.7)	<.0001	328.6 (15.0)	117.2 (3.1)	445.8 (7.4)	<.0001
None of the above	191.4 (16.5)	1370.5 (60.5)	1561.9 (45.6)	<.0001	343.3 (15.7)	2332.1 (60.7)	2675.4 (44.4)	<.0001

Preparedness level								
No plans	311.9 (26.9)	1416.8 (62.5)	1728.7 (50.5)		677.5 (30.9)	2415.8 (62.9)	3093.3 (51.3)	
Some plans	755.1 (65.2)	838.9 (37.0)	1594.1 (46.6)	<.0001	1366.1 (62.4)	1418.9 (36.9)	2785.0 (46.2)	<.0001
All plans	91.2 (7.9)	10.6 (0.5)	101.9 (3.0)		145.8 (6.7)	8.1 (0.2)	153.9 (2.6)	
Experienced previous disaster								
Yes	863.3 (74.8)	1534.5 (67.6)	2397.8 (70.0)	<.0001	1562.6 (71.0)	2346.7 (61.0)	3909.3 (64.6)	<.0001
No	290.9 (25.2)	736.0 (32.4)	1027.0 (30.0)		636.9 (29.0)	1501.3 (39.0)	2138.2 (35.4)	
Type of disaster experienced								
Sever weather w/outages	678.0 (58.7)	1238.2 (54.5)	1916.3 (56.0)	0.0191	1231.5 (56.0)	1885.6 (49.0)	3117.1 (51.5)	<.0001
Hurricane/storm	422.4 (36.6)	590.4 (26.0)	1012.8 (29.6)	<.0001	649.5 (29.5)	801.3 (20.8)	1450.8 (24.0)	<.0001
Tornado	224.7 (19.5)	319.3 (14.1)	544.0 (15.9)	<.0001	384.7 (17.5)	463.2 (12.0)	847.9 (14.0)	<.0001
Earthquake/landslide	226.9 (19.7)	317.7 (14.0)	544.6 (15.9)	<.0001	392.1 (17.8)	467.1 (12.1)	859.2 (14.2)	<.0001
Flood	233.3 (20.2)	253.8 (11.2)	487.1 (14.2)	<.0001	330.1 (15.0)	411.2 (10.7)	741.3 (12.3)	<.0001
Wildfire	89.8 (7.8)	111.5 (4.9)	201.2 (5.9)	0.0007	167.6 (7.6)	163.2 (4.2)	330.8 (5.5)	<.0001
Employment/volunteer in disaster response/recovery								
Yes	307.7 (26.7)	264.4 (11.7)	572.1 (16.7)	<.0001	594.4 (27.1)	576.4 (15.0)	1170.8 (19.4)	<.0001
No	844.8 (73.3)	2006.0 (88.4)	2850.8 (83.3)		1599.2 (72.9)	3275.9 (85.0)	4875.1 (80.6)	
Would evacuate if told to do so								
Yes	683.4 (58.9)	1306.5 (57.4)	2078.4 (57.3)	0.0070	1346.0 (61.3)	2227.3 (57.8)	3573.2 (59.1)	0.0089
No	476.6 (41.1)	969.4 (42.6)	1546.6 (42.7)		850.9 (38.7)	1624.2 (42.2)	2475.1 (40.9)	
Confident know how to prepare for a disaster								
Agree	849.6 (73.6)	1110.5 (48.9)	1960.1 (57.2)		1616.0 (73.5)	1909.3 (49.5)	3525.3 (58.2)	
Neutral	219.6 (19.0)	666.0 (29.3)	885.6 (25.8)	<.0001	434.2 (19.7)	1164.7 (30.2)	1598.9 (26.4)	<.0001
Disagree	85.4 (7.4)	496.9 (21.9)	582.3 (17.0)		149.2 (6.8)	785.1 (20.3)	934.3 (15.4)	
Emergency supply kit will improve chance of surviving a disaster								
Agree	991.5 (85.7)	1723.9 (50.3)	2715.4 (79.2)		1871.0 (85.0)	2627.4 (68.2)	4498.3 (74.3)	
Neutral	120.1 (10.4)	446.1 (19.6)	566.2 (16.5)	<.0001	282.6 (12.8)	1017.5 (26.4)	1300.1 (21.5)	<.0001
Disagree	44.8 (3.9)	102.6 (4.5)	147.4 (4.3)		47.8 (2.2)	209.7 (5.4)	257.5 (4.3)	
Emergency supply kit costs a lot of money								
Agree	257.3 (22.2)	536.4 (23.6)	793.7 (23.2)		552.4 (25.1)	770.7 (20.0)	1323.1 (21.8)	
Neutral	270.8 (23.4)	622.2 (27.4)	893.1 (26.1)	0.0083	512.5 (23.3)	1245.4 (32.3)	1757.9 (29.0)	<.0001
Disagree	628.7 (54.4)	1113.4 (49.0)	1742.1 (50.8)		1136.4 (51.6)	1844.1 (47.8)	2980.4 (49.2)	
Risk of my household being affected by an infectious disease is greater than that of a disaster								
Agree	521.1 (45.0)	1029.5 (45.4)	1550.6 (45.3)		876.0 (34.3)	1679.7 (43.6)	2555.7 (42.2)	
Neutral	423.7 (36.6)	857.1 (37.8)	1280.8 (37.4)	0.5403	814.0 (37.0)	1468.3 (38.1)	2282.3 (37.7)	<.0001
Disagree	212.1 (18.3)	382.9 (16.9)	595.1 (17.4)		510.9 (23.2)	705.1 (18.3)	1216.0 (20.1)	

Table VII. Preparedness by disaster experience and beliefs (weighted)

	Fall 2020					Spring 2021				
	Prepared (N=106)	Somewhat (N=1659)	Not (N=1845)	Total (N=3610)	p-value	Prepared (N=155)	Somewhat (N=2898)	Not (N=3366)	Total (N=6420)	p-value
Emergency Supply Kit (ESK)										
Has an ESK	91.2 (89.6)	755.1 (47.4)	311.9 (18.0)	1158.3 (33.8)	<.0001	145.8 (94.7)	1366.1 (49.1)	677.5 (21.9)	2189.3 (36.3)	<.0001
Does not have an ESK	10.6 (10.4)	838.9 (52.6)	1416.8 (82.0)	2266.3 (66.2)		8.1 (5.3)	1418.9 (50.9)	2415.8 (78.1)	3842.8 (63.7)	
Experienced previous disaster										
Yes	94.6 (78.3)	1252.6 (75.5)	1144.2 (62.0)	2491.5 (68.7)	<.0001	127.2 (82.0)	1863.7 (55.6)	2075.6 (71.7)	4089.5 (63.5)	<.0001
No	26.2 (21.7)	406.4 (24.5)	701.0 (38.0)	1133.5 (31.3)		27.9 (18.0)	818.8 (28.3)	1488.1 (44.3)	2346.1 (36.5)	
Type of disaster experienced										
Severe weather w/outages	83.8 (69.4)	1000.9 (60.3)	903.6 (49.0)	1988.4 (54.9)	<.0001	112.1 (72.3)	1658.3 (57.2)	1447.4 (43.0)	3235.2 (50.1)	<.0001
Hurricane/storm	47.2 (39.1)	568.4 (34.3)	438.5 (23.8)	1054.1 (29.1)	<.0001	59.4 (38.2)	758.1 (26.2)	678.7 (20.2)	1504.1 (23.3)	<.0001
Tornado	33.8 (27.9)	318.4 (19.2)	215.2 (11.7)	567.4 (15.7)	<.0001	43.8 (28.3)	481.5 (16.6)	361.4 (10.7)	888.6 (13.8)	<.0001
Earthquake/landslide	32.3 (26.7)	307.4 (18.5)	219.4 (11.9)	559.1 (15.4)	<.0001	39.2 (25.3)	477.7 (16.5)	392.7 (11.7)	913.9 (14.2)	<.0001
Flood	37.9 (31.4)	273.1 (16.5)	202.9 (11.0)	513.9 (14.2)	<.0001	41.2 (26.6)	417.6 (14.4)	324.3 (9.6)	785.8 (12.2)	<.0001
Wildfire	17.2 (14.3)	117.5 (7.1)	70.4 (3.8)	205.1 (5.7)	<.0001	25.4 (16.4)	191.3 (6.6)	130.8 (3.9)	347.5 (5.4)	<.0001
Employment/volunteer in disaster response/recovery										
Yes	37.3 (30.9)	368.1 (22.2)	187.9 (10.2)	593.3 (16.4)	<.0001	81.0 (52.3)	750.2 (25.9)	382.0 (11.3)	1220.5 (18.9)	<.0001
No	83.5 (69.1)	1290.9 (77.8)	1657.3 (89.8)	3031.7 (83.6)		74.0 (47.7)	2142.9 (74.1)	2969.8 (88.7)	5211.6 (81.1)	
Would evacuate if told to do so										
Yes	72.0 (67.7)	973.3 (58.8)	1016.7 (55.2)	2061.9 (57.3)	0.0089	54.9 (35.4)	1174.3 (40.6)	1460.7 (43.6)	2689.8 (42.1)	0.0134
No	34.3 (32.3)	681.6 (41.2)	823.9 (44.8)	1539.8 (42.8)		100.2 (64.6)	1717.3 (59.4)	1888.7 (56.4)	3706.1 (57.9)	
Confident know how to prepare for a disaster										
Agree	99.8 (82.6)	1068.8 (64.4)	857.5 (46.5)	2026.2 (55.9)	<.0001	131.0 (84.5)	1990.2 (68.7)	1548.9 (46.0)	3681.9 (57.0)	<.0001
Neutral	13.0 (10.7)	399.9 (24.1)	564.2 (30.6)	977.0 (27.0)		10.0 (6.5)	604.7 (20.9)	1138.5 (33.8)	1769.4 (27.4)	
Disagree	8.0 (6.6)	183.3 (11.0)	421.1 (22.8)	612.4 (16.9)		14.0 (9.0)	301.0 (10.4)	672.0 (20.0)	992.4 (15.4)	
Emergency supply kit will improve chance of surviving a disaster										
Agree	111.9 (92.6)	1362.4 (82.1)	1349.4 (73.1)	2823.6 (77.9)	<.0001	141.2 (91.1)	2321.6 (80.1)	2221.1 (66.1)	4700.1 (72.8)	<.0001
Neutral	4.5 (3.8)	232.7 (14.0)	395.7 (21.4)	633.0 (17.5)		9.8 (6.3)	475.4 (16.5)	968.6 (28.8)	1471.1 (22.9)	
Disagree	4.4 (3.6)	59.1 (3.6)	96.5 (5.2)	160.0 (4.4)		4.0 (2.6)	96.8 (3.4)	169.1 (5.1)	270.0 (4.3)	
Emergency supply kit costs a lot of money										
Agree	28.3 (23.4)	366.4 (22.1)	448.7 (24.3)	843.4 (23.3)	0.0160	52.2 (33.7)	632.1 (21.8)	714.5 (21.2)	1406.3 (21.8)	<.0001
Neutral	26.5 (21.9)	535.9 (29.0)	417.6 (25.2)	980.0 (27.0)		31.3 (20.2)	725.6 (25.0)	1190.8 (35.4)	1961.7 (30.4)	
Disagree	66.0 (54.6)	856.9 (46.4)	870.2 (52.5)	1793.0 (49.5)		71.6 (46.1)	1538.5 (53.2)	1456.9 (43.3)	3078.6 (47.7)	
Risk of my household being affected by an infectious disease is greater than that of a disaster										
Agree	48.0 (39.8)	763.9 (46.0)	790.5 (42.8)	1602.4 (44.2)	0.2650	59.3 (38.3)	1234.4 (42.6)	1360.1 (40.4)	2662.9 (41.3)	<.0001
Neutral	49.6 (41.0)	601.9 (36.3)	744.7 (40.4)	1396.1 (38.5)		45.0 (29.0)	1040.7 (35.9)	1402.0 (41.7)	2502.1 (38.8)	
Disagree	23.2 (19.2)	288.4 (17.4)	305.3 (16.5)	616.9 (17.0)		50.7 (32.7)	618.8 (21.3)	594.8 (17.7)	1274.2 (19.7)	

.Table VIII. Respondent confident they know how to prepare for a disaster

	Fall 2020					Spring 2021				
	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value
Age										
18-34 years	514.5 (25.4)	274.3 (28.1)	241.9 (39.5)	1030.7 (28.5)	<.0001	951.5 (25.8)	489.6 (27.7)	374.9 (37.8)	1816.1 (28.2)	<.0001
35-54 years	646.3 (31.9)	346.2 (35.4)	205.0 (33.5)	1197.5 (33.1)		1220.4 (33.2)	588.3 (33.3)	336.2 (33.9)	2144.8 (33.3)	
55-74 years	723.7 (35.7)	277.3 (28.4)	136.6 (22.3)	1137.7 (31.5)		1254.6 (34.1)	559.5 (31.6)	226.0 (22.8)	2040.1 (31.7)	
75+ years	141.6 (7.0)	79.1 (8.1)	28.9 (4.7)	249.7 (6.9)		255.3 (6.9)	132.0 (7.5)	55.3 (5.6)	442.7 (6.9)	
Sex										
Male	1036.1 (51.1)	453.2 (46.4)	265.5 (15.1)	1754.8 (48.5)	0.0010	1853.0 (50.3)	875.4 (49.5)	389.9 (39.3)	3118.3 (48.4)	<.0001
Female	990.1 (48.9)	523.8 (53.6)	346.9 (56.7)	1860.8 (51.5)		1828.8 (49.7)	894.0 (50.5)	602.5 (60.7)	3325.4 (51.6)	
Education										
Less than high school	161.7 (8.0)	131.9 (13.5)	71.6 (11.7)	365.2 (10.1)	<.0001	367.6 (10.0)	230.7 (13.0)	88.0 (8.9)	686.4 (10.7)	<.0001
High school	567.2 (28.0)	291.0 (28.5)	162.4 (26.5)	1020.7 (28.2)		940.6 (25.6)	551.3 (31.2)	269.8 (27.2)	1761.8 (27.3)	
Some college	586.5 (58.2)	256.7 (26.3)	164.5 (26.9)	1007.7 (27.9)		1209.3 (32.8)	456.9 (25.8)	281.3 (28.4)	1947.5 (30.2)	
Bachelor's or higher	710.9 (35.1)	291.3 (30.4)	213.8 (34.9)	1222.0 (33.8)		1164.3 (31.6)	520.5 (30.0)	353.2 (17.2)	2048.0 (31.8)	
Race/Ethnicity										
White, Non-Hispanic	1377.4 (63.9)	611.1 (62.6)	319.7 (52.2)	2308.4 (63.9)	<.0001	2455.0 (66.7)	1092.9 (61.8)	540.6 (54.5)	4088.5 (63.5)	<.0001
Black, Non-Hispanic	218.1 (10.8)	122.8 (12.6)	73.4 (12.0)	414.4 (11.5)		423.0 (11.5)	219.2 (12.4)	105.0 (10.6)	747.2 (11.6)	
Hispanic	289.7 (14.3)	154.7 (15.8)	136.4 (22.3)	580.8 (16.1)		542.1 (14.7)	292.1 (16.5)	215.0 (21.7)	1049.2 (16.2)	
Mixed Race	29.7 (1.5)	12.9 (1.3)	9.8 (1.6)	52.5 (1.5)		71.8 (2.0)	25.4 (1.4)	22.3 (2.2)	119.4 (1.9)	
Other	111.0 (5.5)	75.4 (7.7)	72.9 (11.1)	580.8 (16.1)		190.0 (5.2)	139.9 (7.9)	109.5 (11.0)	429.4 (6.8)	
Housing Structure										
Single family home	1565.6 (77.3)	683.9 (70.0)	392.4 (64.1)	2642.0 (73.1)	<.0001	2747.3 (74.6)	1227.3 (69.4)	642.2 (64.7)	4616.8 (71.7)	<.0001
Townhome/Duplex	149.7 (7.4)	98.3 (10.1)	51.5 (8.4)	299.4 (8.3)		284.8 (7.7)	183.4 (10.4)	107.8 (10.9)	575.9 (8.9)	
Apartment	228.3 (11.3)	159.0 (16.3)	142.3 (23.2)	529.5 (14.7)		514.8 (14.0)	268.8 (15.2)	205.3 (20.7)	988.9 (15.4)	
Mobile home, RV, etc.	82.6 (4.1)	35.8 (3.7)	26.2 (4.3)	144.6 (4.0)		135.0 (3.7)	90.0 (5.1)	37.1 (3.7)	262.1 (4.1)	
Ownership Status										
Owns	1578.0 (77.9)	674.0 (69.0)	410.4 (67.0)	2662.4 (73.6)	<.0001	2768.7 (75.2)	1236.4 (69.9)	666.8 (67.2)	4671.9 (72.5)	<.0001
Rents	411.8 (20.3)	276.0 (28.3)	195.1 (31.9)	882.9 (24.4)		856.0 (23.3)	493.5 (27.9)	304.0 (30.6)	1653.5 (25.7)	
Occupy w/o payment	36.3 (1.8)	27.0 (2.8)	6.9 (1.1)	70.3 (1.9)		57.2 (1.6)	39.6 (2.2)	21.6 (2.2)	118.3 (1.8)	
Region										
South	862.8 (42.6)	328.6 (33.6)	173.9 (28.4)	1365.2 (37.8)	<.0001	1565.8 (42.5)	596.5 (33.7)	283.4 (28.6)	2445.6 (38.0)	<.0001
West	421.5 (20.8)	263.2 (26.9)	183.5 (30.0)	868.2 (24.0)		800.2 (21.7)	472.2 (26.7)	273.6 (27.6)	1546.0 (24.0)	
Midwest	414.4 (20.5)	202.3 (20.7)	131.2 (21.4)	747.8 (20.7)		761.4 (20.7)	359.8 (20.3)	220.4 (22.2)	1341.5 (20.8)	
Northeast	327.5 (16.2)	183.0 (18.7)	123.9 (20.2)	634.3 (17.5)		554.5 (15.1)	341.0 (19.3)	215.1 (21.7)	1110.6 (17.2)	
Urbanicity										
Metro	1724.7 (85.1)	845.3 (86.5)	561.4 (91.7)	3131.4 (86.6)	0.0002	3146.9 (85.5)	1540.6 (87.1)	897.2 (90.4)	5584.7 (86.7)	0.0002
Non-Metro	301.4 (14.9)	131.7 (13.5)	51.0 (8.3)	484.1 (13.4)		535.0 (14.5)	228.9 (12.9)	95.2 (9.6)	859.0 (13.3)	

Household Size										
Lives alone	280.9 (13.9)	155.6 (15.9)	99.1 (15.7)	532.6 (14.7)	0.2498	543.2 (14.8)	236.6 (13.4)	128.5 (13.0)	908.4 (14.1)	0.2059
Lives with others	1745.3 (86.1)	821.4 (84.1)	516.3 (84.3)	3083.0 (85.3)		3138.6 (85.3)	1532.8 (86.6)	863.9 (87.1)	5535.3 (85.9)	
Marital Status										
Married	1229.2 (60.7)	556.1 (56.9)	295.2 (48.2)	2080.6 (57.5)	<.0001	2187.9 (59.4)	972.2 (54.9)	501.2 (50.5)	3660.3 (56.8)	<.0001
Not married	797.0 (39.3)	420.9 (43.1)	317.2 (51.8)	1535.0 (42.5)		1495.0 (40.6)	797.3 (45.1)	491.2 (49.5)	2783.4 (43.2)	
Children										
Household has kids	617.1 (30.5)	333.6 (34.2)	201.3 (32.9)	1152.1 (31.9)	0.1061	1189.0 (32.3)	611.5 (34.6)	331.2 (33.4)	2131.6 (33.1)	0.2452
No kids in home	1409.1 (69.5)	643.4 (65.9)	411.1 (16.7)	2463.5 (68.1)		2492.9 (67.7)	1158.0 (65.4)	661.2 (66.6)	4312.1 (66.9)	
Household Income										
<$25,000	233.4 (11.5)	152.8 (15.6)	96.0 (15.7)	482.2 (13.3)	<.0001	435.8 (11.8)	250.8 (14.2)	107.5 (10.8)	794.1 (12.3)	<.0001
$25,000 < $50,000	331.5 (16.4)	190.8 (19.5)	123.7 (20.2)	646.0 (17.9)		591.0 (16.1)	353.5 (20.0)	181.8 (18.3)	1126.2 (17.5)	
$50,000 < $75,000	329.8 (16.3)	170.1 (17.4)	101.3 (16.5)	601.2 (16.6)		612.9 (16.7)	328.0 (18.5)	177.5 (17.9)	1118.4 (17.4)	
$75,000 < $100,000	294.1 (14.5)	141.4 (14.5)	72.5 (11.8)	508.0 (14.1)		521.1 (15.2)	237.4 (13.4)	149.9 (15.1)	908.4 (14.1)	
$100,000 < $150,000	385.1 (19.0)	161.4 (16.5)	90.2 (14.7)	636.8 (17.6)		749.2 (20.4)	287.8 (16.3)	169.8 (17.1)	1206.7 (18.7)	
$150,000 or more	452.2 (22.3)	160.4 (16.4)	128.8 (21.0)	741.4 (20.5)		771.8 (21.0)	311.9 (17.6)	206.0 (20.8)	1289.7 (20.0)	
Employment Status**										
Employed	1295.4 (63.9)	616.8 (63.1)	405.3 (66.2)	2317.5 (64.1)	0.5700	1637.3 (44.5)	741.4 (41.9)	423.1 (42.6)	2801.8 (43.5)	0.4084
Unemployed/Retired	631.4 (31.2)	311.8 (31.9)	172.6 (28.2)	1115.7 (30.9)		638.0 (17.3)	309.1 (17.5)	176.6 (17.8)	1123.7 (17.4)	
Other	99.4 (4.9)	48.4 (5.0)	34.5 (5.6)	182.4 (5.0)		1406.6 (38.2)	718.9 (40.6)	392.7 (39.6)	2518.2 (39.1)	

**Fall 2020 "Employed" includes all currently employed persons and "Other" includes those who are temporarily out of work; Spring 2021 "Employed" is employed full time only and "Other" are those who are employed part-time. Therefore, these are separate categories and should not be compared.*

Table IX. Respondent believes an emergency supply kit improves chance of survival

	Fall 2020					Spring 2021				
	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value
Age										
18-34 years	830.3 (29.4)	160.4 (25.3)	39.9 (35.0)	1030.7 (28.5)	0.0021	1337.6 (28.5)	417.8 (28.4)	60.6 (22.5)	1816.1 (28.2)	0.4266
35-54 years	928.2 (32.9)	233.7 (36.9)	36.6 (22.9)	1198.5 (33.1)		1543.1 (32.8)	496.1 (33.7)	102.3 (37.9)	2141.5 (33.3)	
55-74 years	877.5 (31.1)	191.8 (30.3)	67.7 (42.3)	1137.0 (31.4)		1498.7 (73.4)	458.3 (31.2)	86.0 (31.9)	2043.0 (31.7)	
75+ years	187.5 (6.6)	47.1 (7.5)	15.8 (9.9)	250.4 (6.9)		320.6 (6.8)	98.8 (6.7)	21.1 (7.8)	440.5 (6.8)	
Sex										
Male	1342.3 (47.5)	323.5 (51.1)	88.9 (55.6)	1754.8 (48.5)	0.0508	2231.3 (47.5)	746.8 (50.8)	139.2 (51.6)	3117.3 (48.4)	0.0503
Female	1481.3 (52.5)	309.5 (48.9)	71.1 (44.4)	1861.9 (51.5)		2468.8 (52.5)	724.3 (49.2)	130.8 (48.4)	3323.9 (51.6)	
Education										
Less than high school	261.3 (9.3)	78.8 (12.5)	25.1 (15.7)	365.2 (10.1)	<.0001	434.7 (9.3)	214.6 (14.6)	38.8 (14.4)	688.0 (10.7)	<.0001
High school	764.0 (27.1)	218.1 (34.5)	38.6 (24.1)	1020.7 (28.2)		1258.8 (26.8)	431.8 (29.4)	66.8 (24.8)	1757.5 (27.3)	
Some college	788.7 (27.9)	169.5 (26.8)	50.3 (31.4)	1008.5 (27.9)		1468.4 (31.2)	401.7 (27.3)	77.3 (28.6)	1947.4 (30.2)	
Bachelor's or higher	1009.6 (35.8)	166.6 (26.3)	46.0 (28.7)	1222.2 (33.8)		1538.2 (32.7)	423.0 (28.8)	87.0 (32.2)	2048.2 (31.8)	

Race/Ethnicity										
White, Non-Hispanic	1759.8 (62.3)	442.1 (69.8)	107.6 (67.2)	2309.5 (63.9)	0.0254	2942.3 (62.6)	969.1 (65.9)	176.9 (65.5)	4088.2 (63.5)	0.0241
Black, Non-Hispanic	343.1 (12.2)	58.2 (9.2)	13.1 (8.2)	414.4 (11.5)		534.8 (71.8)	172.5 (11.7)	37.6 (14.0)	745.0 (11.6)	
Hispanic	468.3 (16.6)	90.1 (14.2)	22.3 (14.0)	580.8 (16.1)		814.2 (17.3)	202.3 (13.8)	32.7 (12.1)	1049.2 (16.3)	
Mixed Race	41.1 (1.5)	9.5 (1.5)	1.9 (1.2)	52.5 (1.5)		93.8 (78.5)	22.1 (1.5)	3.5 (1.3)	119.4 (1.9)	
Other	211.2 (7.5)	33.1 (5.2)	15.0 (9.4)	259.4 (7.2)		315.1 (71.7)	105.1 (23.9)	19.2 (7.1)	439.4 (6.9)	
Housing Structure										
Single family home	2068.1 (73.2)	463.0 (73.2)	110.9 (69.3)	2642.1 (73.1)	0.1163	3393.1 (72.2)	1027.5 (66.9)	195.8 (72.5)	4616.4 (71.7)	0.0883
Townhome/Duplex	233.9 (8.3)	43.7 (6.9)	22.8 (14.3)	300.4 (8.3)		398.2 (8.5)	152.4 (10.4)	24.3 (9.0)	574.8 (8.9)	
Apartment	407.0 (14.4)	101.4 (16.0)	21.1 (13.2)	529.5 (14.6)		728.3 (15.5)	217.8 (14.8)	43.0 (15.9)	989.0 (15.4)	
Mobile home, RV, etc.	114.6 (4.1)	24.9 (3.9)	5.1 (3.2)	144.6 (4.0)		180.5 (3.8)	73.5 (5.0)	6.9 (2.6)	260.8 (4.1)	
Ownership Status										
Owns	2098.2 (74.3)	446.6 (70.5)	118.7 (74.2)	2663.5 (73.7)	0.3173	3436.2 (73.1)	1040.4 (70.7)	192.7 (71.4)	4669.2 (72.5)	0.4441
Rents	675.0 (23.9)	169.8 (26.8)	38.1 (23.8)	882.9 (24.4)		1181.7 (25.1)	399.4 (27.2)	72.5 (26.8)	1653.6 (25.7)	
Occupy w/o payment	50.4 (1.8)	16.6 (2.6)	3.2 (2.0)	70.3 (1.9)		82.1 (1.8)	31.3 (2.2)	4.8 (1.8)	118.3 (1.8)	
Region										
South	1058.3 (37.5)	250.8 (39.6)	56.7 (35.4)	1365.8 (37.8)	0.4379	1826.0 (38.9)	516.6 (35.1)	102.0 (37.8)	2444.6 (38.0)	0.0002
West	684.3 (24.2)	140.5 (22.2)	43.9 (27.5)	868.7 (24.0)		1168.5 (24.9)	317.4 (21.6)	60.3 (22.3)	1546.1 (24.0)	
Midwest	572.7 (20.3)	143.4 (22.7)	31.7 (19.8)	747.8 (20.7)		916.4 (19.5)	362.8 (24.7)	60.7 (22.5)	1339.9 (20.8)	
Northeast	508.4 (18.0)	98.3 (15.5)	27.6 (17.3)	634.3 (17.5)		789.2 (16.8)	274.3 (18.7)	47.0 (17.4)	1110.6 (17.2)	
Urbanicity										
Metro	2471.2 (87.5)	523.8 (82.7)	137.5 (86.0)	3132.5 (86.6)	0.0059	4111.8 (87.5)	1250.1 (85.0)	220.8 (81.8)	5582.7 (86.7)	0.0025
Non-Metro	352.4 (12.5)	109.3 (17.3)	22.5 (14.0)	484.1 (13.4)		588.2 (12.5)	221.0 (15.0)	49.2 (18.2)	858.4 (13.3)	
Household Size										
Lives alone	416.7 (14.8)	101.7 (16.1)	14.2 (8.9)	532.7 (14.7)	0.0727	633.7 (13.5)	213.7 (14.5)	59.0 (21.9)	906.3 (14.1)	0.0005
Lives with others	2406.9 (85.2)	531.3 (84.0)	145.7 (91.1)	3083.9 (85.3)		4066.4 (86.5)	1257.4 (85.5)	211.0 (78.2)	5534.8 (85.9)	
Marital Status										
Married	1607.6 (56.9)	368.1 (58.2)	105.9 (66.2)	2081.6 (57.6)	0.0664	2675.4 (56.9)	839.0 (57.0)	145.4 (53.9)	3659.8 (56.9)	0.6029
Not married	1216.0 (43.1)	264.9 (41.9)	54.1 (33.8)	1535.0 (42.4)		2024.7 (43.1)	632.1 (43.0)	124.6 (46.1)	2781.4 (43.2)	
Children in Home										
Household has kids	905.6 (32.1)	203.8 (32.2)	43.6 (27.3)	1153.0 (31.9)	0.4394	1584.1 (33.7)	458.0 (31.1)	89.8 (33.3)	2131.8 (33.1)	0.1875
No kids in home	1918.0 (67.9)	429.2 (67.8)	116.4 (72.7)	2463.6 (68.1)		3116.0 (66.3)	1031.1 (68.9)	180.2 (66.7)	4309.3 (66.9)	
Household Income										
<$25,000	336.6 (11.9)	112.1 (17.7)	33.5 (20.9)	482.2 (13.3)	<.0001	547.6 (11.7)	224.6 (15.3)	23.5 (8.7)	795.8 (12.4)	0.0002
$25,000 < $50,000	486.0 (17.2)	135.0 (21.3)	24.9 (15.6)	646.0 (17.9)		798.9 (17.0)	269.9 (18.3)	54.0 (20.0)	1122.8 (17.4)	
$50,000 < $75,000	477.0 (16.9)	98.5 (15.6)	25.7 (16.1)	601.2 (16.6)		808.7 (17.2)	263.1 (17.9)	45.6 (16.9)	1117.4 (17.4)	
$75,000 < $100,000	399.0 (14.1)	75.1 (11.9)	32.7 (20.4)	506.8 (14.0)		666.5 (14.2)	193.8 (13.2)	48.1 (17.8)	908.4 (14.1)	
$100,000 < $150,000	511.1 (18.1)	106.9 (16.9)	19.5 (12.2)	637.5 (17.6)		913.2 (19.4)	256.1 (17.4)	37.5 (13.9)	1206.7 (18.7)	
$150,000 or more	613.9 (21.7)	105.4 (16.7)	23.6 (14.8)	742.9 (20.5)		965.1 (20.5)	263.6 (17.9)	61.3 (22.7)	1290.0 (20.0)	

Employment Status**										
Employed	1830.3 (64.8)	397.6 (62.8)	90.6 (56.6)	2318.5 (64.1)	0.0127	2016.3 (43.5)	653.5 (44.4)	130.6 (48.3)	2800.3 (43.5)	0.1703
Unemployed/Retired	859.1 (30.4)	192.0 (30.3)	64.7 (40.4)	1115.7 (30.9)		1845.8 (39.3)	566.1 (38.5)	105.2 (39.0)	2517.1 (39.1)	
Other	134.3 (4.8)	43.4 (6.9)	4.7 (3.0)	182.4 (5.1)		838.1 (17.8)	251.5 (17.1)	34.1 (12.7)	251.5 (17.1)	

**Fall 2020 "Employed" includes all currently employed persons and "Other" includes those who are temporarily out of work; Spring 2021 "Employed" is employed full time only and "Other" are those who are employed part-time. Therefore, these are separate categories and should not be compared.*

Table X. Respondent believes emergency supply kits are expensive

	Fall 2020					Spring 2021				
	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value
Age										
18-34 years	332.8 (39.5)	218.9 (22.3)	478.9 (26.7)	1030.7 (28.5)	<.0001	515.0 (36.6)	516.3 (26.3)	784.8 (25.5)	1816.1 (28.2)	<.0001
35-54 years	290.5 (34.5)	340.7 (34.8)	567.3 (31.6)	1198.5 (33.1)		531.4 (37.8)	612.5 (31.2)	1000.9 (32.5)	2144.8 (33.3)	
55-74 years	190.1 (22.5)	334.7 (34.2)	612.1 (34.1)	1136.9 (31.4)		302.3 (21.5)	657.3 (33.5)	1083.6 (35.2)	2043.1 (31.7)	
75+ years	30.0 (3.6)	85.8 (8.8)	134.6 (7.5)	250.4 (6.9)		57.6 (4.1)	175.7 (9.0)	209.4 (6.8)	442.7 (6.9)	
Sex										
Male	361.8 (42.9)	505.1 (51.5)	887.8 (49.5)	1754.8 (48.5)	0.0006	605.3 (43.0)	1003.7 (51.2)	1509.3 (49.0)	3118.3 (48.4)	<.0001
Female	481.6 (57.1)	475.0 (48.5)	905.2 (50.5)	1861.8 (51.5)		801.0 (57.0)	958.0 (48.8)	1569.3 (51.0)	3328.4 (51.6)	
Education										
Less than high school	85.9 (10.2)	110.7 (11.3)	168.6 (9.4)	365.2 (10.1)	<.0001	160.1 (11.4)	261.7 (13.3)	266.2 (8.7)	688.0 (10.7)	<.0001
High school	280.2 (33.2)	306.0 (31.2)	433.2 (24.2)	1019.4 (28.2)		422.4 (30.0)	601.7 (30.7)	728.8 (24.0)	1762.9 (27.4)	
Some college	236.4 (28.0)	283.2 (28.9)	489.2 (27.3)	1008.9 (27.9)		459.8 (32.7)	592.5 (30.2)	895.2 (29.1)	1947.5 (30.2)	
Bachelor's or higher	240.9 (28.6)	280.1 (28.6)	702.0 (39.2)	1223.0 (33.8)		364.1 (25.9)	505.8 (25.8)	1178.4 (38.3)	2048.2 (31.8)	
Race/Ethnicity										
White, Non-Hispanic	497.5 (59.0)	660.8 (67.4)	1152.4 (64.3)	2310.7 (63.9)	0.0069	863.7 (61.4)	1207.6 (61.6)	2020.3 (65.6)	4091.5 (63.5)	0.0001
Black, Non-Hispanic	105.4 (12.5)	118.8 (12.1)	190.2 (10.6)	414.4 (11.5)		143.5 (10.2)	241.8 (12.3)	361.9 (11.8)	747.2 (11.6)	
Hispanic	154.0 (18.3)	134.4 (13.7)	291.1 (16.2)	579.5 (16.0)		274.7 (19.5)	340.9 (17.4)	433.5 (14.1)	1049.2 (16.3)	
Mixed Race	12.8 (1.5)	9.6 (1.0)	30.1 (1.7)	52.5 (1.5)		34.2 (2.4)	31.1 (1.6)	54.1 (1.8)	119.4 (1.2)	
Other	73.6 (8.7)	56.5 (5.8)	129.3 (7.2)	259.4 (7.2)		90.3 (6.4)	140.3 (7.2)	208.8 (6.8)	439.4 (6.8)	
Housing Structure										
Single family home	590.8 (70.0)	703.1 (71.7)	1348.1 (75.2)	2642.0 (73.1)	0.0237	946.3 (67.3)	1407.3 (71.7)	2265.1 (73.6)	4618.6 (71.6)	<.0001
Townhome/Duplex	78.2 (9.3)	81.3 (8.3)	140.9 (7.9)	300.4 (8.3)		118.3 (8.4)	181.1 (9.2)	276.5 (9.0)	575.9 (8.9)	
Apartment	128.7 (15.3)	150.4 (15.4)	250.4 (14.0)	529.5 (14.6)		252.2 (17.9)	290.5 (14.8)	447.4 (14.5)	990.1 (15.4)	
Mobile home, RV, etc.	45.7 (5.4)	45.2 (4.6)	53.7 (3.0)	144.6 (4.0)		89.6 (6.4)	82.9 (4.2)	89.7 (2.9)	262.1 (4.1)	
Ownership Status										
Owns	574.3 (68.1)	716.9 (73.2)	1372.2 (76.5)	574.3 (68.1)	<.0001	900.1 (64.0)	1434.4 (73.1)	2339.3 (76.0)	4673.7 (72.5)	<.0001
Rents	256.8 (30.5)	249.1 (25.4)	376.9 (21.0)	882.9 (24.4)		489.3 (33.4)	480.9 (24.5)	704.4 (22.9)	1654.6 (25.7)	
Occupy w/o payment	12.4 (1.5)	14.0 (1.4)	43.9 (2.5)	70.3 (1.9)		37.0 (2.6)	46.4 (2.4)	34.9 (1.1)	118.3 (1.8)	

Region										
South	286.6 (34.0)	355.5 (36.3)	723.1 (40.3)	1365.2 (37.8)	<.0001	519.7 (37.0)	726.3 (37.0)	1200.8 (39.0)	2446.8 (38.0)	<.0001
West	246.5 (29.2)	247.6 (25.3)	375.0 (20.9)	869.1 (24.0)		442.3 (31.5)	459.6 (23.4)	644.4 (20.9)	1546.2 (24.0)	
Midwest	183.1 (21.7)	203.4 (20.8)	361.3 (20.2)	747.8 (20.7)		272.3 (19.4)	410.3 (20.9)	660.5 (21.5)	1343.1 (20.8)	
Northeast	127.2 (15.1)	173.5 (17.7)	333.7 (18.6)	634.3 (17.5)		172.1 (12.2)	365.6 (18.6)	572.9 (18.6)	1110.6 (17.2)	
Urbanicity										
Metro	732.3 (86.8)	825.5 (84.2)	1574.7 (87.8)	3132.4 (86.6)	0.0288	1199.9 (85.3)	1690.5 (86.2)	2694.5 (87.5)	5584.9 (86.6)	0.1030
Non-Metro	111.2 (13.2)	154.6 (15.8)	218.4 (12.2)	484.1 (13.4)		206.4 (14.7)	271.2 (13.8)	384.1 (12.5)	861.7 (13.4)	
Household Size										
Lives alone	120.7 (14.3)	157.8 (16.1)	254.6 (14.2)	533.1 (14.7)	0.3688	174.9 (12.4)	266.4 (13.6)	468.2 (15.2)	909.5 (14.1)	0.0339
Lives with others	722.7 (85.7)	822.2 (83.9)	1538.5 (85.8)	3083.4 (85.3)		1231.4 (87.6)	1695.3 (86.4)	2610.4 (84.8)	5537.1 (85.9)	
Marital Status										
Married	431.7 (51.2)	569.7 (58.1)	1080.1 (60.2)	2081.5 (57.6)	<.0001	754.4 (53.6)	1098.4 (56.0)	1809.3 (58.8)	754.4 (53.6)	0.0039
Not married	411.7 (48.8)	410.3 (41.9)	713.0 (39.8)	1535.0 (42.4)		651.9 (46.4)	863.3 (44.0)	1269.3 (41.2)	2784.6 (43.2)	
Children in home										
Household has kids	331.2 (39.3)	285.2 (29.1)	535.4 (29.9)	1151.7 (31.9)	<.0001	592.5 (42.1)	591.0 (30.1)	948.3 (30.8)	2131.8 (33.1)	<.0001
No kids in home	512.2 (60.7)	694.9 (70.9)	1257.7 (70.1)	2464.8 (68.2)		813.8 (57.9)	1370.7 (69.9)	2130.3 (69.2)	4314.8 (66.9)	
Household Income										
<$25,000	134.1 (15.9)	152.6 (15.6)	195.5 (10.9)	482.2 (13.3)	<.0001	80.3 (5.7)	85.5 (4.4)	76.0 (2.5)	241.8 (3.8)	<.0001
$25,000 < $50,000	177.4 (21.0)	203.4 (20.8)	265.2 (14.8)	646.0 (17.9)		284.4 (20.2)	384.8 (19.6)	456.9 (14.9)	284.4 (20.2)	
$50,000 < $75,000	130.0 (15.4)	187.0 (19.1)	284.2 (15.9)	601.2 (16.6)		267.8 (19.0)	368.3 (18.8)	482.3 (15.7)	1118.4 (17.4)	
$75,000 < $100,000	119.3 (14.1)	120.2 (12.3)	268.6 (15.0)	508.0 (14.1)		190.6 (13.6)	304.5 (15.5)	413.3 (13.4)	908.4 (14.1)	
$100,000 < $150,000	136.5 (16.2)	152.2 (15.5)	347.5 (19.4)	636.2 (17.6)		239.3 (17.1)	341.7 (17.4)	625.8 (20.3)	1206.7 (18.7)	
$150,000 or more	146.2 (17.3)	164.7 (16.8)	432.0 (24.1)	742.9 (20.5)		192.7 (13.7)	309.2 (15.7)	788.1 (25.6)	1290.0 (20.0)	
Employment Status**										
Employed	560.1 (66.4)	621.7 (63.4)	1135.9 (63.4)	2317.7 (64.1)	0.0950	577.7 (41.1)	867.4 (44.2)	1358.5 (44.1)	2803.6 (43.5)	0.0050
Unemployed/Retired	231.5 (27.5)	310.4 (31.7)	574.5 (32.0)	1116.5 (30.9)		581.1 (41.3)	791.9 (40.4)	1146.4 (37.2)	2519.3 (39.1)	
Other	51.9 (6.2)	47.9 (4.9)	82.6 (4.6)	182.4 (5.0)		247.5 (17.6)	302.5 (15.4)	573.7 (18.6)	1123.7 (17.4)	

**Fall 2020 "Employed" includes all currently employed persons and "Other" includes those who are temporarily out of work; Spring 2021 "Employed" is employed full time only and "Other" are those who are employed part-time. Therefore, these are separate categories and should not be compared.*

Table XI. Respondent believes risk of infectious disease greater than risk of disaster

	Fall 2020					Spring 2021				
	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value	Agree (N=3682)	Neutral (N=1769)	Disagree (N=992)	Total (N=6443)	p-value
Age										
18-34 years	430.2 (26.9)	414.8 (29.7)	181.9 (29.5)	1026.9 (28.4)	0.0149	821.2 (30.8)	688.9 (27.5)	306.0 (24.0)	1816.1 (28.2)	0.0003
35-54 years	506.5 (31.6)	484.3 (34.7)	209.0 (33.9)	1199.9 (33.2)		838.0 (31.5)	828.3 (33.1)	471.5 (37.0)	2137.9 (33.2)	
55-74 years	532.7 (33.2)	413.6 (29.6)	192.0 (31.1)	1138.2 (31.5)		816.0 (30.6)	813.3 (32.5)	414.4 (32.5)	2043.7 (31.7)	
75+ years	133.0 (8.3)	83.5 (6.0)	34.0 (5.5)	250.4 (6.9)		187.7 (7.1)	171.6 (6.9)	82.3 (6.5)	441.6 (6.9)	

Sex										
Male	808/1 (50.4)	638.7 (45.8)	309.3 (50.1)	1756.1 (48.6)	0.0264	1270.7 (47.7)	1198.6 (47.9)	646.2 (50.7)	3115.5 (48.4)	0.1760
Female	794.3 (49.6)	757.4 (54.3)	307.6 (49.9)	1859.3 (51.4)		1392.2 (52.3)	1303.5 (52.1)	628.0 (49.3)	3323.7 (51.6)	
Education										
Less than high school	140.1 (8.7)	167.1 (12.0)	58.1 (9.4)	365.2 (10.1)	<.0001	233.7 (8.8)	313.3 (12.5)	137.8 (10.8)	684.8 (10.6)	<.0001
High school	376.3 (23.5)	480.0 (34.4)	162.0 (26.3)	1018.3 (28.2)		653.7 (24.6)	767.1 (30.7)	336.9 (26.4)	1757.7 (27.3)	
Some college	439.6 (27.4)	374.3 (26.8)	195.0 (31.6)	1008.9 (27.9)		791.2 (29.7)	749.8 (30.0)	407.4 (32.0)	1948.4 (30.3)	
Bachelor's or higher	646.5 (40.3)	374.7 (26.8)	201.9 (32.7)	1223.0 (33.8)		984.3 (37.0)	671.9 (26.9)	392.1 (30.8)	2048.2 (31.8)	
Race/Ethnicity										
White, Non-Hispanic	1050.0 (65.5)	847.0 (60.7)	409.9 (66.4)	2306.9 (63.8)	0.0240	1687.8 (63.4)	1547.2 (61.8)	852.5 (20.9)	4087.5 (63.5)	0.0001
Black, Non-Hispanic	182.6 (11.4)	165.7 (11.9)	66.1 (10.7)	414.4 (11.5)		276.2 (10.4)	351.1 (14.0)	117.7 (9.2)	745.0 (11.6)	
Hispanic	224.2 (14.0)	256.8 (18.4)	101.1 (16.4)	582.2 (16.1)		462.0 (17.4)	390.8 (15.6)	195.3 (15.3)	1048.0 (16.3)	
Mixed Race	23.1 (1.4)	21.1 (1.5)	8.3 (1.3)	52.5 (1.5)		48.3 (1.8)	42.3 (1.7)	28.8 (2.3)	119.4 (1.9)	
Other	122.5 (7.6)	105.4 (7.6)	31.5 (5.1)	259/4 (7.2)		188.7 (7.1)	170.7 (6.8)	80.0 (6.3)	439.4 (6.8)	
Housing Structure										
Single family home	1186.5 (74.0)	992.3 (71.1)	462.1 (74.9)	2640.9 (73.0)	0.1283	1870.4 (70.2)	1772.3 (70.8)	970.5 (76.2)	4613.2 (71.6)	<.0001
Townhome/Duplex	143.0 (8.9)	110.1 (7.9)	47.3 (7.7)	300.4 (8.3)		247.3 (9.3)	221.3 (8.8)	106.6 (8.4)	575.1 (8.9)	
Apartment	214.5 (13.4)	232.8 (16.7)	82.3 (13.3)	529.5 (14.7)		454.3 (17.1)	381.9 (15.3)	153.8 (12.1)	990.1 (15.4)	
Mobile home, RV, etc.	58.5 (3.7)	60.9 (42.1)	25.2 (4.1)	144.6 (4.0)		90.9 (3.4)	126.6 (5.1)	43.3 (3.4)	260.8 (4.1)	
Ownership Status										
Owns	1203.9 (75.1)	987.1 (70.7)	471.4 (76.4)	2662.3 (73.6)	0.0109	1905.9 (71.6)	1796.6 (71.8)	968.5 (76.0)	4670.9 (72.5)	0.0048
Rents	371.0 (23.2)	381.9 (27.4)	130.0 (21.1)	882.9 (24.4)		712.3 (26.8)	648.0 (25.9)	292.0 (22.9)	1652.3 (25.7)	
Occupy w/o payment	27.5 (1.7)	27.2 (2.0)	15.6 (2.5)	70.3 (1.9)		44.7 (1.7)	57.4 (2.3)	13.8 (1.1)	115.9 (1.8)	
Region										
South	574.5 (35.9)	512.5 (36.7)	277.1 (44.9)	1364.1 (37.7)	0.0001	884.9 (33.2)	1014.2 (40.5)	543.2 (42.6)	2442.2 (37.9)	<.0001
West	364.8 (22.8)	372.2 (26.7)	132.1 (21.4)	869.1 (24.0)		634.4 (23.8)	593.4 (23.7)	318.6 (25.0)	1546.4 (24.0)	
Midwest	371.2 (23.2)	266.2 (19.1)	110.4 (17.9)	747.8 (20.7)		581.7 (21.9)	503.7 (20.1)	254.6 (20.0)	1340.1 (20.8)	
Northeast	291.9 (18.2)	245.2 (17.6)	97.3 (15.8)	291.9 (18.2)		562.0 (21.1)	390.8 (15.6)	157.8 (12.4)	1110.6 (17.3)	
Urbanicity										
Metro	1424.1 (88.9)	1188.9 (85.2)	518.4 (84.0)	3131.3 (86.6)	0.0014	2373.0 (89.1)	2129.6 (85.1)	1078.5 (84.6)	5581.2 (86.7)	<.0001
Non-Metro	178.3 (11.1)	207.2 (14.8)	98.5 (16.0)	484.1 (13.4)		289.9 (10.9)	372.4 (14.9)	195.7 (15.4)	858.0 (13.3)	
Household Size										
Lives alone	231.5 (14.5)	213.6 (15.3)	88.0 (2.4)	533.1 (14.8)	0.7557	351.9 (13.2)	373.7 (14.9)	182.9 (14.4)	908.5 (14.1)	0.1993
Lives with others	1370.9 (85.6)	1182.6 (84.7)	528.9 (14.6)	3082.3 (85.3)		2311 (86.8)	2128.4 (85.1)	1091.3 (85.7)	5530.7 (85.9)	
Marital Status										
Married	925.0 (57.7)	791.3 (56.7)	366.5 (59.4)	2082.8 (57.6)	0.5142	1474.4 (55.4)	1426.4 (57.0)	758.7 (59.6)	3659.6 (56.8)	0.0455
Not married	677.4 (42.3)	604.8 (43.3)	250.4 (40.6)	1532.6 (42.4)		1188.5 (44.6)	1075.6 (43.0)	515.5 (40.5)	2779.6 (43.2)	
Children in home										
Household has kids	464.0 (29.0)	468.0 (33.5)	221.1 (35.8)	1153.0 (31.9)	0.0020	852.7 (32.0)	844.9 (33.8)	431.5 (33.9)	2129.1 (33.1)	0.3274
No kids in home	1138.4 (71.0)	928.2 (66.5)	395.8 (64.2)	2462.4 (68.1)		1810.2 (68.0)	1657.2 (66.2)	842.7 (66.1)	4310.1 (66.9)	

Household Income										
<$25,000	183.0 (11.4)	214.2 (15.3)	85.0 (13.8)	482.2 (13.3)	<.0001	310.3 (11.7)	337.1 (13.5)	146.1 (11.5)	793.5 (12.3)	<.0001
$25,000 < $50,000	258.7 (16.1)	283.0 (20.3)	104.3 (16.9)	646.0 (17.9)		418.0 (15.7)	482.6 (19.3)	224.4 (17.6)	1125.0 (17.5)	
$50,000 < $75,000	259.0 (16.2)	243.3 (17.4)	98.9 (16.0)	601.2 (16.6)		475.5 (17.9)	443.5 (17.7)	199.1 (15.6)	1118.0 (17.4)	
$75,000 < $100,000	217.8 (13.6)	197.3 (14.1)	92.9 (15.1)	508.0 (14.1)		360.0 (13.5)	365.7 (14.6)	182.6 (14.3)	908.4 (14.1)	
$100,000 < $150,000	295.8 (18.5)	226.0 (16.2)	117.0 (19.0)	638.9 (17.7)		482.2 (18.1)	450.0 (18.0)	274.5 (21.6)	1206.7 (18.7)	
$150,000 or more	388.1 (24.2)	232.3 (16.6)	118.8 (19.3)	739.1 (20.4)		616.9 (23.2)	423.2 (16.9)	247.5 (19.4)	1287.6 (20.0)	
Employment Status**										
Employed	1047.9 (65.4)	873.1 (62.5)	395.6 (64.1)	2316.6 (64.1)	0.2687	1137.8 (42.8)	1100.1 (44.0)	563.1 (44.2)	2801.0 (43.5)	0.0564
Unemployed/Retired	485.9 (30.3)	440.7 (31.6)	189.9 (30.8)	1116.5 (30.9)		1024.5 (38.5)	971.5 (38.8)	520.0 (40.8)	2516.0 (39.1)	
Other	68.6 (4.3)	82.3 (5.9)	31.4 (5.1)	182.4 (5.0)		500.7 (18.8)	430.5 (17.2)	191.0 (15.0)	1122.2 (17.4)	

Table XII. Weighted logistic regression analysis of emergency supply kit ownership by demographics factors, Spring 2021

	Crude OR	Has Kit	No Kit	Adjusted OR*	95% CI	p-value
Age						
18-34 years	1.144	554.1 (34.0)	1073.6 (66.0)	1.142	0.904, 1.442	0.2655
35-54 years	1.333	768.6 (37.6)	1277.7 (62.4)	1.320	1.051, 1.658	0.0170
55-74 years	1.354	748.1 (37.9)	1223.9 (62.1)	1.378	1.051, 1.658	0.0059
75+ years *(reference)*	1.0	130.4 (31.1)	288.9 (68.9)	1.0	--	--
Sex						
Male *(reference)*	1.0	1101.3 (37.7)	1821.7 (62.3)	1.0	--	--
Female	0.891	1100.1 (35.0)	2042.4 (65.0)	0.891	0.802, 0.991	0.0338
Education Level						
Less than high school *(reference)*	1.0	212.0 (35.3)	387.8 (65.7)	1.0	--	--
High school	0.910	544.4 (33.2)	1094.0 (66.8)	0.934	0.766, 1.140	0.5037
Some college	1.192	731.1 (39.5)	1122.1 (60.5)	1.200	0.988, 1.457	0.0662
Bachelor's or higher	1036	713.8 (36.2)	1260.3 (63.8)	1.046	0.862, 0.991	0.6489
Region						
South *(reference)*	1.0	938.4 (40.9)	1360.6 (59.1)	1.0	--	--
West	1.042	601.5 (41.8)	837.3 (58.2)	1.025	0.896, 1.173	0.7204
Midwest	0.556	354.4 (27.7)	924.5 (72.3)	0.554	0.477, 0.642	<.0001
Northeast	0.600	307.0 (29.3)	741.7 (70.7)	0.596	0.509, 0.698	<.0001

NOTE: Final model presented, adjusted for age, sex, educational level, and region; Initial model in Appendix V

Table XIII. Weighted logistic regression analysis of emergency supply kit ownership by preparedness level, Spring 2021

	Crude OR	Has Kit	No Kit	Adjusted OR*	95% CI	p-value
Has the following preparedness plans						
Emergency comms plan	6.460	695.7 (72.9)	258.4 (27.1)	3.618	3.049, 4.294	<.0001
Multiple evacuation routes	4.356	529.9 (66.9)	262.5 (33.1)	2.156	1.800, 2.583	<.0001
Meeting place outside of the neighborhood	5.613	328.6 (73.7)	117.2 (26.3)	1.937	1.498, 2.505	<.0001
Copies of important docs	2.736	1049.0 (52.0)	966.9 (25.2)	1.829	1.619, 2.067	<.0001
Meeting place outside home	3.336	714.7 (59.5)	487.4 (40.6)	1.473	1.261, 1.721	<.0001
Preparedness level						
No plans *(reference)*	1.0	677.5 (21.9)	2415.8 (78.1)	--	--	--
Some plans	3.433	1366.1 (49.1)	1418.9 (51.0)	--	--	--
All 5 plans	63.859*	145.8 (94.7)	8.1 (5.3)	--	--	--

**95% Confidence Interval 31.364-130.021*

Note: Logistic regression model based on individual plans

Table XIV. Weighted logistic regression analysis of emergency supply kit ownership by disaster experience, Spring 2021

	Crude OR	Has Kit	No Kit
Experienced previous disaster			
Yes	1.570	1562.6 (40.0)	2346.7 (60.0)
No *(reference)*	1.0	636.9 (29.8)	1501.3 (70.2)
Type of disaster experienced*			
Wildfire	1.862	167.6 (50.7)	163.2 (49.3)
Hurricane/storm	1.593	649.5 (29.5)	801.3 (44.2)
Earthquake/landslide	1.570	392.1 (45.6)	467.1 (54.4)
Tornado	1.549	384.7 (45.4)	463.2 (54.6)
Flood	1.476	330.1 (44.5)	411.2 (55.5)
Sever weather w/outages	1.324	1231.5 (39.5)	1885.6 (60.5)
Work/Volunteer in disaster response/recovery			
Yes	2.112	594.4 (50.8)	576.4 (49.2)
No *(reference)*	1.0	1599.2 (32.8)	3275.9 (67.2)

**Reference category is not experiencing the disaster*

Table XV. Weighted logistic regression analysis of preparedness levels by demographic factors, Spring 2021

	Crude OR	Prepared*	Not Prepared	Adjusted OR*	95% CI	p-value
Age						
18-34 years	0.847	807.2 (44.4)	999.6 (54.9)	0.841	0.672, 1.055	0.1353
35-54 years	0.987	1035.2 (48.2)	1098.2 (51.2)	0.756	0.606, 0.944	0.0133

55-74 years	1.003	998.8 (48.8)	1039.0 (50.8)	0.932	0.755, 1.151	0.5150
75+ years *(reference)*	1.0	215.6 (48.7)	226.0 (51.1)	1.0	--	--
Education Level						
Less than high school *(reference)*	1.0	274.5 (39.9)	413.5 (60.1)	1.0	--	--
High school	1.058	724.2 (40.9)	1031.0 (58.3)	0.946	0.784, 1.42	0.5638
Some college	1.530	976.9 (50.1)	961.3 (49.3)	1.269	1.049, 1.535	0.0143
Bachelor's or higher	1.690	1081.2 (52.7)	957.0 (46.7)	1.287	1.053, 1.573	0.0137
Race/Ethnicity						
White, Non-Hispanic *(reference)*	1.0	2020.2 (49.3)	2055.7 (50.1)	1.0	--	--
Black, Non-Hispanic	0.754	317.2 (42.4)	425.0 (56.9)	0.883	0.747, 1.044	0.1451
Hispanic	0.804	459.7 (43.8)	583.1 (55.6)	0.827	0.714, 0.958	0.0112
Mixed Race	1.243	65.6 (54.9)	53.8 (45.1)	1.251	0.860, 1.820	0.2412
Other	0.807	194.1 (44.2)	245.3 (55.8)	0.708	0.575, 0.872	0.0012
Housing Structure						
Single family home *(reference)*	1.0	2333.2 (50.8)	2263.6 (49.2)	1.0	--	--
Townhome/Duplex	0.726	244.1 (42.4)	327.3 (56.8)	0.861	0.714, 1.028	0.1173
Apartment	0.632	389.3 (39.3)	599.1 (60.5)	1.004	0.828, 1.219	0.9654
Mobile home, RV, etc.	0.508	90.2 (34.3)	172.9 (65.7)	0.636	0.483, 0.837	0.0012
Ownership Status						
Owns	1.612	2367.1 (50.6)	2287.6 (48.9)	1.346	1.143, 1.586	0.0004
Rents *(reference)*	1.0	642.7 (38.8)	1003.9 (60.7)	1.0	--	--
Occupy w/o payment	1.028	47.0 (39.4)	71.3 (59.8)	1.012	0.680, 0.930	0.9546
Region						
South *(reference)*	1.0	1168.1 (47.7)	1266.8 (51.8)	1.0	--	--
West	1.117	781.0 (50.5)	760.2 (49.1)	1.120	0.978, 1.283	0.1003
Midwest	0.966	626.6 (46.6)	706.6 (52.6)	0.891	0.731, 0.923	0.1029
Northeast	0.832	481.0 (43.1)	629.3 (56.4)	0.796	0.686, 0.923	0.0026
Marital Status						
Not married	0.674	1070.3 (42.3)	1458.1 (57.7)	0.821	0.731, 0.923	0.0009
Married *(reference)*	1.0	1718.7 (51.8)	1600.4 (48.2)	1.0	--	--
Children						
Household has kids	1.409	1134.0 (53.1)	994.3 (46.5)	1.525	1.354, 1.718	<.0001
No kids in home *(reference)*	1.0	1922.8 (44.5)	2368.6 (54.8)	1.0	--	--
Household Income						
<$25,000 *(reference)*	1.0	308.8 (38.8)	486.7 (61.1)	1.0	--	--
$25,000 < $50,000	1.046	450.5 (39.9)	672.3 (59.6)	0.877	0.722, 1.066	0.1885
$50,000 < $75,000	1.409	526.1 (47.0)	588.4 (52.6)	1.083	0.887, 1.323	0.4346
$75,000 < $100,000	1.543	448.6 (49.4)	458.0 (50.4)	1.123	0.907, 1.391	0.2865
$100,000 < $150,000	1.720	624.2 (51.7)	570.3 (47.2)	1.160	0.939, 1.434	0.1687
$150,000 or more	1.875	698.5 (54.0)	587.1 (45.4)	1.243	1.001, 1.543	0.0489

*Prepared is considered having any (1-5) of the five recommended; Not prepared is having none of the above plans.
NOTE: Final model presented; Initial model in Appendix V
Initial model in Appendix V

Table XVI. Weighted logistic regression analysis of preparedness levels by disaster experience, Spring 2021

	Crude OR	Prepared*	Not Prepared
Experienced previous disaster			
Yes	2.077	2204.5 (53.9)	1862.0 (45.5)
No *(reference)*	1.0	848.3 (36.2)	1486.5 (63.4)
Type of disaster experienced**			
Wildfire	1.884	216.7 (62.4)	130.8 (37.6)
Sever weather w/outages	1.821	1772.0 (54.8)	1445.7 (44.7)
Tornado	1.722	525.3 (59.1)	361.4 (40.7)
Flood	1.653	458.8 (58.4)	324.3 (41.3)
Earthquake/landslide	1.538	517.6 (56.6)	392.0 (42.9)
Hurricane/storm	1.443	817.5 (54.4)	678.7 (20.2)
Employment/volunteer in disaster response/recovery			
Yes	2.914	831.2 (68.1)	382.0 (31.3)
No *(reference)*	1.0	2220.2 (42.6)	2966.5 (56.9)

*Prepared is considered having any (1-5) of the five recommended plans (emergency communication plan, designated meeting place outside of home, meeting place outside the neighborhood, stored copies of important documents, & multiple evacuation routes away from home); Not prepared is having none of the above plans
**Reference category is not experiencing the disaster

Table XVII. Weighted logistic regression analysis of emergency supply kit ownership by disaster beliefs, Spring 2021

	Crude OR	Has Kit	No Kit	Adjusted OR*	95% CI	p-value
Confident know how to prepare for a disaster						
Agree	4.452	1616.0 (45.8)	1909.3 (54.2)	4.375	3.618, 5.290	<.0001
Neutral	1.961	434.2 (27.2)	1164.7 (72.8)	2.354	1.902, 2.914	<.0001
Disagree *(reference)*	1.0	149.2 (16.0)	785.1 (84.0)	1.0	--	--
Emergency supply kit will improve chance of surviving a disaster						
Agree	3.126	1871.0 (41.6)	2627.4 (58.4)	3.031	2.181, 4.212	<.0001
Neutral	1.219	282.6 (21.7)	1017.5 (78.3)	1.334	0.938, 1.898	0.1090
Disagree *(reference)*	1.0	47.8 (18.6)	209.7 (81.5)	1.0	--	--
Emergency supply kit costs a lot of money						
Agree	1.163	552.4 (41.8)	770.7 (58.3)	1.289	1.121, 1.481	0.0004
Neutral	0.668	512.5 (29.2)	1245.4 (70.8)	0.822	0.717, 0.943	0.0050
Disagree *(reference)*	1.0	1136.4 (38.1)	1844.1 (61.9)	1.0	--	--
Risk of my household being affected by an infectious disease is greater than that of a disaster						
Agree	0.720	876.0 (34.3)	1679.7 (65.2)	0.713	0.615, 0.827	<.0001
Neutral	0.765	814.0 (35.6)	1468.3 (64.3)	0.937	0.804, 1.092	0.4042

Disagree *(reference)*	1.0	510.9 (42.0)	705.1 (58.0)	1.0	--	--

Table XVIII. Weighted logistic regression analysis of preparedness levels by disaster beliefs, Spring 2021

	Crude OR	Prepared*	Not Prepared	Adjusted OR*	95% CI	p-value
Confident know how to prepare for a disaster						
Agree	2.921	2122.9 (57.7)	1547.2 (42.0)	2.809	2.415, 3.266	<.0001
Neutral	1.152	616.3 (34.8)	1136.9 (64.2)	1.382	1.163, 1.643	0.0002
Disagree *(reference)*	1.0	315.0 (31.7)	672.0 (67.7)	1.0	--	--
Emergency supply kit will improve chance of surviving a disaster						
Agree	1.859	2464.6 (52.4)	2219.4 (47.2)	1.730	1.332, 2.248	<.0001
Neutral	0.840	486.8 (33.1)	967.0 (65.7)	0.976	0.737, 1.294	<.0001
Disagree *(reference)*	1.0	100.8 (37.4)	169.1 (62.6)	1.0	--	--
Emergency supply kit costs a lot of money						
Agree	0.867	685.0 (48.7)	713.8 (50.8)	0.922	0.808, 1.051	0.8665
Neutral	0.575	759.5 (38.7)	1188.1 (60.6)	0.734	0.648, 0.831	0.2244
Disagree *(reference)*	1.0	1610.0 (52.3)	1456.9 (47.3)	1.0	--	--
Risk of my household being affected by an infectious disease is greater than that of a disaster						
Agree	0.845	1294.5 (48.6)	1359.4 (51.1)	0.875	0.761, 1.007	0.0625
Neutral	0.688	1088.3 (43.5)	1399.4 (55.9)	0.878	0.761, 1.007	0.0776
Disagree *(reference)*	1.0	669.4 (52.5)	594.8 (46.7)	1.0	--	--

**Prepared is considered having any (1-5) of the five recommended plans (emergency communication plan, designated meeting place outside of home, meeting place outside the neighborhood, stored copies of important documents, & multiple evacuation routes away from home); Not prepared is having none of the above plans*

Appendix I. Overview of Select Preparedness and Emergency Supply Kit Studies

Source	Method	Year	Population	Main Findings
Emergency Supply Kit Ownership				
Olympia RP, Rivera R, Heverley S, Anyanwu U, Gregorits M. Natural disasters and mass casualty events affecting children and families: A description of emergency preparedness and the role of the primary care physician. *Clinical Pediatrics* 2010;49(7):686–698.	Self-reported questionnaire of convenience sample of patients	2008	1,024 patients attending Penn State general pediatric outpatient office or Children's Hospital at Montefiore ED	• 22% reported having a complete emergency supply kit • 63% reported having a first aid kit
Nyaku MK, Wolkin AF, McFadden J, Collins J, Murti M, Schnall A, Bies S, Stanbury M, Beggs J, Bayleyegn TM. Assessing radiation emergency preparedness planning by using Community Assessment for Public Health Emergency Response (CASPER) methodology. *Prehospital & Disaster Medicine* 2014;29(3):1-9	Community Assessment for Public Health Emergency Response (CASPER)	2012	Oakland County, MI	• 66.7% of households reported owning an emergency supply kit • 64.7% reported having 3-day supply of water • 85.4% reported having a 3-day supply of food • 62.8% reported having a 7-day supply of medicine • 67.1% reporting owning a first-aid kit
Federal Emergency Management Agency (FEMA). Personal preparedness in America: Findings from the 2012 FEMA National Survey. 2013	FEMA National Survey (landline and cellphone sample)	2012	2,013 US households	• 52% of respondents reported having disaster supplies within their home - Those who talked to others about preparedness are more likely to build a kit or gather emergency supplies (68% vs 45%) - Respondents who care for someone with a disability less likely to build a kit/update supplies (63% vs 75%)
Hiatt E, Belliard C, Call MAL, Jefferies LK, Kener M, Egget DL, Richards R. Household food and water emergency preparedness practices across the United States. Disaster Medicine and Public Health Preparedness. 2021:1-9	142-item online survey	2014	572 Qualtrics panelists	• 53% reported having a 3-day supply of water • 96% reported having a 3-day supply of food

Schnall AH, Wolkin AF, Roth JJ, Ellis EM. Community Assessments for Public Health Emergency Response (CASPERs) – US Virgin Islands, 2017-2018. *AJPH* 2019;109:S303-8	Community Assessment for Public Health Emergency Response (CASPER)	2017	US Virgin Island residents	• Before the hurricanes, 67.0% of household reported having an emergency supply kit. However, significantly fewer reported having one during the storms (47.9%), and, of those, 64.3% reported that they used their kit • Roughly the same number of households reported having a 3-day supply of food (78.2%–84.4%), water (84.5%–89.9%), and 7-day supply of medication (53.5%–57.6%) before and after the hurricanes
Unpublished state, local, and territorial reports	Community Assessment for Public Health Emergency Response (CASPER)	2011-2020	31 CASPERs in CA, MI, NV, ND, PR, TN, TX, USVI	• Emergency supply kit ownership (22.3%–70.0%) • More households seem to own first aid kids (66.5%–94.8%) • Water supply (54.2%–97.4%), food supply (54.2%–92.7%), medicine (36.1%–95.9%) varied • FEMA preparedness plans ranged as well - Important documents (17.3%–82.3%) - Routes away from home (43.9%–86.4%) - Communication plan (18.2%–67.9%) - Meeting spot outside of area (19.3%–57.7%) - Meeting place outside of home (12.6%–64.1%) Note: Not all questions asked in all CASPERs
Federal Emergency Management Agency (FEMA). National Household Surveys	landline and cellphone survey of US households	2017-2019	5,042 (2017), 5,003 (2018), 5,025 (2019)	**2017** **2018** **2019** *Supplies for 3 or more days* 79% 81% 80% *Make an emergency plan* 46% 49% 48% *Talk with others on getting prepared* 29% 38% 45%
Factors Associated with Emergency Supply Kit Ownership				
Ablah E, Konda K, Kelley CL. Factors predicting individual emergency preparedness: a multi-state analysis of 2006 BRFSS data. Biosecurity and Bioterrorism 2009;7(3):317-30.	Behavioral Risk Factor Surveillance System (BRFSS) general preparedness module	2006	Representative sample of general population in AZ, CT, MT, NV, & TN	• Although 78% of respondents reported feeling prepared* for a disaster, just 45% of respondents were actually prepared by objective measures • Feeling “well prepared”, having a disability or health condition requiring special equipment, being 55-64 years old, and having an annual income of above $50k predicted increased likelihood of preparedness

				TOTAL **Prepared*** **Unprepared**** *3-day supply of water* 59.2 (58.0-60.3) 91.5 (90.7-92.4) 32.6 (31.0-34.2) *3-day supply of food* 80.5 (79.5-81.4) 97.3 (96.6-98.0) 66.7 (65.1-68.2) *3-day supply of medicine* 75.3 (74.3-76.4) 94.2 (93.3-95.0) 59.9 (58.3-61.5) *Prepared defined as deficient in no more than 1 of the 6 actionable preparedness measures included on module **Unprepared defined as missing 2 or more objective measures
Bethel JW, Foreman AN, Burke SC. Disaster preparedness among medically vulnerable populations. *Am J Prev Med*. 2011;40(2):139-43.	Behavioral Risk Factor Surveillance System (BRFSS) general preparedness module	2006-2008	Representative sample of general population in DE, GA, LA, MT, NV, & TN	• 42.2% had all 4 preparedness items (water, food, battery-operated radio, flashlight with batteries) • 83.4% had a 3-day supply of food and 55.6% had a 3-day supply of water • Those with fair/poor perceived health (OR=0.76), a disability (OR=0.81), and three or more chronic diseases (OR=0.77) were less likely to have all four preparedness items than their healthier counterparts
Household preparedness for public health emergencies – 14 states, 2006-2010. *MMWR* 2012;61(36):714-29	Behavioral Risk Factor Surveillance System (BRFSS) general preparedness module	2006-2010	CT, MT, NV, TN, DE, LA, MD, NE, NH, GA, NE, PA, MS, NC	• Overall preparedness factors - 89.7% had 3-day supply of medication - 82.9% had 3-day supply of food - 77.7% had working battery-operated radio - 53.6% had a 3-day supply of water - 21.1% had written evacuation plan • Men significantly more likely than women to report household was prepared • Hispanics significantly less likely than all other race/ethnicities to have food, medicine, battery-operated radio, and flashlight • In general, as age of respondent increased, preparedness increased
Al-rousan TM, Rubenstein LM, Walla RB. Preparedness for natural disasters among older US	Health and Retirement Study [Nationally representative cohort]	2010	1,304 adults aged 50 years or older	• 62.7% had a 3-day supply emergency kit • More males (66.8%) than females (59.2%) reported having an emergency supply kit*

<table>
<tr>
<td>Adults: A nationwide survey. AJPH 2014;104(3):506-511.</td>
<td></td>
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<td>
• Age was not associated with kit ownership
- 61.3% of those aged 50-64 years
- 64.3% of those aged 65-79 years
- 61.8% of those aged 80 years or more
• Race was associated with supply kit ownership**
- 64.3% White
- 51.9% Black
- 55.2% Other

*p ≤ .05
**p ≤ .05 for Black vs White
</td>
</tr>
<tr>
<td>McCormick LC, Pevear J 3rd, Xie R. Measuring levels of citizen public health emergency preparedness, Jefferson County, Alabama. J Public Health Manag Pract. 2013;19(3):266-73</td>
<td>Random Digit Dialing (RDD) survey following BRFSS protocol</td>
<td>2010</td>
<td>1,603 residents in Jefferson County, AL</td>
<td>
• 38.7% had complete Get10 emergency supply kit*
• 64.7% had 14-day supply of non-perishable food
• 60.2% had enough water (1 gallon/person/day)

<table>
<tr><th></th><th>Complete Kit</th><th>Incomplete/None</th></tr>
<tr><td>Marital status (p=0.01)</td><td></td><td></td></tr>
<tr><td>Married</td><td>43.5%</td><td>56.5%</td></tr>
<tr><td>Not married</td><td>34.6%</td><td>65.4%</td></tr>
<tr><td>Education (p=0.08)</td><td></td><td></td></tr>
<tr><td>HS graduate</td><td>40.2%</td><td>59.8%</td></tr>
<tr><td>Less than HS</td><td>29.7%</td><td>70.3%</td></tr>
<tr><td>Income (p=0.01)</td><td></td><td></td></tr>
<tr><td>>$25K</td><td>40.9%</td><td>59.1%</td></tr>
<tr><td>≤$25K</td><td>30.0%</td><td>70.0%</td></tr>
</table>

*water, non-perishable food, manual can opener, 30-day supply medication, first aid kit, flashlight, battery-operated radio, clothing, personal care items, important documents
</td>
</tr>
<tr>
<td>Thomas TN, Leander-Griffith M, Harp V; Cioffi JP. Influences of Preparedness Knowledge and Beliefs on Household Disaster Preparedness. MMWR 2015;64(35):965-971.</td>
<td>Pre-intervention survey (Ready CDC)</td>
<td>2013-2015</td>
<td>439 Atlanta & Morgantown-based CDC Staff members</td>
<td>
• Those with advanced preparedness knowledge* more likely to have an emergency supply kit (44% vs. 17%), 3-day supply of water (53% vs 37%), 3-day supply of food (70% vs 49%), and first aid kit (84% vs 59%) than those with basic knowledge

*advanced knowledge considered if reported awareness of the need to assemble an emergency supply kit and written disaster plan, disasters likely to occur in county of residence, meaning of outdoor warning sirens, and where to sign up for free CPR and first aid training
</td>
</tr>
</table>

Impact of Interventions on Emergency Supply Kit Ownership				
Coulston J, Deeny P. Prior exposure to major flooding increases individual preparedness in high-risk populations. *Prehospital and Disaster Medicine* 2010;25(4):289-95.	Survey of random sample of households within 300 meters of high-risk flooding areas	2007-2008	125 households in Monmouth & Tewkesbury UK	• Those with both flood risk and exposure (Tewkesbury) were more prepared compared to those in just the flood risk area (Monmouth) - 76% in Tewksbury owned a first aid kit compared to 55% in Monmouth - 39% in Tewksbury had enough bottled water for 3 days compared to 19% in Monmouth
Kohn S, Eaton JL, Feroz S; Bainbridge AA, Hoolachan J; Barnett DJ. Personal Disaster Preparedness: An Integrative Review of the Literature. *Disaster Medicine & Public Health Preparedness*. 2012;6:217-31	Cross-sectional Pre/Post intervention surveys using a convenience sample	2010	State and local health department employees in WV; 131 (baseline) and 69 (1-year follow-up)	• 3-hour interactive workshop on disaster preparedness - Used personal preparedness curriculum based on the Extended Parallel Process Model framework
McCormick LC, Pevear J 3rd, Rucks AC, Ginter PM. The effects of the April 2011 tornado outbreak on personal preparedness in Jefferson County, Alabama. J *Public Health Management & Practice* 2014;20(4):424-31	Random Digit Dialing (RDD) surveys following BRFSS protocol before and after tornado	2010, 2012	1,603 residents in Jefferson County, AL	• After the April 2011 tornado outbreak, 86% of respondents reported they had thought more about personal/family preparedness - 59.65% reported they had taken actions to increase their level of preparedness • Significant increase in completion of emergency supply kit (37.1% to 61.5%) - Also significant increase in those with 3-day supply of water (58.9% to 81.8%), 14-day supply of food (64.7% to 93.5%), and first aid kit (53.0% to 75.1%)
Bagwell HB, Liggin R, Thompson T, Lyle K, Anthony A, Baltz M, Melguizo-Castro M, Nick T, Kuo DZ. Disaster preparedness in families with children with special health care needs. *Clinical Pediatrics.* 2016; 55(11): 1036-43	Pre/Post survey of enrolled cohort of caregivers/families	2013	223 respondents from Arkansas Children's Hospital Medical Home Clinic	• 18% of families had an emergency supply kit prior to being given a starter kit that contained information on how to develop a disaster plan - 6-10 weeks after initial visit, 99% had an emergency supply kit 6-10 weeks after initial visit, 44% added supplies to their emergency supply kit

Appendix II: Preparedness and Emergency Supply Kit Questions for Styles Surveys

ESK1. Have you or anyone in your household experienced any of the following types of disasters? *Select all that apply.*

ESK1_1.	Earthquake, mudslide, or landslide
ESK1_2.	Tropical storm or hurricane
ESK1_3.	Flood
ESK1_4.	Severe weather with power outages
ESK1_5.	Wildfire
ESK1_6.	Tornado
ESK1_7.	None of these

ESK2. Have you or anyone in your household ever worked, volunteered, or trained in disaster response or recovery? *Select all that apply.*

ESK2_1.	Volunteered for disaster response
ESK2_2.	Work in disaster response or recovery
ESK2_3.	Taken CERT training
ESK2_4.	Volunteer with American Red Cross
ESK2_5.	Work in emergency management
ESK2_6.	Other
ESK2_7.	None of these

ESK3. Does your household have any of the following emergency plans? *Select all that apply.*

ESK3_1.	Emergency communication plan
ESK3_2.	Designated meeting place outside of home
ESK3_3.	Meeting place outside your neighborhood
ESK3_4.	Stored copies of important documents
ESK3_5.	Multiple evacuation routes away from home
ESK3_6.	Easy to get to emergency supply kit
ESK3_7.	None of these

ESK4. If public authorities announced a mandatory evacuation from your community because of a large-scale disaster or emergency, what would be the main reason(s) to prevent you from evacuating? *Select all that apply.*

ESK4_1.	Nothing, I would evacuate
ESK4_2.	Concern about leaving pets
ESK4_3.	Concern about leaving property
ESK4_4.	Nowhere to go
ESK4_5.	Lack of transportation
ESK4_6.	Health problems
ESK4_7.	Other

ESK5. An emergency supply kit is a collection of basic items that a household may need in a disaster. It is recommended these items be stored together in containers that can be easily accessed, such as large boxes, bins, or bags. Has your household prepared an Emergency Supply Kit with supplies like water, food, flashlights, and extra batteries that is kept in a designated place in your home?

1	Yes
2	No
3	Don't know

If ESK5 = 1 ESK6. What items are in your Emergency Supply Kit? *Select all that apply.*

ESK6_1.	Food
ESK6_2.	Water
ESK6_3.	Flashlight with batteries
ESK6_4.	Radio
ESK6_5.	Medical supplies
ESK6_6.	Household cleaning supplies
ESK6_7.	Other

How much do you agree or disagree with the following statements? *Select one answer per row.*

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1	2	3	4	5

ESK7.	By keeping an emergency supply kit, my household is improving its chance of surviving a disaster
ESK8.	It costs a lot of money to put together an emergency supply kit
ESK9.	I feel confident that I know how to prepare for disasters
ESK10.	The risk of my household being affected by infectious disease (H1N1, MERS, SARS, COVID-19) is greater than the risk of being affected by a disaster

Appendix III: Additional Shelter Question from 2020 *FallStyles*

EXW2. What reasons will prevent you from going to a shelter during an extreme weather event this year?? *Select all that apply.*

EXW2_1.	No information about location and hours of operation
EXW2_2.	Lack of 'social distancing'
EXW2_3.	Inadequate availability of hand washing
EXW2_4.	Inadequate availability of medical care
EXW2_5.	Lack of public transportation
EXW2_6.	Concerned leaving pets/valuables in the house
EXW2_7.	Concern about getting COVID infection

Appendix IV: Comparison of *ConsumerStyles* Samples

	2020 FallStyles			*2021 SpringStyles*		
	2019 CPS*	Unweight	Weighted	2019 ACS**	Unweight	Weighted
Gender						
Male	48.4	51.1	48.4	48.3	46.7	48.4
Female	51.6	48.9	51.6	51.7	53.3	51.6
Age						
18-24	11.6	2.9	10.4	10.9	3.4	10.1
25-34	18.0	12.8	18.2	18.0	11.3	18.1
35-44	16.4	14.3	16.6	16.8	21.7	16.8
45-54	16.2	13.9	16.5	16.2	22.3	16.4
55-64	16.7	23.9	16.9	16.9	19.3	17.1
65+	21.1	32.1	21.4	21.2	22.0	21.5
Region						
Northeast	17.5	17.8	17.6	17.3	17.6	17.3
Midwest	20.8	22.8	20.6	20.7	23.6	20.8
South	37.9	34.5	37.8	38.1	35.2	37.9
West	23.8	24.9	24.0	23.9	23.6	24.0
Household income* **						
Less than $25K	13.6	11.0	13.4	12.6	9.3	12.3
Race/Ethnicity						
White, Non-Hispanic	63.1	74.8	63.9	63.0	73.0	63.5
Black, Non-Hispanic	11.8	7.7	11.4	11.8	8.0	11.6
Other, Non-Hispanic	7.2	4.9	7.2	6.9	4.6	6.8
Hispanic	16.4	9.4	16.1	16.5	11.3	16.3
2+ Races, Non-Hispanic	1.4	3.2	1.5	1.8	3.1	1.8
Education						
Less than high school	10.6	5.4	10.1	11.2	4.9	10.7
High school	28.3	27.4	28.2	27.4	21.8	27.4
Some college	27.8	26.8	27.9	30.0	30.5	30.2
Bachelor's or higher	33.3	40.4	33.8	31.4	42.8	31.7
MSA Status						
Non-Metro	13.3	13.6	13.4	13.4	13.5	13.4
Metro	86.7	86.4	86.6	86.6	86.5	86.6
Household size						
1	14.6	21.4	14.7	14.1	11.9	14.1
2	34.8	42.7	35.1	33.9	32.0	34.2
3	18.8	16.1	19.0	19.3	19.3	19.5
4	16.9	12.2	16.9	16.6	20.6	16.8
5+	14.9	7.5	14.4	16.1	16.2	15.4

*Data are taken from the 2019 Current Population Survey (CPS) which consists of 67,297 households and 132,809 persons. Weights are then provided to project the data to the U.S. total 128,569,540 million households and 250,438,395 million adults.
**Data taken from 2019 American Community Survey (ACS) which consists of 1,276,627 households and 2,452,515 persons. Weights are provided to project the data to the U.S. total 122,795,009 million households and 247,431,811 million adults.
***Household income was asked differently on each survey – all categories weighted. However, <$25k was the only strata consistent for display in one table.

Appendix V: Initial Weighted Logistic Regression Model Results

Weighted logistic regression analysis of emergency supply kit ownership by demographics factors, Initial Model, Spring 2021

	Crude OR	Has Kit	No Kit	Adjusted OR*	95% CI	p-value
Age						
18-34 years	1.144	554.1 (34.0)	1073.6 (66.0)	1.135	0.897, 1.435	0.2922
35-54 years	1.333	768.6 (37.6)	1277.7 (62.4)	1.294	1.029, 1.629	0.0278
55-74 years	1.354	748.1 (37.9)	1223.9 (62.1)	1.363	1.084, 1.715	0.0080
75+ years *(reference)*	1.0	130.4 (31.1)	288.9 (68.9)	1.0	--	--
Sex						
Male *(reference)*	1.0	1101.3 (37.7)	1821.7 (62.3)	1.0	--	--
Female	0.891	1100.1 (35.0)	2042.4 (65.0)	0.893	0.802, 0.994	0.0377
Education Level						
Less than high school *(reference)*	1.0	212.0 (35.3)	387.8 (65.7)	1.0	--	--
High school	0.910	544.4 (33.2)	1094.0 (66.8)	0.925	0.754, 1.134	0.4510
Some college	1.192	731.1 (39.5)	1122.1 (60.5)	1.166	0.949, 1.431	0.1433
Bachelor's or higher	1036	713.8 (36.2)	1260.3 (63.8)	0.996	0.803, 1.237	0.9733
Race/Ethnicity						
White, Non-Hispanic *(reference)*	1.0	1361.8 (34.9)	2540.6 (65.1)	1.0	--	--
Black, Non-Hispanic	1.253	269.8 (40.2)	401.5 (59.8)	1.195	1.005, 1.421	0.0439
Hispanic	1.102	364.2 (37.1)	616.4 (62.9)	0.981	0.841, 1.144	0.8080
Mixed Race	1.465	48.4 (44.0)	61.6 (56.0)	1.359	0.922, 2.001	0.1208
Other	1.202	157.1 (39.2)	243.9 (60.8)	1.079	0.867, 1.343	0.4944
Region						
South *(reference)*	1.0	938.4 (40.8)	1360.6 (59.2)	1.0	--	--
West	1.042	601.5 (41.8)	837.3 (58.2)	1.039	0.904, 1.193	0.5907
Midwest	0.556	354.4 (27.7)	924.5 (72.3)	0.560	0.482, 0.651	<.0001
Northeast	0.600	307.0 (29.3)	741.7 (70.7)	0.595	0.508, 0.698	<.0001
Household Income						
<$25,000 *(reference)*	1.0	253.2 (36.1)	448.0 (63.9)	1.0	--	--
$25,000 < $50,000	0.951	368.2 (35.0)	685.2 (65.0)	0.936	0.762, 1.149	0.5273
$50,000 < $75,000	0.977	376.1 (35.6)	11.2 (64.4)	0.976	0.792, 1.202	0.8181
$75,000 < $100,000	0.859	282.7 (32.7)	681.0 (64.4)	0.835	0.670, 1.042	0.1105
$100,000 < $150,000	1.159	451.8 (39.6)	689.6 (60.4)	1.123	0.908, 1.390	0.2838
$150,000 or more	1.067	469.2 (37.6)	777.8 (62.4)	1.034	0.834, 1.284	0.7582

NOTE: Only variables significant at p<.05 in individual analysis included in initial model: housing structure (p-0.1463), ownership status (p=0.5707), urbanicity (p=0.1374), household size (p=0.0727), marital status (p=0.0641), children in the home (p=0.1732), and employment (p=0.1788) not included

Weighted logistic regression analysis of preparedness levels by demographic factors, Initial Model, Spring 2021

	Crude OR	Prepared	Not Prepared	Adjusted OR*	95% CI	p-value
Age						
18-34 years	0.847	807.2 (44.4)	999.6 (54.9)	0.828	0.659, 1.039	0.1029
35-54 years	0.987	1035.2 (48.2)	1098.2 (51.2)	0.753	0.603, 0.939	0.0119
55-74 years	1.003	998.8 (48.8)	1039.0 (50.8)	0.930	0.753, 1.148	0.4998
75+ years *(reference)*	1.0	215.6 (48.7)	226.0 (51.1)	1.0	--	--
Education Level						
Less than high school *(reference)*	1.0	274.5 (39.9)	413.5 (60.1)	1.0	--	--
High school	1.058	724.2 (40.9)	1031.0 (58.3)	0.950	0.787, 1.146	0.5911
Some college	1.530	976.9 (50.1)	961.3 (49.3)	1.275	1.053, 1.543	0.127
Bachelor's or higher	1.690	1081.2 (52.7)	957.0 (46.7)	1.301	1.063, 1.591	0.0105
Race/Ethnicity						
White, Non-Hispanic *(reference)*	1.0	2020.2 (49.3)	2055.7 (50.1)	1.0	--	--
Black, Non-Hispanic	0.754	317.2 (42.4)	425.0 (56.9)	0.884	0.748, 1.045	0.1490
Hispanic	0.804	459.7 (43.8)	583.1 (55.6)	0.825	0.712, 0.956	0.0103
Mixed Race	1.243	65.6 (54.9)	53.8 (45.1)	1.245	0.856, 1.811	0.2517
Other	0.807	194.1 (44.2)	245.3 (55.8)	0.707	0.574, 0.870	.0011
Housing Structure						
Single family home *(reference)*	1.0	2333.2 (50.8)	2263.6 (49.2)	1.0	--	--
Townhome/Duplex	0.726	244.1 (42.4)	327.3 (56.8)	0.866	0.718, 1.045	0.1342
Apartment	0.632	389.3 (39.3)	599.1 (60.5)	1.018	0.838, 1.237	0.8573
Mobile home, RV, etc.	0.508	90.2 (34.3)	172.9 (65.7)	0.638	0.485, 0.839	0.0013
Ownership Status						
Owns	1.612	2367.1 (50.6)	2287.6 (48.9)	1.347	1.143, 1.587	0.0004
Rents *(reference)*	1.0	642.7 (38.8)	1003.9 (60.7)	1.0	--	--
Occupy w/o payment	1.028	47.0 (39.4)	71.3 (59.8)	1.009	0.679, 1.502	0.9632
Region						
South *(reference)*	1.0	1168.1 (47.7)	1266.8 (51.8)	1.0	--	--
West	1.117	781.0 (50.5)	760.2 (49.1)	1.121	0.979, 1.283	0.0986
Midwest	0.966	626.6 (46.6)	706.6 (52.6)	0.892	0.776, 1.025	0.1062
Northeast	0.832	481.0 (43.1)	629.3 (56.4)	0.794	0.684, 0.921	0.0023
Household Size						
Lives alone	0.673	324.1 (39.3)	500.2 (60.7)	0.905	0.767, 1.068	0.2371
Lives with others *(reference)*	1.0	2465.0 (49.1)	2558.3 (50.9)	1.0	--	--
Marital Status						
Married	0.674	1718.7 (51.8)	1600.4 (48.2)	0.839	0.776, 1.025	0.0047
Not married *(reference)*	1.0	1070.3 (47.7)	1458.1 (57.7)	1.0	--	--

Children						
Household has kids	1.409	1134.0 (53.1)	994.3 (46.5)	1,500	1.328, 1.695	<.0001
No kids in home *(reference)*	1.0	1922.8 (44.5)	2368.6 (54.8)	1.0	--	--
Household Income						
<$25,000 *(reference)*	1.0	308.8 (38.8)	486.7 (61.1)	1.0	--	--
$25,000 < $50,000	1.046	450.5 (39.9)	672.3 (59.6)	0.874	0.719, 1.063	0.1768
$50,000 < $75,000	1.409	526.1 (47.0)	588.4 (52.6)	1.077	0.881, 1.316	0.4683
$75,000 < $100,000	1.543	448.6 (49.4)	458.0 (50.4)	1.114	0.899, 1.380	0.3254
$100,000 < $150,000	1.720	624.2 (51.7)	570.3 (47.2)	1.150	0.930, 1.422	0.1974
$150,000 or more	1.875	698.5 (54.0)	587.1 (45.4)	1.227	0.987, 1.525	0.0649

**Prepared is considered having any (1-5) of the five recommended plans (emergency communication plan, designated meeting place outside of home, meeting place outside the neighborhood, stored copies of important documents, & multiple evacuation routes away from home); Not prepared is having none of the above plans*

NOTE: Only variables significant at p<.05 in individual analysis included in initial model: sex (p=0.3177), urbanicity (p=0.6494), and employment status (p=0.1379) not included

Appendix VI: CDC Communications Plan (Draft)

Communication Plan
Preparedness & Emergency Supply Kit Data
Target Release Date: 1 August 2021
Drafted by Amy Helene Schnall

Background

Natural disasters, such as wildfires, floods, and hurricanes, devastate United States (US) communities every year. While there are typical disaster seasons (e.g., hurricane season from June through November, wildfires over dry summer months, tornadoes during spring), disasters may occur at any time, and within every US state and territory. Despite efforts to control, prevent, or mitigate disasters, they will continue to occur and impact many people. In fact, research shows that factors such as climate change are making disasters, such as hurricanes, stronger and more frequent, with no signs of slowing down. Unfortunately, these disasters do not impact society equitably with certain groups facing greater risk before, during, and after disasters, including, but not limited to, access to resources as well as exposure to disasters themselves. Once a disaster strikes, these pre-existing gaps are often exacerbated.

Preparedness is key. During a disaster, community members may be on their own for a period of time because of the ongoing response efforts, size of the affected area, loss of communication, and impassible roads. Therefore, a common recommendation is to promote preparedness through the preparation of an emergency supply kit as well as making emergency plans as outlined on Ready.gov and CDC websites.

While several assessments and studies have asked about emergency supply kits and preparedness over the years, these data are primarily older with many surveys conducted over 10 years ago. The pandemic has had a major impact on many aspects of life, directly and indirectly, including preparedness. It has affected the ways we prepare for emergencies in a number of ways such as how supplies are gathered, the items to include in emergency supply kits (e.g., masks, hand sanitizer), disaster shelter operations, and the way people seek care and preventive services. Because of this, many knowns before 2020 in terms of preparedness may no longer be the same as behaviors have changed (e.g., people staying at home, hoarding of supplies).

To understand the current state of preparedness and emergency supply kit ownership, including how key social determinants may impact preparedness, CDC conducted two surveys via Porter Novelli's *ConsumerStyles*: one in September 2020 (*FallStyles)* and a second in March 2021 (*Spring Styles).* These nationally representative data are summarized through several fact sheets and infographics available on the Health Studies' website.

Communication Objective

- To provide public health professionals, emergency management officials, and others with the latest data on preparedness and emergency supply kit ownership

- To provide Health Studies' stakeholders with the data for preparing for a disaster or emergency within their jurisdiction
- To provide the public with current information on disaster preparedness levels within the US

Audience

- Public Health personnel/emergency management officials (primary)
- Academics (secondary)
- Public (secondary)
- Policymakers (tertiary)

Channels

- CDC Website Posting
- CDC Social Media
- E-mail Blast ("Dear Colleagues" e-mail to partners)
- NCEH Health Studies Post
- CDC Connects (Intranet)

Strategy

The Health Studies website will be the primary means of promoting the products, but dissemination through partners will also be important for outreach. The materials can be downloaded and printed by the end-user as well as available in easy-to-view 508 compliance on Health Studies' materials and resources page. A "Dear Colleague" email will be sent out to partners and stakeholders describing the release of the new data. We will also use the CDC/NCEH Twitter handles and Facebook page to push out social media messages to be shared by our partners. In addition, we will present at the Council of State and Territorial Epidemiologists (CSTE) disaster epidemiology subcommittee monthly meeting and CDC's Disaster Epidemiology Community of Practice (DECoP) quarterly meeting to engage state, local, tribal, and territorial (STLT) partners in the discussion of potential actions to be taken based on these data. Lastly, we will draft a blog entry for the NCEH blog and follow up with a CDC Connects article (TBD) and Conversations in Health Equity blog (TBD) focused on vulnerability and preparedness.

Key Messages

- CDC has released new data on national level preparedness and emergency supply kit ownership
- Currently, less than half of US adults are prepared for a disaster or emergency
- It is important that communities are prepared for a disaster, especially low-income and communities of color who are often disproportionally affected

Supplemental Tools/Messaging

Twitter Text (<280 char)	**(@CDCEnvironment/CDCGov)** Are you prepared? New data released on national preparedness and emergency supply kit ownership. See https://www.cdc.gov/nceh/hsb/disaster/materials-and-resources.htm

Facebook Text (<250 char)	Natural disasters, such as wildfires, floods, and hurricanes, devastate US communities every year. During a disaster, community members may be on their own for a period of time because of the ongoing response efforts, size of the affected area, loss of communication, and impassible roads. Therefore, community preparedness is essential to a successful response and can help mitigate loss of life, injuries, and illnesses. Are you prepared? See new data released on national preparedness and emergency supply kit ownership here: https://www.cdc.gov/nceh/hsb/disaster/materials-and-resources.htm
Images (file location)	
Other (Health IQ App, blog, etc. file location)	Conversations in Equity Blog to be developed with approval from Office of Minority Health & Health Equity (OMHHE)
Clear Communication Index	

Timeline

Date	Action	Responsible Party	Status
7 July 2021	Submit fact sheets into eClearance	Amy Helene Schnall	
9 July 2021	Submit communications plan into eClearance	Comms	
1 August 2021	Outreach Email/Social Media Posting	Comms, Amy Helene Schnall	
1 August 2021	Blog release	Comms	
TBD	CDC Connects article	Comms	
TBD	Conversations in Equity Blog	Amy Helene Schnall	
19 August 2021	CDC DECoP presentation	Amy Helene Schnall	
Sept 2021	CSTE Subcommittee presentation & discussion with STLTs	Amy Helene Schnall	

Note: Dates are approximate only. Dates my change based on clearance

Email to Colleagues

- Disaster Epidemiology Community of Practice (DECoP)
- Council of State and Territorial Epidemiologists Disaster Epidemiology Subcommittee, Climate & Health Subcommittee, and Emergency Management subcommittee
- American Red Cross Disaster Health Services
- Hurricane Response Hubs
- University of Colorado, Boulder Hazards Center (Lori Peak)
- University of Utah (Kim Shoaf)
- University of Delaware (Jen Horney)
- Association of State and Territorial Health Officials
- National Environmental Health Association
- American Public Health Association
- National Association of County and City Health Officials

Dear colleagues,

The Centers for Disease Control and Prevention's (CDC) National Center for Environmental Health (NCEH) is pleased to announce the **release of recent survey data on preparedness and emergency supply kits.**

During a disaster, community members may be on their own for a period of time because of the ongoing response efforts, size of the affected area, loss of communication, and impassible roads. Therefore, a common recommendation is to promote preparedness through the preparation of an emergency supply kit as well as making emergency plans as outlined on Ready.gov and CDC websites.

While several assessments and studies have asked about emergency supply kits and preparedness over the years, these data are primarily older with many surveys conducted over 10 years ago. The pandemic has had a major impact on many aspects of life, directly and indirectly, including preparedness. Because of this, many knowns before 2020 in terms of preparedness may no longer be the same as behaviors have changed (e.g., people staying at home, hoarding of supplies).

To understand the current state of preparedness and emergency supply kit ownership, including how key social determinants may impact preparedness, CDC conducted two surveys via Porter Novelli's *ConsumerStyles*: one in September 2020 (*FallStyles)* and a second in March 2021 (*Spring Styles).* These nationally representative data are now released on CDC's website.

"Preparedness is key for a successful disaster response and recovery effort. These data help us understand where we are as a nation in terms of preparedness and help us understand what factors lead to the most vulnerable so we can better strategize", says Amy Helene Schnall, a lead epidemiologist on the Disaster Epidemiology and Response Team in NCEH.

Fact sheets and infographics can be found at https://www.cdc.gov/nceh/hsb/disaster/materials-and-resources.htm as well as on CDC's Disaster Epidemiology Community of Practice (DECoP) SharePoint site. A detailed journal article is forthcoming.

Please contact Amy Helene Schnall (GHU5@cdc.gov) if you have any questions or would like more information about these data.

Thank you

Health Studies' Section Website "Blog"

Are YOU prepared? New data released on national preparedness and emergency supply kit ownership

The Centers for Disease Control and Prevention's (CDC) National Center for Environmental Health (NCEH) is pleased to announce the **release of recent survey data on preparedness and emergency supply kits.**

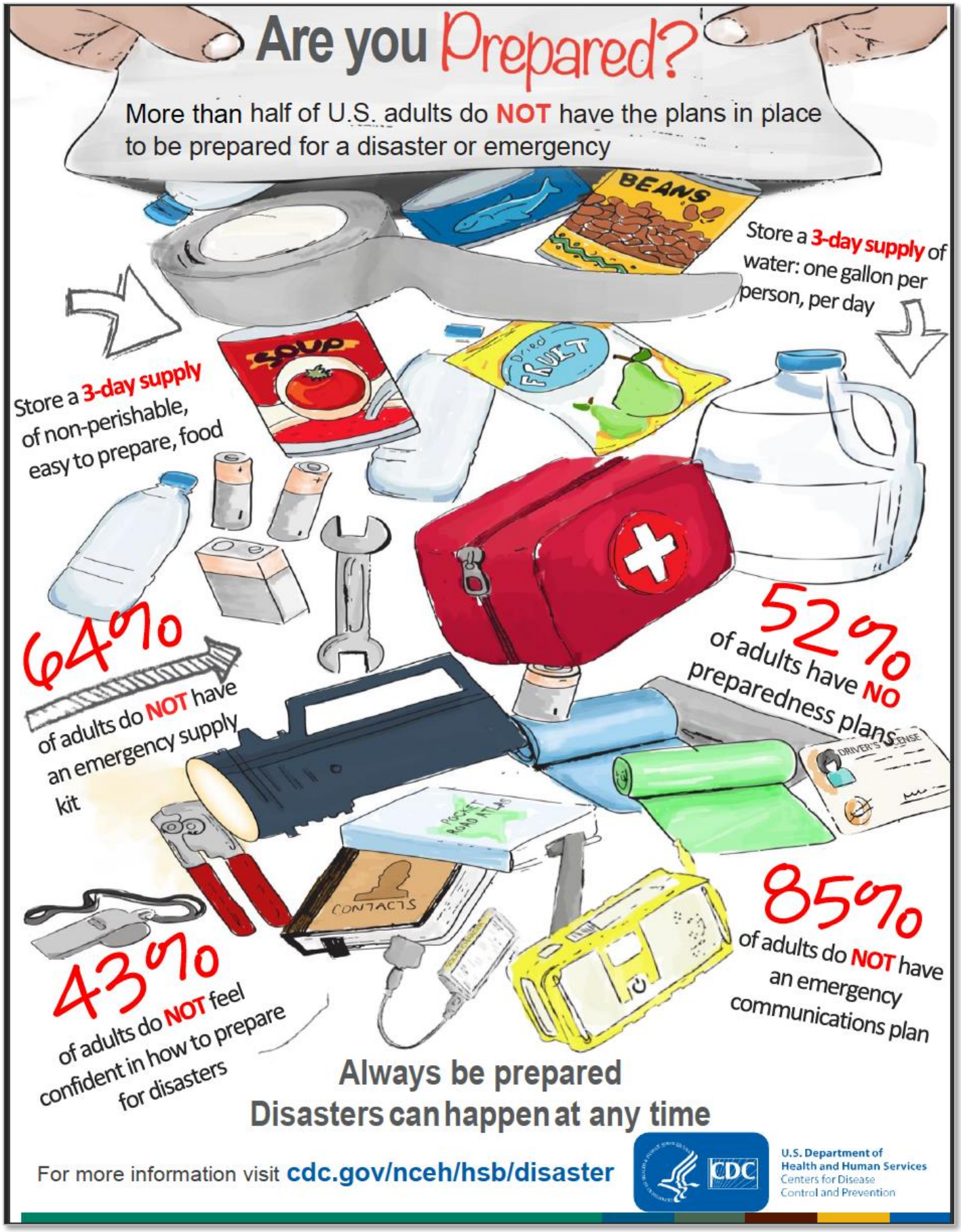
During a disaster, community members may be on their own for a period of time because of the ongoing response efforts, size of the affected area, loss of communication, and impassible roads. Therefore, it is important that households are prepared by having detailed plans and a dedicated emergency supply kit.

"Preparedness is key for a successful disaster response and recovery effort. These data help us understand where we are as a nation in terms of preparedness and help us understand what factors lead to the most vulnerable so we can better strategize", says Amy Helene Schnall, a lead epidemiologist on the Disaster Epidemiology and Response Team in NCEH.

To understand the current state of preparedness and emergency supply kit ownership, including how key social determinants may impact preparedness, CDC conducted two surveys via Porter Novelli's *ConsumerStyles* in September 2020 (*FallStyles)* and March 2021 (*Spring Styles).* These nationally representative data are now released on CDC's website.

Age, gender, education level, and region all play and important role in preparedness and emergency supply kit ownership. For example, adults aged 35-54 years and 55-74 years are 33% and 35% more likely to have an emergency supply kit than those 75 years or older. This is important in terms of disaster vulnerability and preparedness. These data, and more, can be found in fact sheets and infographics from these two recent, nationally representative surveys at https://www.cdc.gov/nceh/hsb/disaster/materials-and-resources.htm

Appendix VII: Infographic (Draft)



Appendix VIII: *FallStyles* Fact Sheet (Draft)

Preparedness Plans & Emergency Supply Kits

Key Findings from a Fall 2020 Survey

Overview

When preparing for natural disasters and other emergencies, having a plan and an emergency supply kit are key. The Centers for Disease Control and Prevention (CDC) conducted a survey in fall of 2020 to assess preparedness levels, emergency supply kit possession, and emergency supply kit items. Results show that many people in the United States may not have these important items to make them ready for a disaster.

Methods

CDC analyzed data collected through Porter Novelli's (PN) *FallStyles* surveys. The survey was conducted in fall 2020, with 3,625 adults from across the country.

The survey included 10 questions related to preparedness and emergency supply kits, such as whether people had an emergency supply kit, what items were included in the kit, and whether they had experienced a natural disaster before. Respondents were also asked which of the following Federal Emergency Management Agency (FEMA)-recommended plans/items they had:

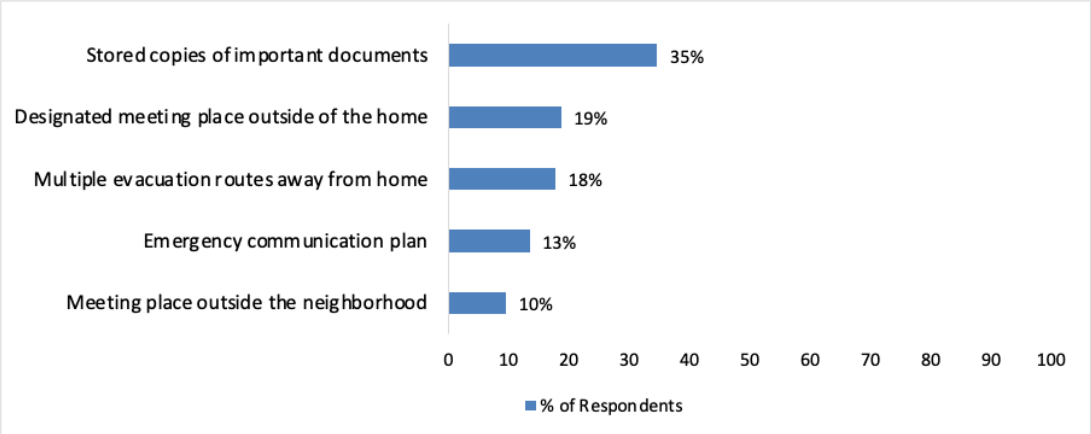
- Stored copies of important documents
- Designated meeting place outside of the home
- Multiple evacuation routes away from home
- Emergency communication plan
- Meeting place outside the neighborhood

Results

Overall, preparedness levels among respondents were low

- 51% of respondents had none of the FEMA recommended plans
- Less than 3% of respondents had all the FEMA recommended plans
- The most common plan was stored copies of important documents (35%) (Figure 1)

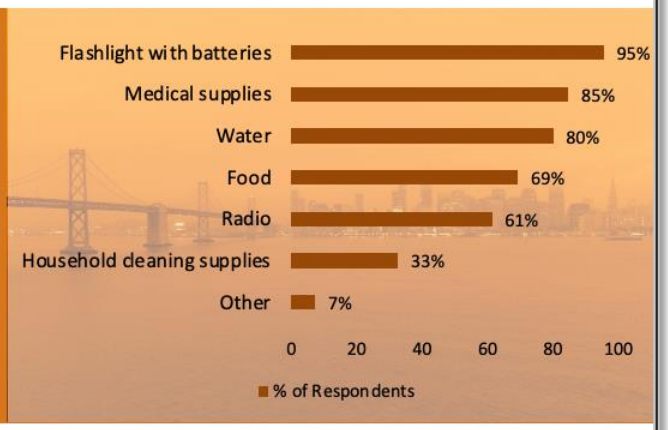
Figure 1. Percentage of Respondents with FEMA Preparedness Plans



Few respondents had an emergency supply kit

Only 1 in 3 respondents had an emergency supply kit

The most common items in their kit were a flashlight, medical supplies, and water



People were *more* likely to be prepared and have an emergency supply kit if they

- Owned their home
- Lived in the West or the South
- Had an annual income of $125,000 or more
- Experienced a natural disaster in the past

Beliefs play an important role in preparedness

Those who are *confident they know how to prepare* for a disaster and believe that an emergency supply kit will *improve their chance of survival* were more likely to have an emergency supply kit and be prepared than those who did not have such beliefs

Related Resources

- Preparedness Plans & Emergency Supply Kits: Key Findings from a Spring 2021 Survey
- Natural Disasters & Severe Weather
- Prepare Your Health: Plan Ahead
- Ready Wrigley
- Going to a Shelter During the COVID-19 Pandemic
- Food and Water Needs: Preparing for a Disaster or Emergency
- Disaster Risk Reduction for Health

Appendix IX: *SpringStyles* Fact Sheet (Draft)

Preparedness Plans & Emergency Supply Kits

Key Findings from a Spring 2021 Survey

Overview

When preparing for natural disasters and other emergencies, having a plan and an emergency supply kit are key. The Centers for Disease Control and Prevention (CDC) conducted a survey in spring of 2021 to assess preparedness levels, emergency supply kit possession, and emergency supply kit items. This is a follow-up from the survey conducted in fall 2020. Results show that many people still may not have these important items to make them ready for a disaster.

Methods

CDC analyzed data collected through Porter Novelli's (PN) *SpringStyles* survey. The survey was conducted in spring 2021, with 6,455 adults from across the country.

The survey included 10 questions related to preparedness and emergency supply kits, such as whether people had an emergency supply kit, what items were included in the kit, and whether they had experienced a natural disaster before. Respondents were also asked which of the following Federal Emergency Management Agency (FEMA)-recommended plans/items they had:

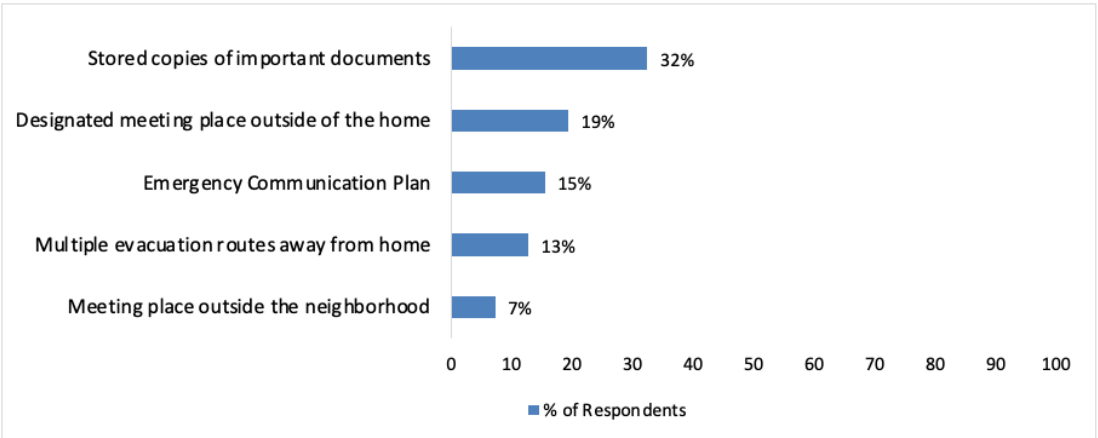
- Stored copies of important documents
- Designated meeting place outside of the home
- Multiple evacuation routes away from home
- Emergency communication plan
- Meeting place outside the neighborhood

Results

Overall, preparedness levels among respondents were low

- 52% of respondents had none of the FEMA recommended plans
- Less than 3% of respondents had all the FEMA recommended plans
- The most common plan was stored copies of important documents (32%) (Figure 1)

Figure 1. Percentage of Respondents with FEMA Preparedness Plans

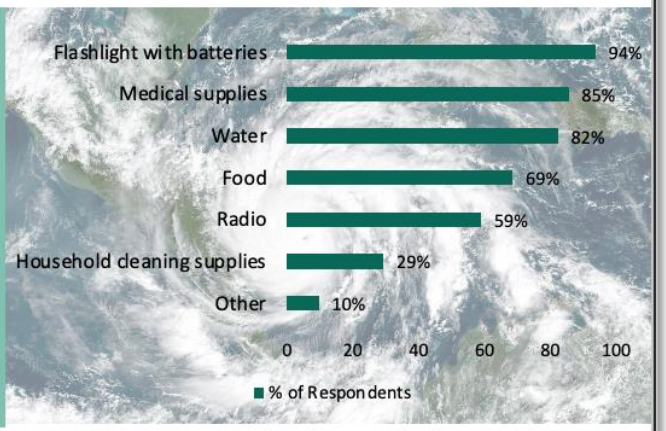


Few respondents had an emergency supply kit

Only 1 in 3 respondents had an emergency supply kit

Those living in the Midwest were 47% less likely to have an emergency supply kit than those in Western states

People were *less* likely to have an emergency supply kit if they were *female*, *75 years* or older, lived in the *Midwest or Northeast*, or had *less than a high school* education



People *more* likely to be prepared

- Have a bachelor's degree or more
- LIve in a single family home
- Own a home
- Are married
- Have children living in the home
- Earn a household income of ≥$50,000
- Live in the South or West

Beliefs matter

Those who believe that an emergency supply kit will improve their chance of surviving a disaster are more than 3x as likely to have a kit

Those who feel confident they know how to prepare for a disaster are more than 4x as likely to have a kit and 2x as likely to be prepared

Related Resources

- Preparedness Plans & Emergency Supply Kits: Key Findings from a Fall 2020 Survey
- Natural Disasters & Severe Weather
- Prepare Your Health: Plan Ahead
- Ready Wrigley
- Going to a Shelter During the COVID-19 Pandemic
- Food and Water Needs: Preparing for a Disaster or Emergency
- Disaster Risk Reduction for Health

Appendix X: Infographic II: Social Determinants of Health (Content Only)

NOTE: Content to be cleared and provided to Creative Services for design purposes

KEY MESSAGES

- Natural disasters are becoming stronger and more frequent because of climate change, urbanization, and other factors
- Age, gender, education level, and region matter

FACTS TO INCLUDE

- Older adults (75 years and older) are less likely to have an emergency supply kit
- Being female decreased likelihood of having an emergency supply kit by 11%
- Those in the Midwest and Northeast are half as likely to be prepared as those living in the South and West
- Those with less than high school education are also less likely to have preparedness plans
- Persons living in mobile homes, RVs, boats, or vans are half as likely to have preparedness plans compared to those living in single family homes
- Being married, having children in the home, and having a household income of $50,000 or more all increase preparedness levels

Source: *SpringStyles 2021*