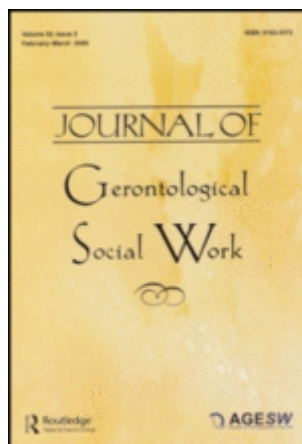


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Structural Characteristics of Nursing Homes and Social Service Directors that Influence Their Engagement in Disaster Preparedness Processes

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Abstract:	<p>Nursing home residents are an at-risk population during disaster situations, and nursing homes face unique challenges in managing disasters. Nursing home social service departments can support their nursing homes in meeting the needs of residents during disasters, yet there is little research exploring their involvement. To address this gap, we use secondary data from the 2019 National Nursing Home Social Service Directors' study to explore social service directors' and their departments' involvement in disaster preparedness and response, and personal- and nursing home-level characteristics that predict involvement. Results show that nursing home social service directors and their staffs are predominantly involved; 61.9% (n= 562) of respondents stated always participating, and an additional 20.3% (n=184) usually participating in disaster planning. The age of the director significantly predicted involvement, with older directors being most likely to always be involved. Further research is needed to understand why some nursing homes involve their social service directors in disaster planning and others do not, what roles those directors play, and to identify strategies to increase involvement within this role.</p>

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Structural Characteristics of Nursing Homes and Social Service Directors that Influence Their
Engagement in Disaster Preparedness Processes

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Abstract

Nursing home residents are an at-risk population during disaster situations, and nursing homes face unique challenges in managing disasters. Nursing home social service departments can support their nursing homes in meeting the needs of residents during disasters, yet there is little research exploring their involvement. To address this gap, we use secondary data from the 2019 National Nursing Home Social Service Directors' study to explore social service directors' and their departments' involvement in disaster preparedness and response, and personal- and nursing home-level characteristics that predict involvement. Results show that nursing home social service directors and their staffs are predominantly involved; 61.9% (n= 562) of respondents stated always participating, and an additional 20.3% (n=184) usually participating in disaster planning. The age of the director significantly predicted involvement, with older directors being most likely to always be involved. Further research is needed to understand why some nursing homes involve their social service directors in disaster planning and others do not, what roles those directors play, and to identify strategies to increase involvement within this role.

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3 Compared to older adults in the community, nursing home residents are at greater risk for
4
5 adverse outcomes during disasters, in part due to older age and having more chronic conditions
6
7 (Dosa et al., 2012). Nursing home residents often have functional limitations in activities of daily
8
9 living (ADLs) and instrumental activities of daily living (IADLs), physical disabilities, and/or
10
11 cognitive impairments that impact their ability to evacuate safely during disasters (Aldrich &
12
13 Benson, 2008; Holup et al., 2017; Lu et al., 2020).
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17 Nursing home social service departments “provide medically-related social services to
18
19 attain or maintain the highest practicable physical, mental and psychosocial well-being of each
20
21 resident” (Behavioral Health Services, 2016, para a). They also comprise essential parts of the
22
23 interdisciplinary teams. Each nursing home approaches disaster preparedness differently, from
24
25 what disciplines comprise the team to the role each plays in planning, practice/drills, and
26
27 response (Office of Inspector General, 2012a). The Centers for Medicare and Medicaid Services
28
29 (CMS) provides guidance in the form of a checklist (81 F.R. 68692, 2016), which lays out what
30
31 contingencies should be addressed in a nursing home’s emergency plan but does not include
32
33 which disciplines within the nursing home should be involved. Social services should be an
34
35 important part of the plan, as the checklist calls for “Training ... to address psychological and
36
37 emotional aspects on caregivers, families, residents, and the community at large” (Office of
38
39 Inspector General, 2012b, p.33). Other key elements of the regulation are procedures to assess
40
41 for relevant hazards and developing interventions for each hazard; plans for communication with
42
43 families, residents, transportation and other vendors; and instructions for policies and procedures
44
45 to address the same.
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52 Nursing homes face all types of hazards in disasters. While the CMS checklist does not
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54 designate which disciplines should be involved in disaster preparedness, the skills that bachelor’s
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3 and master's prepared social workers bring to the long-term care environment, such as broker,
4 advocate, manager, educator, facilitator, and organizer (e.g., Hepworth et al., 2013) could be
5 particularly useful in helping nursing homes prepare for disasters. Nursing home social service
6 directors, who may or may not be social workers, must understand micro, mezzo, and macro
7 issues, be aware of person-in-environment, and have crisis management skills, all of which are
8 essential components of social work education (Council on Social Work Education, 2015).
9
10 Nursing homes with more qualified social service employees receive fewer psychosocial
11 deficiencies on state inspection surveys (Simons, 2006).
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22 Federal regulations require nursing homes with at least 120 beds that accept Medicare or
23 Medicaid funds to have at least one full-time social worker, yet the definition of social worker
24 includes people who are not educated or credentialed in social work. The regulatory definition of
25 a social worker includes those with bachelor's degrees in gerontology, sociology, special
26 education, rehabilitation counseling, and psychology (Administration, 2019). The National
27 Association of Social Workers (NASW) recommends, at minimum, a nursing home social
28 worker have a degree in social work (Bailey et al. 2003). We will discuss further in the literature
29 review what makes social workers well suited to help in these activities.
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40 Natural disasters are commonly defined by nursing home staff and researchers as events
41 like hurricanes, tornadoes, and snowstorms, with the potential to physically damage buildings,
42 disrupt the supply chain, and strand staff at work or away from the nursing home for extended
43 periods of time (Goldman & Galea, 2014). This article uses data from the National Nursing
44 Home Social Services Directors' (NNHSSD) study, a nationally representative survey designed
45 to characterize the nation's social services workforce, to describe the personal-level and nursing
46 home-level structures that influence how often nursing home social service directors and their
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3 staffs are involved in the process of nursing home disaster preparedness. We also discuss the
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5 importance of including nursing home social service directors and workers in disaster
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7 preparedness and response and the strengths social workers can bring to these roles.
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10 **Literature Review**

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12 **Nursing Homes and Disaster Preparedness and Response**

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14 With the exception of hospitals, nursing homes provide the highest level of care for older
15
16 adults of any other setting. The frailty of this population decreases their ability to withstand
17
18 negative situations that may occur before, during, and after disasters, such as gaps in care from
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20 personnel shortages, extreme changes in temperature, loss of necessary medical equipment due
21
22 to power outages or floods, and sudden and unpredictable changes in setting or location, which
23
24 can exacerbate confusion, agitation, and behavioral concerns (Brown et al., 2007; Fernandez et
25
26 al., 2002).
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31 The unique vulnerabilities of nursing home residents to disasters were highlighted during
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33 Hurricane Katrina in 2005, when approximately 139 nursing home residents died during and
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35 after the hurricane (Hyer et al., 2007). Subsequent studies exploring the morbidity and mortality
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37 impacts of being exposed to hurricanes indicate that the hurricane had long-term effects on
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39 nursing home residents (Dosa et al., 2010). Hurricane Katrina and its' ill effects revealed
40
41 significant gaps in nursing homes' policies and planning and preparedness processes. A report
42
43 issued by the Office of Inspector General (OIG) (2006) indicated a breakdown had occurred in
44
45 the planning process across all the Gulf States (Alabama, Florida, Louisiana, Mississippi, and
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47 Texas) that experienced a major hurricane in 2004 or 2005 (Ivan, Katrina, Rita, and Wilma).
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49 Factors contributing to breakdowns in preparedness and response included nursing homes not
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51 having adequate plans, administrators failing to follow through with planned processes, or plans
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not being sufficient to meet emerging needs during disasters. Nursing home administrators also reported that their exclusion from local, state, and federal planning efforts resulted in a lack of resources and supports during the disaster and that plans for older adults were inconsistent across the care continuum (Laditka et al., 2008).

The Potential Merits of Social Work in Disaster Planning and Response

Although social workers have often responded to disasters and traumas (Hamler et al., 2020; Kusmaul et al., 2018; Naturale, 2007; Scoville, 1942), there is a dearth of research specifically examining the role of social work in disaster response in nursing homes. Much of the existing literature discusses events that occurred over a decade ago, such as Hurricanes Katrina, Rita, and Gustav, or is conceptual (Beltran et al., 2020). These studies describe social work's role as supporting the emotional well-being of residents, and also that of overwhelmed, tired, and distressed direct care staff to ensure the team can function effectively under duress (Laditka et al., 2008). Social workers engage in disaster management activities throughout all stages of the disaster. For example, they provide individualized support to residents experiencing psychological distress from seeing news coverage about the impending events, restore communication with families (e.g., after evacuating to another location), and facilitate the processing of shared trauma (Claver et al., 2013; Laditka et al., 2008). As part of the interdisciplinary team, social workers are often the profession tasked with ensuring residents' emotional well-being. Nursing home administrators identify social work as the profession most likely to engage in resilience-building interventions such as psychological first aid training to support nursing home residents during disasters (Brown et al., 2010).

Other critical roles of nursing home social service workers are facilitating discussions about goals of care, resolving family conflicts, and documenting advance care planning wishes

(Bomba et al., 2011). Ensuring resident goals are documented and up to date is crucial during disasters, as decisions may need to be made urgently or while communication with decision-makers is disrupted. Social workers collaborate with other members of the interdisciplinary team and outside agencies (e.g., hospice agencies), to plan for continuity of supports during disasters. Following a disaster, social workers support residents who have experienced a change in condition and their families; this may involve additional discussions around goals, and coordination of end-of-life care (Frahm et al., 2012).

Theoretical Framework

Donabedian’s structure, process, and outcome model (Donabedian, 1988) for evaluating the quality of care is used as a framework to organize this exploratory study. Donabedian proposed that favorable client outcomes, or good quality care, results from effective processes, which are shaped by structural factors. Structures of healthcare include provider and organizational-level characteristics such as capacity (i.e., bed size, staffing); processes include how and what services are delivered; and outcomes are care quality and patient physical and psychosocial well-being. As described in the literature review, previous studies have highlighted the poor quality of disaster response in nursing homes, which is the Donabedian outcome of focus in our research. In this exploratory study, we focus on the role of facility-level and social service director-level characteristics (structure) on involvement in disaster preparedness (process).

Despite the potential for nursing home social service directors to engage in disaster preparedness and response, their level of involvement in this work within nursing homes has not been clearly described (Beltran et al., 2020). There are even fewer studies that speak directly to nursing home social service directors’ and staffs’ involvement in disaster preparedness. The

current study helps to bridge this gap, by exploring nursing home social service directors' involvement in the process of disaster planning and response and the structural factors associated with that involvement.

Methods

Data Source

We used a subset of the NNHSSD study to describe whether nursing home social service workers help their nursing homes prepare for disasters and the personal-level and nursing home-level characteristics that influence that involvement. The NNHSSD study provides nationally representative data from nursing home social service directors to characterize the nation's nursing home social services workforce, describe their workload, and determine their training needs and preferences (Bern-Klug et al., 2021). The total survey had 185 items.

Of the 3,067 nursing home social service directors contacted by the NNHSSD study, 924 completed the study survey, for a response rate of 30%. The distribution of responses in the overall sample is reported in (Bern-Klug et al., 2021). Importantly, the nursing home characteristics of the respondents were representative of nursing homes nationally across multiple factors including the type of nursing home, ownership, bed size, chain status, and quality rating (Bern-Klug et al., 2021).

Variables

Outcome Variables

The primary outcomes we used are based on two items. The first item asked social service directors the extent to which social services staff “participate in disaster response planning and drills.” Possible responses were “always”, “usually”, “sometimes”, and “never”. In our analysis, we combined sometimes and never due to the size of the samples, 12 ($n=109$) and

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3 six ($n=56$) percent, respectively, much smaller than the usually and always groups. The second
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5 item asked social service directors how much preparation time they would need in order to
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7 provide one-on-one training to a social services colleague to “explain the social services’ role in
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9 disaster planning and during a disaster.” Response options were “could do without preparation”,
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11 “2 hours prep time”, “10 hours prep time”, or “could not do.” This variable, particularly the
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13 “could not do” response, served as a proxy for whether or not they needed training themselves.
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17 ***Predictor Variables***
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20 Predictor variables were selected to allow us to explore structural factors that might
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22 influence whether or not social service directors were involved in the disaster preparedness
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24 planning process. Due to the exploratory nature of this work, variables included were selected
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26 based on previous literature indicating their influence on nursing home processes and outcomes
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28 (e.g., Castle & Ferguson, 2010; Schnelle et al., 2004). We grouped the structural variables into
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30 individual-level factors and nursing home-level factors. Individual-level factors were education
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32 level, years of experience, whether the person had a social work degree and license or not,
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34 gender, race, and age. Demographic characteristics allow us to describe the sample. Other
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36 individual characteristics were based on the literature and NASW recommendations describing
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38 desired structural qualifications of social service staffing. To reduce respondent burden, nursing
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40 home-level factors were obtained from public access files on the CMS website. Nursing home-
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42 level variables were bed size, staffing ratio, ownership, location, and rural/urban designation.
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44 These structural variables have been shown in previous research to impact outcomes for nursing
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46 home residents (Shippee et al., 2015).
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52 **Individual Variables.** The NNHSSD study collected information on social service
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54 directors and their staffs, as reported by the directors. We used information only about the
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3 directors themselves. Individual-level variables were kept as the NNHSSD study coded them.
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5 Education level was coded into three categories: less than a four-year degree, Bachelor's degree,
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7 and Master's degree. Years of experience was coded into three categories: 0-3 years, 4-9 years,
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9 and 10 or more years. Social work degree and license were coded as to whether the respondent
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11 had both a social work degree and a social work license (yes or no). Gender was coded as male
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13 and female. Race was coded into two categories: White and non-White, given the high
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15 percentage of White respondents (88.0%) in this sample. Age was collected as categorical, into
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17 ages 18-34, 35-54, and 55 and older.
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21 **Bed Size.** Bed size refers to the number of Medicare and/or Medicaid certified beds. The
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23 NNHSSD study collapsed this into a categorical variable of 0-60, 61-120, and 120+. These cut
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25 points reflect two structural factors. The average size of a nursing home in the United States is
26
27 106 beds; only one state has an average of fewer than 60 beds (Kaiser Family Foundation, 2019).
28
29 Therefore, the 0-60 bed category was created to capture staffing differences that may occur in
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31 smaller homes. The cut point at 120 was due to the regulations that require a "full-time qualified
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33 social worker" in nursing homes with more than 120 beds (Administration, 2019).
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38 **Staffing Ratio.** We calculated staffing ratio by dividing number of full-time equivalent
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40 social service staff by number of residents in the nursing home and then multiplying by 100.
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43 **Ownership.** The CMS website lists 13 categories of tax status. For the NNHSSD study,
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45 these were collapsed into "for-profit", "not-for-profit", and "government."
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48 **Location.** Researchers from the NNHSSD study obtained state level data on each nursing
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50 home and included it in the data set. Since this study looked at disaster preparedness, we
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52 collapsed the states into categories described as "Northeast Coastal" (mid-Atlantic and north),
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54 "South Coastal" (Gulf coast and southeastern U.S.), "West Coastal" (states that border on the
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Pacific Ocean), and “non-coastal” (all other states that do not border an ocean). We based these categories on the different types of potential disasters each was most likely to face, which we hypothesized would lead to differences in preparedness. We later re-categorized these into a new variable to examine differences in “Wildfire” versus “non-Wildfire” regions. The Wildfire category included Oregon, Washington, California, and Colorado, and non-Wildfire included the remaining states.

Rural/Urban. The NHHSSD study used county-level data to assign one of nine Rural-Urban continuum codes (RUCC) as designated by the USDA to each participating nursing home. For our analysis, the nine RUCC categories were collapsed into a dichotomous variable of “metro” and “non-metro,” with metro as the reference category.

Statistical Analyses

We first ran Chi-square analyses to test the association between categorical predictors and both outcome variables. We intended to run hierarchical logistic regression models for both outcome variables. However, the bivariate analysis showed no statistically significant results for the question on how much preparation time Social Service Directors would need in order to provide one-on-one training to a social services colleague to “explain the social services’ role in disaster planning and during a disaster”, so we only ran a hierarchical logistic regression model for the “participate in disaster response planning and drills” question. The first step of the model included individual variables, and the second step added nursing home structural variables. We then ran an additional unanticipated regression model where we replaced the location variable of Coastal/non-Coastal with Wildfire/non-Wildfire. We conducted all analyses in IBM SPSS Version 26.

Results

Descriptive Statistics

A full description of the sample can be found in Bern-Klug et al.(2021). Broadly, the sample demographics are similar to national trends in nursing home social work: mostly female (93.1%, $n=523$) and White (87.3%, $n=495$). Slightly less than half were between the ages of 35-54 (45.9%, $n=258$), one quarter were 18-34, (24.9%, $n=140$), and the remainder were over the age of 55 (29.2%, $n=164$). The majority of the sample was college educated: 47.8% ($n=267$) reported a bachelor's degree as their highest level of education and 34.8% ($n=194$) reported a master's degree. Just over half had a degree in social work either at the BSW or MSW level (55.6%, $n=310$), but only a third had both a social work degree and a social work license (34.2%, $n=191$), reflecting the lack of social work requirements for social service directors in nursing homes.

Social Service Involvement in Disaster Planning and Drills

Responses to the question, the extent to which social services staff “participate in disaster response planning and drills,” indicated that the vast majority of social services departments participate in disaster training: 61.9% ($n=562$) of respondents reported the department always participates, 20.3% ($n=184$) usually, and 17.8% ($n=162$) sometimes or never participated. In fact, only six percent reported that the social services department never participated in disaster response planning and drills.

Directors' Ability to Explain Social Services' Role in Disaster Planning and During a Disaster

The question about how much preparation time a social service director would need to explain the social services' role in disaster planning and during a disaster served as a proxy for whether the social service directors felt competent in their knowledge of disaster preparedness

and response. Most directors felt fairly competent: 38.6% (n=357) could explain the social services role with no preparation, 47% (n=434) needed less than two hours to prepare. The remaining 11% either needed 10 or more hours to prepare (7%, n=65) or felt that they could not do at all (4%, n=37). We conducted bivariate analysis to determine whether structure or process variables influenced the social service director’s preparedness. A lack of significant responses led us to conclude that they did not.

Chi-Square Models

Individual-Level Structures

Chi square tests were used for categorical predictors. Age of the social services director was a statistically significant predictor of always being involved in disaster planning and drills $X^2(4, N=908) = 20.557, p < .001$, with the oldest nursing home social service directors most likely to be always involved. See table 1 for the results of the other individual-level predictors, none of which showed evidence of statistical differences by group. [Insert table 1 about here]

Nursing Home Structures

Among the nursing home level predictors, size of the nursing home predicted social services involvement in disaster planning and drills $X^2(4, N=908) = 9.812, p = .04$ with social service workers in large size nursing homes (more than 120 beds) more likely to endorse that they were only never or sometimes involved.

Regression Model

Table 2 presents results from the hierarchical logistic regression model used to determine the likelihood that social workers were always involved in nursing home disaster preparedness and response, with individual-level and nursing home-level characteristics added at each step of the model. In step one, the individual-level characteristics were statistically significant, $X^2(9) =$

27.740, $p = .002$. The model explained 4.0% (Nagelkerke R^2) of the variance between being always involved (vs all other responses) in disaster preparedness and response and correctly classified 61.0% of cases. Age of the social service director was a statistically significant predictor of involvement in disaster preparedness and response. Compared to those age 55 and older, social service directors ages 18-34 ($OR = .46$, 95% CI [.29, .71], $p < .001$) and ages 35-54 ($OR = .51$, 95% CI [.36, .73], $p < .001$) were less likely to be involved in disaster preparedness and response. The addition of the nursing home level characteristics in the second step was not statistically significant. Step two added only 1.1% of additional explanation of the variance (Nagelkerke R^2). No single nursing home characteristic was statistically significant in explaining variance. The unanticipated regression model with Coastal/non-Coastal replaced by Wildfire/non-Wildfire revealed no additional statistically significant findings. [Insert table 2 about here]

Discussion

Our findings reveal that most nursing home social services departments (61.9%) are always involved in disaster planning and another 20.3 percent usually are—accounting for social services departments involvement in 80% of all U.S. Medicare and/or Medicaid certified nursing homes' disaster planning. Federal guidelines require nursing homes to train all of their staff every year on emergency and disaster plans (81 F.R. 68692, 2016), thus while not confirmed from this survey, it is likely the social services department is working with other departments in disaster planning. Interdisciplinary disaster planning would likely yield the best results for residents, because every department is impacted by a disaster, and all staff are needed for a comprehensive, multidimensional response. Interdisciplinary interventions in nursing homes have been shown to improve resident outcomes in other areas (Nazir et al., 2013). Strengthening

federal guidelines for social service staffing and for interdisciplinary team participation in disaster planning is one structural change that might influence this process for nursing homes.

There are a number of limitations that should be considered when interpreting the findings of this study. First, methodologically, this data was collected using a self-report survey and reflects the perceptions of the social service directors who responded. Further, the outcome measure was double-barreled and may have inaccurately measured their participation. Future research should break out survey items. For example, “participate in disaster response planning” and “drills” could be listed as separate items to more accurately determine the nursing home social service departments’ involvement in disaster planning. We also found that older social service directors were more likely to participate but we do not know their exact ages due to how the age was collected. We also do not know if age correlates to greater experience. Our only statistically significant result, age, was collected as a categorical variable. However, despite these limitations, this exploratory study of secondary data provides valuable insight into the involvement of social service directors and their staff in disaster preparedness of nursing homes.

Our statistical model was not successful in identifying structural predictors of social services departments’ participation in disaster planning and drills. Indeed, neither characteristics of the social services director (other than the age of the director), nor the structural characteristics of the nursing home helped to explain the variation in social services department participation in disaster planning and drills. Our findings indicate that older nursing home social service directors were more likely to report their department was involved in disaster planning as compared with their younger counterparts. There is some research that found that social workers who remain in the profession are older (Wermeling, 2013) and that social workers who remain in the profession turnover frequently (Chiller & Crisp, 2012). Neither of these studies looked at nursing home

social service directors. This would be interesting to explore further, to understand whether older social service directors have more experience, and as discovering the reasons might help nursing home administrators engage younger nursing home social service directors in disaster planning and drills. Understanding barriers to engagement among younger nursing home social service directors may also reveal training opportunities.

The data used in this study was collected pre-COVID. The COVID-19 global pandemic has been a completely different kind of disaster to which nursing homes have had to respond. During COVID-19 the roles of nursing home social service directors and their staffs have been similar to previous natural disasters such as facilitating communication between residents and their families and providing emotional support to both parties. In addition, the COVID-19 global pandemic has been prolonged, has left residents and staff particularly vulnerable to physical harm due to limited access to personal protective equipment (PPE), and has created additional psychosocial needs related to social isolation and separation from family members (e.g., Kusmaul et al., 2020). Since experts say that global pandemics may become more common in the future (David & LeDevedec, 2019), disaster preparedness and response must incorporate the lessons learned from COVID-19, including the essential role of social service departments in disasters.

Implications for Social Work in Long Term Care

The most concerning part of our finding was that five percent of nursing home social service directors were never involved in disaster planning and drills and 12% were only sometimes involved. While these nursing homes are likely still engaged in disaster planning, the social service directors were absent from these activities. Due to all of the reasons discussed about how nursing home social service directors can contribute to a nursing home's disaster

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3 planning, this finding suggests that the absence of social workers from this process could be
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5 shaping the quality of the outcomes. While this study did not allow us to explore this possibility,
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7 this is a structural factor that is worth exploring in future research.
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10 Previous studies on disaster preparedness in nursing homes have found that lack of
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12 personal knowledge about disasters and limited nursing home financial resources were cited as
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14 two of the most common barriers to preparedness and planning (Dosa et al., 2003). Social
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16 workers often feel unprepared to respond in the immediate aftermath of a disaster since few
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18 social workers are trained to act in a community-wide disaster (Newhill & Sites, 2000). While
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20 many social workers are not specifically trained in disaster preparedness, it is essential that social
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22 work education prepare all new social work professionals to be competent and ready to assist
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24 older adults during a disaster. This is particularly prevalent as so many social work roles intersect
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26 with older adults in disaster preparedness, response, and recovery.
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31 The COVID-19 global pandemic and resultant impacts on nursing homes have shown us
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33 that social service workers are an important part of a nursing home’s disaster response. COVID-
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35 19 has isolated residents from family members, and many residents have gotten sick and died.
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37 Social workers have been responsible for supporting isolated residents and concerned family
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39 members often with few resources because leadership and other disciplines have little
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41 understanding of what they do (Kusmaul et al., 2020; Miller et al., 2021). Moving forward, it
42
43 will be important to understand the training and support needs of nursing home social workers, to
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45 ensure that they can fulfill their duty of supporting residents’ well-being, resident rights, and
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47 dignity during disasters.
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51 Additional research is needed on social workers in long-term care settings. Further
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53 research is necessary to explain why some nursing homes include their social services
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3 departments in disaster training and others do not. It is also important to document whether
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5 nursing homes that consistently include social services in disaster planning processes experience
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7 better disaster-related outcomes for residents. Future studies should investigate the role that
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9 nursing home social services staff members play in disaster planning and during a disaster.
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Table 1:

Chi Square Test of Individual Predictors and Social Service Involvement in Disaster Preparedness and Response

	X^2	df	p -value	N
Gender	2.36	2	.31	908
Race	2.48	2	.29	917
Education	5.48	4	.242	906
Experience	4.30	4	.37	915
Social Work License	1.30	2	.52	901

Table 2
Logistic Regression Model of Social Service Involvement in Disaster Preparedness and Response

	Step One		Step 2	
	OR	95% CI	OR	95%CI
Gender (Male)	.84	[.50, 1.39]	.84	[.50, 1.41]
Age				
18-34	.46***	[.29, .71]	.45***	[.29, .70]
35-54	.51***	[.36, .73]	.50***	[.35, .73]
Race (White)	1.01	[.66, 1.55]	1.06	[.68, 1.66]
Education Level				
< 4 Year Degree	1.18	[.73, 1.90]	1.31	[.79, 2.20]
Bachelor Degree	.95	[.69, 1.31]	.99	[.71, 1.38]
Experience				
0-3 Years	.93	[.64, 1.37]	.93	[.62, 1.40]
4-9 Years	.81	[.56, 1.16]	.81	[.56, 1.17]
No Social Work License	.82	[.60, 1.12]	.81	[.59, 1.11]
Bed Size	---	---		
< 60 Beds	---	---	1.29	[.78, 2.15]
60-120 Beds			.95	[.67, 1.34]
Ownership	---	---	1.11	[.82, 1.51]
Rural/Urban	---	---	1.34	[.97, 1.88]
Staffing Ratio	---	---	.99	[.84, 1.17]
Region	---	---		
Northeast Coastal	---	---	1.15	[.72, 1.86]
South Coastal	---	---	1.10	[.76, 1.87]
Pacific Coastal	---	---	.92	[.52, 1.65]
Wildfire States †	---	---	.73	[.43, 1.23]

Note: UOR = Unadjusted Odds Ratio; AOR = Adjusted Odds Ratio; CI = Confidence Interval. Reference Groups: Gender- Female; Age- 55+; Race- Other; Education Level- Master’s Degree; Experience- more than 10 years; Bed Size- more than 120, Ownership- For profit, Rural/Urban- Urban, Staffing ration- continuous variable, Region- non-coastal; and Wildfire states- non-coastal.

† Census Regions were recoded into wildfire areas and included in a separate regression model in place of Coastal region.

p*<.05, *p*<.01, ****p*<.001