Racial Disparities in the Use of Physical Restraints in U.S. Nursing Homes

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The use of physical restraints in nursing homes among black and white residents was examined on the basis of data from the 2004 National Nursing Home Survey to determine if black residents were more susceptible to the use of physical restraints. Odds ratios acquired through logistic regression are provided with 95 percent confidence intervals. Findings revealed that black residents are more likely than white residents to be restrained with bed rails, side rails, and trunk restraints. Findings suggest that racial disparities exist in the use of physical restraints. Implications for practice, policy, and research are discussed.

KEY WORDS: nursing homes; physical restraints; racial disparities

An unprecedented growth in the aging population is expected over the next 40 years. In 2050, almost 90 million individuals in America are expected to be 65 years of age or older (Administration on Aging [AoA], 2010a). According to the AoA, in 2009, 20 percent of individuals over the age of 65 were members of minority groups, with blacks representing the largest minority group (AoA, 2010b). Between 2010 and 2030, the minority population of older adults is expected to increase 160 percent while only a 59 percent increase in white older adults is expected (AoA, 2010b). Research suggests that accessing home- and community-based care may be more difficult for older minorities than for their white counterparts (Feng, Fennell, Tyler, Clark, & Mor, 2011). As a result, minorities may have fewer alternatives to nursing home care later in life. Based on a national survey of nursing home residents, a 10 percent decrease in the use of nursing homes by white people was observed between 1999 and 2008; over the same time, an 11 percent increase in the use of nursing homes by blacks was noted (Feng et al., 2011). These demographic shifts warrant consideration of how different racial groups experience the nursing home environment.

In recent years, a body of research has begun to shed light on disparities within the American nursing home industry. Evidence of segregation appears to be widespread, with two-thirds of black nursing home residents residing in only 10 percent of all nursing homes (Smith, Feng, Fennell, Zinn, & Mor, 2007). Black people are more likely than white people to reside in facilities with higher percentages of Medicaid recipients, poorer staffing ratios, and more serious inspection violations (Mor, Zinn, Angelelle, Teno, & Miller, 2004; Smith et al., 2007; Smith, Feng, Fennell, Zinn, & Mor, 2008). Disparities in the documentation of end-of-life wishes (Degenholtz, Arnold, Meisel, & Lave, 2002; Reynolds, Hanson, Henderson & Steinhauser, 2008), the use of antipsychotic medications (Hudson, Cody, Armitage, Curtis, & Sullivan, 2005), and the presence of urinary incontinence (Boyington et al., 2007), pressure ulcers (Cai, Mukamel, & Temkin-Greener, 2010), and immunizations (Bardenheier, Wortley, Ahmed, Hales, & Shefer, 2010) have been noted, with black residents having poorer outcomes than white residents in each of these areas. This study adds to our understanding of disparities in nursing homes, with an examination of the relationship between race and the use of physical restraints.

Federal regulators define physical restraints as “any manual method or physical or mechanical device, material, or equipment attached to or adjacent to the resident’s body that the individual cannot remove easily, which restricts freedom of movement or normal access to one’s body” [42 CFR 483.13(a)]. Common examples include chairs that prevent rising, belts or vests that secure a resident to a chair or bed, or devices that prevent a resident from freely moving an arm, leg, foot, or hand. Some consider bed rails and side rails to be physical restraints—residents are unable to lower them without assistance—but these devices are often excluded...
from national incidence and prevalence data because they also can serve to enable bed mobility.

The use of physical restraints of any type is concerning because they present a threat to residents’ physical and psychological health. In a systematic review of 25 studies, researchers found physical restraints to be associated with death by asphyxiation, loss of muscle strength, pressure ulcers, incontinence, contractures, fractures, chafing, thrombosis, aspiration, skin tears, and fecal impaction (Chaves, Cooper, Collins, Karmarkar, & Cooper, 2007). Physically restrained residents are also more likely to experience cognitive declines, decreased self-esteem and social engagement, and increased confusion, forgetfulness, depression, humiliation, fear, anger, agitation, anxiety, and resistance to care (Castle, 2006; Chaves et al., 2007).

Despite the potential harm restraints pose to the health and welfare of residents, their use continues around the world. In looking at the use of physical restraints in five countries, Canada was found to have the highest prevalence rate, with 31 percent of Canadian nursing home residents physically restrained, followed by Finland at 28 percent (Feng et al., 2009). At the time of the survey, Switzerland had the lowest prevalence, with only 6 percent of its residents physically restrained. In the United States, tremendous gains have been made in the reduction of physical restraints over the past three decades. In the late 1980s, it was thought that more than 40 percent of nursing home residents were physically restrained (Schoeneman & Graber, 1996). Today, on average, only 3.2 percent of nursing home residents are physically restrained by limb, chair, or trunk restraints (American Health Care Association [AHCA], 2011). The driving force behind restraint reduction in the United States was the Omnibus Reconciliation Act of 1987 that limited the use of restraints in nursing homes to the treatment of medical symptoms [42 CFR 483.13 (a)] and directed federal surveyors to pay particular attention to the use of restraints during facility inspections. The nursing home industry is to be commended for its advances in the reduction of physical restraints; however, research examining whether restraint reduction has occurred at a similar rate among all racial and ethnic groups is lacking. This study uses a nationally representative sample of U.S. nursing homes to examine the relationship between race and physical restraints and to determine if racial disparities exist in the use of physical restraints among U.S. nursing home residents.

**METHOD**

**Sample**

Data for this study were drawn from the 2004 National Nursing Home Survey (NNHS) conducted by the Centers for Disease Control and Prevention (Jones, Dwyer, Bercovitz, & Strahan, 2009). The 2004 NNHS is the seventh survey conducted in American nursing homes since 1973 and the most recent survey available for review. The 2004 NNHS employed a stratified, multistage probability design to examine a nationally representative sample of 13,507 residents from 1,174 nursing homes. No more than 12 residents from a single facility were included in the survey.

**Measures**

Resident-level data were acquired for the 2004 NNHS through staff interview and medical record reviews that included a substantial amount of information from the most recent Minimum Data Set (MDS) on file for selected residents. The MDS is a comprehensive multidimensional standardized assessment completed on each individual residing in a nursing home certified to receive Medicare and/or Medicaid funding in the United States [§483.20(b)(1)(ii)]. An interdisciplinary team of facility staff completes an MDS for each resident at least quarterly.

In this study were five dependent variables of interest, each one indicating the use of a specific type of physical restraint: bed rails, side rails, trunk restraints, limb restraints, and chair restraints. According to the *Revised Long-Term Care Facility Resident Assessment Instrument User’s Manual*, bed rails refer to the use of one or more three-quarter-length or longer rails that a resident cannot easily remove (Centers for Medicare & Medicaid Services [CMS], 2002). Side rails refer to the use of one or more half-rails that cannot be easily removed by a resident. Because bed rails and side rails prohibit a resident from being able to maneuver in and out of bed unassisted, and significant injuries can occur when residents attempt to climb over raised bed rails, a decision was made to include the use of these devices in this research. Trunk restraints may be used in a bed or in a chair and include vest or waist restraints that cannot be removed by a resident. Limb restraints restrict the
movement of an extremity, such as a hand, arm, foot, or leg. Limb restraints may be used, for example, to restrict a resident from pulling out a feeding tube or to restrict a resident from scratching a sore. Chair restraints refer to chairs that prevent a resident from being able to stand independently. Examples include chairs with locked lapboards, lap buddies, or geri-chairs (CMS, 2002). Each variable was dichotomous, with “1” indicating the use of a restraint, and “0” indicating no restraint. In addition, the NNHS also provided a single dichotomous variable indicating the use of any of the aforementioned restraints with “0” indicating no restraint was used and “1” indicating that some type of restraint was used.

For this study, the primary independent variable of interest is race. Race was coded as a dichotomous variable with “1” indicating that a resident was black and “0” indicating a resident was white. Residents of other races and ethnicities were excluded from this analysis. Previous research on physical-restraint usage in nursing homes suggests a number of additional variables could affect whether an individual is physically restrained and have been included in this analysis. Individual-level control variables considered in this analysis included: gender, behavior problems, falls, activities of daily living (ADLs), and cognitive impairments associated with dementia. Gender was coded as a dichotomous variable with “1” indicating female and “0” indicating male.

A single variable in the NNHS measured behavior problems. Researchers were asked to determine through staff interview or medical record review if the resident displayed “any behavior symptoms, such as wandering, verbally abusive language, physically abusive actions, socially inappropriate or disruptive symptoms, or resisting care” (Jones et al., 2009). In our analysis, if a resident was noted to display behavior problems, they were coded “1” and those who did not display behavior problems were coded “0”.

Two variables were used to measure falls. One indicated whether a resident had experienced a fall in the past 30 days, and the other indicated whether a resident had experienced a fall in the past 31 to 180 days. For each of these variables, if a fall had occurred within the specified time frame, the variable was coded “1”; if a fall had not occurred within the specified time frame, the variable was coded “0”.

Within the NNHS, a single variable measuring the total number of impairments in ADLs for each resident was available. Possible ADLs included in this measure were transferring, dressing, eating, toileting, and bathing. Scores ranged from 0 to 5 with “0” indicating that a resident was independent in all five activities of daily living and “5” indicating that a resident was in need of some level of support with all ADLs.

Residents with dementia were identified based on International Classification of Diseases (ICD), Ninth Revision—more commonly known as ICD-9—codes. Following a previously established methodology used by Luo, Lin, and Castle (2011), residents with the following ICD-9 codes were noted to have dementia: 290 (dementias); 294.1 (other dementia conditions); 294.8 and 310 (organic brain syndromes); 331 (Alzheimer’s disease); and 797 (senility). A resident with any of these conditions was coded “1” as having dementia, while residents without these conditions were coded “0” as not having dementia.

Analysis

PASW/SPSS 18.0 was used for all data analysis. Logistic regression assessed whether black residents were more susceptible to the use of physical restraints in nursing homes than white residents. Odds ratios are provided with 95 percent confidence intervals (CIs).

RESULTS

Descriptive Statistics

About 11 percent of the sample (n = 1,406) was black. Some type of device (including bed rails and side rails) was used to physically restrain almost 40 percent of the sample (n = 5,193). The most commonly used restraint was side rails. Twenty-four percent of the sample (n = 3,201) was restrained using side rails, followed by bed rails that restrained almost 15 percent of the sample (n = 1,925). Trunk restraints were used on about 4 percent of the sample (n = 479), and chair restraints were used on about 3 percent (n = 415). Less than 1 percent (n = 40) was restrained with limb restraints. Cross-tabs detailed in Table 1 show that there was a statistically significant relationship between race and the use of any type of physical restraint \[\chi^2(1, \ N = 13,191) = 51.783, \ p < .001\]. Almost half of black residents were restrained with some type of device, compared with only 38 percent of
white residents. Bivariate statistics also revealed significant relationships between race and three specific restraints: bed rails, side rails, and trunk restraints. An analysis of limb and chair restraints revealed no evidence of racial disparities.

Almost 75 percent of the sample was female (72 percent, $n = 9,509$). Forty-nine percent of the sample was diagnosed with dementia ($n = 6,506$), while about 28 percent ($n = 3,683$) demonstrated some type of behavioral problems. About 15 percent ($n = 21,970$) experienced a fall in the past 30 days, and about 25 percent ($n = 3,344$) experienced a fall in the past 180 days. More than 75 percent of the sample ($n = 10,235, 78$ percent) required some level of supervision or assistance with four or more ADLs.

### Resident Characteristics Associated with Restraint Use

Results of logistic regression, detailed in Table 2, indicated that the odds of black residents being restrained by any type of device were 1.406 times higher than the odds for white residents (95 percent CI = 1.251, 1.581). When compared with white residents, black residents were 1.628 times more likely to be restrained with bed rails (95 percent CI = 1.412, 1.878), 1.112 times more likely to be restrained with side rails (95 percent CI = .977, 1.265), and 1.327 times more likely to be restrained with trunk restraints (95 percent CI = 1.003, 1.755).

### DISCUSSION

According to the Universal Declaration of Human Rights, adopted by the United Nations in 1948, every individual has the right to equality, inclusion, and liberty (Office of the High Commission for Human Rights, 1996). To physically restrain frail, institutionalized elders of color at a greater rate than others may be considered a violation of civil rights. Although tremendous gains have been made in the reduction of physical restraints in nursing homes, it seems as though reduction may not have occurred at a similar rate across racial and ethnic lines. Findings from this research suggest that when controlling for characteristics such as dementia and ADLs impairments, black residents are still more likely to be physically restrained than white residents. This not only restricts their freedom of movement, but also places black residents at a greater risk of death and significant physical or psychological harm as a result of restraint usage.
The 40 percent restraint usage documented in this study far exceeds the 3 percent national average reported in 2011 (AHCA, 2011). The primary reason for this vast variation is the difference in measurements. Because bed rails and side rails cannot be lowered by residents and because of the increased risk of harm to residents who may try to climb over or through raised rails, we thought it was important to include them in this work. Residents who try to climb over raised rails can experience more serious falls because of the added height from which they may fall. They may experience more bruising and skin tears when they bump into rails or attempt to slide through them. Some may argue that residents feel more secure with raised rails or that raised rails can allow residents to experience greater bed mobility, but other devices can provide residents with enhanced bed mobility while not restricting their ability to maneuver in and out of bed freely. Despite the fact that bed rails and side rails are commonly overlooked as restraints, the fact remains that they inhibit independence and restrict freedom of movement.

**IMPLICATIONS FOR SOCIAL WORK PRACTICE, POLICY, AND RESEARCH**

These findings suggest widespread institutional discrimination in the use of restraints within the nursing home industry. To eliminate these disparities, social work practitioners, policymakers, and researchers must come together to develop interventions to ensure that race is not a conscious or unconscious factor in the use of restraints in nursing homes. Federal regulations require that each Medicare- or Medicaid-certified nursing facility must provide medically related social services to meet the biopsychosocial needs of residents [§483.15(g)(1)]. As such, social workers and social work designees have a voice in the development of each resident’s care plan. According to the NASW Code of Ethics, “Social workers should not practice, condone, facilitate, or collaborate with any form of discrimination on the basis of race . . .” (NASW, 2008, p. 22). A first step in eradicating disparities in the use of physical restraints in nursing homes can be achieved through education. Social workers who are unaware of the disparities in restraint usage may unknowingly be practicing, condoning, and facilitating this discriminatory practice. Once educated, social workers have a responsibility to ensure that black nursing home residents are not restrained at a higher rate than other residents. A simple calculation of the percent of residents restrained in any given facility by race can be a helpful assessment measure for individual facilities. If race is found to be a factor in restraint usage, then practitioners should carefully review restraint use among residents of color in care plan meetings to ensure that the least restrictive measures are being used to treat medical symptoms. It may be helpful to have an outside consultant review medical records without knowledge of race to make certain that uniform restraint policies are being implemented. In addition, social work practitioners in nursing homes could facilitate cultural diversity and cultural sensitivity training to help make employees more mindful of unconscious treatment differences based on race and ethnicity.

Social workers can also play an active role in advocating for the adoption of policy changes designed to minimize restraint disparities in nursing homes. Guidelines put into place with the implementation of Medicare and Medicaid in 1965 are thought to have been a starting point in desegregating health care. Given that all Medicare- and Medicaid–certified nursing facilities must undergo regular inspections by state and federal regulators, oversight of facility practices to minimize treatment differences based on race or ethnicity could be a powerful step in eradicating disparities in these environments. Prior to conducting annual inspections, regulators review quality measures to identify areas requiring close examination during visits. Decisions are made primarily based on whether a facility exceeds national or state averages in a particular area and on a facility’s past performance history. If a facility exceeds the national average of 3 percent in the area of restraints, surveyors are likely to pay close attention to restraints during their visit. Race is not currently a factor in quality measures. If quality measures were broken down by race, surveyors and nursing facility providers could more readily assess disparities within a particular facility. Mechanisms are already in place that could be slightly modified to allow policymakers to make quality measures by race available to the general public, facility providers, and regulators. Additional regulations requiring facilities to address disparities that carry civil monetary penalties may also help ensure more uniform and equitable practices among nursing home providers. Such regulations and surveyor oversight have been effective.
at reducing the overall rate of restraint usage in the United States and could be just as effective at eliminating racial and ethnic disparities in nursing facilities.

Social work and other health care researchers must continue to bring to light disparities within the nursing home industry and to identify specific practices that may contribute to unequal treatment for some racial and ethnic groups. Additional research is needed to determine if disparities in the use of physical restraints are indeed a widespread phenomenon or if these findings are indicative of facility-level problems in poor-performing facilities that tend to care for greater percentages of black residents. Interventions to increase cultural diversity and cultural sensitivity while eradicating disparities should be tested. Findings must be disseminated not only in peer-reviewed scholarly journals and academic conferences, but also in plain language summaries that can be easily disseminated and replicated by nursing home providers.

CONCLUSION
This research adds greatly to our knowledge of restraint disparities in American nursing homes, but because secondary data from the NNHS of 2004 were used in this study, we had no control over the variables collected. Much of the data collected were drawn from the Minimum Data Set, a comprehensive assessment completed by facility staff for reimbursement and regulatory purposes. Data collected by independent researchers may include less bias than data provided by facility providers for reimbursement and regulatory purposes. Because of confidentiality, we were unable to link resident-level data to organizational-level data and employee-level data to examine the relationship between organizational and employee factors on restraint disparities. Future research that considers the geographic location of facilities, facility ownership, employee racial composition, and employee cultural diversity and sensitivity could add greatly to our understanding of restraint disparities.

Disparities in the use of physical restraints by race in nursing homes are a concerning phenomenon and a violation of basic human rights. Frail elders who depend on others for personal care are among the most vulnerable groups in our society. Practitioners, policymakers, and researchers can make a difference and find ways to eradicate all disparities within the nursing home industry, but collaboration and ongoing efforts are needed to successfully eliminate racial and ethnic disparities in health care. In an ideal world, physical restraints would be a thing of the past, but until they are, the least we can do is ensure that all races are treated equitably by our health care system.

REFERENCES


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**SELF-CARE IN SOCIAL WORK**

A Guide for Practitioners, Supervisors, and Administrators

Kathleen Cox and Sue Steiner

Social workers encounter a number of unique forms of occupational stress on a daily basis. The more thoroughly they understand the stressors they face, the better-prepared social workers will be able to manage them successfully. *Self-Care in Social Work* is a guide to promote effective self-care tailored to the needs of social workers, including both individual and organizational approaches. On a personal level, it goes beyond the typical prescriptions to exercise, eat well, sleep more, and get a massage or meditate. In fact, the book is based on the premise that self-care should not be an add-on activity only happening in the rare instance when there is some free time. Instead, it is conceptualized as a state of mind and considered an integral part of a social worker’s training.

In *Self-Care in Social Work*, the reader is taught how to approach individually oriented self-care through the development of self-awareness, self-regulation, and self-efficacy. At the organizational level, readers are guided through a process of learning about areas of match and mismatch between themselves and their agency structure and culture. This book is particularly timely as the economic downturn continues to create stressful working conditions by pressuring agencies to do more with less.


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