Physical Abuse of Older Adults in Nursing Homes: A Random Sample Survey of Adults With an Elderly Family Member in a Nursing Home

Lawrence B. Schiamberg PhD [a] , James Oehmke PhD [b] , Zhenmei
Zhang PhD [c] , Gia E. Barboza PhD [d] , Robert J. Griffore PhD [a] ,
Levente Von Heydrich MSWPhD [a] , Lori A. Post PhD [e] , Robin P.
Weatherill PhD [f] & Teresa Mastin PhD [g]

[a] Human Development and Family Studies, Michigan State University,
East Lansing, Michigan, USA

[b] Department of Agricultural Economics, Michigan State University,
East Lansing, Michigan, USA

[c] Department of Sociology, Michigan State University, East Lansing,
Michigan, USA

[d] Department of African American Studies, Northeastern University,
Boston, Massachusetts, USA

[e] Department of Emergency Medicine, School of Medicine, Yale
University, New Haven, Connecticut, USA

[f] National Center for PTSD, VA Boston Healthcare System, Boston,
Massachusetts, USA

[g] Public Relations and Advertising, College of Communication,
DePaul University, Chicago, Illinois, USA

Available online: 29 Dec 2011

PLEASE SCROLL DOWN FOR ARTICLE

Routledge
Taylor & Francis Group

Physical Abuse of Older Adults in Nursing Homes: A Random Sample Survey of Adults With an Elderly Family Member in a Nursing Home

LAWRENCE B. SCHIAMBERG, PhD

Human Development and Family Studies, Michigan State University, East Lansing, Michigan, USA

JAMES OEHMKE, PhD

Department of Agricultural Economics, Michigan State University, East Lansing, Michigan, USA

ZHENMEI ZHANG, PhD

Department of Sociology, Michigan State University, East Lansing, Michigan, USA

GIA E. BARBOZA, PhD

Department of African American Studies, Northeastern University, Boston, Massachusetts, USA

ROBERT J. GRIFFORE, PhD and LEVENTE VON HEYDRICH, MSW, PhD

Human Development and Family Studies, Michigan State University, East Lansing, Michigan, USA

LORI A. POST, PhD

Department of Emergency Medicine, School of Medicine, Yale University, New Haven, Connecticut, USA

ROBIN P. WEATHERILL, PhD

National Center for PTSD, VA Boston Healthcare System, Boston, Massachusetts, USA

TERESA MASTIN, PhD

Public Relations and Advertising, College of Communication, DePaul University, Chicago, Illinois, USA

Few empirical studies have focused on elder abuse in nursing home settings. The present study investigated the prevalence and risk factors of staff physical abuse among elderly individuals receiving nursing home care in Michigan. A random sample of 452 adults with elderly relatives, older than 65 years, and in nursing home care completed a telephone survey regarding elder abuse and neglect experienced by this elder family member in the care setting. Some 24.3% of respondents reported at least one incident of physical abuse by nursing home staff. A logistic regression model was used to estimate the importance of various risk factors in nursing home abuse. Limitations in activities of daily living (ADLs), older adult behavioral difficulties, and previous victimization by nonstaff perpetrators were associated with a greater likelihood of physical abuse. Interventions that address these risk factors may be effective in reducing older adult physical abuse in nursing homes. Attention to the contextual or ecological character of nursing home abuse is essential, particularly in light of the findings of this study.

KEYWORDS   elder abuse, physical abuse, ecological perspective, nursing homes

INTRODUCTION

Elder abuse is a significant social problem that has received increasing attention in medical and social science research over the past 20 years. Although findings are available for abuse occurring in the home or community (Lachs & Pillemer, 2004; Schiamberg & Gans, 1998, 1999, 2000), less is known about the nature and scope of elder mistreatment in nursing homes, arguably an even more vulnerable population (Gibbs & Mosqueda, 2004; Hawes, 2003). Older adult residents of nursing homes may be at increased risk for abuse because of chronic diseases that require institutionalization and that, in turn, lead to chronic limitations of physical or cognitive functions. Although studies of Adult Protective Services (APS) reports and Medicaid records have documented the psychological and physical harm done by such abuse in the community (Dong, 2005), including higher mortality rates (Lachs, Williams, O'Brien, Pillemer, & Charlson, 1998), empirical research on prevalence and risk factors of elder abuse in nursing home care, is limited. Such research presents unique challenges to obtaining truly informed consent and accurate

reports from elders who may be unwilling or unable to participate in a standard survey. Some older adult nursing home residents may be reluctant to report abuse because they fear retaliation or feel hopeless that no one would help them or help make the situation better (Hawes, 2002).

This study presents the first analyses of risk factors and incidence of physical abuse of older adults in nursing home care, using a large random-sample telephone survey of adults with an elderly family member, ≥65 years, in a nursing home. In general, physical abuse includes slapping, pushing, or striking an older adult with an object, with the intent to inflict harm or pain. In nursing homes, physical abuse may include other behaviors such as inappropriate chemical or physical restraints. Also, in accordance with other researchers, who include sexual abuse and nonconsensual sexual involvement (e.g., being forced, threatened, or deceived into sexual activities ranging from looking or touching to intercourse or rape), the current investigation categorizes sexual abuse and nonconsensual sexual involvement as physical abuse (Hawes, 2003). The purpose of this investigation was to estimate prevalence of physical abuse in nursing homes and to identify individual and social/contextual risk factors of physical abuse.

REVIEW OF RESEARCH

Prevalence and Types of Reports of Elder Abuse

Although there have been frequent reports of mistreatment and abuse of older adult nursing home residents, there has not been sufficient or systematic studies of the prevalence of physical abuse or other types of abuse in nursing homes (Hawes, 2002). An early study found that 36% of nursing home staff reported witnessing physical abuse by staff to patients, and 10% acknowledged being physically abusive themselves (Pillemer & Moore, 1989). The reporting of elder abuse in nursing homes and other long-term care arrangements has typically been accomplished through institutional reporting, often in collaboration with Medicaid Fraud Control Units, Adult Protective Services (APS), law enforcement officials and, in some states, through long-term care ombudsman programs (Brandl et al., 2007). Institutional reporting of elder abuse is often compromised, as indicated, by the mental or physical status of the older adult nursing home resident and frequently by fear that reporting of elder abuse by older adult residents or family members will result in retaliation. Even if reports of abuse are made, there is no assurance of adequate responses from the institutions or from regulatory or investigational entities (U.S. General Accounting Office, 2002).

As with institutional reporting of elder abuse, family reports are subject to inaccurate estimation of the problem. While nursing home staff might underestimate abuse because they or their colleagues could be perpetrators, family members may underestimate abuse for a variety of reasons. They may

not be informed about all acts of abuse or they may not feel comfortable discussing nursing home abuse because of residual guilt associated with involvement in the initial institutionalization decision for the older adult (Hawes, 2003; Hawes, Blevins, & Shanley, 2001). Since some bias may be associated with each reporting format, one source of data cannot be assumed to be the standard against which all others should be validated. Although comparative studies of types of reporting strategies are rare, recent evidence using the data set for this research found that incidents of abuse reported by family members appear to be higher than incidents reflected by official data from the Michigan Long-Term Care Ombudsman Program (Zhang et al., 2011). Although limited, such findings point to the need for consideration of multiple reporting strategies for estimating institutional elder abuse.

Risk Factors

Promising theoretical perspectives for identifying the risk factors of elder abuse in nursing homes have emerged from ecological theoretical frameworks, as originally applied to domestic abuse of older adults by adult child caregivers (Schiamberg & Gans, 1998, 1999, 2000) and more recently extended to elder abuse in nursing homes (Schiamberg et al., 2011). The focus of this perspective is on the older adult–institutional caregiver relationship as the focal or immediate context for identifying and organizing risk factors, including more distal contexts such as family–older adult relationships and the broader institutional environment (e.g. monitoring of resident-on-resident abuse).

      Consistent with this perspective, existing research on risk factors of abuse in nursing homes suggests that behavior problems and conflict with institutional caregivers are strongly associated with physical abuse as reported in surveys of nursing staff (Goergan, 2001; Meddaugh, 1993; Pillemer & Moore, 1990). The connection between increased older adult dependency on either domestic caregivers or nursing home staff appears to be a critical feature for risk of elder abuse (Burgess, Dowdell, & Prentky, 2000). Specifically, the physical or cognitive limitations of older adults resulting from chronic diseases, which lead to increased dependency on caregivers, is a prominent risk factor for abuse in both domestic and nursing home contexts. For example, nursing home residents with diagnosed Alzheimer's dementia or with provocative behavioral symptoms such as verbal/physical aggressiveness were at greater risk for elder abuse than those without such diagnoses or behaviors (Burgess et al., 2000; Pillemer & Bachman-Prehn, 1991). The risk of abuse in nursing homes may be greater than in domestic settings because of the likelihood that nursing home residents have a preponderance of physical and cognitive factors leading to dependency on staff caregivers (Krauss & Altman, 1998). Factors influencing

the response of the institutional caregiver to the potentially provocative characteristics and behaviors of dependent nursing home residents are additional key risk factors in elder abuse in nursing homes (Hawes et al., 2001).

With reference to demographic risk factors and abuse in nursing homes, both age and gender have frequently been implicated, although results often have been ambiguous. For example, some studies find that women are more likely to be abused (Tatara et al., 1998), and others find more male victims (Pillemer & Finkelhor, 1988). The "oldest old" also may be more vulnerable, with more victims over 80 found in some studies (Tatara et al., 1998), but not others (Comijs, Pot, Smit, Bouter, & Jonker, 1998).

The role of contexts beyond the immediate and focal context of the older adult–caregiver relationship are seen as essential to understanding the risk factors of elder abuse in nursing homes and domestic settings (Schiamberg et al., 2011; Schiamberg & Gans, 1998, 1999, 2000). These significant, yet more distal, contexts include the older adult–family relationship and the older adult–other nursing home resident relationship, including nonstaff abuse. While there is considerable evidence that the characteristics of family caregivers are related to abuse in domestic settings (Fulmer et al., 2005; Schiamberg & Gans, 1998, 1999, 2000), much less is known about the role of the older adult–family relationship in nursing home abuse. Recent evidence points to a significant role for family communication in the prevention of elder abuse in nursing homes (Donohue, Dibble, & Schiamberg, 2008).

Although previous research on elder abuse in nursing homes has identified two types of perpetrators—staff abusers and nonstaff abusers (i.e., other residents or volunteers)—the focus of most investigations is on staff abusers. The relationship between staff abuse and nonstaff, or resident-to-resident abuse, has never been explored. Most of the residents in nursing homes who experience some form of resident-to-resident abuse are cognitively impaired, are considered to have inappropriate social skills, and are prone to wandering or being verbally abusive to other residents or staff (Shinoda-Tagawa et al., 2004). There is evidence that residents least likely to be victims of resident-to-resident abuse were those frequently observed and served by staff because of serious health circumstances, with limited mobility, and, in turn, significantly dependent on caregivers (Shonoda-Tagawa et al., 2004). In addition, resident-to-resident abuse has been found to be as much as three times more likely for older adults with Alzheimer's disease in nursing homes (Shonoda-Tagawa et al., 2004). While nursing home staff might be expected to be alert to indicators of potential resident-to- resident abuse, currently there are there no effective reporting procedures for such abuse, reinforcing the importance of staff training and family involvement (Lachs, Bachman, Williams, & O'Leary, 2007).

The above review of research on factors related to physical abuse in nursing homes points to two primary research questions: (a) What

is the prevalence of physical abuse for older adult (≥65) nursing home residents? (b) What are the risk factors for physical abuse for this nursing home population? A number of potential risk factors emerge in the review of research. These include *individual demographic characteristics of the older adult,* such as age, gender or possibly education; *individual functional/performance factors*, including ADL limitations, diagnosis of Alzheimer's disease, or cognitive impairments (e.g., memory problems, mental confusion), and older adult behavioral problems with staff caregivers or other nursing home residents (e.g., physical or verbal provocation, often a behavioral manifestation of Alzheimer's disease); and *factors distal to the immediate older adult/caregiver relationship context*, including older adult–family relationship characteristics (e.g., perceived emotional closeness of the responsible family member and the older adult nursing home resident) and the relationship of the older adult to other nursing home residents (e.g., incidents of resident-on-resident abuse).

METHODS

Study Design

The "Michigan Survey of Households with Family Members Receiving Long-Term Care Services" was a random digit dial telephone survey of the noninstitutionalized population of adults in Michigan who have a relative receiving long-term care services. Long-term care was defined as any paid service to assist a family member to accomplish normal daily activities in the community setting or in a facility such as a nursing home. The original sample of 1,002 individuals who completed the random digit dial telephone survey consisted of family respondents with a relative of any age in long-term care. The age range of relatives in long-term care was 11 to 97 years of age or older. However, 769 or 77% of the 1,002 individuals in all types of long-term care, including nursing homes, were ≥65 years of age. Of those 769 cases, the specific sample for this study included only 452 cases with an elderly adult ≥65 years of age in a nursing home.

The design of the study was cross-sectional, with retrospective sequences of households with a family member in long-term care. The interview provided an opportunity for gathering detailed histories of older adults in a nursing home, including older adult behavioral and health characteristics and types/levels of abuse. Using a computer-assisted interview system (CATI), interviews were conducted by the professional staff of Schulman, Ronca and Bucuvalas, Inc. from October through December of 2005.

Data for this study were based on telephone interview responses from family members, rather than from the older adult nursing home residents themselves. Typically, studies of elder abuse in the community rely on victim or caregiver accounts of the nature and frequency of the abuse. As

indicated, this is particularly difficult, if not impossible, to do with elders in nursing home care. Victims of elder abuse, assuming they are even available, may be unable to accurately answer questions pertaining to abuse due to embarrassment, fear of reprisal, or poor cognitive or verbal abilities. It may be impossible to obtain informed consent from individuals affected by dementia. On the other hand, caregivers in nursing homes are, in many instances, the individuals who are committing the abuse, and hence they too will most probably not be forthright. Less biased accounts might be obtained from informed respondents (in this case, family members) who are familiar with the care of the institutionalized elder (Harris & Benson, 2006).

The response rate for the random digit dialing (RDD) methodology used in this study is calculated as the ratio of the number of completed telephone interviews to the number of all potentially eligible respondents or telephone contacts (i.e., completed interviews plus eligible nonrespondents). The response rate for this study was 64%, which is considered very good for RDD telephone surveys (see the American Association for Public Opinion Research website for a detailed description of response rate calculations; http://www.aapor.org/standard).

Subjects

The final analytical sample ($N = 452$) for this study included respondents who answered questions about physical abuse and had relatives 65 years of age and older living in a nursing home. As indicated in Table 1, study respondents were overwhelmingly family members (97%), with an adult child being the most frequent category of family member (41.6%).

For the final analytical sample, the question of missing data was addressed for all variables in the study, including both the nine predictor

TABLE 1 Characteristics of Respondents

Variable	Frequency	Percentage
Spouse	34	7.5
Sibling	29	6.4
Child	188	41.6
Parent	2	0.4
Grandchild	67	14.8
Daughter/Son-in-Law	34	7.5
Niece/Nephew	31	6.9
Mother/Father-in-Law	14	3.1
Self	1	0.2
Friend	7	1.5
Other Relative	40	8.8
Attorney	5	1.1
TOTAL	452	100

variables and the dependent variable. *For predictor variables*, there was a small level of missing data on six of the nine predictor variables in the study model (missing data for educational level, diagnosis of dementia, diagnosis of Alzheimer's, ADL limitations, emotional closeness, and behavioral problems; no missing data for age, gender, and nonstaff abuse). Of the total possible response values for the entire analytical sample on the nine predictor variables (4,068 possible response values), only 1.3% or 53 of those possible response values were missing. *For the dependent variable*, again, there was a small level of missing data on each of the three individual measures that comprised the global dependent measure of physical abuse (injury to the body of the older adult, inappropriate restriction of mobility, sexual abuse, and nonconsensual sexual involvement). Of the total possible response values for the analytical sample for the three components of the dependent variable (1,356 possible response values), only 2.1% or 29 of those possible response values were missing. For missing data for the both the predictor variables and dependent variables, values were imputed using the Systat EM Method for data imputation, which estimates values using the maximum likelihood method. For the predictor variables and again for the dependent variable, the Little MCAR (missing completely at random) test statistic for the imputed values used in the study was not statistically significant, indicating that the null hypothesis (i.e., data not missing completely at random) was rejected (Chen & Little, 1999; Little & Rubin, 2002).

Measures/Variables

THE DEPENDENT VARIABLE: PHYSICAL ABUSE

Physical abuse is defined as the infliction of physical harm, pain, physical coercion, and also may include sexual abuse (Hawes, 2003; Kosberg & Nahmiash, 1996; Lachs & Pillemer, 1995). To capture a full array of possible dimensions of physical abuse, a global measure of staff physical abuse was developed, which included three specific manifestations using related interview questions from the study. For each of the following three manifestations of physical abuse, respondents were asked to indicate how many incidents the older adult had ever experienced in a long-term care setting (none, 1–2, 3–5, 6–10, more than 10, *don't know/refuse)*:

1. *Injury to the body of the older adult.* This measure was based on the following prompt: "Let's start with incidents of physical mistreatment by staff or other caregivers such as striking, hitting, beating, pushing, shoving shaking, slapping, kicking, pinching, or bumping."
2. *Inappropriate restriction of mobility.* This measure was based on the following prompt: "Now I am interested in other types of caretaking mistreatment by staff ... such as over-administration of drugs

... inappropriate use of physical restraints, unjustified force feeding, inappropriate toileting practices, or physical punishment."

3. *Sexual abuse and nonconsensual sexual involvement.* This measure included being forced, threatened, or deceived into sexual activities ranging from looking or touching to intercourse or rape, and was based on the following prompt: "Now we want to discuss incidents of sexual misconduct by staff or other caregivers such as forced sex, sexual contact without consent, sexual coercion, and unwanted touching."

A binary variable was constructed for the three-part global measure of physical abuse. The variable took the value of 1 if an incident of physical abuse had been reported for *one or more of the three types of physical abuse* (comprising the global measure) over the duration of the older adult's nursing home residence. A value of 0 was used otherwise. The incidence of staff physical abuse for individual older adults was measured using the binary global physical abuse measure, based on whether an older adult nursing home resident was reported by the respondent (i.e., typically a family member) to have been subjected to one or more of the three types of abuse.

PREDICTOR VARIABLES

The predictor variables were designed to capture an array of older adult characteristics, characteristics of the relationship between the respondent and the older adult, and contextual factors extending beyond the immediate focal context of older adult/institutional caregiver. The following predictor variables and measurement strategies were used in the study.

Age is the chronological age in years of the resident. *Gender* is a binary variable, with 1 = female and 0 = male. *Educational level* measures the older adult's highest level of schooling as reported by the family respondent, with a range of possible responses from no formal schooling to a postgraduate degree. *Behavioral problems* is a binary variable taking the value of 1 if the respondent reported that the patient has behavior problems such as being abusive physically or verbally, or actively resisting care, and 0 otherwise. *ADL limitations* are the activities of daily living (e.g., bathing, dressing, getting around or moving inside the facility, getting in or out of a bed or chair, toileting, eating) that the resident cannot perform without help (each ADL is treated as a binary variable, with a yes = 1 and a no = 0). *Alzheimer's disease* takes a value of 1 if the respondent reports that the patient has been diagnosed as having Alzheimer's disease, and a value of 0 otherwise. *Dementia (non-Alzheimer's)* takes a value of 1 if the older adult has been diagnosed with dementia unrelated to Alzheimer's disease, and a value of 0 otherwise. *Nonstaff abuse or resident-to-resident abuse* measures whether or not the older adult nursing home resident has ever been mistreated in the

nursing home by an individual who was not a caregiver or member of the nursing home staff (the variable assumes the value of 1 if there has been at least one such incident, and 0 otherwise). *Emotional closeness* is the respondent's answer to the question "How would you characterize the closeness of your relationship with the older adult . . . where 1 = emotionally distant and 10 = emotionally close?"

RESULTS

Incidence of Physical Abuse

The incidence of physical abuse in nursing homes is described in two ways, the first being by the use of the number and percentage of individuals in the total sample ($n = 452$) who were abused (i.e., subjected to one or more of the three measures of the binary global physical abuse measure). Using the binary variable strategy for measuring the incidence of physical abuse (described above), 110 older adult nursing home residents, or 24.3% of the final analytical sample ($n = 452$), were subjected to physical abuse by nursing home staff (see Table 2).

   Second, the incidence of physical abuse is described by the type of physical abuse (i.e., the number and percentage of each of the three types of abuse in terms of the total number of *types* of abuse). The frequencies and percentages *of the total number of types of physical abuse* for the three types of physical abuse are as follows: *physical mistreatment by staff* (e.g., hitting, beating, kicking, and so on), $n = 44$ or 27%; *caretaker mistreatment, including inappropriate use of restraints, forced toileting, or unjustified forced feeding*, $n = 103$ or 62%; *staff sexual abuse*, $n = 18$ or 11% (see Table 2). In our view, both measures of incidence are useful for understanding physical abuse in nursing homes.

TABLE 2 Incidence of Physical Abuse (by Number of Older Adults and by Abuse Types Reported by Respondents)

Variable	Frequency	Percentage
Incidence: Older Adults Subjected to Physical Abuse	110	24.3
TOTAL	452	100
Incidence: Type of Physical Abuse		
Physical mistreatment by nursing home staff	44	27
Sexual abuse perpetrated by nursing home staff	18	11
Forced use of restraint (e.g., forced feeding, toileting)	103	62
TOTAL	165	100

Risk Factors of Physical Abuse

CHARACTERISTICS OF THE OLDER ADULT SAMPLE

The demographic breakdown (see Table 3) of nursing home residents whose relatives completed the questionnaire was largely Caucasian (91.4%). Some 72% of nursing home residents were females and almost two-thirds (64.8%) of all nursing home residents were widowed. Every resident suffered from at least one physical, cognitive, and psychiatric disability, and a significant number had more than one disability or disease (e.g., 38% were diagnosed with Alzheimer's disease and 78.8% suffered from one or multiple forms of cognitive illnesses). Over 83% of elderly nursing home residents suffered from one or multiple ADL limitations. A significant proportion of nursing home residents (21.7%) exhibited behavior problems that increased the likelihood of being physically abused. Survey respondents (typically family

TABLE 3 Older Adult Characteristics

Variable	Frequency	Percentage
Gender		
Male	121	26.8
Female	331	73.2
Ethnicity		
Caucasian	413	91.4
African American	29	6.4
Asian American	1	0.2
Hispanic/Latino	1	1.3
Native American	1	0.2
Middle Eastern	1	0.2
Other	1	0.2
Education Level		
No formal schooling	3	0.7
High school or less	324	85.8
Bachelor degree or less	77	8.8
Graduate degree	26	4.7
Marital Status		
Single–never married	31	6.9
Married	100	22.1
Widowed	293	64.8
Divorced	28	6.2
Health/Functional Status		
Alzheimer's disease	169	38
Psychiatric diagnoses	57	12.8
Cognitive problems	354	78.8
ADL limitations (at least one)	344	83.7
Behavior problems	97	21.7
Age		
65–74	52	11.5
75–84	185	40.9
85+	215	47.6

members) overwhelmingly (93%) reported close emotional ties with their relatives placed in nursing home.

OLDER ADULT DEMOGRAPHIC CORRELATES OF PHYSICAL ABUSE

The only statistically significant demographic predictor of staff physical abuse was age. Since increased age is often associated with increased chronic diseases and disabilities, it might be expected that the likelihood of physical abuse also would increase with age. However, the finding from this investigation suggested that the impact of age on the probability of physical abuse was significant, albeit in the opposite direction predicted (see Table 4). For each additional year of the elderly person's age, the odds of abuse decreased by 0.4882 (or 49%), assuming that the other predictor variables in the model are held constant (log odds $= -0.047$; odds $= 0.954$; $p = 0.4882$).

To explore possible explanations for the inverse relationship between age and physical abuse, ANOVA was used to identify possible interactions or mediating effects that might help to explain the relationship. Of the variables considered in the study, the interaction effect between nonstaff abuse (or resident-to-resident abuse) and age was the only significant interaction ($p = 0.001$), given staff physical abuse as the dependent variable. That is, with increasing age, the likelihood of nonstaff abuse increases in magnitude, as we had initially expected for staff physical abuse.

The negative sign of the β coefficient for age (see Table 4) raised concerns about possible multicollinearity, which can result in incorrect signs and/or inaccurate magnitudes of regression coefficient estimates. Visual inspection of the correlation matrix for all study variables indicated that none of the correlations exceeded 0.191. In addition, no multicolinearity between predictor variables was found using the Collinearity Diagnostics Tool in

TABLE 4 Significance of Variables in the Staff Physical Abuse Equation

Variable	β Co-efficient	Odds/Ratio	Significance
Older Adult Demographic Factors			
Age	−0.047	0.954	0.004
Gender	−0.402	0.669	0.167
Education	0.001	1.001	0.992
Older Adult Health Factors			
ADL/help moving	0.925	2.521	0.011
Alzheimer's disease	−0.266	0.766	0.315
Cognitive impairment	−0.325	0.723	0.347
Behavioral problems	0.582	1.790	0.046
Contextual Factors (beyond the older adult/staff interaction)			
Nonstaff/resident-to-resident abuse	1.192	3.293	0.001
Emotional closeness to family	0.110	1.116	0.067

SPSS 17 statistical software. Calculated values for two specific multicollinearity tests in this software—Variance Inflation Factors or VIF and Tolerance Values—were below threshold values for multicollinearity. While VIF values exceeding 10 are generally regarded as indicative of multicollinearity and values exceeding 2.5 as cause for concern in logistic regression, none of the calculated VIF values exceeded 1.5. In addition, all Tolerance Values were close to 1, indicating that all of the variables in the study were orthogonal to each other, or uncorrelated with one another.

HEALTH CORRELATES OF PHYSICAL ABUSE

Since there were six ADLs in the study, a first level of analysis explored the question of whether one or more ADL limitations would place individuals at greater risk for staff physical abuse than no ADL limitations. The goodness of fit of the logistic regression model with the study outcome data indicated that older adult nursing home residents with one or more ADL limitations were at greater risk for staff physical abuse in nursing homes than older adults with no ADL limitations. This finding was confirmed using the Hosmer-Lemeshow (1989) test for the goodness of fit of the logistic regression model with the study outcome data; χ square $= 3.485$, $df = 8$, $p < 0.05$; further, the model fit value of $p = 0.900$ indicated a very good fit with the data.

A second level of analysis involved the identification of the specific ADL or ADLs that contributed to this effect. A stepwise backwards logistic regression demonstrated that one ADL limitation—"Needing Help Moving" (i.e., needing assistance getting around or help moving inside the facility)—was the only significant predictor of physical abuse in the nursing home (see Table 4 where $\beta = .925$, $OR = 2.521$, $p = 0.011$). Taken alone, the "Help Moving" ADL limitation increased the risk of physical abuse by 89% (log old s $= 2.122$; odds $= 8.3478$; physical abuse $= 0.8930$), more than tripling the probability of physical abuse.

Older adults with a simple diagnosis of Alzheimer's disease or a diagnosis of cognitive impairment (e.g., failing memory, difficulty communicating, or difficulty concentrating) were not found to be at higher risk of physical abuse than patients without such diagnoses. However, behavioral problems frequently associated with the diagnosis of Alzheimer's disease (e.g., provocative verbal or physical outbursts) are a significant predictor of staff physical abuse ($p = 0.046$). For example, taken alone, older adult behavioral problems increase the probability of physical abuse by 85% (log odds $= 1.779$; odds $= 5.9239$; physical abuse $= 0.8555$ or 85%).

CONTEXTUAL FACTORS BEYOND THE FOCAL OLDER ADULT/INSTITUTIONAL CAREGIVER CONTEXT

Although it might be expected that an older adult nursing home resident with a close/supportive relationship with a primary/responsible family member

will be at less risk for physical abuse in the nursing home than an older adult with a less close/supportive family relationship, results for emotional closeness and physical abuse did not attain statistical significance, although they were in the predicted direction ($p = 0.067$). On the other hand, the expectation that an older adult with a history of victimization by nonstaff members (e.g., other residents or volunteers) in nursing homes is more likely to be physically abused by staff than an individual who has not been abused before by nonstaff members was found to be a statistically significant predictor ($p = 0.001$). A 1-unit increase in nonstaff abuse will result in a 92% increase in the likelihood of physical abuse (log odds = 2.384; odds = 10.8482; physical abuse = 0.9155 or 92%).

DISCUSSION

Prevalence of Physical Abuse

The estimated incidence of physical abuse in nursing homes (24.3%) suggests that a substantial number of older adult nursing home residents may be subject to one or more types of staff physical abuse, reaffirming the gravity of the problem. In addition to incidence as measured by the number of individuals affected, the incidence of *types* of staff physical mistreatment (i.e., *physical mistreatment*, such as hitting or slapping; *caretaking mistreatment*, such as inappropriate use of physical restraints or forced feeding; *sexual abuse*) points to the need for careful scrutiny of factors and contexts associated with each type of physical abuse. For example, since the majority of incidents of staff physical abuse involve caretaking mistreatment, caretaker training related to managing potentially frustrating circumstances in the normative delivery of caretaker services would be potentially helpful in reducing physical abuse in nursing homes.

Although prevalence estimates of institutional abuse, including staff physical abuse, are useful in assessing the dimensions of the problem, they are subject to bias involving potential underestimation or overestimation of physical abuse in nursing homes. There well may be significant underestimates of institutional elder abuse that are based on reports of institutional caregivers or government estimates of abuse based on institutional or police reports (Brandl et al., 2007; Hawes, 2003). That said, there is limited research on the family respondent methodology used in this study that may, in turn, be subject to underestimation of physical abuse (Hawes, 2002; Hawes et al., 2001) or possible overestimation (e.g., family members thinking older adults were abused when, in fact, they were not). While there in not a perfect system for estimating physical abuse in nursing homes, there is reason to give some credence to the value of family reports of physical abuse, particularly as in this study where family respondents may have felt free to comment openly about institutional physical abuse that was not tied to an

identified nursing home or to an older adult identified by name. Further research needs to be done comparing family reports of elder abuse with incidence estimates based on institutional reporting, including through Medicaid Fraud Control Units, APS, and law enforcement officials, and, in some states, through Long-Term Care Ombudsman programs (Brandl et al., 2007).

Correlates and Risk Factors of Abuse

DEMOGRAPHIC CHARACTERISTICS OF OLDER ADULTS

It is not altogether clear why age should be significantly, yet inversely, related to physical abuse of older adults in nursing homes. Why, for example, should age, typically linked to a variety of older adult physical disabilities and diseases that might create dependency, stress, and possibly abuse in a caregiving relationship, be instead associated with a systematic decrease in physical abuse? Several related factors may be at work to moderate the expected positive and significant relationship between age and staff physical abuse. First, as indicated, there is the existing strong relationship between age and resident-to-resident abuse in nursing homes. This finding is consistent with evidence that resident-to-resident abuse is more likely for older adults with Alzheimer's disease in nursing homes, with age positively associated with increasing rates of Alzheimer's disease (Shinoda-Tagawa et al., 2004). Thus, in nursing homes, it is possible that age is more commonly linked to resident-to-resident abuse such that it substantially moderates the relationship between age and staff physical abuse.

Second, with increasing age, staff physical abuse may actually decrease because the pattern of provocative resident behaviors are both better understood and anticipated, resulting in older residents typically requiring closer group staff supervision and monitoring. This shift in context of care, from one-on-one staff–resident interactions, to group supervision and monitoring, may reduce resident dependence on individual staff, levels of related staff frustration and, in turn, the likelihood of staff physical abuse. Further research is necessary to clarify such possible explanations.

Based on the findings of this investigation, the relationship between age and physical abuse in nursing homes may be more complex than initially assumed. Additional research is necessary to confirm the inverse relationship of age with physical abuse found in this study and to clarify the specific circumstances, if any, which might mitigate that assumed relationship (e.g., older adult health status and treatment).

HEALTH/BEHAVIORAL CHARACTERISTICS OF THE OLDER ADULT

Older adult behavioral problems (e.g., abusive physical or verbal behaviors, including extreme resistance to treatment) are significantly related to physical abuse in nursing homes. This outcome is consistent with other

research findings (Burgess et al., 2000; Goergan, 2001). Furthermore, in identifying and understanding the health and behavioral risk factors of physical abuse in nursing homes, it would seem important to distinguish between the simple diagnosis of either Alzheimer's dementia or cognitive impairments associated with non-Alzheimer's dementia or Alzheimer's and the actual older adult behavioral outcomes of those diagnoses. In particular, the findings of this study support the notion that actual patient behavioral problems, often associated with Alzheimer's or non-Alzheimer's dementia, are primary risk factors for physical abuse in nursing homes.

While this investigation found that one or more ADL limitations place individuals at greater risk for staff physical abuse, it is not clear why one specific ADL limitation, "Need Help Moving," should emerge as the only significant or primary predictor of staff physical abuse. One possible explanation may be that, unlike the other five ADL limitations (bathing, dressing, toileting, getting in and out of bed or a chair, eating) that may have typically defined locations and/or expected times, needing help moving around a facility may occur at almost any time and any place in a facility. While it could occur in expected locations and times where planned activities (e.g., music, games) are going on, and therefore be part of an expected or typical scenario, it could also occur frequently and unpredictably. For example, older adults in early/middle stages of Alzheimer's disease may be prone to wandering about a facility at an unpredictable time or in an unexpected location, requiring help returning to their rooms and creating frustration for both caregiver and/or the older adult (Van Wyk, Benson, & Harris, 2000).

CONTEXTUAL FACTORS BEYOND THE FOCAL OLDER ADULT/INSTITUTIONAL CAREGIVER CONTEXT

The findings of this study point to the significance of resident-to-resident abuse as a risk factor in staff physical abuse in nursing homes. Consistent with research on adolescent bullying that suggests that some individuals may take on the role of "victim" (Barboza et al., 2009), individuals who are chronic victims of abuse by other residents may display some nonmeasured characteristics that place these individuals in the role of a victim. Perhaps the older adult engages in risky behavior, appears cowering or timid, or is socially challenged, which in turn might increase the likelihood of physical abuse. Nonstaff abuse possibly captures characteristics of the victim that make the older adult a chronic victim. While few studies have examined nonstaff abuse, incident estimates suggest both the severity of the problem and the importance of identifying risk factors, such as cognitive impairment or verbal aggressiveness that may be common triggers for staff abuse or others (as yet unidentified), which are unique to resident-on-resident abuse. Further research is needed to delineate the reasons why resident-on-resident

abuse appears to be a key predictor of staff physical abuse, as well as to develop interventions for mitigating resident victimization.

The findings on emotional closeness, while not significant, are in the predicted direction. Further, they point to the important and critical role of family members in overseeing nursing care of older adults. In particular, joint partnerships that enhance the combined roles of institutional caregivers and family members enhance the individual resources and families in addressing elder abuse in nursing homes (Donohue, Dibble, & Schiamberg, 2008).

LIMITATIONS OF THE STUDY

While this study may illustrate a number of factors specifically related to the occurrence of staff physical abuse of older adult residents, at both immediate and more distal contexts of interaction, results should be interpreted with the limitations of the study in mind. Given that nursing home residents of Caucasian ancestry composed the main sample body (83%), findings should not be taken as accurate reflections of experiences in more multicultural contexts. While data collected in this study reflect the knowledge of family respondents about their older adult relatives in nursing homes, additional research is needed to compare the results of this study with research using other elder abuse reporting formats (e.g., institutional self-report, criminal justice reports, and government/agency data collection). Another limitation is that data were not collected on the characteristics and contexts of the institutional caregiver, an essential dimension of the focal context of physical abuse in the nursing home—the older adult/institutional caregiver context.

CONCLUSIONS AND POLICY RECOMMENDATIONS

Increased attention to the contextual or ecological character of nursing home abuse is essential, particularly in light of the findings of this study (Schiamberg et al., 2011). Staff physical abuse in nursing homes occurs in the context of the delivery of caregiving efforts, suggesting the value of focusing on the relational context of the older adult–institutional caregiver as an initial context for framing the key features of the relationship, including characteristics of the older adult and the staff caregiver. In addition, interactional contexts more distal to the older adult–institutional caregiver relationship, such as the family–older adult relationship and the resident-on-resident relationship, are essential to a full understanding of physical abuse in nursing homes. Finally, effective interventions for addressing staff physical abuse in nursing homes can be informed by the risk factors identified in this investigation, including those in immediate and more distal contexts.

REFERENCES

Barboza, G., Schiamberg, L., Oehmke, J., Korzeniewski, S., Post, L., & Hereaux, C. (2009). Individual characteristics and the multiple contexts of adolescent bullying: An ecological perspective. *Journal of Youth and Adolescence*, *38*, 101–121.

Brandl, B., Dyer, C. B., Heisler, C. J., Otto, J. M., Steigel, L. A., & Thomas, R. W. (2007). *Elder abuse detection and prevention*. New York, NY: Springer Publishing Company.

Burgess, A. W., Dowdell, E., & Prentky, R. (2000). Sexual abuse of nursing home residents. *Journal of Psychosocial Nursing*, *38*, 11–18.

Chen, H. Y., & Little, R. (1999). A test of missing completely at random for generalized estimating equations with missing data. *Biometrika*, *86*(1), 1–13.

Comijs, H. C., Pot, A. M., Smit, J. H., Bouter, L. M., & Jonker, C. (1998). Elder abuse in the community: Prevalence and consequences. *Journal of the American Geriatric Society*, *46* (7), 885–888.

Dong, X. Q. (2005). Medical implications of elder abuse and neglect. *Clinics in Geriatric Medicine*, *21*(2), 293.

Donohue, W. A., Dibble, J. L., & Schiamberg, L.(2008). A social capital approach to the prevention of elder abuse. *Journal of Elder Abuse & Neglect*, *20*, 1–23.

Fulmer, T., Paveza, G., VandeWeerd, C., Fairchild, S., Guadagno, L., Bolton-Blatt, M., & Norman, R. (2005). Dyadic vulnerability and risk profiling for elder neglect. *The Gerontologist*, *45*(4), 525–534.

Goergen, T. (2001). Stress, conflict, elder abuse and neglect in German nursing homes: A pilot study among professional caregivers. *Journal of Elder Abuse & Neglect*, *13*(1), 1–26.

Gibbs, L. M., & Mosqueda, L. (2004). Confronting elder mistreatment in long-term care. *Annals of Long-Term Care: Clinical Care and Aging*, *12*(4), 30–35.

Harris, D. K., & Benson, M. (2006). *Maltreatment of patients in nursing homes: There is no safe place*. New York, NY: Haworth Pastoral Press.

Hawes, C. (2003). Elder abuse in residential long-term care settings: What is known and what information is needed? In R. J. Bonnie & R. B. Wallace (Eds.), *Elder mistreatment: Abuse, neglect, and exploitation in an aging America* (pp. 444–500). Washington, DC: National Academies Press.

Hawes, C., Blevins, D., & Shanley, L. (2001). *Preventing abuse and neglect in nursing homes: The role of the nurse aide registries*. Report to the Centers for Medicare and Medicaid Services. College Station TX: Texas A&M System.

Hosmer, D. W., & Lemeshow, S. (1989). *Applied logistic regression*. New York, NY: Wiley.

Kosberg, J. I., & Nahmiash, D. (1996). Characteristics of victims and perpetrators and milieus of abuse and neglect. In L. A. Baumhover & S. C. Bell (Eds.), *Abuse, neglect and exploitation of older persons: Strategies for assessment and intervention* (pp. 31–50). Baltimore, MD: Health Professions Press.

Krauss, N. A., & Altman, B. M. (1998). *Characteristics of nursing home residents–1996* (AIICPR Pub. No. 99-0006). MEPS Research Findings, No. 5. Rockville, MD: Agency for Health Care Policy and Research.

Lachs, M., Bachman, R., Williams, C. S., & O'Leary, J. R. (2007). Resident-to-resident elder mistreatment and police contact in nursing homes: Findings from

a population-based cohort. *Journal of the American Geriatric Society*, *55*(6), 840–845.

Lachs, M. S., & Pillemer, K. (1995). Current concepts: Abuse and neglect of elderly persons. *New England Journal of Medicine*, *332*, 437–443.

Lachs, M. S., & Pillemer, K. (2004). Elder abuse. *Lancet*, *364*(9441), 1263–1272.

Lachs, M. S., Williams, C. S., O'Brien, S., Pillemer, K. A., & Charlson, M. E. (1998). The mortality of elder mistreatment. *Journal of the American Medical Association*, *280*(5), 428–432.

Little, R. J., & Rubin, D. B. (2002). Statistical analysis with missing data. New York, NY: Wiley.

Meddaugh, D. I. (1993). Covert elder abuse in the nursing home. *Journal of Elder Abuse & Neglect*, *5*(3), 21–37.

Pillemer, K., & Bachman-Prehn, R. (1991). Helping and hurting: Predictors of maltreatment of patients in nursing homes. *Research on Aging*, *13*(1), 74–95.

Pillemer, K., & Finkelhor, D. (1988). The prevalence of elder abuse: A random sample survey. *The Gerontologist*, *28*(1), 51–57.

Pillemer, K., & Moore, D. W. (1989). Abuse of patients in nursing homes: Findings from a survey of staff. *The Gerontologist*, *29*(3), 314–320.

Pillemer, K., & Moore, D. W. (1990). Highlights from a study of abuse of patients in nursing homes. *Journal of Elder Abuse & Neglect*, *2*(1/2), 5–29.

Schiamberg, L. B., Barboza, G. E., Oehmke, J., Zhang, Z., Griffore, R., Weatherill, R., . . . Post, L. (2011). Elder abuse in nursing homes: An ecological perspective. *Journal of Elder Abuse & Neglect*, *23*, 190–211.

Schiamberg, L., & Gans, D. (1998, September). *An ecological perspective to elder abuse by adult children*. Paper presented at the World Conference on Family Violence, Singapore.

Schiamberg, L., & Gans, D. (1999). An ecological framework for contextual risk factors in elder abuse by adult children. *Journal of Elder Abuse & Neglect*, *11*(1), 79–105.

Schiamberg, L., & Gans, D. (2000). Elder abuse by adult children: An applied ecological framework for understanding contextual risk factors and the intergenerational character of quality of life. *The International Journal of Aging and Human Development*, *50*(4), 329–359.

Shinoda-Tagawa, T., Leonard, R., Pontikas, J., McDonough, J. E., Allen, D., & Dreyer, D. (2004). Resident-to-resident violent incidents in nursing homes. *Journal of the American Medical Association*, *291*(5), 591–598.

Tatara, T., Thomas, C., Kusmeskus, L. B., Gertig, J., Duckhorn, E., & Jay, K. (1998). *National elder abuse incidence study: Final report*. Washington DC: National Center on Elder Abuse.

U.S. General Accounting Office. (2002). *Nursing homes: More can be done to protect residents from abuse* (GAO-T-HEHS-02–312). Washington, DC: U.S. Government Printing Office.

Van Wyk, J. A., Benson, M. L., & Harris, D. K. (2000). Test of strain and self-control: Occupational crime in nursing homes. *Journal of Crime and Justice*, *23*(2), 27–44.

Zhang Z., Schiamberg L. B., Oehmke J., Barboza G. E., Griffore R. J., Post L. A., . . . Mastin T. (2011). Neglect of older adults in in Michigan nursing homes. *Journal of Elder Abuse & Neglect*, *23*, 58–74.