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FINAL REPORT:

***An Examination of Resident Abuse in Assisted Living Facilities***

NATIONAL INSTITUTE OF JUSTICE

Nicholas Castle, Ph.D.

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## ABSTRACT

**Introduction.** An estimated 39,100 Assisted Living (AL) settings exist in the U.S., with about 971,900 beds, providing services to 733,300 persons every day. Elders living in AL settings may be particularly vulnerable to abuse because many suffer from cognitive impairment, behavioral abnormalities, or physical limitations – factors that have been reported as risk factors associated with abuse. In this research, perceptions of abuse in AL coming from a large sample of Direct Care Workers (DCWs) and administrators are examined.

**Methods.** Information on abuse came from two sources, administrators and DCWs in AL. A random sample of eligible AL settings (N=1,500) was selected from all 50 states. To obtain information administrators were asked if they were willing to complete the questionnaire. An incentive gift card was used (\$25). The administrator questionnaires were anonymous. Second, administrators were asked if they would be willing to distribute the questionnaire to DCWs. The DCW questionnaires were also anonymous.

**Results.** The applied psychometric statistics of the DCWs questionnaire were favorable. In general, the percent of missing responses was low averaging about 1%. Of the 15,500 DCW questionnaires distributed, a total of 12,555 returned the questionnaire. This gave a response rate of 81%. For the DCWs perceptions of abuse the highest percent was for staff arguing with a resident (9.65%). For the DCWs perceptions of resident-to-resident abuse, the highest percent was for arguing with another resident (12.83%) and the lowest percent was for digital penetration (0.02%). Of the 1,500 AL administrator questionnaires distributed a total of 1,376 were returned. This gave a response rate of 84%. For the administrators perceptions of abuse the findings for “Occurred Often (during the past 3 months)” are the highest for destroying things belonging to a resident (0.80%).

Some areas associated with abuse in multivariate analyses include external, organizational, and internal factors (especially lower staffing levels). Very few associations with demographic characteristics of DCWs were associated with abuse. Resident characteristics associated with high levels of abuse include residents with dementia and with physical limitations. Administrator characteristics associated with high rates of abuse include shorter tenure and lower education level.

**Conclusion.** Overall, we find resident abuse by staff to be relatively uncommon. However, in some areas (such as humiliating remarks) substantial improvements in the rates could be made. With respect to resident-resident abuse we find this to be more common than staff abuse. In both cases (staff abuse and resident-to-resident abuse) verbal abuse and psychological abuse were reported most often.

## EXECUTIVE SUMMARY

Recent statistics indicate that Assisted Living (AL) has become an important provider of services to elders in the U.S. An estimated 39,100 AL settings existed in 2010 (Park-Lee et al., 2011). In total these settings represented 971,900 beds (Park-Lee et al., 2011) and provided services to 733,300 persons daily (Caffrey et al., 2012). Elders living in AL settings may be particularly vulnerable to abuse because many suffer from impairments that have been reported as risk factors associated with abuse (Dyer, Connolly, & McFeeley, 2002; Pillemer, 1988). In this research, perceptions of abuse in AL coming from a large sample of Direct Care Workers (DCWs) and administrators are examined.

The National Research Council reports that “the national response to elder mistreatment still remains weak and incomplete... [E]lder mistreatment remains hidden, poorly characterized, and largely unaddressed” (Bonnie & Wallace, 2003, p. 18). This may be especially true for AL. Clearly, elder abuse may be extremely important in the daily lives of AL residents. It can greatly influence quality-of-life. Elder abuse in general is associated with adverse health consequences, including fractures, depression, dementia, and malnutrition (Lachs et al., 2002).

In this research, our understanding of abuse is broadened by expanding the institutional focus (i.e., by including a wide sample of AL settings), widening the scope of abuse (i.e., by including an emphasis on medications), including specific perpetrators (i.e., staff), and by elaborating on facility practices that may aid in preventing or contributing to abuse.

## RESEARCH DESIGN AND METHODS

**Source of Data.** Information on abuse came from two sources, administrators and DCWs. A random sample of approximately 7% (N = 1,500) of eligible AL settings was selected from all 50 states. Various names are used for settings that are often generically termed assisted living (e.g., residential care and congregate care). In this research, AL is used as a general term to represent all of these settings; however, to be included in this research, facilities must be “a long-term care setting that typically provides residents with support for activities of daily living (ADLs) and instrumental activities of daily living (IADLs).”

**Questionnaire Administration.** To obtain information administrators were asked if they were willing to complete the questionnaire. An incentive gift card was used (\$25). The administrator questionnaires were anonymous. However, facility ID codes were included on each survey.

Second, administrators were asked if they would be willing to distribute the questionnaire to DCWs. An example DCW questionnaire was sent to each administrator so that they could examine the content. It was requested that they distribute the survey to all full-time and part-time DCWs on all shifts (but to exclude none DCW staff). DCWs also received an incentive gift card (\$20). The DCW questionnaires were anonymous. However, facility ID codes were included on each survey.

Administrators from participating facilities were mailed prepackaged DCW questionnaires. This consisted of sealed envelopes containing: the questionnaire, a letter describing the study, and a postage-paid return envelope. Follow-up reminder mailings (and emails) were used for administrators.

**Questionnaire Development.** The first step in developing the questionnaire was to determine which areas of abuse to investigate. The emphasis in previous pilot research was on verbal, physical, material, psychological, caregiving, medication, and sexual abuse (Castle, 2012). This emphasis was further refined based on interviews with 4 Directors of Nursing and interviews with 10 DCWs (all from AL).

To help modify existing items and construct new items for the questionnaire, interviews with an additional 40 DCWs from 10 different facilities were also used. An open-ended question format was used, and DCWs were asked their perceptions on abuse questions, and perceptions on wording questions in general. They were given a \$20 gift card for participation.

Based on these interviews with DCWs, the pool of items was refined. That is, items were written to be relevant to DCWs (i.e., face validity), to be relevant to the AL context (i.e., content validity), and to be easily understood. The pool of items was also reduced by eliminating similar questions and by choosing the most-relevant questions (based on feedback from DCWs).

The final step in developing this questionnaire consisted of cognitive testing with 15 DCWs. This approach helps determine whether potential respondents answer a question in the way it intended to be answered. DCWs were given a \$20 gift card for participation. Specifically, for each question, the interviewer (i.e., author), determined whether the responses from the DCWs indicated a problem, potential problem, or no evidence of a problem with the question.

**Abuse Questionnaire Formatting.** Two questionnaire formatting items of importance are the issues of observing abuse and the reference period. Many forms of abuse can be perpetrated quickly, making observation less likely. Therefore, questions were asked using multiple formats: (1) see any staff do this; (2) the resident told you about staff doing this; (3) a family member told you about staff doing this; and, (4) someone other than a resident or family member told you about staff doing this.

Most items used a stem (i.e., lead in to the question) asking for information in the last three months of employment. This time period was chosen based on interviews with DCWs and past experience, but also because it is used on the CAHPS® Nursing Home Survey ([www.cahps.ahrq.gov](http://www.cahps.ahrq.gov)). The CAHPS® Nursing Home Survey was subject to extensive testing, including use of periods of observation (Sangl et al., 2007). However, it should be noted that the use of this time period has limitations, including recall accuracy by DCWs, and in this case the limitation of reducing the pool of respondents because they may not have been employed for this time duration (i.e., turnover of DCWs in many facilities is high).

**Analyses.** Bias from non-response is first examined. That is, facilities responding to the survey were compared to those that did not respond and facilities that respond to the survey were compared to all U.S. facilities. Second, the applied psychometric properties of the instrument were examined including the completeness of data, score distributions (i.e., ceiling and floor effects), item-scale consistency, and reliability of domain scores. Third, item responses are presented, including simple descriptive statistics consisting of the percent or mean for each of our questionnaire items. Finally, regression analyses were conducted examining factors such as: (a) the association of external, organizational, and internal factors with resident abuse; (b) the association of staffing factors with resident abuse; (c) the association of DCW characteristics with resident abuse; and, (d) the association of leadership characteristics with resident abuse.

## **RESULTS**

### **Applied Psychometric Properties**

In general, the percent of missing responses is low averaging about 1%. The question with the highest percent (10.54%) of missing responses was the “digital penetration” item. If abuse was identified, then each question asked for a number of occurrences. The percent of responses in the first category of occurrences “one time” and the fourth category of occurrences “5-6 times” shows that if abuse was identified, it tended to occur only one time. Using all of the information for the number of occurrences of abuse and giving a mean value (excluding those reporting no abuse) the mean number of responses is found to be low. Thus, for example, the mean number of cases of yelling at a resident observed (during the last 3 months) was 2.96. High inter-correlation values (above  $r = .50$ ) among the domain items are considered an indication of scale reliability. High inter-correlation values were found that also suggest that the items provide a true measurement of the underlying concept. All of the item-scale correlations were above the value of  $r = .50$ . Cronbach's alpha determines the internal consistency or average correlation of items in a survey, with 0.7 often presented as an acceptable reliability coefficient. All of the Cronbach's alphas are above 0.7.

### **Direct Care Workers Characteristics**

A total of 12,555 DCWs returned the questionnaire. This gave a response rate of 81%. Most of the DCWs were female (93%) and most were white (59%). The average time working in the current facility was 2.9 years.

### **Direct Care Workers Perceptions of Abuse**

The results for “did you see any staff do this?” show the highest percent was for staff arguing with a resident (9.65%). The results for “did the resident tell you about staff doing this” show the highest percent was also for staff arguing with a resident (5.90%). The results for “did a family member tell you about any staff doing this?” show the highest percent was for critical remarks to a resident (3.89%). The results for “did someone other than a resident or family member tell you about staff doing this?” show the highest percent was for threatening remarks to a resident (0.82%).

### **Direct Care Workers Perceptions of Resident-to-Resident Abuse**

DCWs were asked if they saw any residents abuse each other. The highest percent reported by DCWs was for one resident arguing with another resident (12.83%) and the lowest percent was for digital penetration (0.02%).

### **Assisted Living Sample Characteristics**

A total of 1,376 AL facilities (i.e., administrators) returned the questionnaire. This gave a response rate of 84%. The average number of beds in this sample was 59. This compares favorably with the national average of 54 beds. The average self-reported occupancy rate was 91%.

## **Assisted Living Administrators Perceptions of Abuse**

The findings for “Never (during the past 3 months)” show the highest percent is for digital penetration (100%) and the lowest percent is for making humiliating remarks to a resident. The findings for “Very Uncommon (during the past 3 months)” show the highest percent is for making humiliating remarks to a resident (48.84%) and the lowest percent is for making digital penetration (0%). The findings for “Uncommon (during the past 3 months)” show the highest percent is for staff arguing with a resident (8.28%) and the lowest percent is for making digital penetration (0%). The findings for “Sometimes Occurred (during the past 3 months)” show the highest percent is for making humiliating remarks to a resident (6.47%) and the lowest percent is for making digital penetration (0%). The findings for “Occurred Often (during the past 3 months)” show the highest percent is for destroying things belonging to a resident (0.80%) and the lowest percent is for making digital penetration (0%). The findings for “Very Common (during the past 3 months)” show the highest percent is for threatening remarks to a resident (0.65%) and the lowest percent is for making digital penetration (0%).

## **Rates of Abuse**

Prevalence rates using the observed or have evidence category and given as yearly rates were calculated (i.e., the number of observations of abuse that occur in elders in AL in a year). Using DCWs perceptions of abuse, the highest prevalence rates were for verbal abuse (203 residents (per 1,000) for making humiliating remarks) and psychological abuse (163 residents (per 1,000) for critical remarks). Generally, lower prevalence rates were reported for physical abuse, caregiving abuse, medication abuse, material exploitation, and sexual abuse.

## **Association of External, Organizational, and Internal Factors with Resident Abuse**

This analysis uses information from the DCW perceptions and the category “did you ever see staff do this?” The characteristics examined include staffing levels, turnover, and agency use. Each domain of abuse is also examined as a composite score (i.e., Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; and, Sexual Abuse from Staff). Some of the findings show that low staffing levels was associated with high rates of abuse; high turnover levels were associated with high rates of abuse; and, high agency staffing levels were associated with high rates of abuse.

## **Association of Direct Care Workers Characteristics and Abuse**

The DCW characteristics examined include gender, age, education level, race, and language spoken. Each domain of abuse is also examined as a composite score (i.e., Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; and Sexual Abuse from Staff). Overall very few associations with these demographic characteristics were evident.

## **Resident Characteristics and Abuse**

The resident characteristics examined include gender, age, dementia, and physical limitations (these were self-reported by DCWs). Each domain of abuse is also examined as a composite score (i.e., Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse



from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; and, Sexual Abuse from Staff). It was found that residents with dementia were associated with high rates of abuse; residents with physical limitations were associated with high rates of abuse; and, older residents were associated with high rates of abuse.

### **Leadership Characteristics and Abuse**

The leadership characteristics of administrators were examined. The specific leadership characteristics examined include tenure, education level, age, and leadership score. Each domain of abuse is also examined as a composite score (i.e., Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; and, Sexual Abuse from Staff). Little association between low administrator tenure and low administrator education levels with high rates of abuse were identified.

### **Inter-Correlations of Abuse**

Seven domains of abuse were included in the questionnaire. The inter-correlations of these domains were examined (i.e., Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; and, Sexual Abuse from Staff). Overall, this shows that residents abused in one area are likely not to be abused in other areas. In a few cases however, some correlation did exist. Residents who are verbally abused are also more likely to be physically abused and psychologically abused. In addition, residents who have care giving abuse are also more likely to have medication abuse.

### **Resident-to-Resident Abuse**

We asked whether DCWs saw any residents abuse each other (i.e., resident-to-resident abuse). The domains used were verbal abuse from other residents, physical abuse from other residents, psychological abuse from other residents, material exploitation from other residents, and sexual abuse from other residents. The highest percent was for arguing with another resident (12.83%). In general, the rates of resident-to-resident abuse identified by DCWs were higher than those reported for staff abuse.

### **SUMMARY**

Many scholars have acknowledged that little is known about resident abuse in long-term care settings (e.g., Cooper, Selwood, & Livingston, 2008). In the literature review conducted, very few empirical studies examining resident abuse in AL were identified. Still, in the literature the notion exists that abuse may be an issue of concern in AL and may increase in stature. For example, Hawes (2002) has reported to Congress that in her data, 15% of staff had witnessed verbal abuse of AL residents. She also reported that medication “errors” were problematic in these settings (Hawes, 2002). The long-term care ombudsman program (LTCOP) has reported that abuse in AL is commonly reported (Administration on Aging [AoA], 2006). One study concluded that “residents of assisted living facilities are poorly informed about protective services and uncertain about options if care were not optimal” (Wood & Stephens, 2003, p. 753). Moreover, with a limited sample of nurse aides (N=855), Castle and Beach (2013) provide a

“first indication that abuse may occur in AL” (p. 248). Thus, the paucity of information on abuse in AL led us to conduct this research.

Overall, it was found that resident abuse by staff was relatively uncommon. However, resident abuse by staff varied according to the type of abuse. For example, verbal abuse and psychological abuse was reported more often than sexual abuse. In the case of humiliating remarks, approximately 20% of residents are exposed to this abuse, so clearly substantial improvements could be made in this area. With respect to resident-resident abuse it was found that this was more common than staff abuse; although again, resident-to-resident abuse varied according to the type of abuse. For example, verbal abuse and psychological abuse was reported more often than sexual abuse and material exploitation. With respect to administrators perceptions on abuse, their perceptions seem to match DCWs perceptions; with the belief that resident abuse by staff is relatively uncommon.

## **IMPLICATIONS FOR POLICY AND PRACTICE**

Overall, it was found that resident abuse by staff was somewhat uncommon – but not negligible. Options to prevent abuse in AL are needed (other than options used in the community). For example, Pillemer and Hudson (1993) present a training program for nurse aides (used in nursing homes) based on materials from CARIE (Center for Advocacy for the Rights and Interests of the Elderly). These training programs should be adopted and modified for use by DCWs. Thus, Practice Recommendation #1: Develop DCW specific abuse prevention training programs.

Some types of abuse identified are not readily amenable to interventions frequently used in community settings such as use of police services (e.g., for insulting remarks). However, this should not relegate the potential importance of these “low grade” types of abuse. Insulting remarks could potentially lead to a cascade of events in elders, resulting in depression and even death. In the AL context, abuse such as insulting remarks may be extremely important given the circumscribed locus of control that exists for many residents. Many impaired residents have few interactions with friends, family, or other elders. For many, interactions with AL staff caregivers are the most important social interactions of their daily lives. These interactions may also escalate into more serious forms of abuse. In this context, no cases of abuse from staff caregivers can be considered benign. Thus, Practice Recommendation #2: Emphasize the potential importance of low grade forms of abuse.

Also in nursing homes nurse aide registries are used. One function of these is to prevent known abusers of elders working in nursing homes. Similar registries could be considered for use for DCWs in AL. However, for such registries to work as designed, abusers need to be first identified. With chronic under-reporting of elder abuse, registries may be failing in this essential function. Further interventions may be needed to improve reporting in this area. Practice Recommendation #3: Examine the potential utility of DCW registries.

The scope of abuse examined in this research was wider than that of most other studies. For example, items were included addressing medications abuse. Given that many elders on average take nine or more different medications on a daily basis (the CMS definition for polypharmacy), the potential for abuse in this area is substantial (Doshi, Shaffer, & Briesacher, 2005). Findings from this research suggest that medication administration is less than optimal. Medication abuse could equate to adverse outcomes for many elders. Again, interventions from other areas of long-term care may be usefully applied in AL. This could include more use of

designated medication aides (these are currently used in AL in several states). Practice Recommendation #4: Examine the potential utility of using DCWs as medication aides.

## **PROJECT DESCRIPTION**

### **Overview**

In this research, perceptions of abuse in Assisted Living (AL) settings coming from a large sample of Direct Care Workers (DCWs) and administrators are examined. AL represents one of the most numerous institutional care settings for elders. An estimated 39,100 AL settings existed in 2010 (Park-Lee et al., 2011). In total these settings represented 971,900 beds (Park-Lee et al., 2011). Only nursing homes with approximately 16,100 facilities and 1.7 million beds are more numerous institutional care settings for elders (National Nursing Home Survey [NNHS], 2004).

This research may be significant, as elders living in AL settings may be particularly vulnerable to abuse. This vulnerability to abuse may occur because many suffer from cognitive impairment, behavioral abnormalities, or physical limitations – factors that have been reported in other settings as risk factors associated with abuse.

The National Research Council reports that “the national response to elder mistreatment still remains weak and incomplete... [E]lder mistreatment remains hidden, poorly characterized, and largely unaddressed” (Bonnie & Wallace, 2003, p. 18). This may be especially true for AL. Clearly, elder abuse may be extremely important in the daily lives of AL residents. It can greatly influence quality-of-life. Elder abuse in general is associated with adverse health consequences, including fractures, depression, dementia, and malnutrition (Lachs et al., 2002).

In this research, our understanding of abuse is expanded by broadening the institutional focus (i.e., by including a wide sample of AL), widening the scope of abuse (i.e., by including an emphasis on medications), including specific perpetrators (i.e., staff), and by elaborating on facility practices (i.e., staffing levels) that may aid in preventing or contributing to abuse. In addition, care and treatment in AL is provided primarily by DCWs (Assisted Living Federation of America [ALFA], 2009). Thus, their perceptions of resident abuse may be important.

In summary, the research has several specific aims:

1. Examine resident abuse from staff reported by DCWs in a nationally representative sample of assisted living (AL) settings;
2. Expand the scope of our understanding of resident abuse by including medication abuse in AL;
3. Use the data collected to examine: a. rates of abuse; b. the association of external, organizational, and internal factors with resident abuse; c. DCW characteristics associated with abuse; d. resident characteristics associated with abuse; e. leadership characteristics associated with abuse; f. the inter-correlations of different types of abuse; and, g. resident-to-resident abuse.

### **Review of Relevant Literature**

An upward trend in the prevalence of elder abuse is predicted to occur (Conner et al., 2011). However, many scholars have acknowledged that little is known about resident abuse in long-term care settings (e.g., Cooper, Selwood, & Livingston, 2008). Long-term care settings include a wide variety of providers such as nursing homes and AL. Most information on abuse in long-term care settings comes from nursing homes. A recent review of the elderly abuse literature identified very few studies set in AL (Daly, Merchant, & Jogerst 2011). Thus, not surprisingly in the review presented below very few empirical studies examining resident abuse

in AL settings were identified.

Two reported statistics were identified that indicated that elder abuse may be an issue of concern in AL. First, Hawes (2002) has reported to Congress that in her data, 15% of staff had witnessed verbal abuse of AL residents. She also reported that medication “errors” were problematic in these settings (Hawes, 2002). Second, the long-term care ombudsman program (LTCOP) has reported that abuse in AL is commonly reported (Administration on Aging [AoA], 2006).

A few authors have also presented the perception that elder abuse may be problematic in AL settings. However, for the most part little empirical data was provided to substantiate these perceptions. For example, one study concluded that “residents of assisted living facilities are poorly informed about protective services and uncertain about options if care were not optimal” (Wood & Stephens, 2003, p. 753).

More recently, Castle and Beach (2013) presented descriptive information of elder abuse from nurse aides (who are similar to DCWs examined in this study) working in AL. Information only came from nurse aides included in the Pennsylvania nurse aide registry (N=832). All AL settings experienced verbal abuse (i.e., yelling, insulting remarks, cursing, and humiliating remarks). The questions addressed verbal abuse, physical abuse, psychological abuse, caregiving abuse, medication abuse, and material exploitation (28 questions). The findings show that suspected abuse is not uncommon, and gave some indication that staff abuse may occur in AL.

The paucity of information on abuse in AL led us to propose this study. In addition, we believe there are several characteristics of the AL industry that could potentially lead to situations of elder abuse. This augments the importance of this study.

The AL industry is not regulated by federal legislation, but is regulated in differing degrees by the states. State regulations vary in standards, and oversight is often designated to a Department of Health, Public Welfare, Aging, or Senior Services (Carlson, 2007). Staffing levels and staff qualifications are thereby often not stipulated. Inadequate staff training has been shown to increase the risk of abuse (Pillemer & Hudson, 2003).

Extensive diversity exists in the AL industry. For example, diversity exists in the populations living in these settings and the types of services provided. Nevertheless, facilities typically provide services for impaired elders. For example, 72% receive assistance with bathing and 52% receive assistance with dressing (Caffrey et al, 2012). Approximately 42% have Alzheimer’s disease or other dementias and 28% have depression (Caffrey et al, 2012). Such elders are more likely to be abused (Dyer, Connolly & McFeeley, 2002). As Conner and associates (2010) identified in a structural equation model, physical, cognitive, age, and behavior problems influence susceptibility to abuse.

Further diversity exists in the resident populations of AL. Elders make up the majority of residents but many facilities also care for non-elderly adults. A reported 11% of AL residents are under age 65 (Caffrey et al, 2012). Non-elderly adults living in long-term care settings often have a psychiatric diagnosis (Spillman et al., 2003). Having a psychiatric diagnosis is associated with perpetrating abuse (Dyer, Connolly, & McFeeley, 2002).

***Barriers in Abuse Research.*** Given that very little is known about abuse in AL, much of the discussion presented below is based on the nursing home literature. Using the nursing home literature may be limited in some respects, as nursing homes are dissimilar to AL settings in important characteristics (e.g., size and staffing). Nevertheless, the literature may give some

indication of the issues and barriers to research that may exist in AL.

In nursing homes, several barriers to empirical research on abuse exist that seem pertinent to AL. First, incidence rates are likely underestimates. Approximately half of Pennsylvania nursing home administrators and ombudsmen estimated that about 60% of institutional elder abuse cases were unreported (Peduzzi et al., 1997). One reason for this is that many residents are unable to report abuse or neglect, or they are fearful that reporting may lead to retaliation or otherwise negatively affect their lives (Compton, Flanagan & Gregg, 1997). In this research, Direct Care Workers (DCWs) are used as informants. This also has limitations; but, as part of the development activities under-reporting by DCWs was not identified as a significant source of bias. This approach was also recently used with success in AL (Castle & Beach, 2013).

In addition to the high rates of underreporting, elder abuse and neglect becomes difficult to study due to varying definitions, reporting protocols, and investigation standards across the states. As Roby and Sullivan (2000) discuss, variations in state laws, including 28 different terms for elder abuse and neglect, have made it difficult to compare empirical data from different states. In this research, previously used and robust definitions of abuse was used as part of a national survey, so the information received will be standardized.

**Overview of This Research.** With this prior research as background, it is clear that we need to address many areas of resident abuse in AL. The following provides some rationale for the areas chosen to be included as part of this research.

*Examine resident abuse from staff reported by DCWs in a nationally representative sample of AL settings.* The perpetrators of abuse can vary, and include family, caregivers (i.e., staff), and even other residents (Lachs et al., 2004). In this research, for parsimony, we focus on resident abuse perpetrated from caregivers (with some additional items addressing resident-to-resident abuse). The approach utilized examined perceptions from a large sample of DCWs. It is possible to directly ask some residents about abuse. However, limitations to this approach are mentioned above, and such interviews are expensive. A mail survey of DCWs is cost effective. Nevertheless, a potential limitation is willingness to report abuse. Prior research (Pillemer & Moore, 1990) and our own research has shown the willingness of DCWs to report abuse.

*Expand the scope of our understanding of resident abuse in AL.* The survey development is described below. The domains include: Verbal abuse from Staff; Physical abuse from Staff; Psychological abuse from Staff; Caregiving abuse from Staff; Medication abuse from Staff; Material exploitation from Staff; and, Sexual abuse from Staff. Example items and definitions are given in the table (below).

The inclusion of medication abuse expands the scope of our understanding of abuse in AL. Given that elders on average take nine more different medications on a daily basis, the potential for abuse in this area is substantial. Both overuse and underuse of medications is known to occur in long-term care settings. However, it is noted that medication abuse can be somewhat complex, and the approach presented here has some limitations. For example, instances of abuse could occur in AL when the resident needs medication assistance, as resident compliance may not be in line with cognitive ability. Medications can also be administered incorrectly; for example, some require a lot of water and the resident needs to be upright for 30 minutes (e.g., osteoporosis medications).

**Specific Research Objectives.** Using the data collected the following will be examined: a. rates of abuse; b. the association of external, organizational, and internal factors with resident abuse; c. staffing characteristics associated with abuse; d. resident characteristics associated with

abuse; e. leadership characteristics associated with abuse; f. the inter-correlations of different types of abuse; and, g. resident-to-resident abuse.

A. *Rates of abuse.* For all DCWs we ask for information on resident assignment and unit (a.k.a. wing/floor). We also requested abuse information from a three month period. Using this information, the rate of reported cases will be calculated. These rates will be approximations. However, the information may still be useful as no current estimates of rates for the different categories of abuse in AL currently exist.

Category of Abuse	Definition	Example Specific Areas Examined	Example Item
Verbal abuse	Intentional infliction of anguish, pain or distress through verbal interactions (Clarke & Pierson, 1999, p. 635)	Yelling, Nasty remarks, Cursing	For yelling at a resident: Did you see any staff do this?
Physical abuse	Acts done with the intention of causing physical pain or injury (Lachs & Pillemer, 2004, p. 1264)	Pushing, Grabbing, Pinching,	For pushing a resident: Did you see any staff do this?
Psychological abuse	Acts done with the intention of causing emotional pain or injury (Lachs & Pillemer, 2004, p. 1264)	Aggressive behavior, Threatening remarks, Critical remarks	For critical remarks to a resident: Did you see any staff do this?
Caregiving abuse	Failure to provide goods and services necessary to avoid physical harm, mental anguish or mental illness (CMS, 2004; 42 C.F.R. §488.301)	Halting care, Withholding food, Withholding water	For not giving food on purpose to a resident: Did you see any staff do this?
Medication abuse	Elders purposely deprived of their correct medication or given inappropriate medication (Chambers, 1999, p. 80)	Excessive medications, Delay in medications	For not giving a needed medication on purpose to a resident: Did you see any staff do this?
Material exploitation	The improper use of an older person's assets (Rabiner, O'Keeffe, & Brown, 2006, p. 51)	Stealing things Stealing money	For stealing things from a resident: Did you see any staff do this?
Sexual abuse	Non-consenting sexual contact of any kind (National Center on Elder Abuse [NCEA], 1998, p. 1)	Unwelcome touching, Unwelcome discussion of sexual activity	For unwelcome touching of a resident: Did you see any staff do this?

B. *Examine the association of external, organizational, and internal factors with resident abuse.* This approach (i.e., examining external, organizational, and internal factors) is often used in health services research when our understanding of a topic is emerging. For example, for

nursing homes this approach has been used to examine closures, psychoactive drugs, pressure ulcers and use of physical restraints. This kind of examination would also appear warranted based on conceptual models recently proposed to examine abuse (Schiamber et al., 2011). The proposed models include various external, organizational, and internal factors. Thus, this analysis would seem pertinent for research on abuse in AL.

External factors are characteristics external to the organization such as regulation. Organizational factors are characteristics of the facility itself, such as chain membership. These factors are the relatively stable attributes of the facility. Internal factors are operating characteristics of the facility, such as the occupancy rate. These factors reflect operating decisions within the facility and for many facilities can vary over time. These factors help in understanding the context under which good/poor care results (such as abuse). For example, in comparing nursing home abuse in association with census demographics, higher incident and report rates were associated with nursing homes in metropolitan areas (Jogerst et al., 2006). This information (i.e., external, organizational, and internal factors) was collected as part of the administrator survey.

*C. An examination of DCWs characteristics and abuse.* Following the successful protocols used in prior studies, staffing information (e.g., staffing levels, turnover, and agency use) per unit were collected from the administrator. Combined with the abuse information whether these characteristics are associated with abuse is examined.

We base this analysis on the literature from nursing homes – as very little literature has examined staffing levels in AL. Staffing levels, measured as full-time equivalents (FTEs), are associated with how much is done for a resident. Thus, higher staffing levels positively influence how well care is delivered (following the hypotheses, presented below). Stable employees are likely to deliver better care and to have a greater appreciation for when resident care should be delivered. Indeed, the empirical literature has consistently shown high staff turnover is associated with poor quality of care. Agency staff, measured as temporary staff hired from a staffing agency, are proposed to be less familiar with facility practices and with residents. Thus, agency staff could diminish the quality of resident care delivered.

The AL industry is regulated by the states. The scale and scope of regulations is highly variable across states; but, for the most-part the industry does not have a high degree of oversight. In this relatively unregulated environment, staffing levels and staff qualifications are thereby often not stipulated. This does not necessarily mean that staffing levels and staff qualifications are insufficient in all AL settings in all states. However, evidence would suggest that quality of care is not high in many facilities, and this includes problems with staffing (Zimmerman et al., 2003). Inadequate staffing levels and training have been shown to increase the risk of abuse in other long-term care settings (Pillemer & Hudson, 2003).

It is hypothesized that: (1) low staffing levels will be associated with high rates of abuse; (2) high turnover levels will be associated with high rates of abuse; and, (3) high agency staffing levels will be associated with high rates of abuse.

In addition, characteristics of DCWs may also be associated with abuse. Some research has examined characteristics of staff and identified such factors to be important. For example, Wang (2005) found less education and a younger age to be associated with psychological abuse. Although, we note that this study was conducted in Taiwan and had a small sample size (N=114). Given the emerging nature of this research, no specific hypotheses are presented.



*D. An examination of resident characteristics and abuse.* Elders, in general, are particularly vulnerable to abuse and neglect because many suffer from cognitive impairment, behavioral abnormalities, or physical limitations that have been reported as risk factors for abuse and neglect. Vulnerability in nursing homes is heightened because many residents are unable to report abuse or neglect, or they are fearful that reporting may lead to retaliation of otherwise negatively affect their lives. The same may also be true for AL.

Residents in AL may be particularly vulnerable to abuse and neglect. AL settings typically provide services for impaired elders. As noted above, many have moderate to severe cognitive impairment, along with physical and mental health issues (Caffrey et al, 2012). Elders with these characteristics are more likely to be abused (Dyer, Connolly, & McFeeley, 2002).

It is specifically hypothesized that: (1) residents with dementia will be associated with high rates of abuse; (2) residents with physical limitations will be associated with high rates of abuse; and, (3) older residents will be associated with high rates of abuse.

*E. Leadership characteristics and abuse.* Following the successful protocols used in prior studies, administrator information (i.e., tenure, education, age) for each facility was collected. Combined with the abuse information whether these characteristics are associated with abuse are examined.

The leadership team of most AL settings consists of the Administrator and Director of Nursing (DON). Recent research has begun to demonstrate that these top managers have an enormous influence on the effectiveness of their organizations. For example, empirical investigations have demonstrated that top management turnover is associated with poor quality of care and with high caregiver turnover (Anderson, Corazzini, & McDaniel, 2004). Further understanding the relationship between characteristics of top management and organizational effectiveness may be important because it represents a potential means of improving the care and operation of long-term care facilities. This may be especially important for AL.

It is hypothesized that: (1) low administrator tenure will be associated with high rates of abuse; (2) low administrator education levels will be associated with high rates of abuse.

*F. Inter-correlations of abuse.* We examine whether the areas of abuse are related. That is, whether high levels of abuse in one area is associated with high levels of abuse in another. Understanding patterns of abuse may be important. For example, we may find higher rates of psychological abuse on units with older residents and we may find higher rates of prescription drug abuse on dementia units. These patterns may have both policy and practice relevance.

*G. Resident-to-resident abuse.* Little is known about resident-to-resident abuse. However, early indications suggest that almost 5% of residents in nursing homes experience this form of abuse (Lachs et al., 2007). Findings such as these suggest a high prevalence of inter-resident abuse and underscore the need for further research and understanding in this area. Moreover, work, to date, has tended to focus on physical abuse. Verbal, material, psychological, and sexual abuse are less well examined (and are examined in this research).

## **RESEARCH DESIGN AND METHODS**

**Source of Data.** The AL industry is not regulated by federal legislation and is, therefore, regulated (in differing degrees) by the states. The states use various names for this care setting, including assisted living; but, other names include residential care and congregate care (Carlson, 2007). In this research, AL is used as a general term to represent all of these settings; however,

to be included in this research, facilities must be “a long-term care setting that typically provides residents with support for activities of daily living (ADLs) and instrumental activities of daily living (IADLs).”

When this research was conducted national figures had estimated 39,100 AL settings existed in the U.S. (Park-Lee et al., 2011). To our knowledge no national data source exists that lists all of these facilities. Therefore, using state listings (from websites) and our definition of AL (above), we identified addresses of approximately 21,000 AL settings. A random sample of approximately 7% (N = 1,500) of these eligible AL settings were selected from all 50 states for this research. No AL settings were excluded based on ownership characteristics.

**Questionnaire Administration.** To obtain information administrators were asked if they were willing to complete the questionnaire. An incentive gift card was used (\$25). The administrator questionnaires were anonymous. However, facility ID codes were included on each survey.

Second, administrators were asked if they would be willing to distribute the questionnaire to DCWs. An example DCW questionnaire was sent to administrators so that they could examine the content. We requested that they distribute the survey to all full-time and part-time DCWs on all shifts (but to exclude none DCW staff). DCWs also received an incentive gift card (\$20). The DCW questionnaires were anonymous, but again facility ID codes were included on each survey.

Administrators from participating facilities were mailed prepackaged DCW questionnaires. This consisted of sealed envelopes containing: the questionnaire, a letter describing the study, and a postage-paid return envelope. Follow-up reminder mailings (and emails) were used for administrators.

**Questionnaire Development.** The first step in developing the questionnaire was to determine which areas of abuse to investigate. The emphasis in the pilot research was on verbal, physical, material, psychological, caregiving, medication, material, and sexual abuse (Castle, 2012). This emphasis was further refined based on interviews with 4 DONs/administrators and interviews with 10 DCWs (all from AL).

To help modify existing items and construct new items for the questionnaire, interviews with an additional 40 DCWs from 10 different facilities was also used. An open-ended question format was used, and DCWs were asked their perceptions on abuse questions, and perceptions on wording questions in general. They were given a \$20 gift card for participation.

Based on our prior experience, less than 60 items were to be included, as response rates tend to decline with DCWs beyond this number. However, also based on our prior experience incentive payments help improve response rates with DCWs. With a \$20 incentive payment, the burden of participation required from completing the questionnaire was less than commensurate with the level of incentive payment.

Based on these interviews with DCWs, the pool of items was refined. That is, items were written to be relevant to DCWs (i.e., face validity), to be relevant to the AL context (i.e., content validity), and to be easily understood. The pool of items was also reduced by eliminating similar questions and by choosing the most-relevant questions (based on feedback from DCWs).

The final step in developing this questionnaire consisted of cognitive testing with 15 DCWs. This approach helped determine whether potential respondents answer a question in the way it intended to be answered. DCWs were given a \$20 gift card for participation. Specifically,

for each question, the interviewer (i.e., authors), determined whether the responses from the DCWs indicated a problem, potential problem, or no evidence of a problem with the question.

**Abuse Questionnaire Formatting.** Two questionnaire formatting items of importance are the issues of observing abuse and the reference period. Many forms of abuse can be perpetrated quickly, making observation less likely. Therefore, questions were asked using multiple formats: (1) see any staff do this; (2) the resident told you about staff doing this; (3) a family member told you about staff doing this; and, (4) someone other than a resident or family member told you about staff doing this. In this respect, the questionnaire represents likely observations and reports of abuse. However, we have no way of knowing if these observations and reports of abuse are based on actual cases. Therefore, we conservatively refer to our findings as DCWs perceptions of abuse.

Most items used a stem (i.e., lead in to the question) asking for information in the last three months of employment. This time period was chosen based on our interviews with DCWs and our past experience, but also because it is used on the CAHPS® Nursing Home Survey ([www.cahps.ahrq.gov](http://www.cahps.ahrq.gov)). The CAHPS® Nursing Home Survey was subject to extensive testing, including use of periods of observation (Sangl et al., 2007). However, we note that the use of this time period has limitations, including recall accuracy by DCWs, and in our case the limitation of reducing the pool of respondents because they may not have been employed for this time duration (i.e., turnover of DCWs in many facilities is high).

## **Analyses**

### **Data representativeness**

Based on previous research, we anticipated response rates to be high enough to limit the potential impact of differential non-response to fairly low levels. Nonetheless, we examined bias from non-response. That is, facilities responding to the survey were compared to those that did not respond and facilities that respond to the survey were compared to all U.S. facilities.

### **Applied Psychometric Properties**

The applied psychometric properties of the instrument were examined including the completeness of data, score distributions (i.e., ceiling and floor effects), item-scale consistency, and reliability of domain scores. Item responses are presented, including simple descriptive statistics consisting of the percent or mean for each of our questionnaire items. Examining the applied properties of the pilot instrument in this way follows the prior work of McHorney, Ware, Lu, and Sherbourne (1994).

### **Analyses of Specific Research Questions**

This nested nature of the data does need to be taken into consideration for all of the analyses. How this was done depend on the analyses conducted. For the multivariate analyses, such as the logistic regression to test response bias, the main issue was how to avoid underestimation of standard errors due to the likely correlation of responses within unit or AL. We used a sandwich standard error estimator (e.g. the cluster option to the logit and confa commands in Stata 11.0) to account for possible non-independence of error terms.

#### *A. Rates of abuse*

DCWs have told us in focus groups that these events are memorable and that this information could be provided. Using this information, the rate of abuse was calculated. Prevalence rates were calculated. This is a measure of the number of observations of an event that occur in a population during a specified time period (Last, 1995). That is, in this case

prevalence refers to the total number of elders who have experienced abuse in a one year time period (rather than incidence, which is the number of new cases identified or reported at a given point in time). The “seen staff do this” category was used as the numerator in making these calculations. The time period for the observation was 3 months, so the figures were multiplied by 4 to give a yearly rate. The total number of residents in the facility for the year was used as the denominator.

*B. Examine the association of external, organizational, and internal factors with resident abuses.*

External factors are characteristics external to the organization such as regulation. Organizational factors are characteristics of the facility itself, such as chain membership. These factors are the relatively stable attributes of the facility. Internal factors are operating characteristics of the facility, such as the occupancy rate. These factors reflect operating decisions within the facility and for many facilities can vary over time. These factors help in understanding the context under which good/poor care results (such as abuse). Moreover, as noted by Schiamber and associates (2011), these contextual factors can influence abuse. External, organizational, and internal factors were collected as part of the administrator survey. Multivariate analyses described above are used in this analysis.

*C. An examination of DCWs characteristics and abuse.*

The staffing questions in the survey had been used in a previous questionnaire (used in both nursing homes and AL). The validity of these questions was previously assessed using interviews at 152 nursing homes and via cross-checking survey responses with existing nursing home records (but we note similar analyses were not with AL settings). For example, staffing levels were cross-checked with payroll records with a resulting kappa statistic of .95. Kappa statistics were similarly high for other staffing variables, indicating that the information collected was reliable. As noted above, this kind of examination would appear warranted as such factors may be related to abuse (Schiamber et al., 2011). Multivariate analyses described above are used in this analysis.

*D. An examination of resident characteristics and abuse.*

The questionnaire does not include extensive information on the types of residents abused. This was due to parsimony needed for the questionnaire. However, one item asked for resident details (and details on the abuse) for the last case of abuse observed. This should be the most memorable, and the most reliable. Resident details were asked (i.e., cognitive status, dementia, approximate age, gender, race, and physical limitations). Multivariate analyses described above are used in this analysis.

*E. Leadership characteristics and abuse.*

Following the successful protocols used in prior studies, top management information (i.e., tenure, education, age) per facility will be collected from the administrator. Combined with the abuse information we examine whether these characteristics are associated with abuse.

The leadership questions in the survey had been used in a previous questionnaire. The validity of these questions was previously assessed using interviews with more than 500 top managers (but we note similar analyses were not with AL settings). Multivariate analyses described above are used in this analysis.

*F. Inter-correlations of abuse.*

We examine whether the areas of abuse are related. Student’s paired sample t-tests are used to determine whether the differences are significantly different from zero, with significant t-tests indicating systematic differences are present. The magnitude of any systematic differences

can be determined. Following Cohen’s effect sizes (Cohen, 1977), absent, small, moderate, and large over- (under) estimates were defined as values of <0.2, 0.2-0.5, >0.5-0.8, and >0.8, respectively. Understanding patterns of abuse may be important. For example, we may find higher rates of one type of abuse associated with another form of abuse. These patterns may have both policy and practice relevance.

*G. Resident-to-resident abuse.*

Given the need to keep the questionnaire short; this section included few questions asking about resident-to-resident abuse. This information will be included as part of a descriptive analysis, and will give some preliminary information on the extent of this form of abuse in AL.

**RESULTS**

**Data representativeness**

**Direct Care Worker (DCW) Characteristics.** Table 1 presents the demographic characteristics of the DCW respondents. A total of 12,555 DCWs returned the questionnaire. This gave a response rate of 81%. Most of the DCWs were female (93%) and most were white (59%). The average time in the current facility was 2.9 years. Most DCW characteristics of the sample were not significantly different from equivalent characteristics recorded in the 2004 National Nursing Assistant Survey (NNAS). The NNAS was conducted as a supplement to the 2004 National Nursing Home Survey (NNHS).

**TABLE 1: Direct Care Workers Demographic Characteristics (N=12,555)**

<b>Characteristic</b>	<b>Percent</b>	<b>(N)</b>	<b>Mean</b>	<b>(SD)</b>
<b>Gender (Female)</b>	93.44%	(11732)		
<b>Age (years)</b>			37.5	(12.21)
<b>Highest grade or level of school completed</b>				
8th grade or less	3.74%	(469)		
Some high school, but did not graduate	5.11%	(642)		
High school graduate or GED	89.09%	(11185)		
4-year college graduate	1.78%	(224)		
More than 4-year college degree	0.21%	(26)		
<b>Race</b>				
American Indian or Alaska Native	0.10%	(13)		
Asian	2.34%	(294)		
Black or African American	38.15%	(4790)		
White	59.28%	(7443)		
Native Hawaiian or other Pacific Islander	0.06%	(8)		
<b>Language mainly spoke at home</b>				
English	85.42%	(10725)		
Spanish	4.69%	(589)		
English and Spanish equally	2.95%	(370)		
Some other language	6.67%	(837)		
		(12521)		
<b>Time as an aide at you current facility (years)</b>			2.9	(2.32)

**Assisted Living Sample Characteristics.** Table 2 presents the descriptive statistics of the AL sample. A total of 1,376 AL facilities (i.e., administrators) returned the questionnaire. This gave a response rate of 84%. The average number of beds in this sample was 59. This compares favorably with the national average of 54 beds. The average occupancy was 91%. Most characteristics of the sample were not significantly different from equivalent characteristics recorded in national samples of AL (e.g., Park-Lee et al., 2011).

**TABLE 2:** Assisted Living Characteristics (N=1,376)

Characteristic	Current Sample		Comparison Statistics	
	Percent	Mean	Percent	Mean
<b>Size</b>				
Number of beds		59		54^
Private rooms	86%		73%'	
<b>Occupancy</b>				
Current occupancy		91.30%		
Average occupancy for 2010		93%	88.3%*	
<b>Resident characteristics</b>				
Private Pay	87%			67%+
Medicaid (serves at least one resident)	32%			43%+
<b>Ownership</b>				
For-profit	85%		82%	
Not-for-profit	15%		18%	
Chain owned	33%		38%	
Not part of a chain	67%		42%	
Religious affiliation				
<b>Turnover</b>				
Number of administrators worked at this facility during the past 3 years		2.8		
Number of Nurse Directors worked at this facility during the past 3 years		2.2		
<b>Prior month, staff turnover</b>				
Full-time RN FTEs	22%			
Part-time RN FTEs	18%			
Full-time LPN FTEs	20%			
Part-time LPN FTEs	26%			
Full-time DCW FTEs	34%			
Part-time DCW FTEs	37%			
<b>Prior year, staff turnover</b>				
Full-time RN FTEs	21%			14%~
Part-time RN FTEs	18%			
Full-time LPN FTEs	23%			20.5%~
Part-time LPN FTEs	19%			
Full-time DCW FTEs	33%			29%~
Part-time DCW FTEs	35%			
<b>Prior month, staffing levels</b>				
RN FTEs		1.1		
LPN FTEs		1.5		
DCW FTEs		4.6		
<b>Agency (i.e., temporary) staff use</b>				
RN FTEs	2%			
LPN FTEs	3%			
DCW FTEs	18%			
<b>Current staff working at facility for 3 years (or more)</b>				
RN FTEs	21%			
LPN FTEs	27%			
DCW FTEs	19%			
<b>Use consistent assignment of aides when caring for residents</b>				
Yes	68%			
Use 2 week rotating assignments	11%			
Use other aide assignments	21%			
<b>% Consistent assignment (if used)</b>	<b>78%</b>			

^National Center for Assisted Living (www.ahcancal.org). Assisted Living Facility Profile.  
\*Assisted Living Homes (all assistedlivinghomes.com). Assisted Living Occupancy Rates Increasing (8/18/10)  
~National Center for Assisted Living. (2011). Findings of the NCAL 2010 Assisted Living Staff Vacancy, Retention and Turnover Survey. Washington, DC.  
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## Applied Psychometric Properties

Table 3 presents the applied psychometric statistics of the DCWs questionnaire. Column 1 shows the percent of missing responses for each item. In general, the percent of missing responses is low averaging about 1%. The question with the highest percent (10.54%) of missing responses was the “digital penetration” item.

If abuse was identified, then each question asked for a number of occurrences. In Column 2 we show the percent of responses in the first category of occurrences “one time” and the fourth category of occurrences “5-6 times.” This shows that if abuse was identified, it tended to occur only one time.

Column 3 uses all of the information for the number of occurrences of abuse and presents a mean value (excluding those reporting no abuse). Thus, for example, the mean number of cases of yelling at a resident observed (during the last 3 months) was 2.96.

Column 4 presents the item-scale correlations. High inter-correlation values (above  $r = .50$ ) among the domain items are considered an indication of scale reliability. High inter-correlation values also suggest that the items provide a true measurement of the underlying concept. All of the item-scale correlations were above the value of  $r = .50$ .

Column 5 presents Cronbach’s alphas. Cronbach's alpha determines the internal consistency or average correlation of items in a survey, with 0.7 often presented as an acceptable reliability coefficient. All of the Cronbach’s alphas are above 0.7.



**TABLE 3: Applied Psychometric Properties of Direct Care Workers Questionnaire on Perceptions of Abuse (N=12,555)**

Category and Item	Missing responses (%)	Floor (category 1)	Ceiling (category 4)	Mean (if yes)	Item-scale correlation	Cronbach's alpha coefficients
<b>Verbal Abuse from Staff</b>						0.84
Yelling at a resident	2.29	4.74%	2.34%	2.96	0.72	
Making <u>nasty remarks</u> to a resident	0.54	4.25%	2.27%	3.15	0.72	
Swearing at a resident	1.26	6.56%	1.92%	2.06	0.62	
Making <u>humiliating remarks</u> to a resident	0.71	11.93%	1.64%	2.62	0.62	
Staff <u>arguing</u> with a resident	0.91	12.32%	1.72%	2.85	0.75	
<b>Physical Abuse from Staff</b>						0.88
Pushing, grabbing, or pinching a resident	1.13	1.75%	1.71%	1.08	0.61	
Pulling hair or kicking a resident	0.85	1.95%	1.75%	1.63	0.84	
Hurting a resident on purpose	1.11	0.36%	1.75%	1.73	0.85	
Throwing things at a resident	1.3	1.58%	2.18%	1.94	0.65	
Hitting a resident	0.84	0.64%	1.60%	1.88	0.76	
Bullying a resident	1.48	4.61%	1.51%	2.16	0.76	
Aggressive behavior towards a resident	2.09	5.14%	1.76%	2.69	0.76	
<b>Psychological Abuse from Staff</b>						0.75
Threatening remarks to a resident	2.27	3.74%	1.63%	1.9	0.73	
Critical remarks to a resident	2.25	3.51%	1.69%	1.71	0.75	
Threatening to stop taking care of a resident	2.09	1.08%	0.21%	1.05	0.71	
<b>Caregiving Abuse from Staff</b>						0.80
Not giving food on purpose to a resident	2.66	1.86%	1.79%	1.68	0.78	
Not giving fluids on purpose (e.g., water) to a resident	2.29	0.71%	0.68%	1.47	0.85	
<b>Medication Abuse from Staff</b>						0.78
Not giving a needed medication on purpose to a resident	0.82	1.64%	0.57%	1.22	0.74	
Giving more medication than needed on purpose to a resident	4.2	0.27%	0.98%	2.1	0.65	
Deliberately delaying giving medication(s) to a resident	2.25	1.73%	0.99%	1.2	0.79	
<b>Material Exploitation from Staff</b>						0.72
Stealing things from a resident	2.56	0.02%	0.59%	1.75	0.84	
Stealing money from a resident	0.82	1.09%	0.51%	1.23	0.86	
Signing important documents (e.g., checks) without permission from a resident	0.63	1.95%	0.29%	1.08	0.76	
Destroying things that belong to a resident without permission	2.17	0.84%	0.42%	1.14	0.72	
<b>Sexual Abuse from Staff</b>						0.79
Unwelcome touching of a resident	4.25	0.64%	0.37%	1.11	0.88	
Unwelcome discussion of sexual activity with a resident	5.86	1.58%	0.37%	1.12	0.84	
Exposure of a residents private-body parts to embarrass them	6.43	3.74%	0.39%	1.03	0.81	
Digital penetration (e.g., finger) of a resident	10.54	3.95%	0.49%	1.18	0.74	

## **Direct Care Workers Perceptions of Abuse**

Table 4 presents the DCWs perceptions of abuse. In Column 1 the results for “did see any staff do this?” are presented. The highest percent was for staff arguing with a resident (9.65%). In Column 2 the results for “did the resident tell you about staff doing this” are presented. The highest percent was also for staff arguing with a resident (5.90%). In Column 3 the results for “did a family member tell you about any staff doing this?” The highest percent was for critical remarks to a resident (3.89%). In Column 4 the results for “did someone other than a resident or family member tell you about staff doing this?” The highest percent was for threatening remarks to a resident (0.82%).

**TABLE 4: Direct Care Workers Perceptions of Resident Abuse (N=12,555)**

Category and Item	Did you see any staff do this?		Did a resident tell you about any staff doing this?		Did a family member tell you about any staff doing this?		Did someone other than a resident or family member tell you about any staff doing this?	
	Percent	(N)	Percent	(N)	Percent	(N)	Percent	(N)
<b>Verbal Abuse from Staff</b>								
Yelling at a resident	2.69%	(338)	3.49%	(438)	1.69%	(212)	0.22%	(27)
Making <u>nasty remarks</u> to a resident	3.35%	(421)	3.90%	(490)	1.31%	(164)	0.30%	(38)
Swearing at a resident	5.49%	(689)	4.37%	(549)	2.13%	(267)	0.39%	(49)
Making <u>humiliating remarks</u> to a resident	7.99%	(1003)	5.03%	(631)	2.30%	(289)	0.55%	(69)
Staff <u>arguing</u> with a resident	9.65%	(1211)	5.90%	(741)	2.80%	(351)	0.60%	(75)
<b>Physical Abuse from Staff</b>								
<u>Pushing, grabbing, or pinching</u> a resident	0.89%	(112)	1.72%	(216)	1.07%	(134)	0.42%	(53)
<u>Pulling hair or kicking</u> a resident	0.20%	(25)	1.11%	(139)	1.19%	(149)	0.54%	(68)
<u>Hurting</u> a resident on purpose	0.36%	(45)	2.02%	(254)	1.42%	(178)	0.71%	(89)
<u>Throwing things</u> at a resident	0.57%	(72)	1.83%	(230)	0.47%	(59)	0.81%	(102)
<u>Hitting</u> a resident	0.36%	(45)	1.74%	(219)	0.63%	(79)	0.27%	(34)
<u>Bullying</u> a resident	2.20%	(276)	2.83%	(355)	2.53%	(318)	0.29%	(37)
<u>Aggressive behavior</u> towards a resident	2.69%	(338)	3.72%	(467)	3.71%	(466)	0.33%	(41)
<b>Psychological Abuse from Staff</b>								
<u>Threatening remarks</u> to a resident	0.89%	(112)	4.64%	(582)	3.76%	(472)	0.82%	(103)
<u>Critical remarks</u> to a resident	3.28%	(412)	3.96%	(497)	3.89%	(488)	0.64%	(80)
<u>Threatening to stop taking care</u> of a resident	0.30%	(38)	2.47%	(310)	1.74%	(219)	0.41%	(52)
<b>Caregiving Abuse from Staff</b>								
<u>Not giving food on purpose</u> to a resident	0.25%	(32)	3.50%	(439)	1.21%	(152)	0.41%	(52)
<u>Not giving fluids on purpose</u> (e.g., water) to a resident	0.12%	(15)	2.92%	(367)	1.03%	(129)	0.25%	(31)
<b>Medication Abuse from Staff</b>								
<u>Not giving a needed medication on purpose</u> to a resident	0.19%	(24)	1.79%	(225)	0.42%	(53)	0.35%	(44)
<u>Giving more medication than needed on purpose</u> to a resident	0.37%	(46)	1.00%	(125)	0.54%	(68)	0.41%	(51)
<u>Deliberately delaying giving medication(s)</u> to a resident	0.56%	(70)	1.73%	(217)	3.43%	(431)	0.29%	(36)
<b>Material Exploitation from Staff</b>								
<u>Stealing things</u> from a resident	2.48%	(311)	2.78%	(349)	3.04%	(382)	0.63%	(79)
<u>Stealing money</u> from a resident	1.73%	(217)	2.03%	(255)	1.67%	(210)	0.66%	(83)
<u>Signing important documents (e.g., checks) without permission</u> from a resident	0.54%	(68)	1.15%	(145)	1.26%	(158)	0.21%	(26)
<u>Destroying things that belong</u> to a resident without permission	2.13%	(267)	1.94%	(244)	3.72%	(467)	0.84%	(106)
<b>Sexual Abuse from Staff</b>								
<u>Unwelcome touching</u> of a resident	0.06%	(7)	0.30%	(38)	0.25%	(31)	0.06%	(7)
<u>Unwelcome discussion of sexual activity</u> with a resident	0.26%	(33)	0.25%	(31)	0.19%	(24)	0.14%	(18)
<u>Exposure of a residents private-body parts to embarrass</u> them	0.06%	(8)	0.18%	(23)	0.14%	(17)	0.08%	(10)
<u>Digital penetration</u> (e.g., finger) of a resident	0.00%	(0)	0.02%	(2)	0.01%	(1)	0.00%	(0)

## Assisted Living Administrators Perceptions of Abuse

Table 5 presents the administrators perceptions of abuse. These are presented as perceptions, as no detail is provided on if the responses were from suspected episodes of abuse or actual abuse that was dealt with in some way. In addition, the categories used are subjective as no guidance was provided as to what was meant by the categories (uncommon, very uncommon, (etc)).

**TABLE 5:** Assisted Living Administrators Perceptions of Abuse (N=1,376)

Category and Item	Never (during the past 3 months)		Very Uncommon (during the past 3 months)		Uncommon (during the past 3 months)		Sometimes Occurred (during the past 3 months)		Occurred Often (during the past 3 months)		Very Common (during the past 3 months)	
	Percent	(N)	Percent	(N)	Percent	(N)	Percent	(N)	Percent	(N)	Percent	(N)
<b>Verbal Abuse from Staff</b>												
Yelling at a resident	67.66%	(931)	26.02%	(358)	4.22%	(58)	1.89%	(26)	0.15%	(2)	0.22%	(3)
Making <u>nasty remarks</u> to a resident	59.52%	(819)	32.12%	(442)	5.52%	(76)	2.69%	(37)	0.07%	(1)	0.15%	(2)
Swearing at a resident	63.37%	(872)	27.54%	(379)	5.01%	(69)	4.00%	(55)	0.07%	(1)	0.07%	(1)
Making <u>humiliating remarks</u> to a resident	36.99%	(509)	48.84%	(672)	7.49%	(103)	6.47%	(89)	0.07%	(1)	0.22%	(3)
Staff <u>arguing</u> with a resident	48.47%	(667)	38.01%	(523)	8.28%	(114)	4.87%	(67)	0.15%	(2)	0.36%	(5)
<b>Physical Abuse from Staff</b>												
Pushing, grabbing, or pinching a resident	90.55%	(1246)	8.14%	(112)	0.87%	(12)	0.36%	(5)	0.07%	(1)	0.07%	(1)
Pulling hair or kicking a resident	87.28%	(1201)	11.05%	(152)	1.16%	(16)	0.51%	(7)	0.07%	(1)	0.00%	(0)
Hurting a resident on purpose	82.63%	(1137)	15.26%	(210)	0.80%	(11)	1.31%	(18)	0.07%	(1)	0.00%	(0)
Throwing things at a resident	92.30%	(1270)	5.67%	(78)	1.67%	(23)	0.29%	(4)	0.15%	(2)	0.07%	(1)
Hitting a resident	93.46%	(1286)	3.05%	(42)	2.11%	(29)	1.16%	(16)	0.15%	(2)	0.22%	(3)
Bullying a resident	85.61%	(1178)	9.74%	(134)	2.69%	(37)	1.60%	(22)	0.36%	(5)	0.36%	(5)
Aggressive behavior towards a resident	70.64%	(972)	18.39%	(253)	7.12%	(98)	3.27%	(45)	0.22%	(3)	0.58%	(8)
<b>Psychological Abuse from Staff</b>												
Threatening remarks to a resident	71.37%	(982)	20.64%	(284)	4.58%	(63)	2.76%	(38)	0.36%	(5)	0.65%	(9)
Critical remarks to a resident	48.62%	(669)	39.10%	(538)	7.78%	(107)	4.14%	(57)	0.22%	(3)	0.36%	(5)
Threatening to stop taking care of a resident	90.70%	(1248)	6.32%	(87)	1.89%	(26)	0.87%	(12)	0.36%	(5)	0.22%	(3)
<b>Caregiving Abuse from Staff</b>												
Not giving food on purpose to a resident	93.75%	(1290)	3.85%	(53)	1.45%	(20)	0.80%	(11)	0.44%	(6)	0.15%	(2)
Not giving fluids on purpose (e.g., water) to a resident	92.08%	(1267)	4.72%	(65)	1.38%	(19)	1.74%	(24)	0.29%	(4)	0.07%	(1)
<b>Medication Abuse from Staff</b>												
Not giving a needed medication on purpose to a resident	96.66%	(1330)	2.03%	(28)	1.09%	(15)	0.15%	(2)	0.00%	(0)	0.07%	(1)
Giving more medication than needed on purpose to a resident	95.20%	(1310)	2.47%	(34)	1.89%	(26)	0.29%	(4)	0.15%	(2)	0.15%	(2)
Deliberately delaying giving medication(s) to a resident	92.22%	(1269)	2.76%	(38)	3.49%	(48)	1.24%	(17)	0.22%	(3)	0.29%	(4)
<b>Material Exploitation from Staff</b>												
Stealing things from a resident	73.40%	(1010)	20.86%	(287)	4.58%	(63)	0.94%	(13)	0.44%	(6)	0.22%	(3)
Stealing money from a resident	67.15%	(924)	26.02%	(358)	5.38%	(74)	1.31%	(18)	0.58%	(8)	0.15%	(2)
Signing important documents (e.g., checks) without permission from a resident	95.64%	(1316)	2.33%	(32)	1.53%	(21)	0.44%	(6)	0.65%	(9)	0.07%	(1)
Destroying things that belong to a resident without permission	52.33%	(720)	38.59%	(531)	5.45%	(75)	3.27%	(45)	0.80%	(11)	0.36%	(5)
<b>Sexual Abuse from Staff</b>												
Unwelcome touching of a resident	92.81%	(1277)	4.07%	(56)	2.11%	(29)	0.94%	(13)	0.15%	(2)	0.07%	(1)
Unwelcome discussion of sexual activity with a resident	92.15%	(1268)	3.63%	(50)	2.83%	(39)	1.24%	(17)	0.22%	(3)	0.15%	(2)
Exposure of a residents <u>private-body parts</u> to embarrass them	91.35%	(1257)	4.87%	(67)	3.20%	(44)	0.44%	(6)	0.29%	(4)	0.15%	(2)
Digital penetration (e.g., finger) of a resident	100.00%	(1376)	0.00%	(0)	0.00%	(0)	0.00%	(0)	0.00%	(0)	0.00%	(0)

In Column 1 the findings for “Never (during the past 3 months)” are presented. The highest percent is for digital penetration (100%) and the lowest percent is for making humiliating remarks to a resident. In Column 2 the findings for “Very Uncommon (during the past 3 months)” are presented. The highest percent is for making humiliating remarks to a resident

(48.84%) and the lowest percent is for making digital penetration (0%). In Column 3 the findings for “Uncommon (during the past 3 months)” are presented. The highest percent is for staff arguing with a resident (8.28%) and the lowest percent is for making digital penetration (0%). In Column 4 the findings for “Sometimes Occurred (during the past 3 months)” are presented. The highest percent is for making humiliating remarks to a resident (6.47%) and the lowest percent is for making digital penetration (0%). In Column 5 the findings for “Occurred Often (during the past 3 months)” are presented. The highest percent is for destroying things belonging to a resident (0.80%) and the lowest percent is for making digital penetration (0%). In Column 6 the findings for “Very Common (during the past 3 months)” are presented. The highest percent is for threatening remarks to a resident (0.65%) and the lowest percent is for making digital penetration (0%).

### Specific Research Questions

#### A. Rates of abuse

Prevalence rates using the seen category and given as yearly rates are presented in Table 6. Following the DCWs perceptions of abuse, the highest prevalence rates were for verbal abuse (203 per 1,000 residents’ rate for making humiliating remarks) and psychological abuse (163 per 1,000 residents for critical remarks). Generally, lower prevalence rates were reported for physical abuse, caregiving abuse, medication abuse, material exploitation, and sexual abuse.

**TABLE 6:** Estimated Rates of Staff Abuse in Assisted Living (N=12,555)

Category and Item	Estimated Prevalence Rate Per 1,000 residents per year
<b>Verbal Abuse from Staff</b>	
Yelling	131
Nasty remarks	152
Swearing	173
Humiliating remarks	203
Argumentative with resident	160
<b>Physical Abuse from Staff</b>	
Pushing, grabbing, or pinching	41
Pulling hair or kicking	24
Hurting resident	35
Throw things at resident	46
Hitting a resident	31
Bullying a resident	73
Aggressive behavior	50
<b>Psychological Abuse from Staff</b>	
Threatening remarks	127
Critical remarks	163
Threatening to stop caring	22
<b>Caregiving Abuse from Staff</b>	
Not giving food	31
Not giving fluids	25
<b>Medication Abuse from Staff</b>	
Not giving needed medication	43
Given excessive medication	32

Delayed giving medication	158
<b>Material Exploitation from Staff</b>	
Stealing things	44
Stealing money	22
Sign important documents without permission	12
Destroying things	36
<b>Sexual Abuse from Staff</b>	
Unwelcome touching	16
Unwelcome discussion of sexual activity	12
Exposure of private-body parts to embarrass	21
Digital penetration	<1

*B. Examine the association of external, organizational, and internal factors with resident abuse.*

Table 7 presents the association of external, organizational, and internal factors with resident abuse. This uses Direct Care Workers Perceptions of Resident Abuse and the category “did you ever see staff do this?” Each domain of abuse is also examined as a composite score (Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; Sexual Abuse from Staff). Overall, very few associations were evident. The most robust association was with low staffing. In 6 of the 7 abuse domains higher turnover was significantly associated with higher abuse; in 6 of the 7 abuse domains a lower staffing levels were significantly associated with higher abuse; and in 5 of the 7 abuse domains more agency use was associated with higher abuse.

It was hypothesized that: (1) low staffing levels will be associated with high rates of abuse; (2) high turnover levels will be associated with high rates of abuse; and, (3) high agency staffing levels will be associated with high rates of abuse. The findings provide some support for these hypotheses.

**TABLE 7: Direct Care Workers Perceptions of Resident Abuse (N=12,555) and Association with External, Organizational, and Internal Factors**

Characteristic	Verbal Abuse from Staff	Physical Abuse from Staff	Psychological Abuse from Staff	Caregiving Abuse from Staff	Medication Abuse from Staff	Material Exploitation from Staff	Sexual Abuse from Staff
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Number of beds	1.11 (1.04-1.38)*	1.03 (0.92-1.11)	1.06 (1.01-1.19)*	1.00 (0.92-1.04)	1.18 (1.03-1.25)**	1.16 (1.04-1.22)**	1.19 (1.07-1.29)**
Private rooms	0.96 (0.93-1.01)	0.65 (0.55-0.84)**	0.95 (0.89-0.99)*	0.88 (0.78-0.97)**	0.64 (0.58-0.87)**	1.02 (0.93-1.10)	1.10 (1.02-1.19)*
Average occupancy for 2010	1.01 (0.95-1.03)	0.95 (0.90-1.14)	1.19 (1.05-1.25)**	1.03 (0.96-1.05)	1.00 (0.94-1.10)	1.05 (1.00-1.11)*	1.11 (1.03-1.17)**
Private Pay	0.97 (0.93-1.02)	0.99 (0.93-1.06)	0.95 (0.83-1.02)	0.90 (0.82-1.03)	0.89 (0.78-0.98)*	1.00 (0.91-1.09)	1.03 (0.96-1.11)
Medicaid (serves at least one resident)	0.87 (0.73-0.98)*	0.82 (0.71-0.98)**	0.94 (0.89-1.13)	0.93 (0.71-0.93)**	0.60 (0.52-0.90)**	1.05 (1.01-1.12)**	1.13 (1.02-1.20)**
For-profit	0.95 (0.74-1.03)	0.99 (0.81-1.03)	1.10 (1.00-1.19)*	1.02 (0.93-1.10)	1.10 (1.02-1.19)*	0.93 (0.71-0.93)**	0.60 (0.52-0.90)**
Chain owned	0.94 (0.90-1.11)	1.04 (1.01-1.13)*	1.08 (0.99-1.22)	0.92 (0.80-0.96)**	0.99 (0.91-1.01)	0.99 (0.81-1.03)	1.10 (1.00-1.19)*
Number of administrators worked at this facility during the past 3 years	1.06 (1.00-1.19)*	1.00 (0.91-1.04)	1.11 (1.03-1.19)**	1.00 (0.91-1.09)	1.03 (0.96-1.11)	0.94 (0.82-0.98)*	0.98 (0.93-1.01)
Number of Nurse Directors worked at this facility during the past 3 years	1.02 (0.97-1.10)	1.04 (0.99-1.09)	0.91 (0.86-0.97)*	0.98 (0.89-1.06)	0.86 (0.74-0.97)*	0.86 (0.73-0.94)**	0.73 (0.69-0.91)**
Prior month, staff turnover (all)	1.28 (1.03-1.35)**	1.13 (1.01-1.19)**	1.17 (1.02-1.22)**	1.05 (1.00-1.11)*	1.11 (1.03-1.17)**	0.92 (0.80-0.96)**	0.99 (0.91-1.01)
Prior month, staffing levels (all)	1.15 (1.05-1.24)*	1.05 (1.01-1.12)**	1.13 (1.02-1.20)**	1.16 (1.04-1.22)**	1.19 (1.07-1.29)**	0.98 (0.89-1.06)	0.86 (0.74-0.97)*
Agency (i.e., temporary) staff use	0.91 (0.81-0.99)*	0.94 (0.83-1.06)	0.90 (0.83-0.96)**	0.94 (0.82-0.98)*	0.98 (0.93-1.01)	1.13 (1.01-1.19)**	1.17 (1.02-1.22)**
Current staff working at facility for 3 years (or more)	0.82 (0.78-0.95)**	0.75 (0.62-0.89)**	0.89 (0.72-0.95)*	0.86 (0.73-0.94)**	0.73 (0.69-0.91)**	1.00 (0.91-1.04)	1.11 (1.03-1.19)**

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

C. An examination of DCWs characteristics and abuse.

Table 8 presents the association of DCWs characteristics associated with abuse. The characteristics examined include gender, age, education level, race, and language spoken. For parsimony single dummy variables are presented. In sensitivity analyses other more comprehensive dummy variables (e.g., other levels of education) and continuous variables (e.g., age) were used. The findings were not significantly different from those presented. Each domain of abuse is also examined as a composite score (Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; Sexual Abuse from Staff).

Overall, very few associations with demographics were evident. From the perceptions of DCWs, males were more likely to physically abuse residents (AOR=1.03) but less likely to conduct psychological abuse (AOR=0.96) or material exploitation (AOR=0.98). Although, as shown in Table 7 the characteristics of staffing levels, turnover, and agency use were associated with abuse.

**TABLE 8:** Direct Care Workers Perceptions of Resident Abuse (N=12,555) and Association with Demographic Factors

Characteristic	Verbal Abuse from Staff	Physical Abuse from Staff	Psychological Abuse from Staff	Caregiving Abuse from Staff	Medication Abuse from Staff	Material Exploitation from Staff	Sexual Abuse from Staff
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Gender (Male vs. Female)	0.97 (0.93-1.02)	1.03 (1.01-1.07)**	0.96 (0.89-1.01)*	1.03 (0.96-1.06)	0.92 (0.87-1.01)	0.98 (0.94-0.99)*	1.01 (0.99-1.09)
Age (<30 vs. Higher)	1.02 (0.94-1.04)	0.94 (0.90-1.13)	1.19 (1.05-1.25)**	0.93 (0.89-1.04)	0.96 (0.89-1.02)	1.02 (0.94-1.10)	1.08 (0.99-1.16)
Education level (HS vs. Higher)	0.84 (0.72-0.98)*	0.98 (0.95-1.06)	0.97 (0.85-1.03)	0.98 (0.87-1.93)	0.98 (0.91-0.99)*	1.00 (0.91-1.10)	1.05 (0.98-1.10)
Race (Black vs. Other)	0.97 (0.74-1.02)	0.97 (0.81-1.043)	0.96 (0.89-1.11)	1.04 (0.98-1.11)	0.89 (0.87-1.03)	1.065 (0.98-1.10)	0.98 (0.92-1.10)
Language spoken (English vs. Other)	1.06 (0.98-1.19)	1.05 (0.99-1.12)	1.09 (0.99-1.12)	0.95 (0.83-0.98)*	1.11 (1.07-1.12)**	0.98 (0.93-1.04)	1.11 (0.98-1.11)

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

D. Resident characteristics and abuse.

Table 9 presents the association of resident characteristics associated with abuse. The characteristics examined include gender, age, dementia, and physical limitations. Each domain of abuse is also examined as a composite score (Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; Sexual Abuse from Staff). In 3 of the 7 abuse domains younger age was significantly associated with lower abuse; in 3 of the 7 abuse domains dementia was significantly associated with higher abuse; and in 4 of the 7 abuse domains physical limitations were associated with higher abuse.

It was hypothesized that: (1) residents with dementia will be associated with high rates of abuse; (2) residents with physical limitations will be associated with high rates of abuse; and, (3) older residents will be associated with high rates of abuse. The findings provide some support for these hypotheses.



**TABLE 9:** Direct Care Workers Perceptions of Resident Abuse (N=12,555) and Association with Resident Factors

Characteristic	Verbal Abuse from Staff	Physical Abuse from Staff	Psychological Abuse from Staff	Caregiving Abuse from Staff	Medication Abuse from Staff	Material Exploitation from Staff	Sexual Abuse from Staff
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Gender (Male vs. Female)	1.02 (0.97-1.10)	0.93 (0.79-1.01)	1.15 (1.07-1.24)*	1.11 (0.99-1.12)	1.03 (0.96-1.11)	1.14 (0.96-1.14)	0.98 (0.93-1.04)
Age (younger vs. older)	0.91 (0.86-0.99)*	0.99 (0.91-1.03)	0.94 (0.84-0.99)*	0.92 (0.87-0.98)**	1.09 (0.92-1.17)	1.08 (0.99-1.15)	0.97 (0.87-1.03)
Dementia	1.17 (1.02-1.22)**	0.98 (0.89-1.07)	1.04 (0.99-1.10)	1.07 (1.01-1.13)**	0.90 (0.86-1.10)	1.12 (1.03-1.17)**	0.98 (0.94-1.03)
Physical limitations	0.98 (0.94-1.02)	1.11 (1.01-1.21)**	1.10 (1.01-1.19)**	0.93 (0.91-1.13)	1.05 (1.01-1.09)*	1.14 (1.02-1.19)*	1.08 (0.99-1.12)

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

*E. Leadership characteristics and abuse.*

Table 10 presents the association of administrator leadership characteristics associated with abuse. The characteristics examined include tenure, education level, age, and leadership score. Each domain of abuse is also examined as a composite score (Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; Sexual Abuse from Staff). Overall, very few associations with demographics were evident. In 2 of the 7 abuse domains longer tenure was significantly associated with lower abuse; in 3 of the 7 abuse domains a higher education level was significantly associated with lower abuse; and in 4 of the 7 abuse domains better leadership scores were associated with lower abuse.

It was hypothesized that: (1) low top management tenure will be associated with high rates of abuse; (2) low top management education levels will be associated with high rates of abuse. The findings provide weak support for these hypotheses.

**TABLE 10:** Direct Care Workers Perceptions of Resident Abuse (N=12,555) and Association with Administrator Leadership Factors

Characteristic	Verbal Abuse from Staff	Physical Abuse from Staff	Psychological Abuse from Staff	Caregiving Abuse from Staff	Medication Abuse from Staff	Material Exploitation from Staff	Sexual Abuse from Staff
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Tenure	1.03 (0.96-1.04)	0.92 (0.82-1.02)	0.89 (0.79-0.99)*	0.98 (0.93-1.00)*	1.00 (0.94-1.10)	1.05 (0.99-1.11)	1.07 (0.98-1.12)
Education level	1.05 (0.95-1.12)	1.05 (0.91-1.12)	0.95 (0.83-1.02)	0.90 (0.82-1.03)	0.89 (0.78-0.98)*	0.98 (0.90-1.00)*	0.89 (0.74-0.98)*
Age	1.02 (0.96-1.05)	1.00 (0.94-1.11)	1.08 (0.99-1.10)	1.00 (0.97-1.10)	1.00 (0.95-1.10)	1.06 (1.01-1.09)*	1.01 (0.99-1.11)
Leadership score	0.92 (0.87-0.99)**	0.99 (0.93-1.04)	0.86 (0.73-1.01)	0.97 (0.88-0.99)*	0.99 (0.96-1.00)*	0.96 (0.88-0.99)*	0.96 (0.73-1.04)

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

*F. Inter-correlations of abuse.*

Table 11 presents the association of the various domains of abuse. The characteristics examined include each domain of abuse (Verbal Abuse from Staff; Physical Abuse from Staff; Psychological Abuse from Staff; Caregiving Abuse from Staff; Medication Abuse from Staff; Material Exploitation from Staff; Sexual Abuse from Staff). Overall, this shows that residents abused in one area are likely not to be abused in other areas. In a few cases however, some correlation does exist. Residents who are verbally abused are also more likely to be physically abused and psychologically abused. In addition, residents who have care giving abuse are also more likely to have medication abuse.

**TABLE 11:** Direct Care Workers Perceptions of Resident Abuse (N=12,555) and the Correlation of Domains of Abuse

	Verbal Abuse from Staff	Physical Abuse from Staff	Psychological Abuse from Staff	Caregiving Abuse from Staff	Medication Abuse from Staff	Material Exploitation from Staff	Sexual Abuse from Staff
Verbal Abuse from Staff	1						
Physical Abuse from Staff	0.37*	1					
Psychological Abuse from Staff	0.43*	0.38*	1				
Caregiving Abuse from Staff	0.19	0.2	0.18	1			
Medication Abuse from Staff	0.22	0.09	0.25	0.36*	1		
Material Exploitation from Staff	0.13	0.21	0.14	0.17	0.21	1	
Sexual Abuse from Staff	0.19	0.16	0.11	0.18	0.1	0.15	1

\* $p < .05$ .

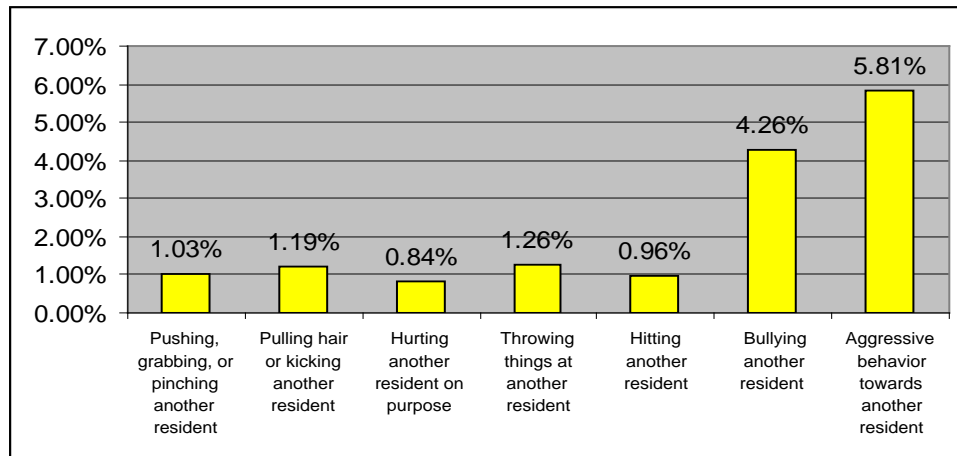
*G. Resident-to-resident abuse.*

Table 12 presents the DCWs perceptions of resident-to-resident abuse. We asked whether DCWs saw any residents abuse each other. The domains used were verbal abuse from other residents, physical abuse from other residents, psychological abuse from other residents, material exploitation from other residents, and sexual abuse from other residents. The highest percent was for arguing with another resident (12.83%) and the lowest percent was for digital penetration (0.02%).

**TABLE 12: Direct Care Workers Perceptions of Resident-to-Resident Abuse (N=12,555)**

Category and Item	Did you see any residents do this to other residents?	
	Percent	(N)
<b>Verbal Abuse from Other Residents</b>		
Yelling at another resident	4.24%	(532)
Making <u>nasty remarks</u> to another resident	4.88%	(613)
Swearing at another resident	6.01%	(754)
Making <u>humiliating remarks</u> to another resident	11.69%	(1468)
Arguing with another resident	12.83%	(1611)
<b>Physical Abuse from Other Residents</b>		
Pushing, grabbing, or pinching another resident	1.03%	(129)
Pulling hair or kicking another resident	1.19%	(150)
Hurting another resident on purpose	0.84%	(105)
Throwing things at another resident	1.26%	(158)
Hitting another resident	0.96%	(121)
Bullying another resident	4.26%	(535)
Aggressive behavior towards another resident	5.81%	(730)
<b>Psychological Abuse from Other Residents</b>		
Threatening remarks to another resident	3.27%	(411)
Critical remarks to another resident	3.95%	(496)
<b>Material Exploitation from Other Residents</b>		
Stealing things from another resident	1.81%	(227)
Stealing money from another resident	1.22%	(153)
Signing important documents (e.g., checks) without permission from another resident	0.27%	(34)
Destroying things that belong to another resident without permission	1.74%	(218)
<b>Sexual Abuse from Other Residents</b>		
Unwelcome touching of another resident	0.27%	(34)
Unwelcome discussion of sexual activity with another resident	1.73%	(217)
Exposure of a residents <u>private-body parts to embarrass</u> them	1.61%	(202)
Digital penetration (e.g., finger) of another resident	0.02%	(2)

**Figure 1: Physical Abuse from Other Residents**



## ANALYSIS AND DISCUSSION

The National Research Council reports that “the national response to elder mistreatment still remains weak and incomplete... [E]lder mistreatment remains hidden, poorly characterized, and largely unaddressed” (Bonnie & Wallace, 2003, p. 18). Based on our literature review this would seem to be especially true for AL. Clearly, elder abuse may be extremely important in the daily lives of AL residents. It can greatly influence quality-of-life. Moreover, elder abuse in general is associated with adverse health consequences. These adverse health consequences include fractures, depression, dementia, and malnutrition (Dyer, Connolly, & McFeeley, 2000; Lachs et al., 2002). Further, from an institutional perspective, abuse if not prevented can be considered an issue of neglect, in addition to an issue of resident safety. Thus, the findings of this research identifying possible staff abuse of residents in AL would appear significant.

The findings indicate that for verbal abuse, physical abuse, psychological abuse, caregiving abuse, medication abuse, and material exploitation some levels of abuse are reported. Clearly, this has to be tempered by the limitation that the abuse identified comes from perceptions of DCWs, and as such represents unsubstantiated cases of abuse. This also has to be qualified in that the interpretation of “type” and “level” of abuse is subjective. No abuse should be the standard; but, arguments with residents are clearly different from rape.

These findings do have the strength that they represent the first characterization of abuse in a large sample of AL settings. As described above, much of AL is private-pay and residents are generally well functioning (Ball, Perkins, Hollingsworth, Whittington, & King, 2009). In this respect it is somewhat incomprehensible that elders receive anything less than the best care possible. On the other hand, the overall results that some abuse exists likely represent the powerlessness and isolation that is inherent to many elders – even those living in AL (Harbison et al., 2012).

Pillemer and Moore (1990) identified verbal abuse to be a common type of abuse in nursing homes. The authors noted that verbal abuse may be “basic features of nursing home life.” (p. 314). We are not able to calculate reliable rates from our AL data (as we detail below). Thus, we cannot make the same assertion that verbal abuse is a basic feature of AL life. Nevertheless, verbal abuse in the form of yelling and insulting remarks from staff does appear to be an endemic issue. This may be an area where qualitative research may be useful. The nature of what remarks were made and the context of the yelling would substantially inform this area.

The potential for psychological abuse by long-term care staff was identified by Wang (2005). That is, he identified 16% of caregivers to have a high tendency towards psychological abuse. No actual incidences of abuse were identified in this prior study. Thus, the findings reported in the study presented here start to give some credence to the possibility that psychological abuse by staff may not be at inconsequential levels.

The National Elder Abuse Incidence Study provided estimates of domestic (household) elder abuse and neglect; however, 50,000 cases of abuse were found to be reported in nursing homes (National Center on Elder Abuse, 1998). From these cases 49% were identified as neglect. Our findings from AL would also seem to indicate neglect. In this case, caregiving neglect was identified. With the staffing problems that exist in long-term care settings, some degree of caregiving neglect may occur in the form of delayed care etc. However, our questions were most certainly in the realm of undefensible caregiving and not simply delays; such as deliberately withholding water.

Our finding in this area of caregiving abuse does warrant further investigation. Given the

health status of many AL residents, we would expect many residents to have few eating and drinking limitations. Thus, the types of residents included in this type of abuse in AL should be investigated (such as those with dementia). Also, we speculate that denial of food and drink for many AL residents may be much less problematic than for impaired residents in nursing homes. Residents are likely able to eat or drink without DCWs help. Nevertheless, with the data available we are not able to examine this assumption. This would seem to mirror recent findings in nursing homes. Zhang and associates (2011) using 414 family members identified approximately 21% of residents were neglected on at least one occasion over a 12 month period.

The rates of abuse reported in our study are somewhat difficult to compare with other studies. In nursing homes, Schiamberg and associates (2012) identified 24.3% of respondents identifying some type of physical abuse. However, this is a limited representation as respondents were relatives and the sample size was small (N=452).

Very little information exists on medication abuse in elderly populations. Yet, elders consume 25% of all prescriptions prescribed each year (Sollitto, 2010). There are a number of reasons that can lead to medication abuse by elders including: miscommunication between seniors and healthcare providers; comprehension of medication instructions; forgetting to take prescriptions (i.e., non-adherence); and, combining medications (Meyer, 2010). Our study shows that abuse from staff should also be added to this list of abuse issues. The medication abuse we examined could arguably be included in the caregiving abuse category. In retrospect, it may be productive to examine misuse by staff such as stealing of medications.

Very little sexual abuse in AL was identified. This finding is similar to the few studies examining sexual abuse in nursing homes (e.g., Teaster, Ramsey-Klawnsnik, Mendiondo, et al., 2007). This is clearly a positive finding. However, we note that the levels identified were not zero and AL residents may experience sexual abuse from staff. It is interesting to note that the highest levels identified for sexual abuse were for exposure of private body-parts. Reflecting the overlap in many areas of abuse, this may also represent a form of psychological abuse of residents.

It was identified that a resident-to-resident abuse seemed more prevalent than staff abuse. Zhang and associates (2012) over a 1 year period identified 10% of nursing home residents to be abused by non-staff (i.e., visitors or other residents). A resident who suffers from resident-to-resident abuse may become more vulnerable to abuse by a staff member (Schiamberg et al., 2012), or vice versa. Moreover, these interactions may not occur contemporaneously. Longitudinal data and methods are needed to better inform in this area.

Some types of abuse included in our survey are not readily addressed by services used to combat abuse in other settings, such as use of police services (e.g., insulting remarks). As such, many more options to prevent staff abuse in AL are needed. The mainstay of services provided by law enforcement and Ombudsmen have an important role to play; but, we need to be more creative in addressing all areas of elder abuse. Nursing homes are using nurse aide training programs. For example, Pillemer and Hudson (1993) present a training program based on materials from CARIE (Center for Advocacy for the Rights and Interests of the Elderly). It is not clear whether similar programs are used in AL. As Ploeg and associates (2009) have identified, increasing knowledge and behavior relative to elder abuse is a challenge – and few interventions have done this well.

AL providers themselves could be more vigilant in identifying abuse. This is clearly self-evident, as resident care should be paramount in all facilities. Nevertheless, vigilance may vary.

Identifying resident abuse has legal implications. As we have seen in many other settings (e.g., church, military, and schools) some organizations may choose not to address abuse (based on fear of litigation). An environmental scan of training and policies addressing abuse in AL may be helpful.

The research findings also show that DCWs believe that the impact of abuse on residents is such that it has had a detrimental influence on the facility atmosphere (see Table 4). These findings may also be important. Clearly, resident abuse is considered to be detrimental to the abused. However, a perpetrator can also create an unhealthy environment. That is, an overall culture, attitude, or atmosphere in which abuse persists could also have a detrimental influence on residents as a whole. These analyses cannot determine whether the facility atmosphere directly influences residents' health, but we speculate that it likely influences requests for care, social functioning, and quality of life.

### **Limitations and Suggestions for Future Research**

The definition of abuse used has some limitations. For instance, one resident raising his/her voice to another resident is quite different than resident-to-resident physical abuse. Also, comingling lesser forms of "abuse" such as two residents yelling at each other with more serious forms of abuse may be problematic. However, as a recent review of the literature notes, defining abuse in general is problematic (Castle, Ferguson-Rome, & Teresi, in press).

We are not able to calculate reliable rates of abuse from our data. This is clearly needed in subsequent investigation. As such, we need to be careful in the interpretation of our findings. The rates reported are limited in several ways. First, they represent "seen" events in a 3 month period. DCWs may have seen the same events (representing over-reporting) or may not have seen an event at all (representing under-reporting). Thus, the rates of abuse are presented as a first-pass at producing such figures and should be interpreted with this in mind.

In our survey, DCWs self-reported that they had worked in AL. It is likely that these responses are accurate, but more detail would be beneficial. AL is highly varied; including variation in staffing patterns and services provided. Following other research on AL (Zimmerman & Sloane, 2007) some specificity in the sample of AL used in future analyses may be useful. Moreover, some specificity in the abuse items to be specific for AL care may also be beneficial.

Similarly, the reliability and accuracy of DCWs' perceptions on abuse are unknown. As part of our analyses, we conducted a cross-validation study to examine this issue. Using our abuse survey, and interviews with DONs (n=5), administrators (n=10), and DCWs (n=42) we asked respondents to rate how reliable answers to each question would be. Using a 1-10 scale, with 10 as "extremely reliable" the mean rating was 9.1. Moreover, in focus groups a consistent theme from DCWs was that responses would be accurate and reliable. Still, this issue remains to be fully explored and clearly represents a limitation of the current study.

The findings on medication abuse come from DCWs' perspectives. DCWs do not prescribe medications. In addition, they lack extensive clinical training and may sometimes misinterpret some issues surrounding medication administration. For example, delays in administering medications can result when medications cannot be taken together. However, in AL many DCWs do directly help residents with taking medications (in fact this is a major reason many elders are placed in AL settings). We are aware of these issues; and believe that DCWs are capable of providing an informed perception on medication abuse (just as they can with other areas of abuse).

The reliability of abuse reporting is a consistent limitation of almost all abuse research. There is likely underreporting in many cases of abuse. This may be especially true for some types of abuse we report (i.e., sexual abuse). In addition, our approach is also subject to a further risk to reliability. That is, a reliability problem may exist based on the interpretative nature of the abuse (i.e., verbal abuse). For example, what one DCW considers yelling may not be the same for another (Fitzpatrick & Hamill, 2010).

We also only examine staff abuse (with less emphasis on resident-to-resident abuse). Some diversity also exists in the resident population of many AL settings. Elders make up the majority of residents, but many facilities also care for non-elderly adults. These non-elderly adults often have a psychiatric diagnosis (Spillman, Liu, & McGalliard, 2003). Having a psychiatric diagnosis is associated with perpetrating abuse (Dyer, Connolly, & McFeeley, 2002). Our findings show resident-to-resident abuse may be prevalent in AL. In additional analyses, we suggest that resident-to-resident abuse investigation should be expanded – for example, to include issues such as resident health and social functioning, and staff attitudes.

## **CONCLUSIONS AND IMPLICATIONS OF FINDINGS**

Clearly, we identify many issues and limitations of the results presented. Most significantly, the information comes from a self-report from DCWs. Nevertheless, our results should also be viewed as presenting a first blush view of elder abuse in AL.

The findings presented are important in many respects. First, elder abuse should be uncommon, but we have evidence indicating that this is not the case. Substantiated cases of abuse were not examined, rather observed, second-hand, and suspected cases of abuse. Still, we would also expect all of these reports in settings like AL to be extremely rare. Our findings would seem to also dispel this belief. Given the many limitations of our study, we should be careful not to cause undue alarm regarding abuse in AL. But at the very least, we advocate that it would seem reasonable to extend the scope of institutional focus on elder abuse in nursing homes to be justifiably expanded to also include AL.

Second, the findings presented are important in identifying some areas associated with abuse. For example, external, organizational, and internal factors were associated with resident abuse including lower staffing levels (significantly associated with higher levels of abuse). Very few associations with demographic characteristics of DCWs were associated with abuse. Resident characteristics associated with higher levels of abuse include residents with dementia and with physical limitations. Administrator leadership characteristics associated with high rates of abuse include shorter tenure and lower education level

In summary, we are able to conclude:

With respect to the Data Collection

- The questionnaires seemed appropriate for the data collection (given the response rates and psychometric properties).
- The data is representative of both DCWs and AL settings.

With respect to Abuse by Staff

- Overall, we find resident abuse to be uncommon.
- Resident abuse varies according to the type of abuse. For example, verbal abuse and psychological abuse was reported more often than sexual abuse.

With respect to Resident-Resident Abuse

- Overall, we find resident-to-resident abuse to be more common than staff abuse.
- Resident-to-resident abuse varies according to the type of abuse. For example, verbal abuse and psychological abuse was reported more often than sexual abuse and material exploitation.

With respect to Administrators Perceptions on Abuse

- Overall, we again find resident abuse to be uncommon.
- Abuse that occurs seems to be infrequent.
- Administrators perceptions seem to match DCWs perceptions.
- Resident abuse varies according to the type of abuse. For example, verbal abuse and psychological abuse was reported more often than sexual abuse.



## **BIOGRAPHICAL NOTES ON AUTHORS AND INSTITUTIONS**

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