

Research Article

Elder Abuse Severity: A Critical but Understudied Dimension of Victimization for Clinicians and Researchers

David Burnes, PhD,^{*.1} Karl Pillemer, PhD,² and Mark S. Lachs, MD, MPH³

¹University of Toronto, Factor-Inwentash Faculty of Social Work, Toronto, Ontario. ²Department of Human Development, Cornell University, Ithaca, New York. ³Weill Cornell Medical College, Cornell University, New York.

*Address correspondence to David Burnes, PhD, University of Toronto, Factor-Inwentash Faculty of Social Work, Room 338, Toronto, Ontario M5S 1V4, Canada. E-mail: david.burnes@utoronto.ca

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Abstract

Purpose of the Study: To describe the variation in severity of elder emotional abuse, physical abuse, and neglect and identify factors associated with more severe forms of elder mistreatment (EM).

Design and Methods: Population-based study using random digit-dial sampling and telephone interviews with a representative sample ($n = 4,156$) of community-dwelling, cognitively intact older adults in New York State. The Conflict Tactics Scale and DUKE Older Americans Resources and Services scales were adapted to assess EM subtypes. For each EM subtype, severity was operationalized by summing the number of different mistreatment behaviors and the frequency of each behavior. Among older adults reporting some degree of mistreatment, ordinal or multinomial regression predicted severity of elder emotional abuse, physical abuse, and neglect.

Results: Distribution of EM severity was characterized by a negative/right skew. More severe emotional abuse was predicted by younger age, living with the perpetrator only, Hispanic background, and higher education. Increasing physical abuse severity was associated with younger age and living only with the perpetrator. Higher neglect severity was associated with functional impairment, younger age, living only with the perpetrator, lower income, and lower education. The presence of nonperpetrator others living in the home served a protective function against escalating mistreatment severity.

Implications: Extends existing EM risk factor research by operationalizing mistreatment phenomena along a continuum of severity. Findings enhance capacity to screen and report particularly vulnerable EM victims and inform targeted interventions to ameliorate the problem. Incorporation of severity into EM research/measurement reflects the clinical and phenomenological reality of the problem.

Key Words: Mistreatment, Intensity, Risk factors, Outcome measurement

Elder mistreatment (EM) is a pervasive public health concern with major individual consequences, such as shortened survival as well as societal costs (Dong, 2014; Pillemer et al., 2015). One-year EM incidence among community-dwelling, cognitively intact older adults in the United States is 7.6–9.5% (Pillemer, Burnes, Riffin, & Lachs, 2015). EM refers to an intentional act or omission of care occurring in a relationship of trust, which cause harm or serious risk

of harm to an older adult or deprives an older adult of basic needs. EM encompasses physical, sexual, emotional, and financial abuse or neglect (National Research Council [NRC], 2003).

Population-based EM prevalence studies (Acierno et al., 2010; Burnes et al., 2015; Laumann, Leitsch, & Waite, 2008; Peterson et al., 2014; Pillemer & Finkelhor, 1988) have advanced our understanding of the scope and

risk factors for the occurrence of EM in the general population. However, to date, these studies used binary (EM/non-EM) outcomes that compressed the range and depth of EM phenomena into a single category of positive case-ness (e.g., one or more mistreatment behaviors in past year). A binary operational EM definition is necessary to establish incidence/prevalence rates; however, it provides limited clinical relevance to health and social service professionals who work with cases characterized by higher degrees of severity and require knowledge of how to alleviate the problem.

EM phenomena are most accurately represented along a continuum of severity. Considerable variation exists across each EM type in regards to the frequency and multiplicity of mistreatment behaviors (Fisher, Zink, & Regan, 2011). In a landmark NRC (2003) report, EM experts noted that EM behaviors occur along a continuum and ought to be analyzed as dimensional variables in terms of frequency/severity. Older adults enduring more frequent and varied mistreatment behaviors are more likely to experience poor mental and physical health, chronic pain, hospitalization, and all-cause mortality (Dong et al., 2009; Dong, Simon, & Evans, 2012; Fisher and Regan, 2011). Largely overlooked in the EM literature, an integration of severity variation into EM conceptualization and measurement would align with research advancements in other domains of interpersonal violence, including child maltreatment (Sprang, Clark, & Bass, 2005) and intimate partner violence (Logan, Walker, & Cole, 2015).

Health professionals who work with older adults incorporate consideration of problem severity into everyday clinical decisions related to EM screening and reporting. Similarly, in elder protection agencies, clinical decisions related to triaging incoming referrals, substantiation assessment, allocating response times, formulating case plan interventions, and/or closing cases depend upon an understanding of problem severity. A greater understanding of the nature and risk factors of EM severity would enhance our capacity to screen victims at the highest risk for detrimental outcomes and inform the development of targeted protective interventions to alleviate the problem. Researching EM through an operational lens of varying severity reflects both the clinical perception of the problem and the nature of mistreatment phenomena as they exist in reality.

Conceptual Framework

Virtually no research exists on factors that place older adults at heightened risk for more severe forms of mistreatment. With limited empirical research on EM severity risk factors, this paper relied heavily on theoretical/conceptual guidance. The NRC (2003) proposed an ecological-systems-oriented EM theoretical framework to identify factors embedded within different levels of ecological influence that contribute to EM severity. Using this framework, EM severity is viewed as a function of interacting characteristics

attached to the individual victim (e.g., functional status, health status, age) and perpetrator, victim-perpetrator relationship (e.g., power dynamics), living environment (e.g., co-habitation status), social embeddedness (e.g., level of social surveillance), and broader sociocultural context (e.g., race/ethnicity, socioeconomic status, geographical context).

At the levels of the individual victim/perpetrator and victim-perpetrator relationship, EM severity is conceptualized, in part, as a product of individual vulnerabilities that contribute to status inequality and power imbalance within the relationship (NRC, 2003). Heightened EM severity can result from power imbalance tilted in favor of the trusted other during scenarios where the older adult is dependent and living with age-associated impairment (functional, physical/mental health, cognitive). Elder power disadvantage and vulnerability may also arise in relationships characterized by gender- or age-based status inequalities (Burnight & Mosqueda, 2011; Newman, Seff, Beaulaurier, & Palmer, 2013). In contrast, EM can arise from relational power imbalance that favors the older adult and contributes towards resentment from the trusted other, such as scenarios in which the trusted other is dependent upon the older adult for finances and/or housing (Jackson & Hafemeister, 2013).

A shared living arrangement (as opposed to living alone) is seen as providing greater, unhindered access to the victim, as well as greater opportunity for tension and escalation in mistreatment (NRC, 2003). Beyond general cohabitation status (alone vs. shared), it is unclear which specific cohabitation dynamics contribute to EM severity. Conventional wisdom suggests that living with the perpetrator contributes to intensification of EM severity. However, whether or not the presence of nonperpetrator cohabitants influences mistreatment severity is unknown. Such social embeddedness is conceptualized as serving a protective surveillance function to deter mistreatment (NRC, 2003).

Individual, relationship, and living environment factors are embedded within broader sociocultural processes that influence mistreatment risk (NRC, 2003). Situational demands theory suggests that the presence of contextual and structural stressors increases the likelihood of EM (Glendenning, 1993). Sociostructural processes and arrangements that contribute to everyday, cumulative stress, such as socioeconomic strain, marginalization, and geographical isolation may contribute to escalating mistreatment severity.

Elder Abuse and Neglect Severity Variation

Few studies have described the variation in EM severity across mistreatment subtypes. In a population-based survey of older adults in Allegheny County, Pennsylvania, Beach, Schulz, Castle, and Rosen (2010) found a somewhat positively skewed distribution of elder emotional abuse behavior frequencies (once—35%, 2–9 times—56%, and 10 or more times—10%). In a study of older women who visited primary care clinics in Ohio, Fisher and Regan

(2006) found that high proportions of EM victims experienced mistreatment behaviors “often” across EM subtypes (emotional abuse—57%, physical abuse—41%, and sexual—46%). The following proportions of victims experienced more than one mistreatment behavior within a given EM subtype (multiplicity): emotional abuse (45%), physical abuse (37%), and sexual abuse (23%) (Fisher and Regan, 2011). From a sample of adult protective service clients in Chicago, Conrad, Iris, Ridings, Langley, & Anetzberger (2011) demonstrated severity variation in regards to the nature of psychologically abusive behaviors across victims. Variation clearly exists in the severity of EM subtypes. However, we lack a thorough understanding of its morphology. What does the distribution of EM severity look like and what proportion of cases fall in higher, clinically relevant ranges of severity? A large-scale population-based study is required to provide the most valid and unbiased representation of EM severity morphology.

Aims and Hypothesis

Using data from a population-based, representative sample of community-dwelling, cognitively intact older adults, this study sought to: (a) describe the variation in severity of elder emotional abuse, physical abuse, and neglect; and (b) identify factors associated with varying severity of elder emotional abuse, physical abuse, and neglect. Aforementioned theory guided the following hypothesis: Among older adults who have experienced some degree of mistreatment, those with higher levels of physical vulnerability (lower physical health, lower functional capacity, higher age), relationship imbalance with the perpetrator (functional dependence, intergenerational difference), isolated perpetrator cohabitation, and sociocultural disadvantage (lower socioeconomic status, marginalized race/ethnicity, geographical isolation) will experience more severe levels of elder emotional abuse, physical abuse, and neglect.

Design and Methods

Data

The New York State Elder Mistreatment Prevalence Study (NYSEMPS) used a random digit-dial (landline/wireless phones), stratified sampling strategy derived from census tracts of NYS to conduct direct telephone interviews with a representative (age, race/ethnicity, gender) sample ($n = 4156$) of older adults in 2009. Inclusion criteria were: (a) age ≥ 60 years; (b) English/Spanish-speaking; (c) community-dwelling; and (d) cognitively intact as determined by a modified version of the Abbreviated Mental Test (Swain & Nightingale, 1997). The Cornell Survey Research Institute conducted telephone interviews following training on EM and safety protocols. Participants were asked if they were in a private place to complete the interview; a toll-free call-back number was provided if participants were not. To avoid exclusion of older adults with potentially

high EM vulnerability, proxy interviews were conducted in a small number of cases ($n = 156$) when the elder had physical, communication, or language barriers preventing direct interviewing. Proxy interviewing has been successfully implemented in prior EM research, despite risk that the proxy might be the perpetrator. Several studies demonstrate that perpetrators are equally or more likely to report EM compared to victims (NRC, 2003). Using American Association for Public Opinion Research criteria, the NYSEMPS yielded a cooperation rate of 75.2%. Analysis for selection bias found only that refusers were less likely to be married/partnered. A more detailed description of NYSEMPS methods is available elsewhere (Lachs & Berman, 2011).

Dependent Variables

Well-established measures were adapted to assess EM subtypes. A modified version of the Conflict Tactics Scale (CTS) was used to assess elder emotional and physical abuse (Pillemer & Finkelhor, 1988). Elder neglect was evaluated by failure to meet the elder’s needs by a responsible caregiver, using Duke Older Americans Resources and Services (OARS) instrumental activities of daily living (IADL) and ADL scales (Fillenbaum & Smyer, 1981). For each CTS item, the respondent was asked if they had experienced the mistreatment event by someone they live with or have spent a lot of time with since age 60 and, if so, how many times the event occurred in the past year (none, once, 2–10 times, or more than 10 times). For each DUKE OARS IADL/ADL, respondents were asked if they could complete the activity independently. If not, the respondent was asked who was responsible for helping with the activity and whether that person had failed to help since age 60 and how many times this had happened in the past year (none, once, two to 10 times, or more than 10 times). Please see Supplementary Appendix A for a detailed description of EM assessment questions. Affirmative responses to abuse/neglect events initiated a question on whether perpetrator status included one of the following relationships of trust: spouse/partner, adult child, son/daughter-in-law, grandchild, other relative, neighbor, friend, home-care attendant, or other non-relative. Consistent with accepted EM definitions (NRC, 2003), this study restricted elder abuse/neglect to scenarios occurring in one of these relationships of trust. In accordance with recommendations to maximize sensitivity in epidemiological interpersonal violence research (NRC, 2003), CTS and DUKE OARS tools assessed EM subtypes with contextually oriented, multiple, behaviorally defined items describing specific mistreatment events.

Calculation of mistreatment severity was adopted from scoring systems used for the CTS (Strauss, 1995) and Assessment of Self-Neglect Severity Scale (Dong et al., 2012). For each EM subtype, severity was measured continuously by summing the number of different mistreatment

behavior types (multiplicity) and the frequency of each behavior. Following CTS scoring guidelines (Strauss, 1995), frequency response categories were scored as follows to approximate actual frequencies: none = 0; once = 1; 2 to 10 times = 6, and more than 10 times = 15.

Emotional abuse was assessed with three CTS mistreatment items (doing/saying something to spite, insulting/swearing, threatening to hit/throw something), which allowed for total emotional abuse severity scores ranging from 0 to 45. Physical abuse was assessed using 11 CTS mistreatment items (throwing something, trying to slap/hit, pushing/grabbing/shoving, slapping, kicking/biting/hitting with fist, hit/tried to hit with something, locking in room, beating up, threaten with knife/gun, used knife/gun, other physical violence), which allowed for total physical abuse severity scores ranging from 0 to 165. Elder neglect was also assessed using 11 DUKE OARS ADL/IADL items (shopping, meal preparation, housework, taking medication, cutting/eating food, dressing/undressing, walking, getting in/out of bed, bathing/showering, using bathroom, other ADL/IADL requiring assistance), which allowed for neglect severity scores ranging from 0 to 165.

For each EM subtype, severity was examined only among the subsample of older adults who reported at least one mistreatment event since age 60. Therefore, severity analysis excluded older adults with no history of EM (Strauss, 1995). Zero scores represented older adults reporting EM since age 60 but an absence of mistreatment in the past year. Higher scores indicated increasingly severe forms of EM in the past year. This approach allowed us to capture the full spectrum of EM severity variation among older adults.

Independent Variables

Elder physical vulnerability was represented by functional capacity, self-reported health status, and age. Functional capacity was measured continuously as the number of DUKE OARS ADL/IADL tasks accomplished independently (0–11). Self-reported health was measured dichotomously as poor (very poor/poor/fair) or good (good/very good/excellent). Victim-perpetrator relationship dynamics were assessed by the type of perpetrator relation to the victim (spouse/adult child/grandchild/paid attendant) and whether or not the victim was functionally dependent upon the perpetrator (yes/no). Victim cohabitation status was operationalized to differentiate specific shared living dynamics (victim lives alone/victim lives only with perpetrator/victim lives with perpetrator and nonperpetrator others/victim lives only with nonperpetrator others). Sociocultural characteristics included gender, household income, education level, race/ethnicity, and geographical context. Household income was measured continuously (1–9) to reflect nine sequential income categories (<\$10,000; \$10,000 to <\$20,000; \$20,000 to <\$30,000;

\$30,000 to <\$40,000; \$40,000 to <\$50,000; \$50,000 to <\$75,000; \$75,000 to <\$100,000; \$100,000 to <\$150,000; and \$150,000+). Geographical context was defined by urban/suburban/rural environment, as determined by the NYS Office of Mental Health.

Analytic Plan

Bivariate/unadjusted regression was conducted on independent variables individually to explore preliminary relationships with EM subtype severity outcomes. Ordinary least squares (OLS) regression was attempted to predict continuous severity outcomes; however, severity outcome distributions violated parametric assumptions of normality. Therefore, continuous severity scores were converted into ordinal outcomes. Multivariate ordinal regression was used to predict elder physical abuse and neglect severity. The final ordinal regression model predicting emotional abuse severity violated the parallel lines test of proportional odds; therefore, a less restrictive multinomial logistic regression approach was used with this EM subtype. Ordinal severity outcome cut-off points were determined based on EM subtype sample size and data distribution. Selection of independent variables into multivariate models was based on significance in bivariate/unadjusted analysis ($P < 0.10$) and tolerance/variance inflation factor diagnostics. Whether the interview was completed by an older adult or close proxy was controlled for in all analyses. Missing data were managed with a fully conditional specification multiple imputation method using 10 pooled data sets. All analyses were performed using IBM SPSS Statistics version 22.

Results

Representative of the general older NYS population, the sample was higher proportion female and Caucasian with mean age of 74.13 (SD = 8.66). It consisted mostly of older adults with functional independence and good health. Over half of the respondents had education beyond high-school. The mean household income category was \$30,000 to \$40,000. Almost half of the sample was married/partnered and the majority of older adults lived in a shared arrangement (Table 1).

Description of Mistreatment Severity

Emotional Abuse

A subsample of 509 [(12.2%), 95% confidence interval (CI): 11.2–13.2%] older adults reported at least one emotional abuse mistreatment event since age 60. The descriptive statistics that follow apply only to this subsample of older adults who reported some degree of emotional mistreatment. The mean severity score was 6.76 (CI: 6.04–7.48, SD = 8.25, median = 6, range: 0–42). Using the frequency category scoring system outlined above, this mean implied

Table 1. Descriptive Characteristics of Total Sample and Elder Mistreatment Severity Subtype Samples

Characteristics	Total sample (<i>n</i> = 4,156) <i>n</i> (%)	Emotional (<i>n</i> = 509) <i>n</i> (%)	Physical (<i>n</i> = 89) <i>n</i> (%)	Neglect (<i>n</i> = 109) <i>n</i> (%)
Physical vulnerability				
Functional capacity mean (±SD)	9.59 (1.2)	10.49 (1.4)	10.2 (1.8)	8.4 (1.8)
Health				
Poor	1,029 (24.8)	135 (26.5)	35 (39.3)	80 (73.4)
Good	3,124 (75.2)	372 (73.1)	54 (60.7)	29 (26.6)
Age mean (±SD)	74.13 (8.7)	71.9 (8.4)	71.87 (8.6)	74.7 (9.1)
Home living environment				
Victim cohabitation status				
Lives alone	1,573 (37.9)	162 (31.8)	30 (33.7)	45 (41.3)
Shared	2,555 (61.5)	342 (67.2)	58 (65.2)	61 (56.0)
Lives with perpetrator only		142 (27.0)	29 (32.6)	22 (20.2)
Lives with perpetrator and nonperpetrator others		66 (13.0)	7 (7.9)	18 (16.5)
Lives only with non-perpetrator others		116 (31.8)	20 (22.5)	19 (17.4)
Marital status				
Married/partnered	1,958 (47.1)	244 (47.9)	32 (36.0)	34 (31.2)
Separated/divorced	515 (12.4)	96 (18.9)	37 (41.6)	23 (21.1)
Other (widow/single)	1,671 (40.2)	168 (33.0)	20 (22.5)	51 (46.8)
Sociocultural				
Gender				
Male	1,476 (35.5)	207 (40.7)	35 (39.3)	32 (29.4)
Female	2,680 (64.5)	302 (59.3)	54 (60.7)	77 (70.6)
Ethnicity				
Caucasian	3,005 (72.3)	366 (71.9)	58 (65.2)	65 (59.6)
African-American	757 (18.2)	95 (18.7)	23 (25.8)	30 (27.5)
Hispanic	250 (6.0)	30 (5.9)	4 (4.5)	5 (4.6)
Other	107 (2.6)	15 (2.9)	3 (3.4)	6 (5.5)
Education				
Less than high school	514 (12.4)	52 (10.2)	9 (10.1)	27 (24.8)
High school	1,290 (31.0)	125 (24.6)	20 (22.5)	32 (29.4)
More than high school	2,326 (56.0)	330 (64.8)	58 (65.2)	48 (44.0)
Household income mean (±SD)	4.5 (2.1)	4.9 (2.1)	4.1 (2.0)	3.63 (2.1)
Geographical context				
Urban	2,395 (57.6)	292 (57.4)	64 (71.9)	63 (57.8)
Suburban	1,117 (26.9)	141 (27.7)	14 (15.7)	36 (33.0)
Rural	635 (15.7)	76 (14.9)	11 (12.4)	10 (9.2)
Interviewed by proxy				
No	4,000 (96.3)	482 (94.7)	83 (93.3)	90 (82.6)
Yes	156 (3.8)	27 (5.3)	6 (6.7)	19 (17.4)

that older adult victims experienced, on average, 2–10 mistreatment events per year. The distribution of individual emotional abuse severity scores was positively/right skewed (Figure 1) (Kolmogorov–Smirnov normality test < 0.001, Skewness = 1.69). Distribution of respondents across mistreatment frequency categories was as follows: since age 60 but not past year (21.6%), once past year (21.8%), 2–10 times past year (33.2%), >10 times past year (23.4%). Older adults experienced some variation in the number of different emotional abuse behavior types endured (one—74.5%, two—20.8%, three—3.5%). The most common type of emotional abuse behavior was insulting/swearing (64%), followed by doing/saying something to spite (52.8%), and threatening to hit/throw something (11.2%).

In relation to the entire study sample ($n = 4156$), the distribution of respondents across emotional abuse frequency categories was as follows: none at all (87.8%), since age 60 but not past year (2.6%), once past year (2.7%), 2–10 times past year (4.1%), >10 times past year (2.9%).

Physical Abuse

A subsample of 89 (2.1%, CI: 1.7–2.6%) older adults reported at least one physical abuse mistreatment event since age 60. The descriptive statistics that follow apply only to this subsample of older adults who reported some degree of physical mistreatment. This subsample had a mean severity score of 3.89 (CI: 2.36–5.43, SD = 6.99, median = 1, range: 0–36), which indicated that victims experienced, on average, one to two mistreatment events per year. The distribution of individual physical abuse severity scores was positively/right skewed (Figure 2) (Kolmogorov–Smirnov normality test < 0.001, Skewness = 2.76). Distribution of respondents across mistreatment frequency categories was as follows: since age 60 but not past year (37.8%), once past year (25.6%), 2–10 times past year (25.6%), >10 times past year (11.0%). Variation existed in the number of different physical abuse behavior types endured (one—59.6%, two—14.6%, three or more—15.7%). The most common

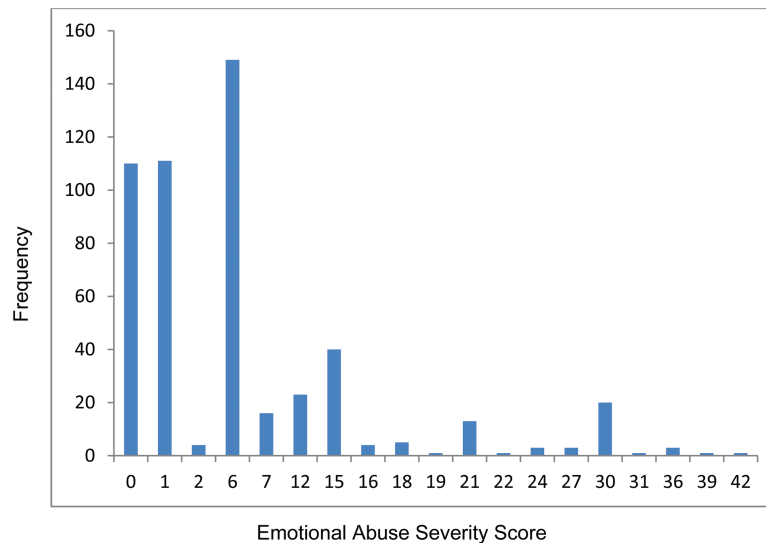


Figure 1. Distribution of individual emotional abuse severity scores.

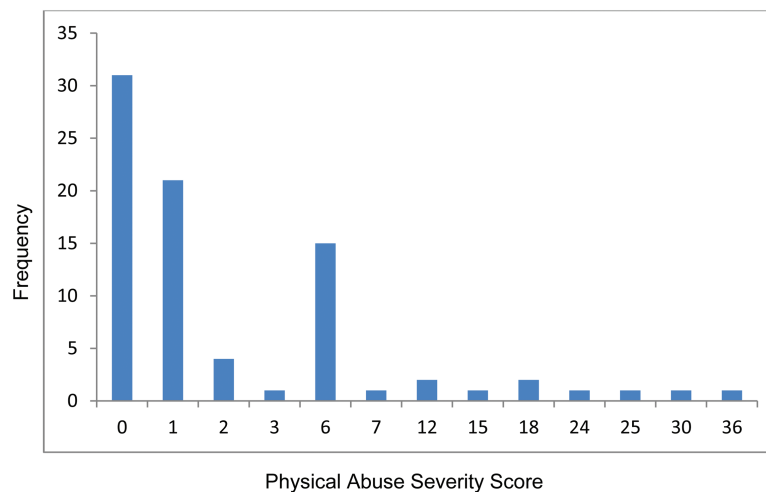


Figure 2. Distribution of individual physical abuse severity scores.

type of physical abuse behavior was pushing/grabbing (46.1%), followed by throwing something (23.6%), slapping (20.2%), and kicking/biting/hitting with a fist (14.6%).

In relation to the entire study sample ($n = 4156$), the distribution of respondents across physical abuse frequency categories was as follows: none at all (97.9%), since age 60 but not past year (0.75%), once past year (0.51%), 2–10 times past year (0.51%), >10 times past year (0.22%).

Neglect

A subsample of 109 (2.6%, CI: 2.1%–3.1%) older adults reported at least one unmet ADL/IADL need by a responsible caregiver since age 60. The descriptive statistics that follow apply only to this subsample of older adults who reported some degree of neglect. This subsample had a mean severity score of 8.94 (CI: 6.75–11.13, SD = 11.03, median = 6, range: 0–63), which suggested that victims experienced, on average, 2–10 neglectful events per year. The distribution of individual neglect severity scores was positively/right skewed (Figure 3) (Kolmogorov–Smirnov normality test < 0.001, Skewness = 2.35). Distribution of respondents across mistreatment frequencies categories was as follows: since age 60 but not past year (17.0%), once past year (17.0%), 2–10 times past year (34.0%), >10 times past year (32.0%). Older adults experienced some variation in the number of different neglectful behavior types (one—77.1%, two—11.0%, three or more—4.0%). The most common type of neglect was related to housework (37.6%), followed by shopping (23.6%), and preparing meals (14.6%).

Within the total study sample, 696 older adults had one or more ADL/IADL limitation. In relation to this subsample of older adults eligible to experience neglect, the distribution of respondents across frequency categories was as follows: none at all (84.3%), since age 60 but not past year (2.4%), once past year (2.4%), 2–10 times past year (4.9%), >10 times past year (4.6%).

Risk Factors for Severity

Emotional Abuse

Table 2 shows results from the final multinomial regression model predicting emotional abuse severity. As age increased, older adults had significantly lower odds of experiencing the highest level of emotional abuse severity (OR: 0.91, CI: 0.87–0.94). Living alone with the perpetrator was associated with significantly higher odds of the most severe levels of emotional abuse (OR: 5.32, CI: 1.87–15.09). The significance of perpetrator cohabitation disappeared when non-perpetrator cohabitants were also present. Hispanic older adults had significantly higher odds of more severe emotional abuse (OR: 3.92, CI: 1.01–15.19). Compared to older adults with education greater than high-school, those with a high-school-only education had significantly lower odds of the most severe level of abuse (OR: 0.45, CI: 0.22–0.90).

Physical Abuse

Table 3 shows results from the final ordinal regression model predicting physical abuse severity. Increasing age was associated with significantly lower odds of more severe physical abuse (OR: 0.91, CI: 0.86–0.97). Living alone with the perpetrator was associated with significantly higher odds of more severe levels of physical abuse (OR: 4.29, CI: 1.35–13.63). The significance of perpetrator cohabitation disappeared when nonperpetrator cohabitants were also present.

Neglect

Table 3 shows results from the final ordinal regression model predicting neglect severity. Increasing functional dependence was associated with significantly lower odds of more severe neglect (OR: 0.74, CI: 0.55–0.98). Increasing age was associated with significantly lower odds of more severe neglect (OR: 0.91, CI: 0.87–0.96). Living alone with the perpetrator was associated with significantly higher odds of more severe neglect (OR: 4.32, CI: 1.08–17.30). The significance of perpetrator cohabitation disappeared when nonperpetrator

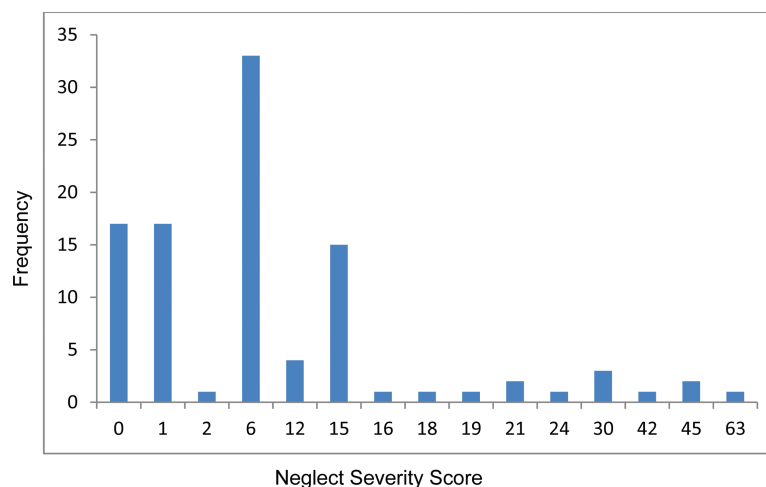


Figure 3. Distribution of individual neglect severity scores.

Table 2. Bivariate and Multivariate Multinomial Regression Predicting Emotional Abuse Severity

Characteristic	Bivariate models		Final multivariate model			
	Score 1/2	Score 6/7	Score 12+	Score 1/2	Score 6/7	Score 12+
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Victim physical vulnerability						
Functional capacity	0.98 (0.81–1.18)	0.99 (0.83–1.19)	1.03 (0.84–1.26)	0.90 (0.71–1.14) ^a	0.85 (0.68–1.06) ^a	0.89 (0.70–1.14) ^a
Poor health	0.75 (0.41–1.38)	1.09 (0.64–1.87)	.99 (0.55–1.78)	—	—	—
Age	0.93 (0.90–0.96) ^{***}	0.90 (0.87–0.93) ^{***}	0.91 (0.88–0.94) ^{***}	0.92 (0.89–0.96) ^{***}	0.89 (0.86–0.92) ^{***}	0.91 (0.87–0.94) ^{***}
Victim–perpetrator relationship dynamics						
Victim dependent on perpetrator	1.57 (0.59–4.17)	1.18 (0.46–3.03)	1.47 (0.55–3.89)	—	—	—
Spouse/partner	1.0 (0.54–1.87)	1.71 (0.98–2.97) [†]	2.17 (1.21–3.89) [*]	0.46 (0.18–1.19)	0.72 (0.28–1.86)	0.89 (0.34–2.29)
Adult child	0.82 (0.43–1.58)	0.96 (0.54–1.73)	0.76 (0.40–1.45)	—	—	—
Grandchild	— ^b	— ^b	— ^b	—	—	—
Paid attendant	— ^b	— ^b	— ^b	—	—	—
Home cohabitation						
Lives alone with perpetrator	2.20 (1.02–4.76) [*]	3.41 (1.66–6.98) ^{**}	5.03 (2.36–10.70) ^{***}	2.74 (0.99–7.54) [†]	2.97 (1.03–8.54) [*]	5.32 (1.87–15.09) ^{**}
Lives with perpetrator and others	2.57 (0.90–7.32) [†]	4.43 (1.68–11.68) ^{**}	4.16 (1.47–11.76) ^{**}	2.05 (0.53–7.91)	2.51 (0.55–11.49)	2.90 (0.68–12.29)
Lives only with non-perpetrator others	0.84 (0.43–1.64)	0.94 (0.51–1.76)	0.91 (0.44–1.85)	0.65 (0.29–1.47)	0.63 (0.29–1.34)	0.75 (0.33–1.70)
Sociocultural						
Female	1.08 (0.63–1.84)	0.87 (0.54–1.42)	1.18 (0.69–2.01)	—	—	—
African-American	0.83 (0.42–1.62)	0.80 (0.43–1.49)	1.09 (0.57–2.07)	0.71 (0.33–1.53)	0.69 (0.33–1.45)	1.07 (0.50–2.30)
Hispanic	2.22 (0.56–8.89)	3.40 (0.95–12.14) [†]	1.67 (0.39–7.21)	1.99 (0.46–8.61)	3.92 (1.01–15.19) [*]	1.75 (0.37–8.28)
Race/ethnicity other	0.95 (0.13–6.93)	1.36 (0.24–7.61)	3.5 (0.71–17.36)	0.94 (0.12–7.39)	1.54 (0.25–9.63)	5.03 (0.91–27.92) [†]
Less than high-school	0.73 (0.30–1.79)	1.14 (0.51–2.54)	0.67 (0.27–1.68)	0.84 (0.30–2.32)	1.83 (0.70–4.76)	0.80 (0.28–2.32)
High school	0.39 (0.20–0.73) ^{**}	0.80 (0.47–1.37)	0.49 (0.27–0.91) [*]	0.37 (0.18–0.75) ^{**}	0.96 (0.51–1.80)	0.45 (0.22–0.90) [*]
Household income	1.06 (0.93–1.20)	1.15 (1.02–1.29) [*]	1.08 (0.95–1.22)	1.0 (0.85–1.17)	1.12 (0.96–1.28)	0.95 (0.81–1.11)
Suburban	1.25 (0.61–2.59)	0.83 (0.41–1.68)	0.64 (0.29–1.40)	—	—	—
Rural	0.91 (0.50–1.66)	0.83 (0.48–1.44)	0.66 (0.36–1.21)	—	—	—
Control						
Interviewed by proxy	0.95 (0.32–2.81)	0.85 (0.31–2.35)	0.51 (0.15–1.80)	0.98 (0.24–3.97)	0.93 (0.24–3.61)	0.50 (0.10–2.37)

Note: Multinomial referent category was score = 0. Independent variable referent groups: health status (good), cohabitation status (lives alone), race/ethnicity (Caucasian), education (more than high-school), and geographical context (urban). Adjusted multinomial regression model satisfied the Likelihood Ratio model fit test ($p < .001$) [$\chi^2 (39, 509) = 129.76$]. Independent variables in the final model had tolerance of 0.74 or above and VIF of 1.34 or below, which suggests no multicollinearity. OR = odds ratio. CI = confidence interval.

^aFunctional capacity was included in the final model given its central role to age-associated vulnerability.

^bNonconverge due to low number of positive cases on independent variable.

* $p \leq .05$. ** $p < .01$. *** $p < .001$. [†] $p < .10$ (borderline).

Table 3. Bivariate and Multivariate Ordinal Regression Predicting Physical Abuse and Neglect Severity

Characteristic	Physical abuse		Neglect	
	Bivariate models	Multivariate model	Bivariate models	Multivariate model
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Victim physical vulnerability				
Functional capacity	1.15 (0.91–1.45)	1.07 (0.81–1.43) ^a	0.72 (0.57–0.90)**	0.74 (0.55–0.98)*
Poor health	0.95 (0.42–2.15)	—	1.75 (0.72–4.22)	—
Age	0.91 (0.87–0.96)**	0.91 (0.86–0.97)**	0.96 (0.92–1.00)*	0.91 (0.87–0.96)**
Victim–perpetrator relationship dynamics				
Victim dependent on perpetrator	1.21 (0.38–3.90)	—	n/a	—
Spouse/partner	0.47 (0.20–1.08)†	0.42 (0.15–1.19)†	0.74 (0.27–2.01)	—
Adult child	0.86 (0.30–2.48)	—	0.79 (0.35–1.78)	—
Grandchild	5.69 (0.66–49.35)	—	0.96 (0.22–4.15)	—
Paid attendant	1.18 (0.03–44.35)	—	2.06 (0.88–4.85)†	1.65 (0.54–5.03)
Home cohabitation				
Lives alone with perpetrator	3.25 (1.19–8.94)*	4.29 (1.35–13.63)*	1.41 (0.51–3.91)	4.32 (1.08–17.30) ^{b,*}
Lives with perpetrator and others	2.17 (0.46–10.16)	1.99 (0.38–10.43)	0.93 (0.32–2.68)	1.06 (0.32–3.56) ^b
Lives only with non-perpetrator others	1.72 (0.58–5.09)	1.06 (1.64–6.30)	1.84 (0.65–5.23)	1.43 (0.41–4.92) ^b
Sociocultural				
Female	0.53 (0.24–1.23)	—	0.72 (0.32–1.62)	—
African-American	2.28 (0.89–5.88)†	1.32 (0.46–3.82)	0.90 (0.38–2.13)	—
Hispanic	0.50 (0.07–3.59)	0.57 (0.06–5.13)	0.68 (0.12–3.88)	—
Other	0.29 (0.02–3.49)	0.25 (0.02–3.94)	2.60 (0.50–13.4)	—
Less than high school	0.84 (0.21–3.32)	—	1.43 (0.56–3.63)	1.49 (0.51–4.33)
High school	1.03 (0.39–2.68)	—	2.29 (0.93–5.66)†	2.83 (1.04–7.70)*
Household income	1.08 (0.88–1.32)	—	0.83 (0.69–1.0)*	0.72 (0.57–0.92)**
Suburban	1.01 (0.33–3.06)	—	0.93 (0.41–2.09)	1.34 (0.49–3.67)
Rural	1.20 (0.37–3.94)	—	0.29 (0.07–1.12)†	0.33 (0.07–1.55)
Control				
Interviewed by proxy	0.54 (0.10–3.0)	2.05 (0.59–1.09)	1.53 (0.56–4.15)	1.05 (0.25–4.31)

Note: Independent variable referent groups: health status (good), cohabitation status (lives alone), race/ethnicity (Caucasian), education (more than high-school), and geographical context (urban). Adjusted ordinal regression models satisfied both the parallel lines test ($p > .05$) and the Likelihood Ratio model fit test ($p < .001$) [$\chi^2_{\text{Physical}} (10, 89) = 28.80$; $\chi^2_{\text{Neglect}} (12, 109) = 37.28$]. Independent variables in the final models had strong tolerance (physical = 0.68 or above, neglect = 0.63 or above) and VIF (physical = 1.48 or below, neglect = 1.68 or below) diagnostics, suggesting no multicollinearity. OR = odds ratio. CI = confidence interval.

^aFunctional capacity was included in the final model given its central role to age-associated vulnerability.

^bCo-habitation status was included in the final model given its central role in defining home living environment.

* $p \leq .05$, ** $p < .01$, *** $p < .001$, † $p < .10$ (borderline).

cohabitants were also present. Compared to older adults with education greater than high-school, those with a high-school-only education had significantly higher odds of more severe neglect (OR: 2.83, CI: 1.04–7.70). Increasing income levels were associated with significantly lower odds of more severe neglect (OR: 0.72, CI: 0.57–0.92).

Discussion

This study described the variation of EM severity and identified factors associated with more severe forms of mistreatment.

Variation in EM Severity

Elder emotional abuse, physical abuse, and neglect were represented by a range in mistreatment event frequencies and

behavioral multiplicity. EM severity variation was not represented by a normal distribution, but rather the raw distribution of individual severity scores across each mistreatment type was characterized by a positive/right skew. The majority of emotional abuse and neglect cases occurred with frequencies of at least 2–10 times per year; approximately one in four emotional abuse and neglect cases experienced 10 or more acts of mistreatment in a year. Physical abuse occurred with lower event frequencies; however, any one physical abuse event is generally weighted by EM experts with greater clinical significance compared to one emotional abuse or neglect event (Lachs & Berman, 2011). Approximately one-third of physical abuse cases were represented by at least 2–10 acts per year; approximately 1 in 10 cases experienced physical abuse more than 10 times per year.

The recognition of variation in EM severity carries important implications for research. EM research would

benefit from abuse/neglect outcome operational definitions that incorporate dimensions of severity. EM studies to date have mainly used binary (yes/no) outcome definitions to measure elder abuse and neglect, which undermines our conceptual and clinical understanding of EM phenomena as highly complex problems. Binary measures effectively reduce the entire range, variation, and depth of EM experiences into over-simplified, unrepresentative terms. Outcome measures that do not accurately reflect the true nature of the latent phenomenon lack construct validity and risk generating invalid inferences in relation to that phenomenon. The present study employed an objective measure of EM severity based on mistreatment behavior frequency and multiplicity. However, future EM research could develop more comprehensive severity measures that incorporate victims' subjective perceptions of the problem, direct mistreatment consequences (e.g., bruising, injury, bed sores, malnutrition, trauma, etc.), event duration, or the clinical course of mistreatment over time. [Conrad, Iris, Ridings, Langley, and Anetzberger \(2011\)](#) used Rasch modeling to support a conceptual severity hierarchy in regards to type of psychological abuse behavior. An incorporation of severity dimensions into EM measurement practices supports a growing recognition of EM as a heterogeneous and individually experienced phenomenon ([Burnes & Lachs, 2015](#)).

EM Severity Risk Factors

Potential risk factors for EM severity were examined at several eco-systemic levels, including the individual victim, victim-perpetrator relationship, home living environment, and sociocultural context.

Physical Vulnerability

Our hypothesis proposed that increasingly older adults would experience higher levels of EM severity. Counter to expectations, younger age was associated with more severe levels of EM across all mistreatment sub-types. There are several possible explanations for this finding. Socioemotional selectivity theory suggests that old-old adults become increasingly motivated to invest in alternative, emotionally meaningful social interactions ([Carstensen, Isaacowitz, & Charles, 1999](#)). Dyadic discord theory suggests that interpersonal violence is bidirectional and cannot be sustained unless both parties contribute to the underlying relational dynamics ([Burnight & Mosqueda, 2011](#)). Using these theories, old-old adults may be more avoidant of potentially abusive relationships than young-old adults. Similarly, perpetrators may also be less likely to engage in escalating mistreatment dynamics as they grow older themselves (e.g., older adult children, older spouses). Consistent with expectations, older adults with greater functional impairment endured more severe neglect. The opportunity of experiencing severe neglect escalates with the number of care needs.

Home Living Environment

The strongest risk factor for EM severity across all mistreatment types was attached to victim-perpetrator living dynamics. As expected, victims who lived alone with their perpetrator experienced more severe EM; these victims were more than four times as likely to endure increasingly severe levels of mistreatment compared to victims who lived completely alone. These findings highlight the danger attached to living arrangements in which the perpetrator has open, unrestrained access to the victim. Of interest, the harmful effect of perpetrator cohabitation disappeared when nonperpetrator cohabitants were also present in the home. Similarly, living arrangements in which the victim only lived with nonperpetrator others were not associated with increased risk of mistreatment severity. These findings suggest that the presence of nonperpetrator others in the home serves a protective function against escalating severity.

Understanding the effect of specific cohabitation dynamics on EM severity carries significant implications for elder protective service organizations. Alteration of the home living arrangement represents a core intervention component for protective service programs seeking to alleviate EM. Yet, intrusive living arrangement interventions are undertaken with very limited empirical support. For cognitively intact older adults, elder protection programs are voluntary and these elders have the right to self-determination. For various reasons, elder victims are often unwilling to separate from their perpetrator. Findings from this study suggest that the addition of nonperpetrator others into a household with the abuser represents an alternative intervention to increase safety. In cases where the victim is willing to separate from the perpetrator but unwilling to live alone, findings indicate that re-location to live with nonperpetrator others is a potentially safe alternative.

Sociocultural Characteristics

Our hypothesis suggested that higher levels of socio-cultural disadvantage would be associated with greater levels of EM severity. As expected, older adults living in households with lower incomes experienced more severe levels of neglect. These elders likely had fewer resources to hire a homecare aid or housekeeping services, to make modifications/renovations to the home environment, or purchase equipment (assistive devices, scooter, etc.) to enhance independence. Hispanic older adults had a higher likelihood of experiencing moderate levels of emotional abuse severity compared to Caucasians. [Parra-Cardona, Meyer, Schiamber, and Post \(2007\)](#) emphasize within-family cultural identity differences as contributing to EM in Latino families. Tension, conflict, and mistreatment can escalate when a U.S.-culturally oriented perpetrator resents and dismisses a country-of-origin-culturally oriented older adult who espouses traditional values. The authors also discuss a sense of distrust and language barriers deterring Latino elders from engaging with formal support services,

which would limit the opportunity to alleviate EM severity. Further research is required to both confirm and understand why Hispanic older adults may be at heightened risk for more severe emotional abuse.

With a focus on EM severity among mistreated older adults, the present study helps advance a branch of EM risk factor knowledge that carries different implications than other population-based prevalence studies conducted to date, which have focused on risk factors that distinguish victim/non-victims in the general population. We would argue that, while the prevailing prevalence risk factor studies carry direct implications for primary prevention initiatives aimed at preventing EM from occurring in the first place, the present study directly informs policy and practice among health and social service professionals who work with indicated or substantiated EM cases in a secondary prevention role. Secondary EM prevention efforts (e.g., emergency room screening, mandatory reporting, adult protective services) principally aim to reduce existing problem severity and alleviate risk of re-victimization, not to necessarily move cases from a yes (EM is present) to no (EM is not present) status. Empirically, severity risk factor findings from the present NYSEMPS study are substantively different than risk factor findings in a previous NYSEMPS study that used the same dataset to predict EM prevalence in the general population (Burnes et al., 2015). Across each EM sub-type, severity/prevalence risk factor profiles, respectively, contained more differences than similarities. Full analysis/interpretation of these similarities/differences is beyond the scope of this article; however, it is important to highlight that risk factors for general problem occurrence are different than those for higher severity among victims; therefore, secondary prevention interventions should not wholly rely on the former body of research to inform practice.

Limitations

The cross-sectional design of this study limited causal/temporal inferences. This study excluded older adults with cognitive impairment, who may represent a particularly vulnerable group to severe mistreatment. Theoretical perspectives/dimensions guiding this study could have been measured with greater detail; investigators were cognizant to limit overall interview length with older adults to reduce the risk of respondent fatigue and corresponding threat to survey completion/response rates. Potentially important EM risk factors/confounders were unavailable for analysis, including victim previous trauma, mental health, and social support, as well as detailed perpetrator characteristics such as mental health, cognitive status, substance use, and dependency upon the victim. Without collecting detailed information about the perpetrator, it is challenging to fully contextualize or understand underlying causal mechanisms. The EM severity scoring system used in this study did not differentially weight survey mistreatment items according

to clinical significance or harm. A beating incident resulting in broken bones was given the same score as a shoving incident resulting in little physical harm. Future development of a severity scoring system that accounts for differences in harm and clinical significance would be beneficial to enhance measurement validity.

Significance

Using a geographically large-scale, population-based, representative sample of older adults, this study represents the first major study on and most comprehensive examination of elder abuse and neglect severity conducted to date. It extends existing EM risk factor research by operationalizing EM phenomena along a continuum of severity. Findings can inform more specified screening and reporting efforts among health and social service professionals to identify older adults at particularly heightened risks of mortality and morbidity. Findings also inform the development of targeted interventions across EM subtypes to alleviate the magnitude of mistreatment.

Supplementary Material

Supplementary material can be found at: <http://gerontologist.oxfordjournals.org>.

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