# Prevalence and Correlates of Emotional, Physical, Sexual, and Financial Abuse and Potential Neglect in the United States: The National Elder Mistreatment Study

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The National Elder Abuse Incidence Study,[1] conducted more than a decade ago, was the first major investigation of mistreatment of the elderly in the United States. It found that 449 924 persons aged 60 years or older had been physically abused, neglected, or in some way mistreated in 1996. However, the study did not solicit data directly from older adults; rather, it assessed Adult Protective Service records and sentinel (e.g., community professionals) reports. Thus, it is very likely that the results greatly underestimated the true scope of the problem of abuse of older Americans, because a large majority of cases are unreported and are undetected by monitoring agents.

In another, earlier investigation, more than 2000 older adults in the Boston area were directly questioned about their experiences.[2] Extrapolated data indicated that approximately 1 000 000 US adults had experienced abuse since reaching age 60 years, with 2% reporting physical abuse and 1.1% verbal abuse. Only approximately 1 in 14 cases was reported to authorities. Other investigators have conducted preliminary assessments of abuse prevalence among the elderly, but most were completed 2 to 3 decades ago. A telephone survey of 2000 randomly selected elderly Canadians found that 0.5% suffered physical abuse and 1.4% emotional abuse since they reached age 60 years.[3] In a random sample of older adults in New Jersey, researchers found an abuse rate of approximately 1%.[4] In a sample of elderly persons in Maryland, the rate was 4.1%.[5] A study of respite care workers in Great Britain found that 45% admitted committing either verbal (41%) or physical (14%) abuse since they began working with the elderly.[6] Interestingly, frequency of patient reports of abuse was less than that of caregivers. Finally, a record review of 404 patients in a chronic illness center identified abuse symptoms in 9.6% of participants.[7]

*Objectives.* We estimated prevalence and assessed correlates of emotional, physical, sexual, and financial mistreatment and potential neglect (defined as an identified need for assistance that no one was actively addressing) of adults aged 60 years or older in a randomly selected national sample.

*Methods.* We compiled a representative sample by random digit dialing across geographic strata. We used computer-assisted telephone interviewing to standardize collection of demographic, risk factor, and mistreatment data. We subjected prevalence estimates and mistreatment correlates to logistic regression.

*Results.* We analyzed data from 5777 respondents. One-year prevalence was 4.6% for emotional abuse, 1.6% for physical abuse, 0.6% for sexual abuse, 5.1% for potential neglect, and 5.2% for current financial abuse by a family member. One in 10 respondents reported emotional, physical, or sexual mistreatment or potential neglect in the past year. The most consistent correlates of mistreatment across abuse types were low social support and previous traumatic event exposure.

*Conclusions.* Our data showed that abuse of the elderly is prevalent. Addressing low social support with preventive interventions could have significant public health implications. (*Am J Public Health.* 2010;100:292–297. doi:10.2105/AJPH.2009.163089)

Most recently, Laumann et al. appended mistreatment questions to the National Social Life, Health, and Aging Project, a study of a nationally representative sample of older Americans.[8] The survey asked 3005 individuals aged 57 to 85 years about past-year physical, verbal, and financial abuse. Two thirds were interviewed in person, and the remainder completed a booklet of questions that was left for participants to read and answer independently (i.e., with no interviewer present). Past-year prevalence was 9.0% for verbal, 0.2% for physical, and 3.5% for financial mistreatment. Respondents toward the younger end of this age range were more likely to experience verbal and financial mistreatment. Women and physically frail elderly persons were more likely to experience verbal mistreatment, African Americans and those in poor health were more likely to report financial exploitation, and Latinos were less likely than respondents from other ethnic groups to report either form of victimization.

This study, although it improved on previous investigations of the problem, had significant limitations. It did not query about some forms of abuse (e.g., sexual assault and neglect were not studied). Moreover, each type of abuse was assessed with only 1 short question. The literature on the epidemiology of interpersonal violence against younger and middle-aged adults demonstrates that to identify abuse and assault events adequately, assessments need to use comprehensive, behaviorally defined descriptions of interpersonal violence events in closed-ended questions.[9]

To build on existing research and address the limitations of previous studies, we designed a study of mistreatment among the elderly in the United States with the methods, definitions, and inclusion of potential correlates (e.g., demographic factors and dependency variables such as use of social services, need of assistance with activities of daily living, health status, and social support) outlined by the National

Research Council.[10] We surveyed a national sample of community-residing adults aged 60 years and older to accomplish 2 aims: (1) assess 1-year prevalence of physical, sexual, emotional, or financial mistreatment or potential neglect (defined as an identified need for assistance that no one was actively addressing) and (2) identify correlates of each form of mistreatment.

## METHODS

We used stratified random-digit-dialing in an area probability sample derived from census-defined size-of-place parameters (e.g., rural, urban), with the continental United States as the sampling location. We designated the household member with the most recent birthday as the respondent for each sampled household. We conducted interviews in the participant's preference of English or Spanish. To increase participant privacy and protection, we asked respondents whether they were in a place where they could talk privately, and we worded questions on sensitive topics to elicit a yes or no response, rather than a description of the mistreatment event. This method yielded a representative sample (by age and gender) of 5777 adults aged 60 years or older. Interviewers determined whether the designated participant clearly possessed the cognitive capacity to consent to participation and surveyed only persons who met this standard; 105 persons were not interviewed after this screening.

### Interviews and Variables

Interviewers used standardized computer-assisted telephone interview procedures to ask participants about a variety of mistreatment experiences, potential correlates, and demographic characteristics. This technique incorporates complex skip-out patterns that ensure that only relevant questions are asked of participants, greatly enhancing interview efficiency. Supervisors listened to randomly chosen, real-time telephone interviews while monitoring the interview on their own computers to check each interviewer's assessment behavior and data entry accuracy at least twice during each shift. Supervisors who detected an error required its correction and discussed the error with the interviewer after the interview. If the error was detected in subsequent

interviews, the interviewer was removed from the study.

Field interviewing began February 6, 2008, and was completed September 9, 2008. The cooperation rate was 69%, calculated according to American Association for Public Opinion Research criteria as the number of completed interviews, including those screened out as ineligible, divided by the total number of completed interviews, including those screened out as ineligible, terminated interviews, and refusals to be interviewed.[11] The final average interview length was approximately 16 minutes.

Mistreatment variables included potential neglect and emotional, physical, sexual, and financial abuse. We also conducted specific correlate analyses incorporating the following variables that might contribute to mistreatment: income (low income was defined as less than $35000 per year combined for all members of the household), employment status, health status, experience of previous traumatic events, social support, use of social services, and required assistance with activities of daily living. These variables were suggested by previous research (e.g., Laumann et al.[8]) and by the National Research Council.[10] (Operational definitions of these key study variables are available in Table A, available as a supplement to the online version of this article at http://www.ajph.org.)

### Statistical Analysis

In step 1, frequency distribution analyses produced prevalence estimates. In step 2, 2-tailed bivariate $\chi^2$ analyses examined mistreatment risk in relation to demographic variables, health ratings, social support, social services use, and previous traumatic stressor experiences (bivariate analyses are shown in Tables B–F, available as supplements to the online version of this article at http://www.ajph.org). In step 3, only risk variables that reached a significance value of .05 in bivariate analyses were examined for their relative risk of each mistreatment type in separate logistic regression analyses, with $\alpha < .05$, set a priori.

We found no differences between Hispanics and other racial/ethnic groups in any mistreatment type. However, we detected differences between Whites and non-Whites on measures of physical mistreatment and therefore included this dichotomous variable in our

analyses. To simplify analyses, we also categorized participants as young-old (aged 60–69 years) or old-old (aged ≥70 years).

## RESULTS

In our sample, 11.4% (n=589) of respondents indicated that they had experienced at least 1 of the commonly used categories of mistreatment (potential neglect and emotional, physical, and sexual abuse) in the past year.

### Demographic and Socioeconomic Characteristics

We collected data from 5777 older adults with an average age of 71.5 years (SD=8.1; range=60–97 years). Of this sample, 60.2% (3477) were women and 39.8% (2300) were men. Approximately 56.8% (3281) were married or cohabitating, 11.8% (677) were separated or divorced, 25.1% (1450) were widowed, and 5.2% (303) had never married. By self-report, 87.5% (4876) of respondents were White, 6.7% (386) were African American, 2.3% (132) were American Indian or Alaskan Native, 0.8% (49) were Asian, and 0.2% (13) were Pacific Islanders; the remainder chose not to answer this question. Of the total sample, 4.3% (245) of respondents indicated they were of Hispanic or Latino origin.

Responses to our risk factor questions indicated that 45.7% (2262) of respondents had low household income, 80.9% (5174) were unemployed or retired, 22.3% (1279) had poor health, 62.0% (3566) had experienced a previous traumatic event, 43.6% (1379) perceived their social support as low, 40.8% (2329) used some form of social services, and 37.8% (2176) needed some assistance with activities of daily living. By our age categorization, 49.9% (2833) of respondents were young-old, and 50.1% (2842) were old-old.

### Types of Mistreatment

*Emotional.* Prevalences for lifetime, after age 60 years, and past-year emotional mistreatment are given in Table 1. Descriptive and bivariate analyses limited to past-year prevalence indicated that approximately 4.6% of older adults had recently experienced some form of emotional abuse and that approximately 7.9% of these incidents were reported to police.

**TABLE 1—Prevalence of Mistreatment Types, by Time Frame: The National Elder Mistreatment Study, 2008**

| | Lifetime Prevalence, % (No.) | Prevalence Since Reaching Age 60 Years, % (No.) | Past-Year Prevalence, % (No.) |
|---|---|---|---|
| **Emotional mistreatment** | | | |
| Overall | 21.7 (1250) | 13.5 (708) | 4.6 (254) |
| Verbal abuse | 9.2 (528) | 4.2 (241) | 3.2 (181) |
| Humiliation | 12.2 (700) | 4.6 (268) | 4.9 (279) |
| Harassment/coercion | 5.4 (311) | 2.3 (132) | 2.2 (126) |
| Being ignored | 9.7 (557) | 4.9 (281) | 4.0 (224) |
| **Physical mistreatment** | | | |
| Overall | 12.0 (799) | 1.8 (93) | 1.6 (86) |
| Hit | 9.9 (572) | 1.3 (74) | 1.2 (70) |
| Restrained | 2.8 (160) | 0.3 (19) | 0.4 (22) |
| Injured | 6.3 (363) | 0.7 (41) | 0.7 (37) |
| **Sexual mistreatment** | | | |
| Overall | 7.0 (397) | 0.3 (16) | 0.6 (34) |
| Forced intercourse | 7.0 (397) | 0.1 (5) | 0.4 (21) |
| Molestation | 4.0 (226) | 0.2 (9) | 0.2 (10) |
| Forced to undress | 1.8 (105) | 0.0 (2) | 0.1 (3) |
| Photographed nude | 0.6 (33) | 0.0 (2) | 0.1 (3) |
| **Potential neglect**[a] | | | |
| Overall | | | 5.1 (297) |
| Specific unaddressed needs | | | |
| Transportation | | | 0.8 (47) |
| Obtaining food or medicine | | | 0.8 (48) |
| Cooking/eating/taking medicine | | | 0.7 (38) |
| House cleaning/yard work | | | 3.4 (197) |
| Getting out of bed/dressed/showered | | | 0.2 (13) |
| Making sure bills are paid | | | 0.5 (29) |
| **Financial mistreatment by family** | | | |
| Overall | | | 5.2 (263)) |
| Family member spent money | | | 3.4 (196) |
| Family member did not make good decisions | | | 0.5 (27) |
| Family member did not give copies | | | 0.7 (40) |
| Family member forged signature | | | 0.5 (30) |
| Family member forced respondent to sign a document | | | 0.3 (18) |
| Family member stole money | | | 0.7 (42) |

*Note.* Some past-year estimates are higher than estimates of mistreatment that occurred since reaching age 60 years, apparently because respondents were more confident in stating whether an event occurred in the past year than they were about whether it occurred before or after they were aged 60 years.
[a]Identified need for assistance that no one was actively addressing.

Correlates that reached statistical significance in bivariate analyses (Table B, available as an online supplement) for this mistreatment type were entered into a logistic regression to identify the relative unique contribution of each factor to reported emotional mistreatment (Table 2). Lower age, employment, experience of a previous traumatic event, and low social support were strongly associated with increased likelihood of mistreatment, as was, though to a lesser extent, the need for help with activities of daily living.

*Physical.* The overall prevalence of physical mistreatment is also given in Table 1; past-year prevalence was 1.6%. Approximately 31% of these events were reported to police. Bivariate analyses of individual risk factors for physical assault (Table C, available as an online supplement) were subjected to logistic regression, which revealed that only lower age and low social support remained significantly associated with likelihood of physical mistreatment (Table 2).

*Sexual.* Sexual mistreatment past-year prevalence was 0.6% (Table 1), with approximately 16% of these assaults reported to police. (Bivariate risk factor analyses are given in Table D, available as an online supplement.) Subjecting statistically significant predictors of risk to multivariate analyses showed that only previous experience of traumatic events and low social support remained predictive of sexual mistreatment (Table 2). The low sample size for these analyses may make these risk relationships tenuous, and findings should be considered preliminary for sexual mistreatment.

*Potential neglect.* The overall prevalence of potential neglect is given in Table 1. Potential neglect over the past year was reported by approximately 5.9% of respondents. (Bivariate analyses are given in Table E, available as an online supplement.) Multivariate analyses (Table 2) showed that risk of potential neglect was predicted by minority racial status, low income, poor health, and low social support.

*Financial.* We analyzed episodes of financial mistreatment perpetrated by family and found a prevalence of 5.2% (Table 1). (Bivariate analyses of correlates for family-perpetrated financial mistreatment are given in Table F, available as an online supplement.) The multivariate model (Table 2) showed that only nonuse of social services and required assistance with daily activities remained uniquely associated with increased likelihood of mistreatment.

## DISCUSSION

Slightly more than 1 in 10 of our community-residing, cognitively intact elderly respondents reported experiencing some type of abuse or potential neglect (excluding financial exploitation) in the past year; low social support significantly increased the risk of virtually all forms of mistreatment. Relatively little of this mistreatment was reported to authorities.

TABLE 2—Logistic Regressions and Correlates for Past-Year Potential Neglect and Emotional, Physical, and Sexual Mistreatment, and Current Financial Mistreatment by Family: The National Elder Mistreatment Study, 2008

| Type of Mistreatment[a] | OR (95% CI) | b | Wald | P |
|---|---|---|---|---|
| Emotional | | | | |
| Age (< 70 y) | 3.16 (2.10, 4.75) | 1.15 | 30.3 | .001 |
| Employment (unemployed) | 0.55 (0.36, 0.84) | −0.60 | 7.8 | .005 |
| Health (poor) | 1.46 (0.99, 2.17) | −0.38 | 3.6 | .058 |
| Previous traumatic event | 2.27 (1.47, 3.51) | 0.82 | 13.6 | .001 |
| Social support (low) | 3.17 (2.14, 4.69) | −1.15 | 33.3 | .001 |
| Need for ADL assistance | 1.83 (1.24, 2.71) | 0.61 | 9.28 | .002 |
| Physical | | | | |
| Age (< 70 y) | 4.10 (1.59, 10.60) | 1.41 | 8.5 | .004 |
| Gender (woman) | 1.14 (0.52, 2.51) | −0.13 | 0.1 | .738 |
| Race (non-White) | 0.63 (0.19, 2.08) | −0.47 | 0.6 | .445 |
| Income (lower) | 1.85 (0.77, 4.43) | 0.61 | 1.9 | .169 |
| Health (poor) | 1.69 (0.73, 3.92) | −0.53 | 1.5 | .220 |
| Previous traumatic event | 1.57 (0.64, 3.88) | 0.45 | 1.0 | .327 |
| Social support (low) | 2.95 (1.19, 7.30) | −1.08 | 5.5 | .019 |
| Sexual | | | | |
| Gender (woman) | 2.01 (0.62, 6.61) | 0.70 | 1.3 | .247 |
| Income (lower) | 1.80 (0.52, 6.26) | 0.59 | 0.9 | .354 |
| Health (poor) | 0.96 (0.27, 3.45) | 0.03 | 0.0 | .955 |
| Previous traumatic event | 13.98 (1.11, 175.46) | 2.64 | 4.2 | .041 |
| Social support (low) | 5.68 (1.30, 2.44) | −1.74 | 5.4 | .021 |
| Need for ADL assistance | 0.37 (0.10, 1.35) | −0.99 | 2.2 | .134 |
| Potential neglect[b] | | | | |
| Gender (woman) | 0.81 (0.52, 1.26) | −0.21 | 0.9 | .350 |
| Race (non-White) | 1.87 (1.13, 3.08) | 0.63 | 6.0 | .014 |
| Income (lower) | 2.00 (1.20, 3.18) | 0.67 | 7.3 | .007 |
| Unemployed | 1.03 (0.45, 2.37) | 0.03 | 0.0 | .944 |
| Health (poor) | 2.18 (1.42, 3.37) | −0.78 | 12.5 | .001 |
| Previous traumatic event | 1.12 (0.71, 1.78) | 0.12 | 0.2 | .621 |
| Social support (low) | 4.14 (2.34, 7.35) | −1.42 | 23.6 | .001 |
| Use of social services (no) | 1.38 (0.89, 2.12) | −0.32 | 2.1 | .148 |
| Need for ADL assistance | 1.58 (∞,∞) | 18.84 | 0.0 | .985 |
| Financial mistreatment (family) | | | | |
| Race (non-White) | 1.29 (0.89, 1.89) | 0.26 | 1.8 | .183 |
| Health (poor) | 1.32 (0.98, 1.79) | −0.28 | 3.4 | .066 |
| Previous traumatic event | 1.28 (0.96, 1.08) | 0.24 | 2.8 | .095 |
| Use of social services (no) | 0.75 (0.57, 0.98) | 0.29 | 4.4 | .036 |
| Need for ADL assistance | 2.00 (1.51, 2.64) | 0.69 | 23.9 | .001 |

Note. ADL = activities of daily living; CI = confidence interval; OR = odds ratio.
[a]The level of the variable given in parenthesis represents the reference value of the variable, which is also the level the variable hypothesized to be associated with increased risk. CIs that range above 1.00 represent increased risk for the reference variable and CIs that range below 1.00 indicate decreased risk.
[b]Identified need for assistance that no one was actively addressing.

## Correlates of Mistreatment

Major correlates varied somewhat by mistreatment type, but nearly all forms of abuse were associated with low social support, even after we controlled for the effects of all other variables that were significant in bivariate analyses. Low social support was associated with more than triple the likelihood that mistreatment of any form would be reported. These findings are disconcertingly consonant with those of mental health epidemiological reports about this age group. Older adults who reported low social support and experienced extremely stressful events such as natural disasters had increased risk of suffering post-traumatic stress disorder, depression, and generalized anxiety disorder.[12]

Of course, it may be that elderly persons who are mistreated report lower social support and that this factor results from, rather than causes, mistreatment. The most likely nature of the relationship, however, is one of reciprocity, with poor support both indicating and predicting mistreatment. Thus, this risk factor may be important not only for predicting negative outcomes in older adults but also for developing preventive interventions addressing both interpersonal violence and psychopathology. Efforts to enhance social support of older adults through a variety of channels, such as reconnection with community resources, improved housing designs for older adults that maximize communal interaction, funding for familial and community programs that bring together the elderly and their neighbors or family members, or—perhaps most important—affordable transportation,[13] will have the dual benefit of building mental health resilience in response to extreme stressors and lowering the risk of interpersonal violence against the senior members of our society. The centrality of social support to the health and well-being of older adults is perhaps the core finding of our study.

Also consonant with the literature on mental health functioning in older adults was the finding that experience of previous traumatic events—including interpersonal and domestic violence—increased the risk for emotional, sexual, and financial mistreatment. This indicates that there may be some shared variance between causes of these forms of mistreatment and precipitants of traumatic life events. On the most obvious level, interpersonal

environments characterized by exposure to traumatic events are probably also more likely to contain abusive individuals over time. Previous research with younger adults has also noted the cyclical nature of violence as a risk factor for future violence.[14]

A methodological strength of our study was that mistreatment events were initially assessed independent of perpetrator status, thereby permitting a more accurate prevalence estimate derived from assessment of both stranger- and family-perpetrated mistreatment events; most previous research has focused on only 1 form of victimization per study, yielding an incomplete picture. Interestingly, functional impairment in our respondents predicted only emotional and financial mistreatment. The greater need of some older adults for help and assistance in accomplishing everyday activities appeared to elicit verbal abusiveness and economic exploitation but not other forms of abuse. Thus, our findings provided only limited support for the long-standing belief that caregiver stress is a causative factor in mistreatment of the elderly.[6,15–17]

By contrast to previous research, our young-old respondents (aged <70 years) were more likely than respondents in the old-old group to fall victim to emotional, physical, and financial mistreatment by strangers. This is consistent with recent findings of Laumann et al.[8] and runs counter to earlier findings that our oldest-old citizens are at increased risk of mistreatment.[1] However, this difference may be attributable to the absence of institutionalized older adults or their representatives in our sample.

In our multivariate analyses, gender and race were not significant independent predictors when the effects of other risk factors were controlled (with the exception of elevated risk of potential neglect in non-White participants). Previous research with older adults[1,8] and younger adults[18–20] found that risk of interpersonal violence varied by gender and race, but others have failed to find gender-based differences.[2] Further study is needed regarding these risk factors.

### Prevalence Estimates

Approximately 4.6% of participants in our study reported experiencing some form of emotional mistreatment in the past year. This contrasts with a prevalence of 9% for verbal mistreatment reported by Laumann et al. in

their recent survey of a nationally representative sample of older adults.[8] This may be at least partly explained by differences between our definition of emotional mistreatment and their more liberal definition of verbal mistreatment. The prevalence of physical mistreatment of older adults was 1.6% in our data, which is 8 times the prevalence detected by Laumann et al.[8] That study asked only 1 question, without contextually orienting preface statements. By contrast, our questions were more inclusive.

Neglect is somewhat difficult to identify or even define, because the perpetrator is failing to act rather than overtly abusing. We focused on potential neglect, in which a need was identified, but no one was available or willing to meet this need. Perpetrators were individuals identified as having some responsibility for helping our respondent to accomplish necessary tasks. Potential neglect was relatively prevalent, with more than 5% of participants reporting an unmet need. This was the only mistreatment type for which race was a significant risk factor. However, this finding may be more a function of differential distribution of personal financial resources along racial lines, resulting in greater levels of unmet needs, rather than any propensity for non-Whites to neglect their older family members. The high prevalence of potential neglect in community-residing, cognitively unimpaired older adults is alarming and warrants further study.

Many previous investigations of mistreatment of older adults have not assessed financial exploitation by family members, but this is the most likely form of victimization. We found that the prevalence of this type of mistreatment in the past year was approximately 5%, which is slightly higher than the 3.5% reported by Laumann et al.[8] and indicates that older adults are at high risk for this form of mistreatment. Older adults who needed assistance with activities of daily life or who reported poor health were more likely to be targets, a finding that echoes past research on fraud and financial abuse of impaired older adults.[1]

### Limitations and Conclusions

Among the limitations of our study was that we derived all our prevalence estimates and correlates from self-reports of precisely the types of events that are notoriously under-reported in this age group. However, we took

several steps to maximize the likelihood that abuse events would be disclosed. First, and in light of research on younger adults,[9] we did not use either open-ended or culturally loaded questions to determine victimization status. Open-ended questions that prompt participants to respond to general queries (e.g., "Please tell me about any times where people might have treated you badly") do not regularly result in descriptions of assault events. We also conducted interviews when the participant was alone or was able to speak privately without fear of being overheard, which increased the likelihood of disclosure.

Another limitation in our data was the absence of some measure of cognitive functioning as a covariate or a risk factor. To control for this variable, we required interviewers to proceed with questioning only if they had no doubt about the ability of respondents to understand and respond to questions. Our data therefore reflect responses of a cognitively intact, community-residing subpopulation of older adults; prevalence and risk factors should be considered in that context. Generalization of our results to what may be the group most at-risk for mistreatment, the cognitively impaired elderly, is not appropriate. For this at-risk group, and particularly for members of this group living in residential settings, alternative methods are required and will probably resemble the sentinel approach used with children. We did not include individuals who did not have a landline (i.e., those with only cell phones), introducing the potential for bias; however, our data were nationally representative and were weighted by census estimates, increasing the generalizability of our findings.

Future research should be directed toward assessing mental and physical health conditions associated with mistreatment of the elderly. Although we have intuitive awareness of the negative effects of abuse of older adults, it is necessary to determine just what forms of abuse, in the context of which risk factors, lead to which negative emotional, functional, and health outcomes. ∎

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## Contributors

R. Acierno originated and supervised the study. M. A. Hernandez translated and piloted the Spanish version of the assessment instrument. A. B. Amstadter expanded the Introduction, Methods, and Discussion sections. H. S. Resnick and D. G. Kilpatrick wrote the preliminary versions of the assessment instrument and supervised revisions to the final version. K. Steve trained and supervised interviewers, collected and cleaned data, and wrote the Methods section. W. Muzzy coordinated implementation of study procedures between the three collaborative institutions.

## Human Participant Protection

The human subjects internal review board of the Medical University of South Carolina approved this research project.

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