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Development of short-form measures to assess four types of elder mistreatment: Findings from an evidence-based study of APS elder abuse substantiation decisions

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Abstract

Improving the standardization and efficiency of adult protective services (APS) investigations is a top priority in APS practice. Using data from the Elder Abuse Decision Support System (EADSS), we developed short-form measures of four types of elder abuse: financial, emotional/psychological, physical, and neglect. The EADSS data set contains 948 elder abuse cases (age 60+) with yes/no abuse substantiation decisions for each abuse type following a 30-day investigation. Item sensitivity/specificity analyses were conducted on long-form items with the substantiation decision for each abuse type as the criterion. Validity was further tested using receiver–operator characteristic (ROC) curve analysis, correlation with long forms and internal consistency. The four resulting short-form measures, containing 36 of the 82 original items, have validity similar to the original long forms. These short forms can be used to standardize and increase efficiency of APS investigations, and may also offer researchers new options for brief elder abuse assessments.

Keywords

Adult protective services; Elder Abuse Decision Support System; elder abuse investigation/substantiation; Older Adult Mistreatment Assessment; receiver operating curve

Introduction

Due to prevailing aging trends, the problem of elder mistreatment is escalating with estimates that in the USA, one in 10 older adults has experienced some form of abuse, neglect, or financial exploitation (FE) (Acierno et al., 2010). Yet due to underreporting, these rates are likely underestimates (Gallione et al., in press). Worldwide, the annual prevalence of elder abuse and neglect may be even higher. For example, Dong (2015) estimates rates as high as 36.2% for older adults in China and 61.1% in Croatia.

Across the country, adult protective services (APS) budgets and support services have been cut drastically while abuse reports have increased by as much as 24% (National Adult Protective Services Association, 2009). This results in insufficient time to carefully investigate and respond to abuse allegations. Such chronic underfunding means that both APS research and practice suffer from lack of a solid knowledge base and evidence-based tools and protocols (Mixon, 2010; Mosqueda et al., 2016; Sommerfeld, Henderson, Snider, & Aarons, 2014). Additionally, there has been scant research to address reporting, assessment, and intervention that is statewide or potentially national in scope (Jackson & Hafemeister, 2013).

A top priority for elder abuse researchers is to improve the quality, standardization, efficiency and cost-effectiveness of APS investigations through empirical research. In their review of 15 elder abuse assessments, Anthony, Lehning, Austin, and Peck (2009) stated, “Federal and state legislators and administrators provide descriptions of each type of abuse; however, they give little guidance to APS workers, who need specific criteria for determining elder mistreatment” (p. 819). Burnes, Rizzo, and Courtney (2014) also noted the unreliability of single caseworker judgments of mistreatment status at case closure, and called for standardized, validated measures. Jackson (2014) has documented the lack of research on abusers as well as the tendency to regard elder abuse as a single phenomenon rather than several distinct types, i.e., physical, emotional, financial, neglect, and sexual. In summary, improved efficiency and quality of assessment along with user-friendly reporting and intervention planning are urgently needed for research, clinical, and community-based use (National Academies Committee on National Statistics, 2010).

Elder Abuse Screening Tools

Most of the research efforts to date have focused on developing elder mistreatment screening tools as precursors to further inquiry, rather than brief assessments that generate reliable information for abuse substantiation decisions. In addition, the screening tools developed thus far have been designed for use in clinical or health care settings, not in the context of APS abuse investigations and substantiations. In her review, Cohen (2011) posited a typology of screening tools, based on the method and scope of inquiry. She classified a select number of instruments into three types: (1) direct questioning by caseworkers and self-report by older adults; (2) signs of abuse identified by caseworkers; and (3) risk indicators evaluated by caseworkers. Noting the considerable overlap across these three “modes” of screening tools, Cohen (2011) suggested that such overlap was potentially positive, as each mode identified cases of abuse that would possibly not have been identified by another. For example, the Hwalek–Sengstock Elder Abuse Screening Test (H-S/EAST)

(Neale, Hwalek, Scott, Sengstock, & Stahl, 1991) and the Elder Abuse Suspicion Index (EASI) (Yaffe, Wolfson, Lithwick, & Weiss, 2008) are both classified as “direct questioning” (Cohen, 2011, p. 262).

The H-S/EAST addresses physical, psychological, and financial abuse and is designed to be used in a clinical setting (Neale et al., 1991). The original 15-item version was subsequently reduced to 9-item and 5-item versions; all three versions showed satisfactory construct validity, but the shorter tools had a high false-negative rate, which means clients experiencing abuse or neglect were not captured by the shorter screening tools. Moreover, using receiver–operator characteristic (ROC) curve analysis, the H-S/EAST was found to have no discriminating power for screening for elder abuse (Cohen, 2011).

The EASI (Yaffe et al., 2008) was designed for use in clinical settings to help physicians identify patients who might be experiencing abuse. The EASI has just six items, five of them being yes/no questions for the patient. The sixth item is answered by the physician and questions whether he/she has noticed behaviors that may indicate abuse. Yaffe et al. (2008) tested the validity by comparing EASI results with a social worker’s determination of abuse, based on an interview with the patient. Sensitivity and specificity were 0.47 and 0.75, respectively.

In contrast to the H-S/EAST and EASI, Cohen (2011) classified the 35-item Elder Assessment Instrument (EAI) (Fulmer, Paveza, Abraham, & Fairchild, 2000) as a “signs of abuse” tool, also intended for use in clinical settings to guide assessment of abuse, neglect, exploitation, and abandonment through Likert-type scales. The EAI does not have a scoring or interpretation system, and relies on a summary of clinical interpretations.

Additional efforts to develop screening tools include the indicators of abuse (IOA) (Reis & Nahmiash, 1998) tool that was designed to identify risk factors for abuse and was developed based on the theoretical model proposed by Kosberg and Nahmiash (1996). The 48-item tool utilizes a clinical interview conducted by a social worker to assess for abuse indicators. The IOA has high internal reliability and successfully identified 84% of abuse cases and 99% of non-abuse cases based on a sample of 341 older adults. Indicators cover three types of factors: (1) caregiver personal problems/issues; (2) caregiver interpersonal problems/issues; and (3) care receiver social support shortages and experience of past abuse.

More recently, Dong, Chen, Fulmer, and Simon (2014) reported on the 10-item self-report screener used in the Population-Based Study of Chinese Elderly (PINE). The screener was developed based on the H-S/EAST and the Vulnerability to Abuse Screening Scale (VASS) (Schofield & Misra, 2003). Items queried psychological mistreatment, physical abuse (PA), exploitation, and neglect (including confinement), using questions about the elder’s perception of such behaviors occurring or actual occurrences with yes/no response options. Their scale demonstrated good reliability with a Cronbach’s alpha of .80, but the sample was limited to Chinese older adults residing in the USA.

Abuse screening tools have a critical role to play in detecting elder mistreatment, especially in situations where clinicians have only a few minutes to evaluate a patient (e.g., emergency departments). However, these broad instruments are inevitably less effective for detecting

specific manifestations of each abuse type, leading to higher false-negative rates. Incorrect assessments can have negative unintended consequences for providers, caregivers, and patients (Beach, Carpenter, Rosen, Sharps, & Gelles, 2016, p. 194), yet comprehensive questionnaires, such as the rigorously constructed, comprehensive Elder Abuse Decision Support System (EADSS) interview guides (Conrad, Iris, & Liu, 2017), and other extensive measures of each abuse type (e.g., Acierno et al., 2010), are less feasible because they require substantially more time to administer. Indeed, even though the EADSS questionnaires were demonstrably quite effective at helping APS caseworkers substantiate reports of alleged abuse, follow-up interviews with caseworkers in Illinois revealed that the entire battery of EADSS abuse measures was too time consuming to administer given their caseloads.

To address caseworkers' needs to systematically collect comprehensive and reliable information on each abuse type in less time, the present study seeks to provide shortened, validated measures for FE, psychological/emotional, PA, and neglect. We base these brief assessments on the longer forms developed and validated as part of the EADSS study, which was funded by the National Institute of Justice (Conrad, 2015; Conrad et al., 2011; Conrad, Iris, Ridings, Langley, & Anetzberger, 2011; Conrad, Iris, Ridings, Langley, & Wilber, 2010; Conrad et al., 2011; Conrad, Iris, Riley, Mensah, & Mazza, 2013). The goal was to develop brief, valid assessment tools for use in APS investigations and substantiation decisions about specific types of abuse.

Development and Field Test of the Elder Abuse Decision Support System (EADSS)

The EADSS is a theory-based system developed through extensive literature review and testing in the field (Conrad et al., 2017; Conrad, Liu, & Iris, 2017). It includes comprehensive, structured interview guides to assess risk of abuse and abuser/victim characteristics and has detailed measures of five types of elder mistreatment: (1) the Older Adult Financial Exploitation Measure (OAFEM); (2) the Older Adult Emotional Abuse Measure (OAEAM); (3) the Older Adult Physical Abuse Measure (OAPAM); (4) the Older Adult Neglect Measure (OANM); and (5) the Older Adult Sexual Abuse Measure (OASAM). For the sake of clarity, in this article we refer to the full structured interview guides as the EADSS long forms.

Between 2012 and 2014, the EADSS was implemented and tested in actual elder abuse investigations yielding 948 substantiated cases from six APS programs in Illinois. Substantiated cases include both "yes" and "no" decisions on whether the five types of abuse/neglect occurred, based on the caseworker's evaluation of evidence collected using the EADSS. Caseworkers were instructed to use the long forms to investigate all five types of abuse. If no allegations of a specific type of abuse and no IOA were found during the investigation, sometimes caseworkers did not indicate a final substantiation decision. However, all 948 cases had a substantiation decision on at least one type of abuse.

Construct validation of the full-length EADSS abuse measures (Conrad et al., 2017) showed high areas under the ROC curve (McNeil & Hanley, 1984) for FE (96.6%), emotional abuse (EA) (97.7%), PA (97.0%), and neglect (96.2%), using the final substantiation decision as the validity criterion for each abuse type. In ROC analysis, values close to 100% indicate

that a measure is highly accurate in detecting a particular phenomenon; in this case, substantiated abuse and/or neglect. Sexual abuse was not included in this analysis due to the small number of substantiated “yes” cases ($n = 7$).

The ROC results support the usefulness of the EADSS in identifying four types of abuse. Use of the EADSS during the field test also increased rates of abuse substantiation (Conrad et al., 2017) because caseworkers were instructed to administer all assessment forms regardless of what abuse type had been reported. Requiring administration of all the EADSS long forms yielded information about all types of abuse (not just the abuse type initially reported). Consequently, the EADSS long forms offered a significantly improved method for substantiating abuse, even in the participating Illinois agencies where substantiation rates were already high (Neale, Hwalek, Goodrich, & Quinn, 1996). As a result, we note that using this uniform assessment tool potentially increased assistance to victims who might otherwise not have received services.

While we did not measure the EADSS long-form administration time, it was reported in focus groups and webinars conducted with caseworkers as part of the field test that administration time was variable due to many factors, such as alleged victim physical or cognitive status. Since the EA and the FE measures required the most input from alleged victims (most items), the majority of caseworker complaints were that these measures were too long. To respond, later in the field test we simply requested that caseworkers ask the first six items of each measure, which were the least severe based on previous psychometric analyses (Conrad et al., 2011, 2010), and if there were no indications of abuse the caseworker could skip the rest. The assumption was that if none of the first six items were endorsed, probabilistically, the more severe forms of emotional or financial abuse would also not be endorsed. The present study uses a more rigorous approach to determine which subset of items meets both needs—the need to detect abuse and the need to minimize time burden on caseworkers and respondents. The resulting EADSS short forms presented in this article are thus more effective at predicting substantiation for abuse than the first six questions in each module.

Aim

The global aim of this study is to provide a comprehensive, succinct, convenient, and valid set of measures for use in elder abuse investigations, i.e., brief valid measures of PA, EA, FE, and neglect. The ultimate objective is to present evidence that these theory-based, empirically tested short-form measures for each type of abuse can be easily incorporated into existing abuse investigation systems. This will help standardize elder abuse investigation and substantiation practices while avoiding the need for extensive training and field-testing of new, unfamiliar systems. To create the EADSS short forms, we used the methods described below.

Methods

Short Form Validation

Substantiation Decision as a Measure of Criterion Validity—Criterion validity refers to the ability of a measure or an item to predict a criterion of interest (Nunnally & Bernstein, 1994). In our study, the best criterion for elder abuse was the substantiation decision—the final judgment of the caseworker, after an investigation taking up to 30 days, as to the presence or absence of a type or types of elder abuse. This final substantiation decision was further validated by the approval of the supervisor. A positive substantiation decision, i.e., “yes” for abuse, formed the basis for moving ahead as an agent of the State of Illinois in the steps needed to ameliorate the situation including removing and/or prosecuting a perpetrator. As such, the validity of all abuse measures and individual items could be weighed by ability to predict this final decision.

Selection of Short-form Items using Sensitivity and Specificity—*Sensitivity* is a type of criterion validity that summarizes how well an item or measure detects a specific phenomenon, in this case, type of abuse. It is the probability (here expressed as a percentage) that a person who was ultimately substantiated as abused would be identified by the item as an abuse victim, i.e., would score positive on that item. *Specificity* measures how well the item identifies those who were not substantiated for abuse. This is the probability that the non-abused person scores negative on the specific item. We used sensitivity and specificity to decide which items were the best predictors of the abuse substantiation decision. In this study, the sensitivity was much more variable (ranging from <1% to 86%) than the specificity (over 95% for all items).

To ensure inclusion of items with at least moderate sensitivity while also meeting more traditional psychometric standards (i.e., high area under the ROC curve, high Cronbach’s alpha, high correlation with long form), we used a 30% sensitivity cutoff as a starting point. The initial 30% sensitivity threshold is admittedly somewhat arbitrary. In the psychometric literature, sensitivity and specificity are typically evaluated for an *entire scale* or set of *multiple items*. Even here, there are no well-accepted standards except for “higher is better” and the need to simultaneously maximize and balance sensitivity and specificity. The use of sensitivity/specificity analyses to evaluate individual items for inclusion in scales is not common, and in our view is one of the unique innovations of the article. Given that elder abuse is a complex, varied phenomenon, and that the likelihood of any single indicator being present (i.e., frequency of endorsement) is somewhat low, we relaxed single-item sensitivity criteria to 30% (and even 20% if there were theoretical reasons for doing so). The goal was not individual item sensitivity/specificity, but *overall scale sensitivity/specificity*, which was achieved. After this preliminary step, we used additional criteria to select items for inclusion in each short form. Namely, we considered frequency of endorsement of each individual item, tending to exclude items with very low endorsement. In addition, some individual items with sensitivities below 30% were included based on theoretical rationale.

ROC Analysis—After items for the four abuse/neglect short forms were identified, ROC curve analysis (McNeil & Hanley, 1984) was used to test the validity of the measures. The

ROC analysis charts the sensitivity against 1 minus the specificity to derive a curve that estimates the relationship of the measure to the criterion of interest (see www.medcalc.org/manual/roc-curves.php for an introduction). The area under the ROC curve indicates the test's validity where 100% is perfect sensitivity and specificity, above 90% is excellent, above 80% is good, 70% is fair, and 50% is random chance (see <http://gim.unmc.edu/dxtests/roc3.htm> for examples). The validity of each short form, i.e., financial, emotional, physical, and neglect, was judged against the criterion of the final yes/no substantiation decision of abuse for each type, respectively. In this study, we compared the area under the curve (AUC) of the short forms to the AUC of the long forms (Conrad et al., 2017) using the preceding standards.

Correlation—To be representative of the long form, the short form should be highly correlated with the long form. According to Cohen (1988), correlations can generally be evaluated as small = .1, medium = .3, or large = .5. We set $>.5$ as a correlation criterion.

Cronbach's Alpha Reliability—Cronbach's alpha is a measure of reliability, or how well the items in a measure are related. Although predictive validity is our principal criterion for the short forms, the measures should still demonstrate reasonable internal consistency. Kline (2000) suggests .9 as "excellent," .7–.9 as "good," and .6–.7 as "acceptable."

Suggested Short-form Scoring

Because the forms are straightforward with simple scoring procedures, caseworkers and researchers can easily be trained to adopt the forms (see the Appendix for short forms). Currently, we simply add up the responses to get a total score for each section. Items are scored "Yes" = 2; "Some Indication" = 1; "No" = 0; and "Refused/Don't Know/NA" = 0 (or missing). Since the ROC analyses indicated that a total score of 1 was most sensitive and specific as a cutoff (Conrad et al., 2017), any score (i.e., a score of 1 or higher or "some indication" on at least one item) indicates high probability of the presence of that type of abuse. Further research will be needed to develop norms to classify abuse/neglect severity using larger, generalizable samples.

Results

Older Adult Financial Exploitation Measure

The predictive validity of the full 27-item OAFEM was tested against the final substantiation decision of FE (yes/no) using ROC curve analysis. There were 283 positive FE substantiations and 457 negative. The Cronbach's alpha was .93 and the area under the ROC curve for the long form was very high at 96.6%, indicating that the OAFEM does an excellent job of detecting FE.

Short Form—Evaluating the sensitivity and specificity of each item against the substantiation decision, the short form retained 11 out of 27 total items. All 11 items had greater than 96% specificity, meaning that if FE was not substantiated, the probability that the item was not endorsed was very high. Because specificity was high for all items, inclusion into the short form was ultimately based on the sensitivity criterion. Two items

retained in the short form, “Has ____ felt entitled to use your money for him/herself?” and “Has ____ used your money on their own behalf instead of for your benefit?” had sensitivity values of approximately 58%. These were the most frequently endorsed items in the OAFEM measure. Two other items, “Have there been unexplained disappearances of your money or possessions?” and “Did ____ take advantage of you to get a hold of your resources such as a house, car, or money?” had 44% and 42% sensitivity, respectively. Other items in the short form and their sensitivity values were: “Has ____ lied about how they were spending your money?” (39%); “Has ____ lived with you, but refused to pay their share of expenses?” (39%); “Has ____ borrowed money from you but not paid it back?” (38%); “Has ____ refused to give you an accounting of how your money was spent?” (35%); and “Have there been unusual activities in your bank accounts, for example, large withdrawals, frequent transfers of funds?” (30%).

We also included two other items with lower sensitivity values: “Has ____ promised care for you but then did not provide it?” (20%) and “Other indicator(s) of financial exploitation” (21%). In some cases of substantiated FE, these items were endorsed when few other items were selected, suggesting that they assess different aspects of FE that are not measured by the other items in the short form. No items with specificity lower than 20% were included (see Table 1).

“Other indicators” of abuse items were administered at the end of each measure and were scored using the closed-ended “yes,” “some indication,” and “no” categories. The wording for these items is shown in the tables and the Appendix. They were designed as catch-all “anything else we might have missed” to give the alleged victim/caseworker the opportunity to note other indicators not captured by the EADSS items. We decided to include them in all short forms as a compromise between the “standardized” approach and the need to allow for uniqueness and clinical judgment, particularly since the less sensitive and less frequent items were removed to create the more parsimonious short forms. Including the “other indicator” item from the short forms does not significantly affect the overall reliability of the short-form measures.

Validation of OAFEM Short Form—The area under the ROC curve for the OAFEM short form was still high at 94.5%, suggesting that together these 11 items are sufficient predictors of elder FE. Furthermore, the short form was internally consistent ($\alpha = .89$) and was highly correlated with the long form ($r = .96$). These results supported the validity of the 11-item FE short form (see Table 5).

The Older Adult Emotional Abuse Measure

The predictive validity of the OAEAM (18 items) was tested against the final substantiation decision for EA (yes/no) using ROC curve analysis. The OAEAM had 266 positive EA substantiations and 452 negative. The area under the ROC curve was very high at 97.7% with Cronbach’s α at .90, indicating that the OAEAM does an excellent job of detecting EA.

Short Form—A short form of the OAEAM was also developed by evaluating sensitivity and specificity of each item. Similar to the OAFEM items, all OAEAM items had 97% or

higher specificity; therefore, sensitivity was used to judge whether an item should be included in the short form. Nine OAEAM items had a sensitivity higher than 30%, indicating a relatively higher percentage of item endorsement when EA was substantiated. From high to low sensitivity, items retained in the short form include: “Have you been uncomfortable with ____?” (73%); “Has ____ called you unkind names or put you down?” (61%); “Has ____ behaved in ways that frighten or scare you?” (57%); “Have you ever been afraid of ____?” (51%); “Has ____ manipulated or tried to control you?” (50%); “Has ____ made you feel small, such as treating you as a child?” (39%); “Has ____ failed to support or back you up when you needed it?” (35%); “Has ____ used nonverbal behavior such as shaking a fist or other threatening gestures?” (34.1); and “Has ____ kept things from you or lied about things you should know about?” (34%).

Three more items were included that indicated more severe EA but that were endorsed less often. These items had sensitivity of at least 20%: “Has ____ talked about you as if you were not there?” (25%); “Has ____ not let you speak for yourself?” (26%); and “Other indicator(s) of emotional abuse” (27%).

Among the 12 items, we found that “Has ____ behaved in ways that frighten or scare you?” was strongly correlated with two other items: “Have you ever been afraid of ____?” (Spearman’s $r = .841, p < .001$) and “Has ____ used nonverbal behavior such as shaking a fist or other threatening gestures?” (Spearman’s $r = .749, p < .001$). To reduce the amount of overlap in the items and to improve parsimony, we decided to exclude “Has ____ behaved in ways that frighten or scare you?” from the short form, resulting in an 11-item short form for EA (see Table 2).

Validation of OAEAM Short Form—The 11-item short form’s area under the ROC curve was still high (97.4%), suggesting that together these 11 items are sufficient predictors of elder EA. Cronbach’s alpha for the 11-item short form was still high ($\alpha = .88$), and the correlation between the short and long forms was very high ($r = .98$), demonstrating that the short form was reliable and representative of the long form. These results supported the validity of the 11-item EA short form (see Table 5).

Older Adult Physical Abuse Measure

Predictive validity of the OAPAM (20 items) was tested against the final substantiation decision of PA (yes/no) using ROC curve analysis. The OAPAM had 122 positive PA substantiations and 638 negative. The area under the ROC curve was very high at 97.0% with Cronbach’s alpha at .82, indicating that the OAPAM does an excellent job of detecting PA.

Short Form—Similar to the OAFEM and OAEAM items, all OAPAM items had 95% or higher specificity, so sensitivity was used to judge whether an item should be included in the short form. Five items had sensitivity above 30%, including “Has ____ attempted or caused you any physical injuries?” (71.4%) and “Have you been a victim of an attempted or completed physical attack?” (85.8%), and were clearly the best predictors. Three other items with sensitivity higher than 30% were as follows: “having bruises or welts” (33.1%), “being

hit, kicked, punched, or slapped” (39.7%), and “being handled roughly, pushed, shoved, grabbed, or shaken” (63.6%).

One more item “other physical injuries not listed” was included for consistency with the three other short-form scales. It had a decent sensitivity score of 25%. Therefore, the final short form for PA included six items (see Table 3).

Validation of OAPAM Short Form—The 6-item short form’s area under the ROC curve for short form was still high (96.1%), suggesting that together these six items are sufficient predictors of elder PA. Cronbach’s alpha for the 6-item short form was high ($\alpha = .86$) and the correlation between the short and long forms was also high ($r = .95$), demonstrating that the short form was reliable and representative of the long form (see Table 5).

Older Adult Neglect Measure

Predictive validity of the OANM (17 items) was tested against the social workers’ final substantiation decision of neglect (neglect yes/no) using ROC curve analysis. There were 243 positive neglect substantiations and 532 negative. The area under the ROC curve was very high for the long form (96.2%), indicating that the OANM does an excellent job of identifying elder neglect. The Cronbach’s alpha for the OANM long form was .77, somewhat lower than for the other types of abuse, but still acceptable (Kline, 2000).

Short Form—A short form of the OANM was developed by evaluating the sensitivity and specificity of each item. An additional consideration for the neglect short form was that previous work on self-neglect (Iris, Conrad, & Ridings, 2014; Iris, Ridings, & Conrad, 2010) has shown that there are two components to the construct—*behavioral* and *environmental*. We wanted to include at least some items from both components. Using these criteria, the short form retained 8 out of 17 total items. Because all items had greater than 97% specificity, inclusion into the short form was based on sensitivity criteria.

Four items had sensitivity of 30% or higher and were retained in the short form: “Is the older adult left alone without supervision?” (39.6%); “Does the AA fail to follow through with preventive or diagnostic testing or prescribed treatment related to the health conditions of the older adult?” (39.4%); “Does the older adult lack needed medications or medical equipment (including eyeglasses, hearing aids, dentures, walkers, etc.)?” (31.2%); and “Other indicators of neglect” (33.8%). The three items besides “other” were from the behavioral component of neglect; thus, we included two environmental items that met minimum sensitivity criteria of 20%: “Are there odors in the older adult’s home that raise concerns (urine, feces, garbage)?” (22.4%); and “Does the older adult’s home or yard appear unsafe or unsanitary?” (20.3%). Lastly, to broaden the range of coverage of the behavioral component, two additional items meeting the 20% sensitivity criteria were also included: “Does the older adult show signs of malnourishment or dehydration?” (27.2%); and “Does the older adult have poor personal hygiene as evidenced by a noticeable odor, long and dirty fingernails, etc.?” (25.0%) (see Table 4).

Validation of OANM Short Form—The area under the ROC curve for the OANM short form was still high (95.0%), suggesting that together these eight items are sufficient

predictors of elder neglect substantiation decisions. The correlation between the OANM short form and long form was high ($r = .83$). The traditional Cronbach's alpha for the 8-item short form was decent ($\alpha = .66$). All of these data provide evidence of the validity of the 8-item neglect short form (see Table 5).

Discussion

The four EADSS short forms offer concise and effective measures of financial, emotional, physical, and neglect. The items included in the short forms had high sensitivity and specificity, high internal consistency, and were highly correlated with the EADSS long forms. Compared with longer, more detailed measures of each type of abuse (e.g., Acierno and colleagues' 2010 highly detailed national elder abuse survey), the EADSS short forms impose a much lighter burden on caseworkers and clients and provide the most parsimonious yet valid assessment of abuse to guide substantiation decisions.

The development of the EADSS short forms represents a key methodological advance in the design of assessments for elder abuse. The EADSS is one of the first assessment systems to use empirically developed and rigorously field-tested protocols and questionnaires to determine the presence or absence of elder abuse (Conrad, 2015). The full assessment consists of multiple measures that assess mistreatment and exploitation in five areas: physical, emotional, neglect, financial and sexual, as well as abuser and victim risk factors. Results of the field test showed higher substantiation rates using the EADSS when compared to rates from the same investigative agencies in the year prior to using the EADSS (Conrad et al., 2017). These measures also uncovered more cases where multiple types of abuse were substantiated (i.e., hybrid abuse), most likely because the EADSS protocols asked investigators to ask about all five types of abuse, not just those alleged by the abuse reporter. Thus, these new short forms appear to be valid for detecting "real cases" of elder abuse that are ultimately substantiated by APS caseworkers.

As noted in the brief review of existing instruments, most research and development has focused on screening for mistreatment in clinical or health care settings—requiring more detailed follow-up assessments for "positive" screens—rather than creating a sufficient tool to determine what type of abuse, or multiple types, has actually occurred, and to inform the abuse substantiation decision. These assessments are necessary to help standardize APS practice and reduce the rate of false negatives and false positives that often result from short screeners.

The EADSS short forms may not be appropriate for every setting. For example, for emergency room physicians and other busy clinicians, we recommend the screening tool created by the American Medical Association (1992) and the EASI, which include just nine and six questions, respectively (Bond & Butler, 2013; Yaffe et al., 2008). Arguably, brief, validated screeners like these (and those mentioned above) are more appropriate for clinical settings and can be included as part of the client's medical evaluation. However, these shorter instruments are less effective at detecting the subtle forms of abuse that do not result in clear emotional or physical injuries but are similarly destructive leading to false-negative abuse assessments. This can have harmful unintended consequences for providers,

caregivers, and patients, potentially causing the older adult to endure further mistreatment. Short screeners with questions that are too general and nonspecific can result in false positives, which can also cause unintended consequences for older adults, their caregivers, health care providers, and social service agencies (Beach et al., 2016). The EADSS short forms provide more questions per abuse type than the aforementioned screeners, increasing the likelihood of detecting abuse and discriminating more nuanced cases while also minimizing false positives. They are most appropriate for APS/elder abuse investigation environments but have the potential for use in research settings to identify prevalence and risk factors where more time is allotted for assessment.

Theoretically derived and tested by APS caseworkers from six agencies in Illinois, we believe the EADSS short forms are well-suited for implementation into current assessment systems. We estimate that administering all four forms will take approximately 10–15 minutes. In practice, we recommend that APS caseworkers record “yes” or “no” in response to each question on the short forms. If abuse is positively substantiated by a “yes” on any short-form item, we recommend that caseworkers ask additional items from the EADSS long forms to collect further evidence. Often the first on the scene, APS caseworkers play an important role by documenting all possible information that supports the substantiation decision. These records are critical to inform whether the case is appropriate for criminal justice proceedings (DeLiema, Homeier, Anglin, Li, & Wilber, 2016).

Of course, use of EADSS short forms for standardized assessment during APS investigations is not intended as a substitute for caseworker experience and clinical judgment. In fact, caseworkers were instructed to describe qualitatively each indicator of abuse that was checked in the EADSS field test, and qualitative summaries of refuting and supporting facts were required. In Conrad et al. (2017), new caseworkers found this approach most beneficial. Elder abuse is a complex phenomenon that presents differently in every case. As noted, we recommend that the short forms be incorporated as part of a broader assessment strategy, and that if a positive score is obtained, the long-forms should be administered to gather further evidence to support the substantiation decision. The inclusion of the “other indicators of abuse” items in the short forms is also an effort to capture the uniqueness and complexity each case.

Another advantage of the forms is that EADSS was designed so that caseworker observations and client responses could be entered in “real-time” into a secure electronic device while the interview is taking place. This reduces data transfer errors associated with entering information from article-based assessments into a computer database once the caseworker has returned to a central office, which is currently a common practice at APS agencies. Adopting the EADSS short-form measures and electronic data collection procedures at APS agencies throughout the USA could not only save time and reduce error, it could also further efforts to develop a uniform national elder mistreatment database.

The need for improved elder mistreatment screening and detection tools for both community-dwelling and institutionalized older adults remains unmet (Beach et al., 2016). The EADSS short forms address those needs by providing elder mistreatment researchers with comprehensive data collection instruments that offer low respondent burden. The

standardized short forms, like the long forms, can be administered in diverse settings, allowing researchers to compare rates of elder mistreatment prevalence and risk factors in different communities (Wood, Liu, Hanoch, & Estevez-Cores, 2016). However, scaling of the short-form items may need to be revised as the “some indication” option may not work in survey-based self-report contexts; and the short forms will need further validation in community-based research and institutional settings.

Limitations

This study used the abuse substantiation decision as the criterion for retaining items in the short forms. A more optimal criterion would be the independent judgment of a third-party, such as another caseworker or supervisor, as to the presence/absence of each abuse type using unstructured interview and observation methods. It is possible that APS caseworkers in this study based their substantiation decisions entirely on their findings from the EADSS assessment; however, in many cases, items on the long forms were endorsed but the abuse was ultimately deemed unsubstantiated. Further validation tests should compare the sensitivity and specificity of individual EADSS items against the substantiation decision guided by other assessment tools.

A second limitation of the analytic approach is that predictive validity is based solely on the caseworkers’ substantiation decision, without incorporation of the victim’s perspective on whether or not a problem exists. Recent research (Burnes, Lachs, Burnette, & Pillemer, in press) finds that a substantial proportion of older adults who are designated as a victim of elder mistreatment using standard elder mistreatment assessment criteria do not appraise the problem as serious themselves. Our sample, however, is different from Burnes, Lachs, Burnette, and Pillemer’s (in press) population-based sample. The APS sample requires consent from alleged older victims to be interviewed, unless older adults were incapacitated. Therefore, to a certain extent, interviewed older adults understood that the investigation was about abuse or neglect, and agreed to participate in the interview with a caseworker. Additional research would be needed to ascertain how well the EADSS short-form results align with alleged victims’ perceptions.

On a related note, recent studies have illuminated cultural differences in perceptions of what comprises elder mistreatment and which types of mistreatment are considered to be more serious than others (Enguidanos, DeLiema, Aguilar, Lambrinos, & Wilber, 2014; Moon & Benton, 2000; Moon & Evans-Campbell, 2000; Moon & Williams, 1993). Dong and his colleagues (2011) have also identified cultural differences in older Chinese American perceptions of elder abuse. Therefore, the short forms should be tested in different cultural settings. It is possible that different items would be retained for different racial/cultural groups where some forms of mistreatment may be more common than others.

We recommend that APS caseworkers continue to be mindful of alleged victims’ subjective appraisals of their situations when interpreting EADSS short-form scores, and perhaps ask victims’ follow-up questions to gauge their perceptions of the severity of mistreatment. There will always be some amount of tension between standardized instruments and the realities they are designed to measure.

Another limitation is that the short forms may not be able to detect less common but severe types of mistreatment, such as being strangled, suffocated or choked. These severe items had low-sensitivity values because they were rarely endorsed. Our recommendation to administer the long form if one or more short-form items are endorsed should address this limitation and prevent these serious forms of violence from being overlooked.

Finally, future research is needed to develop a short-form measure for sexual abuse since there were too few cases in the present sample to provide reliable sensitivity and specificity estimates.

Conclusions

This study has a direct application to improving practice and policy at local, state, and national levels. Use of the short forms should improve the efficiency of elder abuse investigations without compromising substantiation rates. Findings support the possibility of using a multicomponent, standardized, validated assessment tool in “real-time” elder mistreatment investigations. We recommend follow-up studies to evaluate the feasibility of the EADSS short forms in APS agencies outside of Illinois and in research settings.

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Appendix: Elder Abuse Decision Support System

Adult Mistreatment Assessment Short Form

Purpose

This assessment tool is to be used by the caseworker to obtain information about the occurrence of elder mistreatment within the past 12 months. If the client or a collateral information source is unable to respond or is noncompliant, the caseworker should complete the form based on personal observation using whatever information is available.

Any positive answer on these forms should lead to further investigation. This may include administration of the full questionnaire (see www.eadss.org). If the caseworker has reason to believe that the client or collateral is not being truthful, then s/he should document this information the comments section on page 4. When administering the questions, the caseworker should use the name or relationship of the alleged abuser(s) in the blanks for each item. All questions refer to behaviors and signs of mistreatment occurring in the past 12 months, including the present.

Scoring instructions

Check the box corresponding to the answer for each question. To score, simply add the numbers in the first two response columns (“yes” and “some indication”).

Score	Response	Definition
2	Yes	Problem is directly observable or reported by the client or collateral
1	Some indication	Reasonable suspicion that the problem is occurring/has occurred, but there is no unequivocal proof
0	No	No evidence or suspicion that problem is occurring/has occurred in the past 12 months
0	Don't know or N/A	There is no information available to make a decision, or the question is not applicable
0	RF	Client or collateral refused to answer

Physical abuse is causing or attempting to inflict physical pain or injury to an older person.

	Yes	Some indication	No	Don't know or N/A	Refused
P1. In the past twelve months, has ____ attempted or caused you any physical injuries?					
P2. Bruises or welts?					
P3. Have you been a victim of an attempted or completed physical attack (completed or attempted)?					
P4. Hit, kicked, punched or slapped?					
P5. Handled roughly, pushed, shoved, grabbed, or shaken?					
P6. Physically injured in some other way not listed?					

Neglect

Passive neglect is the failure by a caregiver to provide an eligible adult with the necessities of life including, but not limited to, food, clothing, shelter, and medical care, either because of failure to understand the older person's needs, lack of awareness of services to help meet those needs, or a lack of capacity to provide care.

Willful deprivation is the deliberate denial to an eligible adult of required medication, medical care, shelter, food, therapeutic devices, or other physical assistance, thereby exposing that person to risk of physical, mental, or emotional harm. Willful deprivation shall not include the discontinuation of medical care or treatment when the eligible adult has expressed a desire to forego such medical care or treatment.

	Yes	Some indication	No	Don't know or N/A	Refused
N1. Does this person have poor personal hygiene as evidenced by a noticeable odor, long and dirty fingernails, etc.?					
N2. Does the AA fail to follow through with preventive or diagnostic testing or prescribed treatment related to the health conditions of this person?					

- N3. Does this person lack needed medications or medical equipment (including eyeglasses, hearing aids, dentures, walkers, etc.)?
- N4. Does this person's home or yard appear unsafe or unsanitary?
- N5. Are there odors in this person's home that raise concerns (urine, feces, garbage)?
- N6. Does this person show signs of malnourishment or dehydration?
- N7. Is this person left alone without adequate supervision?
- N8. Other indicator(s) of neglect?

Emotional abuse means verbal assaults, threats of maltreatment, harassment, or intimidation so as to compel the older person to engage in conduct which he or she has a right to abstain or to refrain from conduct in which the older person has a right to engage.

	Yes	Some indication	No	Don't know or N/A	Refused
E1. Has ___ manipulated or tried to control you?					
E2. Have you been uncomfortable with ___?					
E3. Has ___ called you unkind names or put you down?					
E4. Has ___ kept things from you or lied about things that you should know about?					
E5. Has ___ used nonverbal behavior such as shaking a fist or other threatening gestures?					
E6. Have you ever been afraid of ___?					
E7. Has ___ failed to support or back you up when you needed it?					
E8. Has ___ made you feel small, such as treating you as a child?					
E9. Has ___ talked about you as if you were not there?					
E10. Has ___ not let you speak for yourself?					
E11. Other indicator(s) of emotional abuse? (For example, threatened to not let you see grandchildren) Describe					

Financial exploitation means the misuse or withholding of an older person's resources by another person to the disadvantage of the elderly person and/or the profit or advantage of a person other than the older person.

	Yes	Some indication	No	Don't know or N/A	Refused
F1. Has ___ borrowed money from you and not paid it back?					
F2. Has ___ felt entitled to use your money for himself/herself?					
F3. Has ___ used your money on their own behalf instead of for your benefit?					
F4. Have there been unexplained disappearances of your money or possessions?					
F5. Has ___ lied about how they were spending your money?					

F6. Did ___ take advantage of you to get a hold of your resources such as a house, car, or money?

F7. Has lived with you, but refused to pay their share of expenses?

F8. Has ___ refused to give you an accounting of how your money was spent?

F9. Have there been unusual activities in your bank accounts, for example, large withdrawals, frequent transfers of funds?

F10. Has ___ promised care for you but then did not provide it?

F11. Other indicator(s) of financial exploitation?

***Sexual Abuse** is touching, fondling, sexual threats, sexually inappropriate remarks, or any other sexual activity with an older person when the older person is unable to understand, unwilling to consent, threatened, or physically forced to engage in sexual behavior.

	Yes	Some indication	No	Don't know or N/A	Refused
S1. In the past 12 months, have you been forced into any sexual activities involving lewd language, observing sexual activities, touching, fondling, or oral/anal/vaginal sex?					
S2. Other indicator(s) of sexual abuse, such as bruises on inner thighs, presence of semen, inappropriate or excessive hygienic care?					

References

- Acierno R, Hernandez MA, Amstadter AB, Resnick HS, Steve K, Muzzy W, Kilpatrick DG. Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: The National Elder Mistreatment Study. *American Journal of Public Health*. 2010; 100(2):292–297. DOI: 10.2105/AJPH.2009.163089 [PubMed: 20019303]
- American Medical Association. Diagnostic and treatment guidelines on elder abuse and neglect. Chicago, IL: American Medical Association; 1992. Retrieved from <http://tvfields.com/OtherLinks/AMAReport.pdf>
- Anthony EK, Lehning AJ, Austin MJ, Peck MD. Assessing elder mistreatment: Instrument development and implications for adult protective services. *Journal of Gerontological Social Work*. 2009; 52(8):815–836. DOI: 10.1080/01634370902918597 [PubMed: 19830609]
- Beach SR, Carpenter CR, Rosen T, Sharps P, Gelles R. Screening and detection of elder abuse: Research opportunities and lessons learned from emergency geriatric care, intimate partner violence, and child abuse. *Journal of Elder Abuse & Neglect*. 2016; 28(4–5):185–216. DOI: 10.1080/08946566.2016.1229241 [PubMed: 27593945]
- Bond M, Butler K. Elder abuse and neglect: Definitions, epidemiology, and approaches to emergency department screening. *Clinics in Geriatric Medicine*. 2013; 29(1):257–273. DOI: 10.1016/j.cger.2012.09.004 [PubMed: 23177610]
- Burnes D, Lachs MS, Burnette D, Pillemer K. Varying appraisals of elder mistreatment among victims: Findings from a population-based study. *Journals of Gerontology: Social Sciences*. (in press).
- Burnes DP, Rizzo VM, Courtney E. Elder abuse and neglect risk alleviation in protective services. *Journal of Interpersonal Violence*. 2014; 29(11):2091–2113. DOI: 10.1177/0886260513516387 [PubMed: 24407144]

*Comments:

Note: We did not create a validated short-form measure for sexual abuse due to few substantiated sexual abuse cases in the sample. S1 is the screening question used in the sexual abuse long-form assessment.

- Cohen, J. Statistical power analysis for the behavioral sciences. 2nd. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
- Cohen M. Screening tools for the identification of elder abuse. *Journal of Clinical Outcomes Management*. 2011; 18(6):261–270. Retrieved from http://turner-white.com/pdf/jcom_jun11_abuse.pdf.
- Conrad, KJ. Elder abuse computerized decision support system: Final report. Washington, DC: National Institute of Justice; 2015. No. 249185 Retrieved from <https://www.ncjrs.gov/pdffiles1/nij/grants/249185.pdf>
- Conrad KJ, Iris M, Liu M. Elder Abuse Decision Support System: Field test outcomes, abuse measure validation, and lessons learned. *Journal of Elder Abuse and Neglect*. 2017; doi: 10.1080/08946566.2017.1314843
- Conrad KJ, Iris M, Ridings JW, Fairman KP, Rosen A, Wilber KH. Conceptual model and map of financial exploitation of older adults. *Journal of Elder Abuse & Neglect*. 2011; 23(4):304–325. DOI: 10.1080/08946566.2011.584045 [PubMed: 21978290]
- Conrad KJ, Iris M, Ridings JW, Langley K, Anetzberger GJ. Self-report measure of psychological abuse of older adults. *The Gerontologist*. 2011; 51(3):354–366. DOI: 10.1093/geront/gnq103 [PubMed: 21173437]
- Conrad KJ, Iris M, Ridings JW, Langley K, Wilber KH. Self-report measure of financial exploitation of older adults. *The Gerontologist*. 2010; 50(6):758–773. DOI: 10.1093/geront/gnq054 [PubMed: 20667945]
- Conrad KJ, Iris M, Ridings JW, Rosen A, Fairman KP, Anetzberger GJ. Conceptual model and map of psychological abuse of older adults. *Journal of Elder Abuse & Neglect*. 2011; 23(2):147–168. DOI: 10.1080/08946566.2011.558784 [PubMed: 21462048]
- Conrad, KJ., Iris, M., Riley, BB., Mensah, E., Mazza, J. Developing end-user criteria and a prototype for an elder abuse assessment system. Washington, DC: National Institute of Justice; 2013. No. 241390 Retrieved from <https://www.ncjrs.gov/pdffiles1/nij/grants/241390.pdf>
- Conrad KJ, Liu P, Iris M. Examining the role of substance abuse in elder abuse: Results from mistreatment investigations. *Journal of Interpersonal Violence*. 2017; doi: 10.1177/0886260516640782
- DeLiema M, Homeier DC, Anglin D, Li D, Wilber KH. The forensic lens: Bringing elder neglect into focus in the emergency department. *Annals of Emergency Medicine*. 2016; 68(3):371–377. DOI: 10.1016/j.annemergmed.2016.02.008 [PubMed: 27005449]
- Dong XQ. Elder abuse: Systematic review and implications for practice. *Journal of the American Geriatrics Society*. 2015; 63(6):1214–1238. DOI: 10.1111/jgs.13454 [PubMed: 26096395]
- Dong X, Chang ES, Wong E, Wong B, Simon MA. How do U.S. Chinese older adults view elder mistreatment? Findings from a community-based participatory research study. *Journal of Aging and Health*. 2011; 23(2):289–312. DOI: 10.1177/0898264310385931 [PubMed: 21051768]
- Dong XQ, Chen R, Fulmer T, Simon MA. Prevalence and correlates of elder mistreatment in a community-dwelling population of U.S. Chinese older adults. *Journal of Aging and Health*. 2014; 26(7):1209–1224. DOI: 10.1177/0898264314531617 [PubMed: 25239973]
- Enguidanos S, DeLiema M, Aguilar I, Lambrinos J, Wilber KH. Multicultural voices: Attitudes of older adults in the United States of America about elder mistreatment. *Ageing & Society*. 2014; 34(5):877–903. DOI: 10.1017/S0144686X12001389 [PubMed: 25364064]
- Fulmer T, Paveza G, Abraham I, Fairchild S. Elder neglect assessment in the emergency department. *Journal of Emergency Nursing*. 2000; 26(5):436–443. DOI: 10.1067/men.2000.110621 [PubMed: 11015061]
- Gallione C, Dal Molin A, Cristina FV, Ferns H, Mattioli M, Suardi B. Screening tools for identification of elder abuse: A systematic review. *Journal of Clinical Nursing*. (in press).
- Iris M, Conrad KJ, Ridings J. Observational measure of elder self-neglect. *Journal of Elder Abuse & Neglect*. 2014; 26(4):365–397. DOI: 10.1080/08946566.2013.801818 [PubMed: 24910895]
- Iris M, Ridings JW, Conrad KJ. The development of a conceptual model for understanding elder self-neglect. *The Gerontologist*. 2010; 50(3):303–315. DOI: 10.1093/geront/gnp125 [PubMed: 19726732]

- Jackson SL. All elder abuse perpetrators are not alike: The heterogeneity of elder abuse perpetrators and implications for intervention. *International Journal of Offender Therapy and Comparative Criminology*. 2014; 60(3):1–21. DOI: 10.1177/0306624X14554063
- Jackson, SL., Hafemeister, TL. New directions for developing theories of elder abuse occurring in domestic settings. Washington, DC: National Institute of Justice; 2013. No. NCJ241731
- Kline, P. The handbook of psychological testing. 2nd. London, UK: Routledge; 2000.
- Kosberg, J., Nahmiash, D. Characteristics of victims and perpetrators and milieus of abuse and neglect. In: Baumhover, LA., Beall, CS., editors. Abuse, neglect and exploitation of older persons. Baltimore, MD: Health Professions Press; 1996. p. 31-49.
- McNeil BJ, Hanley JA. Statistical approaches to the analysis of receiver operating characteristic (ROC) curves. *Medical Decision Making*. 1984; 4(2):137–150. DOI: 10.1177/0272989X8400400203 [PubMed: 6472062]
- Mixson PM. Public policy, elder abuse, and adult protective services: The struggle for coherence. *Journal of Elder Abuse & Neglect*. 2010; 22(1–2):16–36. DOI: 10.1080/08946560903436148 [PubMed: 20390825]
- Moon A, Benton D. Tolerance of elder abuse and attitudes toward third-party intervention among African American, Korean American, and White elderly. *Journal of Multicultural Social Work*. 2000; 3(8):283–303. DOI: 10.1300/J285v08n03_05
- Moon A, Evans-Campbell T. Awareness of formal and informal sources of help for victims of elder abuse among Korean American and Caucasian elders in Los Angeles. *Journal of Elder Abuse & Neglect*. 2000; 11(3):1–23. DOI: 10.1300/J084v11n03_01 [PubMed: 21877981]
- Moon A, Williams O. Perception of elder abuse and help-seeking patterns among African-American, Caucasian American, and Korean-American elderly women. *The Gerontologist*. 1993; 33(3):386–395. DOI: 10.1093/geront/33.3.386 [PubMed: 8325527]
- Mosqueda L, Wiglesworth A, Moore A, Nguyen A, Gironda M, Gibbs L. Variability in findings from adult protective services investigations of elder abuse in California. *Journal of Evidence-Informed Social Work*. 2016; 13(1):34–44. DOI: 10.1080/15433714.2014.939383 [PubMed: 26061345]
- National Academies Committee on National Statistics. Meeting on research issues in elder mistreatment and abuse and financial fraud. Washington, DC: Author; 2010.
- National Adult Protective Services Association. APS state budget cuts survey results. Springfield, IL: Author; 2009.
- Neale AV, Hwalek MA, Goodrich CS, Quinn KM. The Illinois elder abuse system: Program description and administrative findings. *The Gerontologist*. 1996; 36(4):502–511. DOI: 10.1093/geront/36.4.502 [PubMed: 8771978]
- Neale AV, Hwalek MA, Scott RO, Sengstock MC, Stahl C. Validation of the Hwalek–Sengstock elder abuse screening test. *Journal of Applied Gerontology*. 1991; 10(4):406–418. DOI: 10.1177/073346489101000403
- Nunnally, JC., Bernstein, IH. Psychometric theory. 3rd. New York, NY: McGraw-Hill; 1994.
- Reis M, Nahmiash D. Validation of the indicators of abuse (IOA) screen. *The Gerontologist*. 1998; 38(4):471–480. DOI: 10.1093/geront/38.4.471 [PubMed: 9726134]
- Schofield M, Misra G. Validity of self-report screening scale for elder abuse: Women's health Australia study. *The Gerontologist*. 2003; 43(1):110–120. DOI: 10.1093/geront/43.1.110 [PubMed: 12604752]
- Sommerfeld DH, Henderson LB, Snider MA, Aarons GA. Multidimensional measurement within adult protective services: Design and initial testing of the tool for risk, interventions, and outcomes. *Journal of Elder Abuse & Neglect*. 2014; 26(5):495–522. DOI: 10.1080/08946566.2014.917598 [PubMed: 24848994]
- Wood SA, Liu PJ, Hanoch Y, Estevez-Cores S. Importance of numeracy as a risk factor for elder financial exploitation in a community sample. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. 2016; 71(6):978–986. DOI: 10.1093/geronb/gbv041
- Yaffe MJ, Wolfson C, Lithwick M, Weiss D. Development and validation of a tool to improve physician identification of elder abuse: The Elder Abuse Suspicion Index (EASI). *Journal of Elder Abuse and Neglect*. 2008; 20(3):276–300. DOI: 10.1080/08946560801973168 [PubMed: 18928055]

Table 1 Financial abuse items, sensitivity, specificity, and endorsement percentage ($n = 740$).

Item	Sensitivity %	Specificity %	Endorsement %
1. Has ___ borrowed money from you but not paid it back?	37.6	98.7	11.9
2. Has ___ felt entitled to use your money for him/herself?	58.3	98.9	18.3
3. Has ___ used your money on their own behalf instead of for your benefit?	57.7	99.6	17.7
4. Have there been unexplained disappearances of your money or possessions?	44.4	96.4	15.1
5. Has ___ lied about how they were spending your money?	38.5	99.8	10.8
6. Has ___ demanded money from you?	29.1	95.9	8.8
7. Did ___ take advantage of you to get a hold of your resources such as a house, car, or money?	41.7	97.7	13.2
8. Has ___ lived with you, but refused to pay their share of expenses?	38.8	98.7	11.7
9. Has ___ given unreasonable explanations for spending your money?	27.7	100.0	7.8
10. Has ___ refused to give you an accounting of how your money was spent?	34.6	99.7	9.7
11. Has ___ taken your money to do something for you but never did it?	22.7	99.5	6.6
12. Have there been unusual activities in your bank accounts, for example, large withdrawals, frequent transfers of funds?	29.6	99.5	8.1
13. Has ___ said they were buying something for you, but it was really for their own use?	16.7	100.0	4.6
14. Has ___ handled your money irresponsibly (for example, gambling, illegal activities)?	23.3	100.0	5.9
15. Have there been unauthorized withdrawals from your bank account?	29.5	99.5	8.4
16. Has ___ taken advantage of cultural or family expectations to get your resources?	18.9	99.2	5.6
17. Has ___ persuaded you to sign any documents even though it was not in your best interest?	13.9	99.7	3.8
18. Has ___ manipulated you to give him/her larger than usual gifts (money, cars, homes)?	14.8	99.7	4.2
19. Has ___ prevented you from spending your money in order to preserve their inheritance?	3.7	100.0	.9
20. Has ___ promised care for you but then did not provide it?	20.1	98.7	6.1
21. Has ___ tricked or pressured you into buying something that you now regret buying?	9.5	100.0	2.8
22. Have your legal or financial documents been frequently changed?	6.4	100.0	1.9
23. Has ___ become the payee on your benefit check and used the money for him/herself?	12.1	99.5	3.7
24. Has ___ convinced you to turn the title of your home, property, farm, car, etc. over to them?	5.0	100.0	1.5
25. Has ___ pressured you to modify your will?	1.7	99.7	.6
26. Has ___ changed the direct deposit destination so as to benefit him/herself?	8.0	99.7	2.1
27. Other indicator(s) of financial exploitation	21.4	97.4	6.7

Notes. Items in bold were selected for the short form. All items were scaled “yes,” “some indication” and “no” (with “Don’t know” and “Refused” options). “Yes” or “some indication” was considered a “positive response” (“endorsement”) for the item in sensitivity analyses; and “no” a “negative response” in specificity analyses with financial abuse substantiation decision as the criterion.

Table 2 Emotional abuse items, sensitivity, specificity, and endorsement percentage ($n = 718$).

Item	Sensitivity %	Specificity %	Endorsement %
1. Has ___ manipulated or tried to control you?	50.2	98.7	15.2
2. Have you been uncomfortable with ___?	72.6	97.8	26.1
3. Has ___ behaved in ways that frighten or scare you?	56.7	98.9	16.4
4. Has ___ called you unkind names or put you down?	60.7	98.4	18.1
5. Has ___ kept things from you or lied about things you should know about?	33.9	98.6	9.7
6. Has ___ taken things away or threatened to take things away from you?	20.0	98.8	6.1
7. Has ___ used nonverbal behavior such as shaking a fist or other threatening gestures?	34.1	98.9	10.0
8. Have you ever been afraid of ___?	51.2	98.9	14.4
9. Has ___ failed to support or back you up when you needed it?	35.4	99.2	9.5
10. Has ___ made you feel small, such as treating you as a child?	39.1	98.6	11.4
11. Has ___ talked about you as if you were not there?	25.2	100.0	6.8
12. Has ___ deliberately confused you?	20.0	98.6	6.2
13. Has ___ not let you speak for yourself?	26.1	98.6	8.1
14. Has ___ abandoned or threatened to abandon you?	11.6	99.4	3.6
15. Has ___ threatened to place you in a nursing home when it was not appropriate?	9.5	99.7	2.6
16. Has ___ treated you in an undignified or inappropriate manner when assisting you with dressing, eating, bathing and so on?	7.7	100.0	1.7
17. Has ___ prevented you from having contact with the outside world via telephone, newspapers, television, or radio, etc.?	12.6	100.0	3.5
18. Other indicator(s) of emotional abuse	26.9	98.9	8.2

Notes. Items in bold were selected for the short form. All items were scaled “yes,” “some indication” and “no” (with “Don’t know” and “Refused” options). “Yes” or “some indication” was considered a “positive response” (“endorsement”) for the item in sensitivity analyses; and “no” a “negative response” in specificity analyses with emotional abuse substantiation decision as the criterion.

Table 3 Physical abuse items, sensitivity, specificity, and endorsement percentage ($n = 760$).

Item	Sensitivity %	Specificity %	Endorsement %
1. Has ___ attempted or caused you any physical injuries?	71.4	99.4	10.2
a. Broken bones, fractures, or dislocations	7.5	99.8	1.0
b. Burns or scalding	1.7	100.0	.2
c. Internal injuries	1.7	100.0	.2
d. Bites	3.4	100.0	.4
e. Bruises or welts	33.1	99.4	4.6
f. Cuts	12.0	100.0	1.5
g. Punctures	1.7	100.0	.2
h. Sprains	2.6	99.7	.5
i. Wounds	10.3	99.7	1.4
z. Other physical injuries not listed?	25.0	95.7	2.2
2. Have you been a victim of an attempted or completed physical attack?	85.8	99.2	12.2
a. Hit, kicked, punched, or slapped	37.9	99.7	5.1
b. Handled roughly, pushed, shoved, grabbed, or shaken	63.6	99.5	8.8
c. Strangled, suffocated, or choked	9.4	100.0	1.1
d. Pinched, poked, or scratched	9.6	100.0	1.3
e. Shot or shot at	0.9	100.0	13.2
f. Stabbed	2.5	100.0	.3
g. Injured with a weapon, instrument, or object	14.9	100.0	1.8
z. Physically injured in some other way not listed?	5.2	100.0	.4

Notes. Items in bold were selected for the short form. All items were scaled “yes,” “some indication” and “no” (with “Don’t know” and “Refused” options). “Yes” or “some indication” was considered a “positive response” (“endorsement”) for the item in sensitivity analyses; and “no” a “negative response” in specificity analyses with physical abuse substantiation decision as the criterion.

Table 4 Neglect items, sensitivity, specificity, and endorsement percentage ($n = 775$).

Item	Sensitivity %	Specificity %	Endorsement %
1. Does the older adult have poor personal hygiene as evidenced by a noticeable odor, long and dirty fingernails, etc.?	25.0	97.2	8.2
2. Does the older adult have lice or other parasites?	3.3	99.8	1.0
3. Does the AA ignore signs and symptoms of disease of the older adult?	29.8	99.6	7.9
4. Does the AA fail to follow-through with preventive or diagnostic testing or prescribed treatment related to the health conditions of the older adult?	39.4	98.5	10.4
5. Does the older adult lack needed medications or medical equipment (including eyeglasses, hearing aids, dentures, walkers, etc.)?	31.2	98.8	8.5
6. Are bathroom facilities unsafe, unsanitary, or inoperable?	16.7	98.3	4.6
7. Are major kitchen appliances (including sink) unsafe, unsanitary, or inoperable?	13.5	99.4	3.0
8. Does the older adult's home or yard appear unsafe or unsanitary?	20.3	98.3	4.9
9. Is there evidence that the adult is eating spoiled food?	0.5	99.8	.3
10. Are there odors in older adult's home that raise concerns (urine, feces, garbage)?	22.4	97.7	6.0
11. Are there piles of garbage in the older adult's house/apartment?	11.5	98.5	3.1
12. Does the older adult lack access to needed areas of the home (bathtub, sinks, bed)?	11.1	99.6	2.6
13. Is the temperature in the home inappropriate for summer/winter conditions?	14.2	95.5	5.9
14. Does the older adult show signs of malnourishment or dehydration?	27.2	98.6	8.0
15. Does the older adult have any untreated sores, wounds, rashes, or other health conditions?	16.9	99.2	4.8
16. Is the older adult left alone without adequate supervision?	39.6	97.6	11.2
17. Other indicator(s) of neglect	33.8	99.6	9.0

Notes. Items in bold were selected for the short form. All items were scaled “yes,” “some indication” and “no” (with “Don’t know” and “Refused” options). “Yes” or “some indication” was considered a “positive response” (“endorsement”) for the item in sensitivity analyses; and “no” a “negative response” in specificity analyses with neglect substantiation decision as the criterion.

Table 5

Statistical validity of short forms by type of abuse.

	Cronbach's alpha short form	Cronbach's alpha long form	Area under the curve % short form	Area under the curve % long form	Correlation between complete and short form
Financial	.89	.93	94.5	96.6	.96
Emotional	.88	.90	97.4	97.7	.98
Physical	.86	.82	96.1	97.0	.95
Neglect	.66	.77	95.0	96.2	.83