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                    System

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Purpose

With prevailing aging trends and recent economic downturns, the problem of elder mistreatment is escalating, and it has been suggested that it may even become a perfect storm with budget freezes and cuts to needed programs. The problems are further compounded by the underfunded patchwork of policies and programs to deal with elder mistreatment. Additionally, there has been scant research to address assessment, reporting, and intervention that is state-wide or potentially national in scope.

To address these issues, the Elder Abuse Decision Support System (EADSS) was designed and developed in our two previous NIJ-funded grants to facilitate computer-assisted assessment of allegations of abuse, standardize substantiation decision-making, provide user-friendly scoring and reporting, and link care planning to case specifics. The resulting reports and data bases that EADSS generates can be used to monitor and track case work and outcomes more effectively and compute agency and system-wide statistics useful in evaluation, planning and research. However, the EADSS had not been implemented nor tested in actual elder abuse investigation and intervention programs.

The aims of this study were to: 1) implement and improve the Elder Abuse Decision Support System (EADSS) as an investigation and intervention system usable in the field, 2) determine the efficacy of the EADSS for improving individual assessment, reporting, intervention and end-user utility as compared to standard protocols with six agencies in Illinois serving as a test bed; and 3) estimate the psychometric properties of EADSS measures of abuse, neglect and exploitation.

A website, www.EADSS.org was developed to provide ongoing technical assistance to the end-users and to make information about the EADSS accessible to professionals and the

2

public. The website includes all measures and manuals, and includes training videos to assist with the use of the system. Screen capture modules are provided as needed, following the principle of "frequently asked questions."

Methods

Implementation. To implement EADSS, we completed the following tasks in year one: Goal 1A.Conducted alpha test/debugged EADSS using internal coders; Goal 1B. Recruited one beta site and trained staff in use of EADSS; Goal 2. Revised EADSS based on alpha test and finalized EADSS for beta test; Goal 3. Conducted the beta test/trial run and finalized EADSS for implementation at six participating agencies.

Acceptability questionnaire. We surveyed caseworkers on system acceptability, using an Acceptability Questionnaire (AQ). Responses to the questionnaire were used to obtain further qualitative feedback in focus groups.

Focus groups. These groups were conducted at the study mid-point to enable examination of problems with the system and to foster program improvement. During September, 2013 we conducted three focus groups with representatives from five of the six agencies participating in our project. We gathered participants' opinions relating to use of all the various components of the EADSS, as well as their overall experiences using the web-based system itself. In addition to the formal focus groups, we also held regular meetings (at time, weekly) in person or via conferencing with caseworkers and supervisors to discuss issues and concerns, and to gather information relevant to program improvement.

Field test design. Six elder abuse service providers in Illinois were selected to field test EADSS. The study used an independent-group pretest-posttest quasi-experimental design with replications across agencies. The one-year pretest from each agency assessed current ANE

3

investigation procedures. The posttest assessed EADSS. The analyses compared prior ANE substantiation rates to rates using the EADSS over time using pre/post independent t-tests.

Measurement. All measures were analyzed using both traditional psychometrics and Rasch item response theory methods. Please see Conrad and Smith (2004) for a brief summary of Rasch methodology.

Results

Demographics. The project database contains a sample of 948 elder abuse cases where there was a substantiation decision of abuse, i.e., yes or no, for persons 60 years of age or older. To summarize briefly, the average age of alleged victims was 77, mostly female at 66%, widowed at 54%, 25% married, and Black at 47%, White at 43%. Information on abusers was missing nearly half the time. We compared the findings for the EADSS (N=948) to "pre-test" year results (N=1,634) using the ANE (Abuse, Neglect and Exploitation) system of IDoA. The IDoA data set was not significantly different from the EADSS data set in terms of the demographics listed above except that the EADSS had a lower proportion of Whites with 43% vs. 56% (p<.001) and a slightly lower proportion married at 25% vs. 30% for IDoA (p<.01).

Substantiation Rates. We examined substantiation rates by type of abuse for the EADSS data, based on this sample of cases for which we had some type of substantiation decision at the time of the final data download from the EADSS database. The EADSS used the same substantiation decision options as the ANE: Verified, Some Indication, No Indication, and Unable to Verify. In our analysis we combined Verified and Some Indication into "Substantiated", as well as No Indication and Unable to Verify into" Not Substantiated". This is consistent with ANE practice.

4

Out of 1,634 reports received in the ANE pretest dataset, a total of 2,958 specific allegations of abuse were made during the 12 months September 1, 2011-August 31, 2012. The ANE data showed that overall there was a substantiation decision of verified or some indication for a total of 1,411 specific incidences of abuse. This yielded a substantiation rate of 46.6%; this was 13.6% lower than the substantiation rate when the EADSS was used, 60.2% (927/1539), statistically significant at p<.001. This finding supported the hypothesis that use of the EADSS will result in higher substantiation rates. For every category of abuse except financial exploitation, the EADSS substantiation rate was significantly higher than the rate for the ANE. For sexual abuse, in particular, the rate of substantiation was much higher for EADSS at .7% vs. .1% for ANE. We believe this is due to the fact that all types of abuse were queried in EADSS regardless of whether it was alleged by the reporter.

Acceptability. Throughout the project, 74 persons were trained to use EADSS. An Acceptability Questionnaire (AQ) was used to assess caseworkers' use of EADSS versus ANE. Pretest refers to the administration of the ANE AQ before using EADSS which questioned respondents about acceptability of the ANE system. Posttest 1 refers to the initial administration of the AQ regarding acceptability of EADSS, and Posttest 2 refers to the final administration of the AQ for the EADSS. Of those who completed the demographic section of the AQ, at Pretest all but one individual reported having a BA or BS degree. In addition, at Posttests 1 and 2, several people reported having master's degrees, including one person with an MSW. Workers' backgrounds were varied in terms of previous experience.

The initial analysis of pretest acceptability data collected from August 2012-Nov 2012, and then posttest 1 data collected April of 2013 to June of 2013 (Table 3) indicated that there was a small difference of 1.4 between the current ANE system (34.8) and the EADSS (33.4) with

the ANE system being preferred slightly. Since there were only 9 persons that took both the pretest and the posttest 1, statistical significance is not meaningful. Looking at the difference in means for all cases divided by the pooled standard error, i.e., 1.4/ 3 = .46, this would not be a meaningful difference where greater than 2.0 would be considered meaningful.

The second administration of the AQ, done in June of 2014, was lower for EADSS by 7.14 (34.83-27.69=7.14) as compared to the ANE pretest. Using the 12 cases that had data at both time points, this was not a statistically significant difference. The data included all case workers completing the AQ at posttest 2 (N=16).

Focus group findings. Based on the focus group input and discussions with the IT staff at Chestnut Health Systems, we achieved consensus that it would be best to revise the EADSS and move it to its own server, as a stand-alone AADSS system, designed specifically to support the APS effort. This would make the AADSS much faster and more user-friendly. The name of the system was changed to AADSS (Adult Abuse Decision Support System) as in July, 2013 Illinois moved to full APS system for persons 18 and over with disabilities as well as all older adults. Feedback from users confirm that the AADSS is much more elegant and intuitive, as compared to the EADSS, while it contains the same content with some small number of additional items (less than 10%) that were identified as necessary. In this way the data from EADSS and AADSS were compatible for data analysis.

Psychometrics. We examined all of the dimensional (i.e., multi-item with latent construct) measures of the EADSS. We obtained the Rasch person reliability and Cronbach's alpha reliability estimates, and the estimate of unidimensionality of each measure where the ratio of the variance explained by the measure divided by the variance explained by the first

principal component of the residuals (variance left after removing the measure variance) should be greater than 3 to 1 to support unidimensionality.

In the discussion below, we first briefly summarize those measures that reached or exceeded the criteria for a useful dimensional measure, and then discuss the measures that did not reach the criteria. We note again that the analyses were conducted for those cases where a substantiation decision of yes (including some indication) or no (including unable to verify) was recorded. A more detailed discussion of the measures is beyond the scope of this brief report but will be provided in papers that are in development. A complete list of items or indicators can be found on the EADSS website.

Abuser Measures. The measures of abuser risk, i.e., history, interview, met the criteria for reliability and unidimensionality. Examples of risk items include "history of violence," "abuses drugs," "trouble keeping a job," and so on. The N's were good considering that it may not be easy to obtain history depending on the client and that direct interviews with the abuser may be difficult to accomplish. The abuser strengths measure, with items such as "provides financial support," "helps you maintain activities outside the home," "takes care of your personal needs," and so on, had a good alpha of .91, but the person reliability was somewhat low at .66. The unidimensionality was fairly strong but did not reach our criterion of 3/1.

Isolation Measure. This measure had a strong alpha which indicates that it does well distinguishing the isolated from the not isolated. However, the person reliability was low indicating that it does not distinguish levels of isolation well. The isolation measure met the unidimensionality criterion.

Vulnerability Measures. Only one of the client vulnerability measures met the criteria— ADL/IADL. Cognitive status and unmet needs measures appeared useful in distinguishing those

with problems from those without, but they did not distinguish levels well. Neither was unidimensional. The mental status, endangering behaviors, and substance abuse measures did not meet reliability nor unidimensionality criteria.

Outcomes Measures. Financial exploitation and psychological/emotional abuse were the subjects of our first NIJ grant, and we were pleased to see that the measures performed well as reliable unidimensional measures that were used well by the case workers. It appears that the neglect measure does a good job of distinguishing neglected from not neglected persons, but more items will be needed to distinguish levels of neglect. The physical and sexual measures look promising, but more data will be needed to draw firm conclusions.

Discussion

What was learned? This study provided proof of concept that high quality measurement could be used in elder abuse investigations. The field research implemented and subsequently improved a new system at 6 agencies while the old system was still being used by the rest of the state. Staff at the 6 agencies learned the new system and implemented it, reviewed it and provided input for revisions while performing the data entry that was needed for evaluation and scientific publications. In the process, we collected data on 948 cases with substantiation decisions to compare with the previous year at these agencies.

Based on these data, compared against the prior year for the six agencies using the ANE system, use of the EADSS has increased substantiation of abuse in general, and in particular, of physical abuse, neglect, emotional abuse and sexual abuse. Overall, in 948 substantiated cases, EADSS substantiated 927 incidents of abuse (ratio=0.98). For the ANE system, out of 1,634 reports from the six agencies, there were 1,411 substantiated incidents of abuse (ratio=.86). The

8

rate of substantiations/allegations for EADSS was 60.2%, while for ANE it was 46.6% (p<.001). These are significant improvements in a state that already had high substantiation rates.

Acceptability. We viewed these findings as lackluster due to the fact that we decided to revise the EADSS system completely in November, 2013 based on the focus group findings (described above). Therefore, we made only minor revisions to the existing system over the following 10 months. During that time the agencies worked with the old EADSS system, using "work-arounds" to compensate for system errors and to accommodate investigations of persons under age 60. This was time-consuming and increased their burden as it has been noted that the growing volume of cases (especially due to Illinois moving to a full adult APS system in July 2013) and accompanying budget cuts was making it difficult for agencies to adopt the new system. We interpreted these findings as being due to many problems in our start-up as we reported in the 1/1/13 – 6/30/13 semi-annual report. Lackluster acceptability of the EADSS may also have been due to worker's comfort with the old system and their resistance to the learning curve necessary for adopting the EADSS. We believe that the new AADSS, implemented in Fall, 2014, has flattened the learning curve and stream-lined the data entry process.

Another complicating factor was that the ANE procedures and practices were still in use throughout the rest of the state. For example, state rules required all case workers to be trained on the ANE, but intake workers and caseworkers at the 6 agencies also had to invest in additional training time. Furthermore, non-EADSS agencies were used to the ANE paper forms and were not comfortable interpreting the new EADSS electronic version when cases were transferred from one agency to another. Of course, this was reasonable since EADSS was not a state-wide system, and they were not trained in its use. Caseworkers noted that intakes coming from the Elder Abuse Hotline were completed using the ANE paper formand the agencies

participating in our study then had to interpret these reports and enter the data into the EADSS intake component.

Measures. In summary, the abuser measures performed well. These were developed solely on the basis of literature review with some limited internal review based on input and experience in the field that indicated that standardized measures were needed.

The financial exploitation, emotional abuse, and neglect measures performed especially well as key outcome measures. Neglect should be improved simply by adding a few more good items. The physical abuse and sexual abuse measures performed well also as useful measures, but require further psychometric study due to complexity of the physical construct, dearth of sexual abuse data, et al. The abuser strengths measure was very close to meeting the *a priori* criteria. The ADL/IADL measure performed well while isolation, cognitive status, unmet needs measures had good alphas but may require further development to distinguish levels of severity better. The other constructs were not well measured. These were questions we simply borrowed from the ANE forms that were never designed to be dimensional scales. From this preliminary analysis, it is evident that they will have to be re-conceptualized and replaced in future development work.

In summary, we learned that it was not just good measurement that we achieved but the ability to deliver high quality measurement in actual elder abuse investigations. Work will be needed to publish scientific papers that illustrate the value of the data that were collected for producing useful knowledge. The ability to collect research quality data in actual fieldwork is rare. Therefore, real world implementation of EADSS/AADSS could have profound implications for improving research and intervention.

Scholarly Products Produced or In Progress

The project produced nineteen presentations at meetings such as the Gerontological Society of America, the Annual Meeting of the National Adult Protective Services Association and the American Society on Aging. A symposium with presentations based on analysis of EADSS data has been submitted to the Gerontological Society of America for the November, 2015 annual meeting. We currently have ten manuscripts in progress, listed here with brief working titles and lead authors: Theory of Financial Exploitation—Conrad; Role of Substance Use Disorders in Elder Abuse—Conrad; Theory of Emotional Abuse—Liu; Typology of Abusers—DeLiema; Polyvictimization—Iris,Liu; EADSS Outcomes--Conrad, Iris; Racial Differences in Financial Exploitation—Beach; Measurement of Abuser Characteristics—Conrad; Theory of Physical Abuse--Yonashiro-Cho, Yon; Theory of Neglect--Conrad, Iris.

Implications for Criminal Justice Policy and Practice

The EADSS was developed and tested with high levels of input from elder abuse caseworkers and others, and has been proven usefulfor improving substantiation rates, but further translational research is needed to promote its use in both research and wider practice. In practice, it can facilitate more efficient and high quality, best-practice-based investigations and interventions. Investigations conducted using EADSS (now AADSS) standardized assessment procedures and validated measures should provide evidence for pursuing criminal as well as civil cases in the justice system.

Therefore, this project provides proof of concept that empirically developed measures can be used successfully in the field in actual elder abuse investigations. However, the most significant contribution will probably be in research where the use of these measures to improve our understanding of elder abuse can have profound implications. Translation of EADSS into the field more broadly will make it possible to test theory, examine time series, and even do natural

experiments, using actual case data with a high degree of inclusiveness regarding geographic

location, race and gender of alleged victims, and standardized information on abusers. It will

take some time to publish the papers in progress, but we expect that these will generate interest

in using AADSS. As more states adopt the AADSS, it will lead to an evolving, research-quality,

national data base that will provide a source of data for researchers, state program evaluators,

and agency administrators.

References

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