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A Systematic Evaluation of a Multidisciplinary Social Work–Lawyer Elder Mistreatment Intervention Model

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Abstract

This study introduces a conceptually-based, systematic evaluation process employing multivariate techniques to evaluate a multidisciplinary social work/lawyer intervention model (JASA-LEAP). Logistic regression analyses were used with a random sample of case records ($n = 250$) from three intervention sites. Client retention, program fidelity, and exposure to multidisciplinary services were significantly related to reduction in mistreatment risk at case closure. Female gender, married status and living with perpetrator significantly predicted unfavorable outcomes. This study extends the elder mistreatment program evaluation literature beyond descriptive/bivariate evaluation strategies. Findings suggest that a multi-disciplinary social work/lawyer elder mistreatment intervention model is a successful approach.

Keywords:

elder abuse evaluation

multi-disciplinary elder abuse intervention

evidence-based elder abuse intervention

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Introduction

Elder mistreatment includes physical, sexual, emotional, and financial abuse or neglect towards an elder by a person in a relationship of trust (National Research Council, 2003). Estimated one-year prevalence of elder mistreatment among community-dwelling elders in the United States (U.S.) is 7.6% - 11.4% (Acierno et al., 2010; Lachs & Berman, 2011). With the segment of the population aged 65 and older expected to double by 2030 (CDCP, 2007), the absolute number of mistreated elders will increase, challenging the preparedness and effectiveness of social service programs helping this population. Unresolved elder mistreatment¹ is associated with devastating health and psychosocial consequences including premature death, increased mortality, morbidity, hospitalization, disability, nursing home placement, poor mental/physical health, and financial loss (Dong, Simon, & Evans, 2012; Dong et al., 2009; Fisher & Regan, 2006; Lachs, Williams, O'Brien, & Pillemer, 2002; Lachs, Williams, O'Brien,

¹ In this study, the definition of elder mistreatment used is the one that guides the intervention program under evaluation. Elder abuse is “any form of mistreatment that results in harm or loss to an older person” (Schechter & Dougherty, 2009, p. 71). Categories include: physical, sexual, financial, passive, and self-neglect as well as active neglect, which is the willful deprivation of resources necessary to ensure the health and well-being of the older adult.

Pillemer, & Charlson, 1998). Research has established elder mistreatment as a pervasive problem; however, elder mistreatment research remains at a nascent stage in learning how to intervene with victims.

Researchers and practitioners have concluded that the development and improvement of elder mistreatment social service intervention evaluation strategies is a research priority, with a need to formulate more systematic, rigorous evaluation approaches (Pillemer et al., 2011; Stolee, Hiller, Etkin, & McLeod, 2012). A National Academies of Science panel was convened a decade ago to assess the state of elder mistreatment research. The panel concluded that while elder mistreatment intervention models were routinely presented in a descriptive manner, these programs had not been subjected to systematic evaluation (National Research Council, 2003). At present, thousands of case workers throughout the United States are implementing a growing number of social service interventions to alleviate cases of elder mistreatment with little research guidance as to which programs actually work (Ploeg, Fear, Hutchison, MacMillan, & Bolan, 2009; Stolee et al., 2012). Public and private resources are invested in programs that have no proven efficacy, which means elder mistreatment victims are subjected to interventions that may be ineffective. Elder mistreatment program evaluation research lacks a systematic, conceptually-based evaluation approach to inform the development of effective intervention strategies.

Challenges in Elder Mistreatment Intervention Research

The lack of substantive elder mistreatment program evaluation and intervention research is not surprising given the challenges that can impede the development of robust prospective, experimental or quasi-experimental research designs with the abused elder population.

Challenges are related to ethics; consent; human subject protection rules; mandatory reporting obligations; participant access and recruitment; agency cooperation; and a paucity of resources; (Connolly, 2008; Pillemer et al., 2011). With up to 94% of cases remaining hidden in the community, abused elders are a particularly difficult population to recruit (Lachs & Berman, 2011). Given the emergency nature of mistreatment situations, referrals must be responded to immediately; there is little time for screening and consent protocols or administering study instruments; and ethical issues arise in assigning subjects into a research arm that denies optimal services. Elders with cognitive impairment are at higher risk for mistreatment (Mosqueda & Dong, 2011). There are difficulties obtaining consent from an elder lacking capacity; proxies are reluctant to provide consent; and there can be concern that the family proxy may also be a perpetrator. In many states, elders are reluctant to participate in research or provide accurate disclosure information due to mandatory reporting ramifications. Debate also persists as to whether participation in elder mistreatment intervention research itself poses increased risk or stress to the subject (Connolly, 2008; Pillemer et al., 2011).

While researchers and institutional review boards work through these challenges, case record analysis is the most common study design (Burnes & Lachs, 2012). However, elder mistreatment case record studies have been criticized as limited by small sample sizes; convenience sampling; unreliable, single-rater measurement procedures; inadequate means to deal with missing data; and/or univariate/bivariate statistical methods. The present study seeks to build upon and address these case record design methodological design limitations. To our knowledge, this is the first elder mistreatment study to employ multivariate statistical techniques

as a strategy for evaluation. It also follows a systematic, conceptually-based evaluation approach to address the fundamental research question: Does the elder mistreatment intervention work?

A Multi-disciplinary Approach

The elder mistreatment literature advocates for a multi-disciplinary model of intervention to alleviate cases of elder mistreatment (Imbody & Vandsburger, 2011; Mosqueda & Dong, 2011). A multi-disciplinary approach provides the necessary diversity of professional resources and skills, used at different points along the assessment and intervention process, to problem-solve and resolve complex, multi-faceted cases of elder mistreatment. For example, community-based multi-disciplinary teams have emerged throughout the country as a way to synergize the resources of diverse providers (Navarro, Wilber, Yonashiro, & Homeier, 2010). Nevertheless, although the rationale for advocating for this preferred model orientation is strong, empirical evidence from research supporting a multi-disciplinary model is weak. Few empirical analyses in the literature have shown the benefits of this intervention orientation. Several calls have been made for evaluations of multi-disciplinary elder mistreatment intervention models (Connolly, 2008; National Research Council, 2003).

Social workers and lawyers represent two key professions involved in treatment plans to support elder victims and alleviate risk of mistreatment (Brownell & Wolden, 2002; Teaster, Nerenberg, & Stansbury, 2003). In community-based social service programs, social workers are involved with receiving the referral, conducting initial assessment and investigation to substantiate the mistreatment, and providing ongoing psychosocial support to execute a treatment plan. Social work services can include one or more of the following: case management;

counseling and mental health support; support groups; financial assistance, alternative housing, police involvement; installation of home security devices or lock replacement; and coordinating external referrals [i.e. legal, health, district attorney, adult protective services (APS) etc.]. Lawyers are often required in cases of elder mistreatment to facilitate legal measures necessary to increase safety and protection of the elder, including orders of protection, power of attorney, guardianship, modification of a will, evictions, and mental hygiene warrants.

While social work services are a critical component in both social service and criminal justice efforts, Brownell and Wolden (2002) found that the availability of legal interventions is a significant factor associated with case resolution, particularly in cases involving financial abuse. Ernst and Smith (2012) found that while social workers alone were more likely to confirm certain forms of abuse, a multi-disciplinary approach resulted in a greater reduction of risk in cases of elder mistreatment. Knowledge and skill set differences between social workers and lawyers in the context of elder mistreatment interventions are complimentary; however, these two professional services are typically provided independently in separate programs in the community. This silo structure of integral elder mistreatment intervention services can create barriers and inefficiencies, which can disservice the elder and delay and/or prevent progress towards safety.

The JASA-LEAP Intervention

The present study evaluates a multi-disciplinary elder mistreatment intervention model designed to alleviate cases of elder abuse and neglect, which integrates the expertise of social workers and lawyers under the same roof, namely the Jewish Association Serving the Aging

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(JASA) Legal/Social Work Elder Abuse Prevention Program (LEAP) in New York City (NYC). JASA-LEAP is the largest community-based elder abuse social service program in NYC, handling over 700 cases of abuse or neglect annually across three boroughs (Manhattan, Brooklyn, and Queens). Assisting elders aged 60 years and older, JASA-LEAP referrals are accepted from all sources, including self, family, friends, social services, district attorney, police, hospitals, clinics, APS, banks, and anonymous sources. Within JASA-LEAP, the social work and legal disciplines work in tandem, not in silos, throughout the intervention process. By integrating these professional services, the JASA-LEAP model is intended to increase program efficiency, resources, specialization and capacity to serve victims immediately, without being impeded by or dependent on, the coordination and elicitation of external services.

After completing a comprehensive assessment to determine the elders' ability to: 1) make decisions; 2) understand and process information, and 3) communicate with and direct others to carry out their wishes, the social worker and lawyer develop an individualized treatment plan focused on the elders' assessed level of risk. Social workers assist clients with applying for benefits/entitlements and Crime Victim Board compensation. They help elders secure emergency funds, locks and alarms; conduct security assessments to help clients regain a sense of security and safety; coordinate referrals; and provide psychosocial case management, counseling, support groups and education. Lawyers assist with legal interventions to ensure the elders' safety, including but not limited to, orders of protection, eviction notices, recovery of real property, and long-term care planning (e.g., living wills and durable powers of attorney). Throughout the intervention, the social workers and lawyers communicate with each other; and, as a team they

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provide advocacy within the legal and social services systems to ensure elders' needs are met. Schechter and Dougherty (2009) provide a more detailed description of JASA-LEAP.

Purpose

The purpose of this study is to: 1) address calls in the literature to evaluate a multi-disciplinary elder mistreatment intervention model and determine if empirical evidence exists to support the prevailing orientation towards multidisciplinary models; and, 2) advance the elder mistreatment program evaluation literature by using a conceptually-based, systematic evaluation process employing multivariate statistical techniques. The specific research hypotheses tested to measure JASA-LEAP success were: Hypothesis 1 (H1): Outcomes for client retention and mistreatment status at case closure (MSCC) in this study will be the same, or better, than the same outcomes in previous studies; Hypothesis 2 (H2): Acceptance of JASA-LEAP services by clients will be associated with reduced risk of mistreatment at case closure; Hypothesis 3 (H3): Higher levels of program fidelity (client exposure to intended JASA-LEAP model) will be associated with reduced risk of mistreatment at case closure; and, Hypothesis 4 (H4): Clients participating in a multi-disciplinary treatment plan (lawyer and social work services) will have more favorable MSCC compared to clients pursuing a social work-only intervention plan.

Methods

Sample and Data

A multi-site, random sample ($n = 250$) of JASA-LEAP case records, closed between 2009 and 2011, was generated using systematic random sampling. Sampling was stratified according to program borough size, in that the number of records drawn per borough was proportional to the volume of cases handled by each borough annually: Manhattan (15%), Brooklyn (40%), and Queens (45%). Sample size was determined based on power analysis and resources available for data collection. Using reasonable assumptions of a medium effect size, an alpha level of 0.05, and accounting for three sites of data collection, a sample of 250 cases provided a more than adequate 0.99 power level. Seventeen cases in which mistreatment was unsubstantiated following investigation were omitted from analysis since no intervention took place. Table 1 provides a description of the study sample characteristics. Study sample gender, race and age characteristics are consistent with recent socio-demographic trends of documented social service system elder mistreatment victim characteristics in New York City (Lachs & Berman, 2011); victims were mostly female, non-Caucasian, and aged 60 to 75 years.

Record data were manually extracted from routine, categorized assessment and case closure forms that, in consultation with the first author (VMR), were originally constructed for the purpose of research and uniform/un-biased caseworker data collection across JASA-LEAP sites. A data collection tool designed via an iterative process of testing with a small sample of case records was used. To ensure reliability of the collection tool, data from an initial sub-sample

of case records ($n = 20$) were extracted by two independent researchers and verified for consistency. To ensure reliability of data coding and interpretation, collection tool data for all case records were coded and interpreted by two trained independent raters; a third party researcher was consulted if the two independent raters diverged.

Variables

Consistent with other elder mistreatment intervention evaluation studies (Burnes & Lachs, 2012), outcome variables included retention and MSCC. Retention refers to the classification of a victim as accepting or refusing services. The opportunity to execute a program intervention to alleviate elder mistreatment is contingent upon the ability of the program to retain clients. Similar to previous studies measuring the retention outcome (Lithwick, Beaulieu, Gravel, & Straka, 2000; Neale, Hwalek, Goodrich, & Quinn, 1996; Roberto, Teaster, & Duke, 2004; Wolf & Pillemer, 2000), retention in this study was measured as a dichotomous variable based on whether or not the client accepted any services (no = 0; yes = 1).

Corresponding with the main program goal, MSCC refers to the extent that the substantiated mistreatment situation has been alleviated following social service intervention. Following recommendations of Wolf and Pillemer (2000), the MSCC outcome was operationalized according to level of future risk of mistreatment. This operationalization recognizes that multiple solutions exist to alleviate elder mistreatment and that a close-ended, singular goal of complete case resolution is often not possible, realistic or desired by the victim at the time of case closure. MSCC was measured as a dichotomous outcome variable (reduced risk of further mistreatment = 0; risk of mistreatment remains high or unchanged = 1). A

standardized, validated MSCC measurement instrument does not exist (Anthony, Lehning, Austin, & Peck, 2009). Subjective MSCC researcher rating is standard research practice in the field; however, the present study emphasized the use of multiple raters to increase measurement reliability. Allocation of cases into MSCC category was assigned, based on record process notes and case closure summary forms, by two independent researchers to ensure inter-rater reliability; a third party researcher was consulted on five occasions when the two independent raters diverged. Allocation into MSCC category was guided by the question: To what extent does the risk of mistreatment harm remain at the time of case closure? Assignment into the high/unchanged category implied that no progress had been made on alleviating the substantiated mistreatment situation or in lessening the threat of harm. Clients involved with these cases often denied or resisted JASA-LEAP services and for a variety of circumstances (e.g., preserving family dynamics, protecting a familial perpetrator from legal/justice system, maintaining stability of status-quo) could not pursue interventions necessary to alleviate the mistreatment situation. A reduced risk case allocation meant that protective steps (e.g., order of protection, housing relocation, perpetrator eviction, home security, financial protection, psychosocial individual/family counseling, support groups) had been taken towards alleviating risk of future mistreatment.

Key predictor variables in the analytic plan were related to level of JASA-LEAP program fidelity (extent to which intervention model was executed as intended) and intervention type (multidisciplinary versus social work-only). JASA-LEAP clients are offered a tailored intervention plan including services that respond to the unique needs of the mistreatment situation. The services offered depend on several factors, including mistreatment type and severity, living arrangement, proximity to perpetrator, level of social isolation, health status, etc.

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As a voluntary program, clients can decline services. For example, frail elders may accept social work services and decline legal interventions since the latter services are typically more intrusive, potentially life-altering, and carry higher risk of severing family relationships, criminally implicating a familial perpetrator, or causing instability. Level of program fidelity was measured as a continuous ratio variable (0 to 1) calculated by dividing the number of services a client pursued by the number of services the client was offered as a part of a JASA-LEAP treatment plan. This variable represents the extent to which the JASA-LEAP intervention had the opportunity to be executed as it was intended, with higher scores representing higher program fidelity. The mean program fidelity ratio score was 0.47 (SD = 0.37). A binary variable, intervention type, was created to denote whether or not a client was exposed to a combined social work/legal intervention plan (social work services only = 0; multi-disciplinary social work-legal services = 1).

In previous studies examining the MSCC outcome, victim social support; absence of illness; change in living situation; dependence (e.g., cognitive impairment); and separation from the perpetrator have been associated with improved MSCC, while victim minority racial group; psychological and physical abuse; abuse severity; and victim-perpetrator interdependence have been negatively related with favorable MSCC (Roberto et al., 2004; Vladescu et al., 2000; Wolf & Pillemer, 1989, 2000). With the exception of victim-perpetrator interdependence and mistreatment severity/frequency (unavailable in dataset), multivariate regression models in the present study adjusted for the following covariate variables, which were identified in the aforementioned literature as associated with elder mistreatment MSCC outcomes and/or represent important case socio-demographic variables to control for: borough

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(Manhattan/Queens/Brooklyn); referral source (community/family/self); client gender (male/female); client racial group (Caucasian/minority); client age (continuous 60 to 96 years); client English proficiency (no/yes); client marital status (married/non-married); mistreatment type (financial/emotional/physical/sexual/neglect/multiple forms); client physical health issue (no/yes); client dementia (no/yes); client social support (low/moderate/high); client living arrangement (with perpetrator/without perpetrator); perpetrator gender (male/female); and perpetrator substance abuse (no/yes). Social support level was measured in response to the question: To what extent client feels he/she has enough people to talk to about difficulties? Among five available response options, responses of “never” or “rarely” were operationalized as low social support, “sometimes” was operationalized as moderate, and “most of the time” or “always” were operationalized as high social support. Perpetrator substance abuse was defined as alcohol or drug dependence at the time of initial client assessment, as reported by the client or evidenced in documentation from the referral.

Multiple imputation (MI) was used to account for missing values - a fully conditional specification (FCS) MI approach employing an iterative Markov chain Monte Carlo method. Ten complete imputed datasets were pooled for analysis.

Analytic Plan

The following analytic plan was used to test the four research hypotheses:

H1: Outcome rates were compared to those found in previous studies. For the retention outcome previous research reported victim rate of refusal of services between 13% and 58%

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(Lithwick et al., 2000; Neale et al., 1996; Roberto et al., 2004; Shiferaw et al., 1994; Wolf & Pillemer, 2000). Regarding the MSCC outcome, previous research reported rates of reduced risk, lessened abuse or partial/complete resolution from 56% to 84% and rates of ongoing high risk or unresolved abuse between 16% and 44% (Cripps, 2001; Kurrle, Sadler, Lockwood, & Cameron, 1997; Lithwick et al., 2000; Neale et al., 1996; Vladescu et al., 2000; Wolf & Pillemer, 1989, 2000). This comparative means of evaluation lacks validity, since it was done across studies and programs with considerably different circumstances and research conditions. However, the comparison provides a useful, preliminary point of reference to screen for red flags or outlier outcome rates that may require consideration before moving forward with further, more sophisticated analysis.

H2: In a successful program, client acceptance of services ought to provide the elder with a higher likelihood of reducing risk of mistreatment than remaining at high/unchanged risk at case closure. A multivariate logistic regression model (Model 1), controlling for key covariates, was used to test the hypothesis of a negative relationship between retention and MSCC – acceptance of services is associated with a reduction in risk of mistreatment.

H3: In a successful program, a greater extent of program fidelity ought to be associated with more favorable outcomes. A multivariate logistic regression model (Model 2), controlling for key covariates, was used to test the hypothesis that higher levels of program fidelity were associated with a reduction in risk of MSCC.

H4: JASA-LEAP clients are not always exposed to the combined social work/legal model if services are declined. Among clients who accepted at least one service (n = 167), group

comparisons were made on key covariates between clients exposed to social work services only ($n = 63$; 37.7%) and clients exposed to combined social work/legal services ($n = 104$, 62.3%). The groups differed significantly on age, $t(111.46) = 3.94$, $p < 0.001$, with older clients less likely to pursue legal interventions, and with respect to perpetrator substance use, [$\chi^2(1, 120) = 5.35$, $p < 0.05$], with legal services more likely to be used when the perpetrator has a substance abuse problem. A multivariate logistic regression model (Model 3), controlling for key covariates, was used to test the hypothesis that clients pursuing a multidisciplinary intervention plan would have more favorable MSCC compared to victims pursuing social work services only.

Multicollinearity diagnostics and correlations were examined to ensure that independent variables in models were not highly correlated. Independent variable correlations ranged in magnitude from 0 and 0.26 and had tolerance of 0.75 or above, indicating an absence of multicollinearity. Analysis was conducted using SPSS Statistics, v19.

Results

H1: JASA-LEAP rate of retention was 71.7%. At case closure, JASA-LEAP rate of reduced risk of mistreatment was 68.2%. The rate of high/unchanged risk was 31.8%.

H2: Table 2 (Model 1) reveals the results of the logistic regression analysis used to examine the hypothesis of a negative relationship between client retention and MSCC. Client retention was a significant negative predictor of MSCC ($\beta = -4.17$; $SE = 0.61$; $p < 0.001$), with retained clients having 0.02 times lower odds than non-retained clients of remaining at high/unchanged mistreatment risk. Among the 14 covariates in the model, client gender was a significant positive

predictor of MSCC, with females having 6.37 greater odds than males of no reduction in mistreatment risk ($\beta = 1.85$; $SE = 0.70$; $p < 0.01$), and client marital status was a significant negative predictor of MSCC, with non-married clients having 0.21 times lower odds than married clients of remaining at high/unchanged mistreatment risk at case closure ($\beta = -1.55$; $SE = 0.63$; $p < 0.05$). Living arrangement status demonstrated borderline significance ($\beta = -1.07$; $SE = 0.55$; $p = 0.055$); clients living without the perpetrator had lower odds of remaining at high/unchanged mistreatment risk compared to clients living with the perpetrator.

H3: Table 2 (Model 2) reports the results of the logistic regression analysis used to test the hypothesis that higher level of program fidelity is associated with a reduction in risk of mistreatment at case closure. Program fidelity was a significant negative predictor of MSCC ($\beta = -6.48$; $SE = 1.04$; $p < 0.001$), with higher levels of fidelity scores associated with lower odds of remaining at a high/unchanged mistreatment risk. Again, client gender was a significant positive predictor of MSCC ($\beta = 1.77$; $SE = 0.67$; $p < 0.01$) and client marital status was a significant negative predictor of MSCC ($\beta = -1.40$; $SE = 0.66$; $p < 0.05$). Client living arrangement was a significant negative predictor of MSCC, with clients living without the perpetrator having 0.27 times lower odds than clients living with the perpetrator of remaining at a high/unchanged risk of mistreatment ($\beta = -1.32$; $SE = 0.55$; $p < 0.05$).

H4: Table 2 (Model 3) shows the results of the logistic regression analysis used to examine the hypothesis that clients pursuing a multi-disciplinary intervention will have more favorable MSCC compared to clients participating in a social work only intervention. It was necessary to include fewer covariate independent variables in this model to account for risks of

non-convergence and model instability with a smaller sub-sample size. Covariates of referral source and English proficiency were dropped from Model 3 since previous research does not find evidence for these factors to be viewed as priorities and they had not shown significance in the previous two multivariate models. Mistreatment type was excluded since it was a variable with many (five) categories and had not shown significance in the previous two multivariate models. Intervention type was a significant negative predictor of MSCC ($\beta = -1.57$; $SE = 0.66$; $p < 0.05$), with clients exposed to a multidisciplinary intervention having 0.21 times lower odds than clients exposed to a social work only intervention of no reduction of mistreatment risk.

Discussion

The present study followed a conceptually-based, systematic evaluation process employing multivariate statistics to evaluate a multi-disciplinary social work/lawyer intervention model for elder mistreatment alleviation. Thus, it addresses a need to develop more rigorous program evaluation strategies that can inform evidence-based interventions (Pillemer et al., 2011; Stolee et al., 2012) and a call from the field to empirically evaluate multi-disciplinary models.

JASA-LEAP outcome rates were placed in the context of rates of similar outcome constructs in the literature. This first evaluation step was employed more as a useful, preliminary point of reference to screen for outliers than as a meaningful comparative means of evaluation – such a comparison lacks validity without similar study/program conditions (i.e. case worker experience, referral sources, inclusion criteria, client motivation). As expected, JASA-LEAP

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outcome rates fell in the middle of the literature ranges and, therefore, did not represent a red flag or cause for concern to proceed in the evaluation process.

An assumption underlying the present evaluation plan is that clients who choose to accept services from a program ought to experience an improvement in MSCC. A program in which clients are as likely to remain at a high/unchanged risk of mistreatment status as they are to experience a reduction in risk of mistreatment would be deemed ineffective. Therefore, a significant relationship between retention and MSCC provides evidence that a program is working. As expected, findings indicated that clients who accepted JASA-LEAP services were more likely to experience a reduction in risk of future mistreatment upon case closure.

We constructed a ratio variable to operationalize level of program fidelity. This variable represents a proxy of the intervention model, or the extent to which the intervention program had the opportunity to be executed as it was intended. Findings revealed that higher levels of JASA-LEAP intervention model fidelity were associated with more favorable outcomes at case closure – evidence that the program is working. However, these results may, in part, be due to selection bias, since analysis included those who were not retained and, therefore, were less likely to experience a reduction in mistreatment risk (Table 1).

Findings from this study support the prevailing, largely un-tested, position in the elder mistreatment literature to use multi-disciplinary models to intervene with victims of elder mistreatment. In particular, findings provide support for an integrated social work/legal interdisciplinary model. Clients pursuing combined social work and legal services were more likely to have a reduction in mistreatment risk compared to clients pursuing social work services

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only. These results extend bivariate findings from a previous study showing a significant association between multidisciplinary services and reduction of mistreatment risk in cases of elder mistreatment (Ernst & Smith, 2012). Further research is required to isolate core components, mechanisms of change, and aspects of the social work/legal combination that are responsible for mediating the intervention's effects on outcomes. By integrating two integral professions in a complimentary manner, the JASA-LEAP model is intended to increase program efficiency and capacity, drawing on a diversity of skills and resources, in order to address the immediate, multi-faceted needs of elder mistreatment victims.

Client gender (being female), marital status (being married), and living arrangement (living with the perpetrator) emerged as significant covariate predictors of unfavorable MSCC. Regarding living arrangement, the multivariate finding in this study extends previous bivariate results that a change in living situation or separation from the perpetrator is associated with improved MSCC (Wolf & Pillemer, 1989; 2000). Correlation evidence has found that a perpetrator is less likely to exit the mistreatment situation if the perpetrator is a spouse (Vladescu et al., 2000), which may help explain why married clients in the present study experienced unfavorable MSCC outcomes. Although routinely included in previous bivariate studies, gender has never shown significance as a predictor of case outcomes. The emergence of gender in the present study may be due to sample bias or a result of examination in the context of multivariate analysis. Further research is necessary to understand gender as a predictor of outcomes.

Findings in this study should be interpreted within the limitations of a case record review design. As agency case records are not directly designed around a structured research agenda,

limitations of this design include increased risk of systematic error in the form of missing data, inconsistent record information, and caseworker bias. This study sought to build on previous elder mistreatment case record research methodology and implement measures to reduce systematic error in the following ways: large sample, random sampling of records, multi-site data collection, extraction of data from routine record forms originally constructed for the purpose of research and uniform/un-biased caseworker data collection, multiple imputation techniques to deal with missing data, use of multiple independent raters of data coding/interpretation, and use of multivariate methods. As data was collected from one social service program in the NYC geographic area, results in this study cannot necessarily be generalized to all elder mistreatment interventions. Future elder mistreatment intervention research should find ways to develop prospective, quasi-experimental and experimental designs. Without an experimental design, the present study cannot make causal conclusions regarding significant associations. However, multivariate analysis provides greater validity of associations by controlling for key confounding factors. To our knowledge, this is the first study within the elder mistreatment program evaluation literature to employ multivariate analysis for the purpose of elder mistreatment program evaluation. An absence of psychometrically sound MSCC outcome measures limits the field to subjective measurement methods; development of a valid MSCC outcome instrument for use in social service intervention settings is a priority for future research. Future studies should be designed to include recidivism as a follow-up elder mistreatment intervention outcome.

In conclusion, this study found evidence that a multi-disciplinary social work/lawyer model is a successful way to intervene with victims of elder mistreatment. A conceptually-based,

systematic evaluation process based on advanced statistical strategies was introduced for use in future elder mistreatment program evaluation studies.

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Table 1

Descriptive Characteristics of Sample and Bivariate Associations with MSCC Outcome (n = 233)

Characteristic	n (%)	MSCC (level future risk)		χ^2 / t-score
		Reduced	High/Unchanged	
Client				
Site				0.72
Manhattan	34 (14.6)	22 (9.4)	12 (5.2)	
Queens	105 (45.1)	70 (30.0)	35 (15.0)	
Brooklyn	94 (40.3)	67 (28.8)	27 (11.6)	
Referral source				7.84*
Self	47 (20.3)	37 (15.9)	10 (4.3)	
Family	44 (19.0)	23 (9.9)	21 (9.1)	
Community	141 (60.8)	99 (42.7)	42 (18.1)	

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Gender				2.18
Male	48 (20.6)	37 (15.9)	11 (4.7)	
Female	185 (79.4)	122 (52.4)	63 (27)	
Racial group				0.78
Caucasian	59 (29.8)	41 (20.7)	18 (9.1)	
African American	83 (41.0)	61 (30.8)	22 (11.1)	
Hispanic	35 (17.7)	23 (11.6)	12 (6.1)	
Other	21 (10.6)	15 (7.6)	6 (3.0)	
Age mean (SD)	73.67 (9.2)			-1.18
English proficient				1.18
No	43 (19.5)	123 (55.7)	55 (24.9)	
Yes	178 (80.5)	26 (11.8)	17 (7.7)	
Marital status				6.57

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Married	60 (28.4)	41 (19.4)	23 (10.9)	
Partner	4 (1.9)	2 (0.9)	2 (0.9)	
Divorced	48 (22.7)	36 (17.1)	12 (5.7)	
Widow	89 (42.2)	65 (30.8)	24 (11.4)	
Single	10 (4.7)	10 (4.7)	0 (0)	
Mistreatment Type				11.28*
Financial	66 (28.6)	43 (18.6)	23 (10.0)	
Emotional	56 (24.2)	31 (13.4)	25 (10.8)	
Physical	66 (28.6)	54 (23.4)	12 (5.2)	
Sexual	1 (0.4)	1 (0.4)	0 (0.0)	
Neglect	5 (2.2)	3 (1.3)	2 (0.9)	
Multiple	37 (16.0)	27 (11.7)	10 (4.3)	
Physical health issue				0.05
No	16 (8.9)	12 (6.7)	4 (2.2)	

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Yes	163 (91.1)	118 (65.9)	45 (25.1)	
Dementia				3.91*
No	165 (92.2)	123 (68.7)	42 (23.5)	
Yes	14 (7.8)	7 (3.9)	7 (3.9)	

Table 1 Continued

	n (%)	MSCC (level future risk)		χ^2 / t-score
		Reduced	High/Unchanged	
Social support				1.73
Low	15 (11.8)	10 (7.9)	5 (3.9)	
Moderate	49 (38.6)	32 (25.2)	17 (13.4)	
High	63 (49.6)	48 (37.8)	15 (11.8)	

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Living arrangement 5.99*

Lives with abuser 143 (63.6) 91 (40.4) 52 (23.1)

Lives without abuser 82 (36.4) 65 (28.9) 17 (7.6)

Perpetrator

Gender 0.37

Male 142 (60.9) 99 (42.5) 43 (30.3)

Female 91 (39.1) 60 (25.8) 31 (34.1)

Relation to victim 5.71

Spouse/Partner 37 (16.1) 24 (10.4) 13 (5.7)

Child 114 (49.6) 74 (32.2) 40 (17.4)

Grandchild 30 (13.0) 18 (7.8) 12 (5.2)

Other 49 (21.3) 40 (17.4) 9 (3.9)

Substance abuse 3.06

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No	72 (44.7)	56 (34.8)	16 (9.9)	
Yes	89 (55.3)	58 (36)	31 (19.3)	
Retention				106.5***
No	66 (28.3)	12 (5.2)	54 (23.2)	
Yes	167 (71.7)	147 (63.1)	20 (8.6)	
Program fidelity ratio mean (SD)	0.50 (0.36)			12.10***

*p < 0.05. ** p < 0.01. ***p < 0.001

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Table 2

Multivariate Logistic Regression for Retention, Program Fidelity, and Intervention Type as Predictors of MSCC Controlling for Key Covariates

Variable	Model 1 (n = 233)		Model 2 (n = 233)		Model 3 (n = 167)	
	OR	95% CI	OR	95% CI	OR	95% CI
Predictors						
Retention (Yes ¹)	0.02**	0.01 – 0.05				
	*					
Program Fidelity			0.002*	0 – 0.01		
			**			
Multidisciplinary Type ²					0.21*	0.06 – 0.75
Covariates						
Site ID						
Queens ³	2.52	0.56 –	2.78	0.54 –	1.83	0.22 –

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Brooklyn	2.59	11.38	2.74	14.26	2.27	15.19
		0.57	–	0.56	–	0.28
		11.82		13.26		18.41
Referral Source						
Family ⁴	1.91	0.50 – 7.29	1.43	0.38 – 5.42		
Self	1.04	0.32 – 3.39	1.09	0.32 – 3.70		
Client Female ⁵	6.37**	1.62	–	5.85**	1.58	–
		25.06		21.63		10.32
Racial Minority ⁶	0.65	0.19 – 2.21	1.07	0.33 – 3.50	1.02	0.28 – 3.63
Age	0.99	0.03 – 1.06	0.97	0.91 – 1.04	0.99	0.92 – 1.06
English Proficient ⁷	1.83	0.56 – 5.98	1.18	0.34 – 4.08		
Not Married ⁸	0.21*	0.06 – 0.73	0.25*	0.07 – 0.90	0.46	0.11 – 1.95
Abuse Type						

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Emotional ⁹	1.17	0.32 – 4.20	1.10	0.31 – 3.83			
Physical	0.31	0.08 – 1.20	0.27	0.06 – 1.25			
Neglect	1.44	0.06 –	1.70	0.07 –			
Multiple	0.72	33.53	1.02	42.29			
		0.18 – 2.82		0.25 – 4.12			
Physical Health Issue ¹⁰	0.92	1.00 – 8.60	1.89	0.31 –	0.54	0.08 – 3.92	
				11.36			
Dementia ¹¹	1.38	0.16 –	1.02	0.14 – 7.21	1.67	0.22 –	
		11.66				12.73	
Social Support							
Moderate ¹²	2.08	0.25 –	1.58	0.20 –	0.74	0.06 – 9.03	
High	0.65	17.32	0.54	12.48	0.61	0.09 – 4.16	
		0.06 – 6.58		0.06 – 4.97			

Table 2 Continued

Model 1

Model 2

Model 3

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	OR	95% CI	OR	95% CI	OR	95% CI
Lives Without abuser ¹³	0.34+	0.12 – 1.02	0.27*	0.09 – 0.79	0.45	0.11 – 1.86
Abuser Female ¹⁴	1.20	0.44 – 3.28	1.15	0.42 – 3.12	0.79	0.22 – 2.79
Abuser Substance Abuse ¹⁵	1.40	0.43 – 4.56	1.27	0.41 – 3.92	2.86	0.65 – 12.62
Constant	5.30	0.01 – 3080.74	8.84	0.02 – 4500.30	0.50	0.001 – 252.34

Note. OR = Odds Ratio. CI = Confidence Interval. Referent groups for categorical variables:

¹Not retained, ²Social work only intervention, ³Manhattan site, ⁴Community referral, ⁵Male, ⁶White, ⁷Not English proficient, ⁸Married/Partner, ⁹Financial abuse, ¹⁰No physical health issue, ¹¹No dementia, ¹²Low social support, ¹³Lives with perpetrator, ¹⁴ Male perpetrator, ¹⁵No perpetrator substance abuse. All models satisfy Hosmer-Lemeshow Goodness of Fit Test ($p > 0.05$): $\chi^2_{\text{Model 1}} (8, 233) = 10.33$, Pseudo $R^2_{\text{Model 1}} = 0.64$; $\chi^2_{\text{Model 2}} (8, 233) = 6.10$, Pseudo $R^2_{\text{Model 2}} = 0.65$; $\chi^2_{\text{Model 3}} (8, 167) = 7.66$, Pseudo $R^2_{\text{Model 3}} = 0.21$

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. + $p < 0.06$ (borderline)