6-2018

Risk Markers Associated with Caregiver Elder Abuse: A Meta-Analytic Study

Annie Johansson

LOMA LINDA UNIVERSITY
School of Behavioral Health
in conjunction with the
Faculty of Graduate Studies

Risk Markers Associated with Caregiver Elder Abuse: A Meta-Analytic Study

by

Annie Johansson

A Dissertation submitted in partial satisfaction of
the requirements for the degree
Doctor of Philosophy in Systems, Families and Couples

June 2018

Each person whose signature appears below certifies that this dissertation his/her opinion is adequate, in scope and quality, as a dissertation for the degree Doctor of Philosophy.

_____, Chairperson
Bryan Cafferky, Assistant Professor of Counseling and Family Sciences

_____
Brian Distelberg, Associate Professor of Counseling and Family Sciences

_____
Mary Moline, Professor of Counseling and Family Sciences

_____
Naomi Schwenke, PhD, Leadership Development Consultant

ACKNOWLEDGEMENTS

I would like to acknowledge Dr. Bryan Cafferky. It is with his support and encouragement that I was able to successfully complete this achievement.

I would also like to my committee members for their advice and direction throughout this process. Thank you for your time which you each gave selflessly.

To my family and friends, your love and support through this journey has been unwavering. It has been a long and challenging road, but your love and support has never failed to be a source of encouragement. Finally, I would like to thank my Lord and Savior. It is with His guidance this journey has been completed.

CONTENT

TABLES

Tables Page

FIGURES

Figures Page

ABBREVIATIONS

SES	Socioeconomic Status
CMA	Comprehensive Meta-Analysis
ADLs	Activities of Daily Living
CTS	Conflict Tactics Scale
EAI	Elder Abuse Inventory
IPV	Intimate Partner Violence

ABSTRACT OF THE DISSERTATION

Risk Markers Associated with Caregiver Elder Abuse: A Meta-Analytic Study

by

Annie Johansson

Doctor of Philosophy, Graduate Program in Systems, Families and Couples
Loma Linda University, June 2018
Dr. Bryan Cafferky, Chairperson

Elder abuse is a significant public health problem affecting approximately 10% of the US population, with international prevalence rates ranging from 3% to 30% (e.g. Burnes et al., 2015; Melchiorre, Penhale, & Lamura, 2014; Roepke-Buehler & Dong, 2015; Selwood, Cooper, & Livingston, 2007). A quantitative meta-analysis was performed to assess risk markers associated with caregivers who abuse the elderly. This dissertation will identify background information specific to this study, discuss specific objectives of the study, and explain the rationale for why this study is being done. Two theoretical frameworks will be discussed and linked with caregiver elder abuse: Bronfenbrenner's ecological theory and role accumulation theory. Literature was used to describe the concepts of the perpetration of caregiver elder maltreatment and how they relate to the meta-analytic study. Results indicate that contextual/environmental, demographic/individual, and cognitive/physical/mental health risk markers are significantly linked with perpetration of caregiver elder maltreatment. Furthermore, strengths and weaknesses specific to this study will be explained. No IRB will be used for this study as it does not involve human subjects and is based off secondary data.

CHAPTER 1
INTRODUCTION

Background

Approximately, 10% of the US elder population, individuals 60 and older, have experienced some form of abuse (Dong & Simon, 2014). However, elder abuse does not just affect those in the US, but it is a worldwide phenomenon with prevalence rates ranging from 3% to 30% (Melchiorre, Penhale, & Lamura, 2014; Selwood, Cooper, & Livingston, 2007). While, there is a plethora of research related to elders who have been victimized, there is limited research related to caregivers who perpetrate elder abuse. For this dissertation, risk marker is defined as any characteristic or factor of an individual that increases their chance of committing a negative act towards and elder. Risk markers that have been linked with perpetration include: age, stress level, depression, anxiety, isolation, marital status and many others (Dong & Simon, 2014; Schofield, Powers, & Loxton, 2013 Torres & Han, 2003; Belfrage & Rying, 2004; Hassan et al., 2015; Dixon et al., 2007). This dissertation serves to create consensus regarding risk markers associated with caregiver elder abuse.

A quantitative meta-analysis was used to identify risk markers associated with caregiver elder abuse. A meta-analytic strategy was chosen because it can create a comprehensive synthesis of research and to create overarching ideas regarding the link between risk markers and perpetration of caregiver elder maltreatment (Card, 2016; Cooper, 2010). Two theoretical frameworks will be used to create an understanding of how risk markers are linked to risk of caregiver elder abuse: Bronfenbrenner's Ecological Model and Role Accumulation Theory.

In society, perpetration has a negative connotation. This dissertation will identify caregiver perpetrators as those who are *at risk* of committing a negative act towards elders. Research often uses the term caregiver perpetration. By removing the label of perpetrator, this allows for the caregivers to be viewed as individuals who have risk markers, but not individuals who are perpetrators.

Objectives

The overall aim for this dissertation is to create a consensus regarding what risk markers for caregivers are empirically linked with caregiver's being at risk of committing a negative act towards elders. In pursuit of this aim, I have four different aims: (1) to perform the first meta-analysis regarding risk markers associated with caregiver elder abuse, (2) to analyze the data to estimate the magnitude of the effect size for each risk marker, group the risk markers into categories, (3) to test whether certain categories of risk markers are more strongly correlated with caregiver perpetration of caregiver elder maltreatment, and (4) to explore how the findings of this study can impact clinical work and training related to elder care.

Objective One

This is the first meta-analysis performed on this topic and will serve to create a benchmark for future research. Additionally, this dissertation will serve to create a consensus regarding which risk markers are empirically linked to caregiver elder abuse. These empirically benchmarks will help guide for future research regarding caregiver elder abuse.

Objective Two

The second objective is to identify which risk markers are more strongly correlated with caregivers committing a negative act towards elders. Each risk marker (described in chapter 4) will be categorized under five broad categories: (1) demographic/individual markers, (2) medical condition markers, (3) cognitive, physical, and mental health markers, (4) contextual/environmental markers and finally (5) relational markers. These five categories of risk markers will be framed within systems outlined in Bronfenbrenner's ecological model (Bretherton, 1993; Bronfenbrenner, 2005).

Objective Three

The third objective is to analyze the strength of those five risk marker categories. For example, cognitive, physical, and mental health markers might have stronger magnitudes of effect sizes those risk markers under relational markers. Each category of risk markers will be analyzed individually and then in comparison to the other categories to determine if one category is more strongly linked to caregivers perpetrating elder maltreatment.

Objective Four

The fourth objective is to discuss implications related to training and clinical work with elders. Findings from this dissertation will be used to inform training programs for individuals and organizations that care for elders. This dissertation will assist organizations in understanding which risk markers are linked with elder maltreatment and

how they can, as an employer, reduce the effect of those risk markers for each employee. For example, if work stress is found to be a significant risk marker, then organizations can begin to take steps to reduce the chance of work place stress.

Rationale

There is a gap in the literature when it comes to understanding caregiver risk markers and elder maltreatment. Most studies focus on risk markers specifically attributed to the elders (victims) of maltreatment, but much less is understood about risk markers linked with caregivers (perpetrators) maltreating elders. Due to the lack of available research and theories of caregivers perpetrating elder maltreatment, this dissertation will lean literature related to perpetration of other forms of violence (i.e. domestic violence) in order to better understand why certain risk markers might be associated with caregivers who maltreatment elders—the starting point for this meta-analysis (Randle, 2006). There is no theory that specifically focuses on elder maltreatment, therefore this dissertation will lean on Bronfenbrenner's Ecological Model (Bretherton, 1993; Bronfenbrenner, 2005), and Role Accumulation Theory (Sieber, 1974) to give a conceptual framework to understand how and why caregiver perpetration occurs.

CHAPTER 2

CONCEPTUAL FRAMEWORKS

An integrated framework incorporating Bronfenbrenner's ecological theory and role accumulation theory will explore how risk markers are linked with caregivers who are at risk of committing a negative act towards elders.

Bronfenbrenner's Ecological Theory

Bronfenbrenner developed a theory contextualized human development through four different systems– microsystem, mesosystem, exosystem, and macrosystem (Bretherton, 1993). The main assumption of ecological theory is that one is not able to understand one's development apart from looking at their social and historical contexts (Darling, 2007). The microsystem relationships that impact the individual specifically such as family, school, and other aspects that interact with the individual identified in the system (Bretherton, 1993). The mesosystem consists of interactions between microsystems such as the relationships between family and peers. The exosystem consists of settings that do not include the individual specifically, for example the parent(s) work environment. Finally, the macrosystem consists of the attitudes and beliefs in which a person lives, for example life-styles, social interchanges, opportunities (Bretherton, 1993). These systems build upon each other and contexts are always defined from the understanding of the individual (Bronfenbrenner, 2005).

While this model has been used to explain child development, it can be used to understand how the different systems interact with each other, when caregiver elder maltreatment occurs. Ecological theory is helpful for understanding the phenomenon of

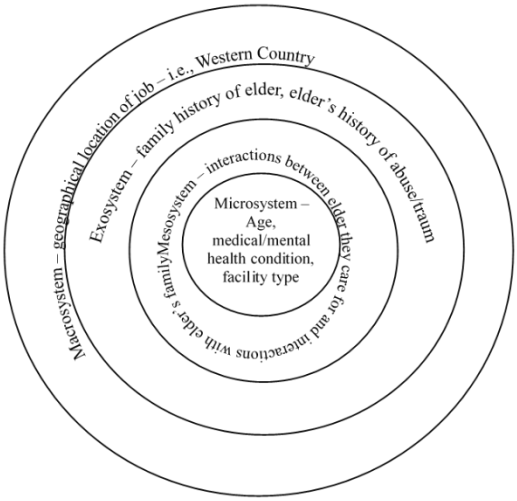

Figure 1. Model of Ecological theory and link of risk markers and caregiver perpetrators

elder maltreatment, because it identifies the concentric, systemic contexts surrounding caregivers who maltreat elders. Ecological theory can provide a lens to view how a caregiver's experience within each system might impact their risk of committing of elder maltreatment.

Figure 1 demonstrates how the whole ecological model views the link between risk markers and caregivers who are at risk of committing a negative act towards elders. The microsystem is in the center, surrounded by the mesosystem, then the exosystem, and in turn they are all encompassed within the macrosystem. This model is especially useful when we consider how the risk markers in each system are potentially linked to caregivers who are at risk of committing a negative act towards elders.

Microsystem

The microsystem looks at family, friends, schools, and other things that directly impact an individual (Bretherton, 1993; Bronfenbrenner, 2005). For example, if the

caregiver has medical conditions, such as back pain, that impact their ability to care for an elder they may be at an elevated risk of abusing or neglecting the elder patient. Additionally, microsystem relationships could be the facility in which the caregiver works or the interactions they have with the elders they care for. Or perhaps a caregiver who lives in a rural setting may not necessarily have access to resources, such as support systems, which may lead them to have increased risk of perpetration. If a caregiver lives in an urban setting they may have a lower socioeconomic status and therefore also have less access to resources to help them handle a stressful job, consequently increasing their risk of perpetrating caregiver elder maltreatment.

Mesosystem

The meso system looks at the interactions between the things that directly impact the individual (Bretherton, 1993; Bronfenbrenner, 2005). An example for a caregiver could be the interaction between the elder they care for and that elder's family. If there is any conflict between systems, it can put caregivers at a risk for experiencing higher level of stress which may lead to a higher risk of caregiver perpetration of elder maltreatment.

Exosystem

The exosystem looks at influences such as community, religious settings, and neighbors (Bretherton, 1993; Bronfenbrenner, 2005). The exosystem consists of settings that do not directly relate to the caregiver but have an impact nonetheless. For a caregiver, this could be the family history of the elder they care for and how it has impacted the elder.

Macrosystem

The macrosystem consists of attitudes, beliefs, morals, etc that impact the individual (Bretherton, 1993; Bronfenbrenner, 2005). Examples of risk markers that may fall into the macrosystem would be lifestyle, social interactions, communication skills, and religious beliefs. For a caregiver, this could be the geographical in which they work – i.e., in the United States or another country – and those ideologies in the specific locations. For example, those in that work in Westernized countries might have different outlooks than those that work in a different setting.

Role Accumulation Theory

In 1960, Goode, coined the term "role strain" which has two branches: role conflict and role overload (Sieber, 1974). Role overload is when there are too many roles taken on by a person; role conflict deals with the competing aspect of multiple roles (Martinez, 2010; Sieber, 1974). Goode's work laid the foundation for the creation of role accumulation theory. Role accumulation theory, created by Sieber in 1974, argues that family members with conflicting role obligations may have increased stress levels, and tend to have a difficulty in managing their stress levels (Martinez, 2010; Momtaz, 2013). Concepts from this theory can be used to understand the link between caregiver risk markers and caregiver perpetration of elder maltreatment.

Role accumulation theory allows for the understanding of how a caregiver might have competing roles within their lives and ultimately one role must win out. Within caregiver perpetration, this can be viewed a few separate ways. First, while a caregiver is on shift they often have dual roles – one as caretaker of the resident and one as caretaker

of the home. They have many tasks to complete such as cleaning and household chores, but also need to be aware of the needs of the elder. This can lead to overburden and stress which can result in potential neglect of the elder or becoming verbally abusive to an elder.

Beyond the caregiver's job conflict, they may experience role strain (Sieber, 1974) due to conflicting roles both at their home and having to being employed. For example, a caregiver who has a family of their own to take care of must manage time at home and make time for work. A caregiver who has multiple competing roles in their life may become overburdened with time management which would lead to increased abuse or neglect of the elderly at their job. The caregiver who is juggling school, studying, work, and other roles may have increased role strain (Sieber, 1974). The more roles one must manage the more likely they are to experience increased stress levels. Increased stress may lead to increased risk of caregiver perpetration of elder maltreatment.

Bronfenbrenner's ecological model allows for risk markers to be categorized within each of the systems. Additionally, Bronfenbrenner's model argues that each system impacts the others and therefore there can be incongruence between the systems resulting in increased stress due to competing systems. Role accumulation theory is used to understand how the different roles in one's life cause increased stress. Therefore, by using the two theories conjointly, it can show how the competing systems- and roles within those systems - can lead to increased risk of caregiver perpetration of elder maltreatment.

CHAPTER 3

REVIEW OF LITERATURE

This chapter will focus on identifying risk markers associated with caregivers and perpetration of elder maltreatment. By understanding risk markers associated with caregiver elder abuse and the consequences of those risk markers, it will help inform organizations who hire caregivers of the elderly, and future training processes for those who work directly with the elder population.

Literature Review

Elder abuse is defined as any physical, sexual, emotional, neglectful, or financial harm aimed at the individual elder (Dong & Simon, 2014; Roberto 2016). For this dissertation elder abuse is consider any action taken towards an elder that as a negative consequence; specifically focusing those who care for the elders and perpetrate maltreatment (Roberto, 2016).

Prevalence of Elder Abuse

The National Elder Mistreatment Survey (US) found varying rates of elder maltreatment, from .06% to 10% (Roberto, 2016). Dong & Simon (2014), stated that 10% of the current elder population in the United States experienced some form of abuse between 2013 and 2014. However, elder abuse does not affect only the U.S. population. Selwood, Cooper, and Livingston (2007) found that abuse occurs in many different countries: India (14%), Korea (6.3%), Europe (4.6%), and U.S. (3.2%). A study performed in Italy found that 22.8% of individuals 64 and older had been victims of abuse and neglect (Melchiorre, Penhale, & Lamura, 2014). It is also important to note

that each country can have different characteristics of their elder population which may skew the results.

Risk Markers

There are multiple identified risk markers associated with elder abuse overall and only a handful identified for caregiver risk markers specifically. For this literature review, risk markers will be viewed within five categories: demographic/individual markers, medical condition markers, cognitive, physical, and mental health markers, contextual/environmental markers and finally relational markers.

Demographic/Individual Risk Markers

Demographic risk markers include individual's SES and employment status. Additionally, individual risk markers include caregiver's age, education level, work load outside of caring for the individual (Torres & Han, 2003; Belfrage & Rying, 2004; Hassan et al., 2015; Dixon et al., 2007).

Medical Condition Risk Markers

Caregivers who suffer from medical conditions, such as chronic illnesses, may be at an increased risk of perpetration (Dong & Simon, 2014; Schofield, Powers, & Loxton, 2013).

Cognitive, Physical, and Mental Health Risk Markers

Cognitive, physical, and mental health risk markers include: anxiety, stress,

depression, isolation, etc (Jackson & Hafemeister, 2011; Dong & Simon, 2014; Roberto, 2016). Caregivers suffering from depression may provide inadequate quality care to elders (Smith et al., 2011). Risk markers associated with other forms of abuse, such as domestic violence, may lead to understanding risk markers associated with caregiver perpetration of elder maltreatment.

Contextual/Environmental Risk Markers

Increased caregiver burden is positively correlated with an increased risk of elder abuse (Lee, 2008). Low social support has been linked with increased rates of perpetration of elder maltreatment (Yan & Kwok, 2010).

Relational Risk Markers

Relational risk markers that may be highly correlated with perpetration may be marital status, marital status, and previous relational history (Lee, 2008; Yan & Kwok, 2010). These risk markers are associated with social support and therefore may show a link between caregivers and perpetration of elder maltreatment.

Related Literature

Domestic violence perpetrators seem to have similar characteristics to those caregivers who abuse the elderly. A few of those characteristics are mental health issues, previous abuse or conflictual relationships, poor behavioral controls, and aggressive behaviors (Hassan et al., 2015; Dixon et al., 2007; Belfrage & Rying, 2004). While these characteristics have not been proven to cause caregivers to abuse elders, there is evidence

to suggest that domestic violence perpetrators and caregivers who abuse the elderly share these characteristics (Randle, 2006). This information can help guide further research and act as a starting place to research caregiver elder abuse risk markers.

Summary

This chapter focused on identifying risk markers associated with caregivers that put them at an increased risk of maltreating the elder. By understanding risk markers associated with caregiver elder maltreatment, it will help inform organizations who hire caregivers of the elderly. Furthermore, this knowledge can help inform future training processes for those who work directly with the elder population. Increased understanding of risk markers associated with caregiver elder maltreatment can help reduce the risk of elder maltreatment and give understanding to why maltreatment may occur.

There a few notable limitations with this literature review. The author's bias may play a role in how the literature is interpreted, due to the extensive work the author has been involved in regarding elder care. Due to the limited amount of literature regarding caregiver elder maltreatment risk markers, this literature can only begin to serve as a means of understanding. This literature review serves to demonstrate the need for continued research—which is why this meta-analysis is so timely. The limited research does not explain which risk markers may be more strongly linked with caregivers who are at risk of committing a negative act towards elders. Additionally, the previous research does not categorize individual risk markers into broad categories, therefore, it lacks the ability to understand the magnitude of risk markers within different ecological systems.

CHAPTER 4

METHOD

A quantitative meta-analysis was used to identify risk markers associated with caregivers who are at risk of committing a negative act towards elders. A meta-analytic strategy was chosen due to its ability to create a comprehensive synthesis of research previously performed (Card, 2016; Cooper, 2010). This dissertation serves to outline the procedures of this meta-analysis from start to finish, discuss the difference between fixed and random effects models, and outline a detailed plan of analyses.

Studies were evaluated for eligibility based on inclusion/exclusion criteria (Table 1). Once Studies were determined eligible, they were coded using a code sheet created by the research team. After data was collected on the code sheet it was entered in an excel sheet and then transferred over to the program, Comprehensive Meta-Analysis (CMA) (Version 3.3.070, Computer Software) for analysis. There is a team of ten participants that coded Studies, entered data, and helped analyze data. These ten individuals consist of one PhD, three doctoral students, and six master's level students.

Table 1. Inclusion and Exclusion Criteria

Inclusion:
55+
Dependent adults over 55
Quantitative
Abuse/neglect=outcome
English
1950-2016
Exclusion: IF…
Younger than 55 (elder)
Dependent adults under 55
Qualitative
Abuse/neglect NOT the outcome
No caregiver perpetration
Education/perception study

Meta-analysis Background/Rationale

A meta-analysis approach allows for analysis of effect sizes of different risk markers rather than simply looking at each study separately (Card, 2016; Cooper, 2010). By bringing together studies and looking at them combined with each other – it can add to the strength of the result by combining the effect sizes. Even if one study's finding is insignificant, this "insignificant" effect size can still contribute important weight to a meta-analysis when aggregated with the findings of other studies. This current meta-analysis looked at risk markers associated with caregiver perpetration of elder maltreatment and performed multiple analyses to measure which effect sizes are associated with caregiver perpetration of elder maltreatment.

Identification of Studies

Database Search and Screening

The following databases were used to conduct searches for studies from 1950-2016: Academic Search Premiere, Google Scholar, PsychArticles, PsychInfo, PubMed, Social Science Index, and Web of Science. Table 2 demonstrates some of the search terms used to find Studies, this list is not inclusive of all search terms as there were too many search terms (often specific to each database) to list them all. Studies were screened multiple times throughout the identification process to continually remove studies not matching the established inclusion and exclusion criteria. Figure 2 shows the path from the initial database hits through to the "final" set of Studies included in the current meta-analysis. Studies were selected using the exclusion/inclusion criteria listed (see Table 1).

Table 2. Key words for database search

"elder abuse"
"elder mistreatment"
"elder neglect"
"aging and abuse"
"granny battering"
"ageism"
"abuse and neglect and elderly"
"nursing home abuse"
"mistreatment and aged"
"mistreatment and elder"

Card, 2016, identifies common elements that should be considered when creating inclusion and exclusion criteria for a meta-analysis. First, it is important to look at the definitions of the constructs used. For example, the words, abuse and maltreatment may be used in different studies but ultimately have the same meaning. For this meta-analysis, mistreatment/maltreatment/abuse/neglect were all used when searching within databases. Secondly, sample characteristics are important to consider, thus studies were included if the elders were identified as individuals over the age of 55. All genders and ethnicities were included. Other essential elements to consider are study design and time frame. For this meta-analysis, only studies that included quantitative data were included.

It is important to understand the risks and benefits of having either a narrow or broad cluster of inclusion and exclusion criteria (Card, 2016). For example, a narrow set of criteria may lead to fewer studies, but additionally it allows for a more specific set of conclusions. Ultimately inclusion and exclusion criteria were up to the discretion of the researcher, if there was justification (Card, 2016). Inclusion and exclusion criteria was created through discussions with team leads (Table 1).

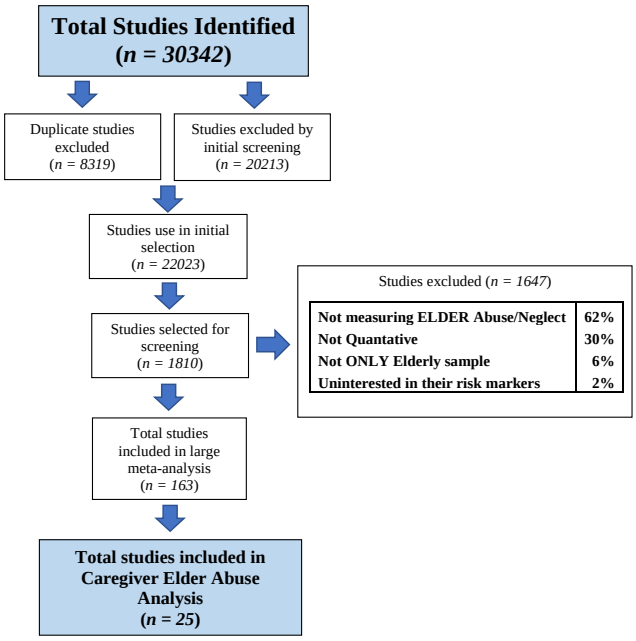

Figure 2. Flow chart of studies included in current meta-analysis

Our comprehensive database search yielded 30,342 potential studies. 8319 studies were excluded due to duplication. After reviewing the title and abstract of the remaining studies 22,023 studies, we excluded an additional 20,213 because they did not report quantitative data related to elder maltreatment. From the remaining, 1810 studies, a more in-depth screening was performed. 1647 studies were excluded due the *a priori* inclusion/exclusion criteria: not measuring elder abuse/neglect (62%), not reporting quantitative data (30%), not reporting risk markers only associated with elderly/caregiver sample (6%), and study reporting uninteresting risk markers (2%). Whenever studies reported unusable effect sizes then authors were contacted to obtain additional effect size information—unfortunately less than 10% responded affirmatively to our requests. A total of 163 were included in a larger meta-analysis regarding elder maltreatment overall. 138 studies were excluded from the larger meta-analysis because they did not report data

related to caregiver perpetration of elder maltreatment. There was a total of 25 Studies ultimately selected for inclusion for analysis.

Code Sheet

A code sheet containing 43 items was created to gather the information from each study used. The code sheet identified items such as publication type, study's findings, sample demographics, data collection methods, prevalence rates of subtypes of elder maltreatment, and coder's subjective rating of the study. The code sheets also determine what direction of violence is being perpetrated and if it was done by a caregiver.

Additionally, the code sheet was created to measure the risk markers, discussed above, and to obtain specific effect sizes data from each study to analyze the aggregated effect sizes (see Appendix A). A codebook was created to be a guide for any questions throughout the meta-analysis process. It focuses on definitions for key terms, what each item on the code sheet is specifically looking for, and other specifics related to this study.

Cross-Coding

A crucial step in any meta-analysis is that of cross coding. This is when two individuals come together with independently-completed code sheets and review all the answers. When discrepancies occur, the researchers discuss with each other and come to a conclusion. This step allows for authenticity of the data collection from the studies and increases the reliability of the study. It also decreases the chance of incorrect information being allowed to be entered in the final database. Lispey and Wilson (2001) have

determined that at minimum, 20 of the studies should be cross coded. The current meta-analysis cross-coded all Studies in the study due to the limited number of studies found.

Risk Markers

There are 25 risk markers identified that produced effect sizes to analyze. Each of the risk markers has been placed into one of five separate categories. The first category of risk markers Demographic/Individual Markers and looked at the following risk markers: age, employment status, education, and income. The second category of risk markers is Medical Condition Markers and included general overall health. The third category of risk markers is Cognitive, Physical, and Mental Health Markers and looked at items such as: depression, anxiety, stress, suicidal ideation/self-harm, ADLs (functional capacity), physical impairments, general mental health, alcohol use, and emotional limitations. The fourth category of risk markers is Contextual/Environmental Markers and included the following risk markers: hours of care provided, caregiver burden, elder lives with caregiver, elder financially supports caregiver, and social support. The fifth, and final, category of risk markers is Relational Markers and included: being emotionally abused by an elder, having a previous romantic relationship (divorced/widowed/separated), being in a current romantic relationship (married/dating), having an aggressive/conflictual relationship, being violent towards others and being physically abused by an elder.

Data Analysis

Risk markers were identified in each included study and then coded based on the information related to each specific risk marker (e.g. physical abuse and age of

perpetrator). This effect sizes could be reported using means and standard deviations, correlations, odds ratios, z-scores, Cohen's D, N's and percentages, etc. From that data, effect sizes were computed in the program, Comprehensive Meta-Analysis (CMA) (Version 3.3.070, Computer Software). Most studies produced multiple effect sizes and were then categorized together to produce one effect size overall for each risk marker within the study. Comparisons were run for each risk marker effect size to determine which risk markers have a stronger link with caregiver elder maltreatment.

Tests of Heterogeneity

In meta-analysis, there are two tests that can be used to test heterogeneity: the Q statistic and the I^2 test. The Q statistic reflects the amount of heterogeneity and allows the researcher to determine whether or not reject the null hypothesis of heterogeneity, based on the researcher's interpretation.

The I^2 statistic takes the test of heterogeneity a step farther. It shows the ratio of how much of the heterogeneity is due to between study differences and looks at how much variability within aggregated effect sizes occurs between studies compared to the total variability amid studies (Higgins & Thompson, 2002). The suggested guidelines for interpreting the magnitude for the I^2 statistic are as follows: 25% is considered small, 50% is considered medium, and 75% is considered large (Higgins & Thompson, 2002; Huedo-Medina, Sanchez-Meca, Marin-Martinez, & Botella, 2006)

Fixed Effect vs Random Effects

Within meta-analysis there are two types of approaches for aggregating effect

sizes: fixed effect and random effects. Fixed effect means it is assumed the data is being sampled from one set of studies and that differences between effect sizes for a specific risk marker should be attributed to sampling error (Borenstein, 2012; Borenstein, 2007). In simpler terms, fixed effect assumes that the only sources of error can be measurement error and sampling error.

Random effects approach is used when the differences from study to study may also be attributed to population differences. In other words, the differences in effect sizes reported in various studies can be attributed to "real" differences between the samples used in those studies (Borenstein, 2012; Card, 2006). For example, if two different populations are being sampled, the differences in effect size could be due to sampling error or simply just differences between the samples or populations. Therefore in a random effects meta-analysis, the differences in effect sizes gleaned from different studies may be attributed sampling error or to sample characteristics (e.g. gender, age, and ethnicity) whereas a fixed effect approach simply attributes all differences to sampling error.

For this specific meta-analysis, the random effects model was selected. For social science research, it is rare that studies will share the exact same population or sample. Additionally, when studying human behaviors, the number of differing variables can be vast. Therefore, by using a random effects approach we account for the "real" differences between categories when analyzing the aggregated effect sizes.

Analysis

This meta-analysis analyzed 25 risk markers (categorized into five different

categories) associated with caregivers who are at risk of committing a negative act towards elders. There are a few specific analyses that were run for this meta-analysis for each of the following categories of risk markers: demographic/individual risk markers, medical conditions risk markers, cognitive/physical/mental health risk markers, relational risk markers, contextual/environmental risk markers. Comprehensive meta-analysis (CMA) (Version 3.3.070, Computer Software) was used to run analyses on individual risk markers, categories of risk markers, and to compare the categories to one another.

First, individual analyses on each identified risk marker were run. Only risk markers that were reported in more than two studies were included in the final analyses. Then the risk markers were categorized based on the previously mentioned broad categories. Each category of risk markers was analyzed separately and then compared to each other to determine which category of risk markers is more strongly correlated with caregiver elder maltreatment and neglect. All categories were then compared to determine if there are differences between any of the categories.

While CMA does not produce post hoc tests, individual analyses were run to compare each category with each to determine where differences lie. Although there were a few risk markers linked with specific forms of maltreatment (physical, sexual, emotional, financial, neglect), there was not enough individual risk markers for each subtype of maltreatment to allow analyses to be run. Some studies only reported one effect size for each subtype, and therefore there were not enough studies that reported effect sizes for each subtype. Effect sizes were evaluated using Cohen's (1992) suggested criteria for evaluating the magnitude of mean effect sizes ($r < .01$), small ($r = .10$), medium ($r = .30$), and large ($r = .50$).

Publication Bias

When running a meta-analysis is it imperative to test for publication bias. Publication bias the idea that not all studies were incorporated into the meta-analysis due to many reasons including; studies not being published due to insignificance, studies published in locations not accessible, and studies being published in different languages (Borenstein, 2012).

This dissertation used the funnel plot and Orwin's fail safe-N methods to test for publication bias (Borenstein, 2012). Both methods were chosen to allow for a proper analysis of publication bias and were run in the Comprehensive Meta-Analysis (CMA) (Version 3.3.070, Computer Software) program. The Funnel Plot test for publication bias uses a subjective determination of how evenly the studies are spread over the graph, with the x-axis being the effect sizes and the y-axis being the standard error of the effect sizes. A lack of publication bias on the Funnel Plot is determined by a symmetrical distribution of the effect sizes on both sides of the mean effect size. Funnel plots were run for each category of risk markers to create a pictorial view of potential publication bias.
Orwin's fail-safe N is another test to evaluate the allows for a statistic approach to determine publication bias. This method allows for the determination of how many studies need to be missing to bring the correlation below significance (Orwin, 1983). This dissertation selected the criterion for a "trivial" correlation to be .01 (Borenstein, 2012). In other words, Orwin's fail-safe N was calculated for each category of risk markers (demographic, contextual, cognitive, relational, and medical) to determine how many missing studies, that had a correlation of 0, would be needed to bring the mean effect size down to .01 (Borenstein, 2012; Orwin, 1983).

CHAPTER 5

RESULTS

This dissertation analyzed 25 different risk markers (from 116 reported effect sizes) linked with caregivers who are at risk of committing a negative act towards elders. Each risk marker was analyzed individually and then placed into categories of risk markers – relational, demographic, mental health, contextual, and medical. Those five categories were analyzed individually and then as one large analysis to determine if there were differences within the categories. Additionally, risk markers were not separated out between multivariate and bivariate data due to having a small number of multivariate effect sizes identified.

Description of Identified Studies

Twenty-five studies were identified that met the inclusion criteria for this specific meta-analysis (Table 3). The overall N for the studies ranges from 15 to 2000, with total of 9039, not including Kreinert et al. 2009 [1]. Majority (64%) of the studies were from non-USA countries including: Japan, United Kingdom, India, South Korea, Israel, Germany, Mexico, Egypt, Brazil, Taiwan, and China. Only nine of the studies were from the United States. Most of the studies were convenience studies, with three being representative, and five being random. Additionally, the majority (68%) of the studies used standardized instruments including the Conflict Tactic Scale (CTS), Elder Abuse Inventory (EAI), IOWA dependent adult abuse questionnaire, and the Vulnerability to Abuse Screening scale to measure perpetration. Eight of the studies utilized non-standardized instruments such as questionnaires and surveys.

Table 3. Description of Studies

Study Author, Year	Overall N	N for male	N for female	Prevalence Rates	Geographic location	Sample Type	Nature of Study	Instrument for measurement	RM measured
Anme, 2004	78	24	54	Time Period: (12 months) Overall – 34.6% Physical – 3.9% Emotional – 8.9% Sexual – 1.2% Neglect – 10.2% Self-neglect – 2.5%	Japan	Conv	Cross-Sectional	Questionnaire, Surveys	Morale, General Health Problems
Beach et al, 2005	265	61	204	Overall – 26% Physical - 1% Emotional – 33.6%	United States	Conv	Longitudinal	CTS, ADL, Surveys	Age, Cognitive Impairment, ADLs
Chokkanathan, 2014	897			Overall – 21% Physical –12.3% Emotional – 19.2% Financial – 12.7% Neglect – 12.4%	India	Conv	Cross-Sectional	CTS, Surveys	Violence Towards Others, Marital Status, Alcohol Use, Number of Persons Cared for, Family Cohesion, Stress
Cooney and Mortimer, 1995	77	21	45	Overall – 55% Physical – 11.9% Emotional – 52.2% Neglect – 11.9%	United Kingdom	Conv	Cross-Sectional	Questionnaire	Overall Health, Aggressive/Conflictual Relationships, History of Aggression Towards Abuser, Social Resources
Cooper et al, 2010	220	76	144	Overall - 33.6% Physical – 1.4% Emotional – 32.7%	United Kingdom	Conv	Cross-Sectional	CTS, Questionnaire	Age, Hours of Care Provided,

									General Physical Health, Depression, Anxiety, Caregiver Burden, Alcohol Use, Emotional Limitations
Fulmer et al, 2005	165	49	116	None Reported	Northeast US	Conv	Cross-Sectional	EAI, Questionnaire	Age, ADLs, IADLs, Marital Status, Employment, Personality, Insurance, Caregiver Financially Supports Elder, Elder Financially Supports Caregiver, Elder Living with Caregiver,
Haller et al.,	52	45	27	None Reported	United States	Conv	Cross-Sectional	Lagos et al., scale for Violent Behavior, Questionnaire	Suicidal Ideation, Living with Family, Marital Status
Homer and Gilleard, 1990	57	15	42	Overall – 40.3% Physical – 12.2% Emotional – 37.8% Neglect – 10.5%	United Kingdom	Conv	Cross-Sectional	Questionnaire	Somatic Complaints, Anxiety, Social Engagement, Depression, Alcohol Use, Abused by Elder, Employment,

									Aggressive/Conflictual Relationship, Stroke
Giraldo-Rodriguez et al., 2015	338			Overall – 32.1% Physical – 7% Emotional – 28.1% Sexual – 2.5%	Mexico	Rep	Cross-Sectional	Questionnaire	Age, Caregiver Lives with Elder, Employment, Hours of Care Provided
Krienert et al., 2009	87422	40630	46526	None Reported	United States	Conv	Longitudinal	Questionnaire	Age
Kishimoto et al, 2013	123	44	79	Overall – 33.3% Physical – 1.6% Emotional – 15.4%	Japan	Conv	Cross-Sectional	CTS, Questionnaire	Caregiver Burden, Age, Hours of Care Provided
Lee and Kolomer, 2005	481	91	390	Physical – 14.9% Emotional – 68.3% Phy. Neglect – 15.8% Emo. Neglect – 75.6%	South Korea	Rep	Cross-Sectional	Questionnaire	Age, Income, Employment Status, Hours of Care Provided, Caregiver Burden, Social Support
MacNeil et al, 2010	417	129	288	None Reported	United States	Rep	Longitudinal	CTS, Questionnaire	Anger, Anxiety, Depression, Resentment
Natan and Lowenstein, 2010	510			Overall – 53.9% Physical – 6.4% Emotional – 12.3% Sexual - .4% Financial - .4% Neglect – 34.5%	Israel	Rand	Cross-Sectional	IOWA Dependent Adult Abuse Nursing Home Questionnaire	Number of Inpatient Beds, Number of Nurses, Staff Turnover, Staff-Patient Ratio, Type of Facility
Pillemer and Finkelhor, 1989	258	90	168	Overall – 12.4%	United States	Rand	Cross-Sectional	CTS, OARS, Questionnaire	Violence Towards Others, Emotional Limitations, Physical Disability, Physical

									Limitations, Hospitalizations, Alcohol Use, Elder Financially Supports Caregiver,
Rabold and Goergen, 2013	503	71	432	Overall – 39.7% Physical – 8.5% Emotional – 21.4% Neglect – 18.8%	Germany	Conv	Cross-Sectional	Questionnaire	Age, Caregiver Burden, Alcohol Use, Drug Use, Hours of Care Provided
Rahman and Gaafary, 2012	1106	525	581	Overall – 43.7% Physical - 5.7% Emotional – 5.1% Financial – 3.8% Neglect – 42.4%	Egypt	Rand	Cross-Sectional	Questionnaire	Education, Marital Status, Physical Impairments, Employment
Reichenheim et al., 2009	507	82	425	None Reported	Brazil	Rand	Cross-Sectional	CASE, Questionnaire	Alcohol Use, Depression, Social Support, Violence Against Elderly, Verbal Aggression
Vandeweerd and Paveza, 2006	254	64	190	Physical – 73.9%, Emotional – 60.1%	Florida	Conv	Cross-Sectional	CTS, Questionnaire	Age, Physical Impairment, Cognitive Functioning, Social Support, Self-Esteem, Alcohol Use, Psychiatric Symptoms, Depression
Vandeweerd et al, 2013	254	102	152	Overall – 26.1% Physical – 26.1%	Florida	Conv	Cross-Sectional	CTS, Questionnaire	Age, Cognitive Functioning, Cognitive

									Impairment, Psychiatric Symptoms, Depression, Self-Esteem
Wang et al, 2006	92	28	64	None Reported	Taiwan	Rand	Cross-Sectional	CPEAB, Questionnaire	Age, Hours of Care Provided, Caregiver Burden, Education, Income, Marital Status, Aggressive/Conflictual Relationship
Wang, 2005	114	12	102	Emotional – 99%	Taiwan	Conv	Cross-Sectional	CPEAB, Questionnaire	Age, Caregiver Burden
Wu et al., 2013	2000	801	1199	Overall – 16.4%	China	Conv	Cross-Sectional	Hwalek-Sengstock Elder Abuse Screening Test, Vulnerability to Abuse Screening Scale	Suicidal Ideation
Yan, 2014	149	27	122	Overall – 42.3% Physical – 15.4% Emotional – 40.3%	Hong Kong	Conv	Cross-Sectional	CTS2, Questionnaire	Age, Education, Emotional Limitations, Life Satisfaction,
Yan and Kwok, 2011	122	31	91	Overall – 62.3%	Hong Kong	Conv	Cross-Sectional	CTS2	Age, Education, Caregiver Burden

Six of the 25 studies did not report any prevalence rates. Overall rates for each type of abuse and neglect were calculated. Overall abuse and neglect (combined) had a rate of 35.8%; physical abuse had an overall rate of 13.4%; emotional abuse had an overall rate of 31.1%; sexual abuse had an overall rate of 1.3%; financial abuse had an overall rate of 5.6%; and neglect had an overall rate of 20.1%. Few studies mentioned additional prevalence rates (Table 3).

Publication Bias

Publication bias was tested for each category of risk markers. The funnel plots for each category are reported in the appendix. For the demographic/individual risk markers the funnel plot appeared to have more studies on the left of the mean effect size, meaning that there were more studies that had a lower mean effect size and potentially skewed the results (see Figure 3). For the cognitive/physical/mental health risk markers the funnel

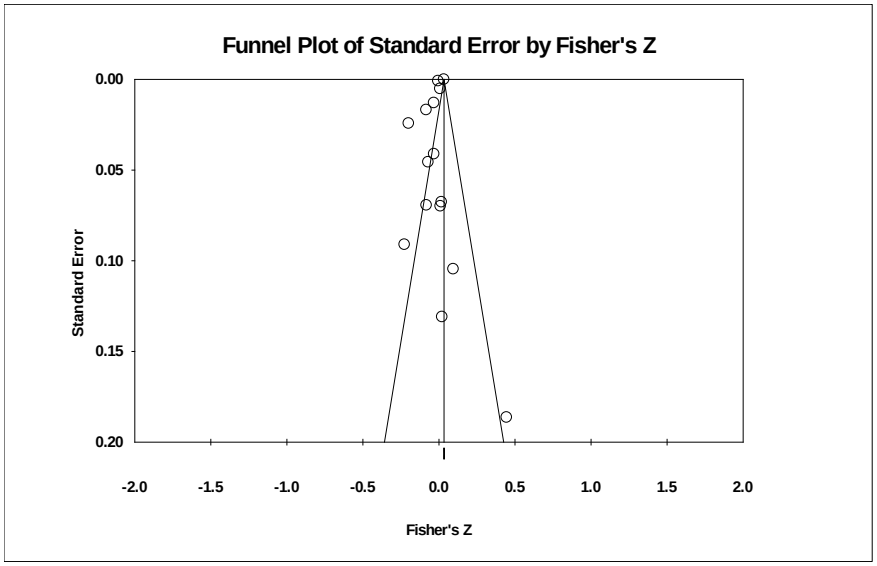

Figure 3. Funnel Plot Demographic/Individual Risk Markers

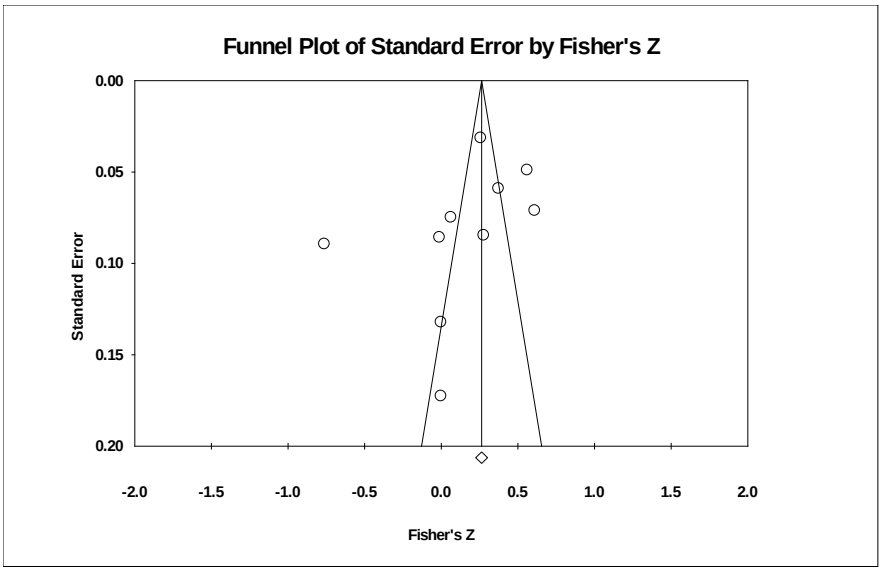

Figure 4. Funnel Plot Contextual/Environmental Risk Markers

plot appeared to have more studies to the right of the mean effect size (see Figure 4). For the contextual/environmental risk markers the funnel plot indicated potential publication bias by appearing to have slightly more studies to the right of the mean effect size (see Figure 5). Finally, for the relational risk markers the funnel plot appeared to not show any publication bias (see Figure 6). No funnel plot was done for the medical conditions risk markers due to only having two effect sizes in that category; CMA requires there to be at minimum, three studies to test for publication bias.

For each category of risk markers, Orwin's fail-safe N, with a criterion for a "trivial" correlation of .10 was run to determine how many studies would need to be missing to create an insignificant correlation (Borenstein, 2012; Card, 2006). For the demographic/individual risk markers the Orwin's N indicated that there would need to be 36 missing studies to bring the correlation below significance. For the cognitive/physical/mental health risk markers Orwin's N indicated there would need to

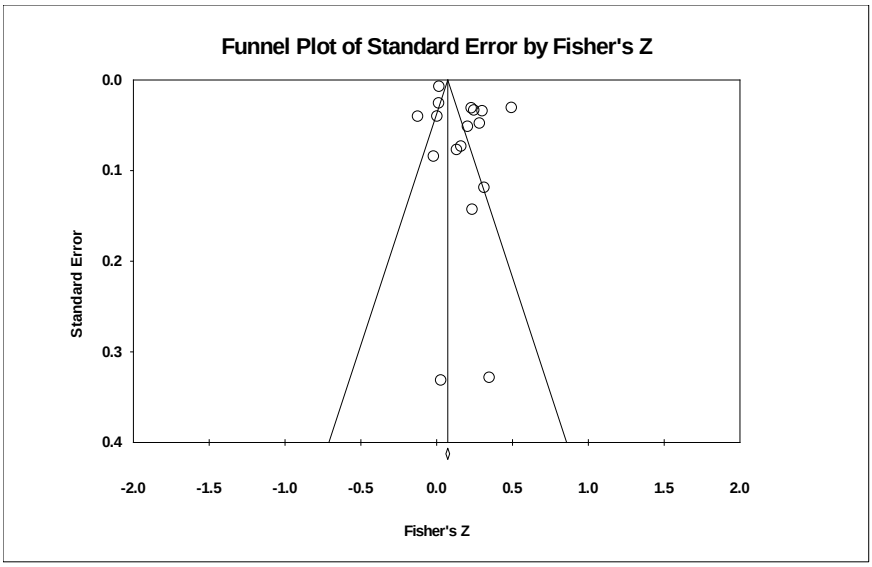

Figure 5. Funnel Plot Cognitive/Physical/Mental Risk Markers

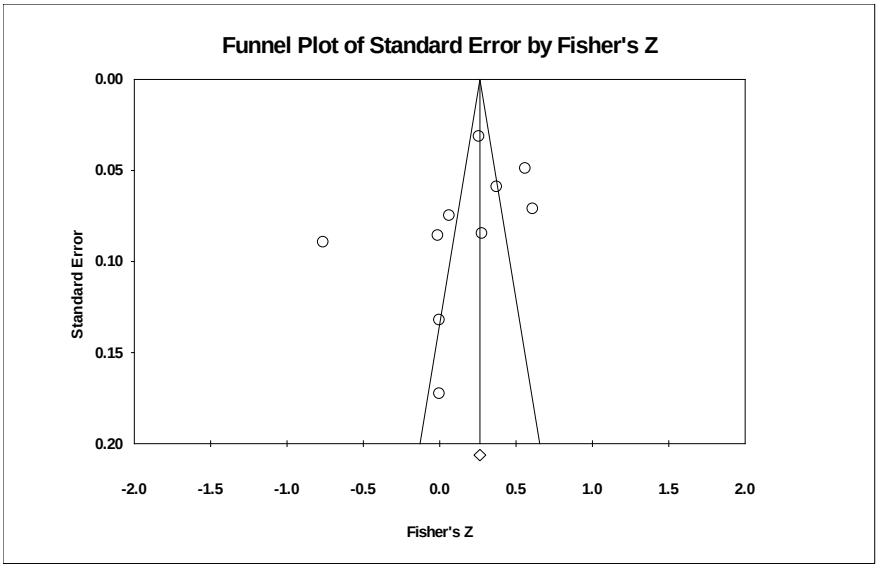

Figure 6. Funnel Plot Relational Risk Markers

be 108 missing studies. For the contextual/environmental risk markers Orwin's N indicated there would need to be 14 missing studies. Finally, for the relational risk markers Orwin's N indicated there would need to be 254 missing studies. No Orwin's N

Table 4. Orwin's Fail-Safe N Tests for Risk Marker Categories associated with Caregiver Elder Maltreatment

		Orwin's Fail-Safe N
Correlate	k	*r to .10*
Demographic/Individual	15	36
Relational	10	254
Contextual/Environmental	13	14
Cognitive/Physical/Mental Health	17	108
Medical	2	N/A

was found for medical conditions due to only have two effect sizes and CMA requiring, at minimum, three to run the analysis (Table 4). These publication bias results suggest that these categories of risk markers are robust against publication bias.

Demographic/Individual Risk Markers

The overall category of demographic/individual risk markers was found to be significantly correlated with caregiver perpetration (r = -0.03, p <.01, k = 15). The only demographic/individual risk marker found to have a significant link with caregiver perpetration was income (r = .023, p < .05, k = 2). Employment status (r = -0.03, p = 0.97, k = 5), level of education (r = -.041, p =.096, k = 4), and age (r = -0.013, p = 0.27, k = 12) were not significantly linked to caregiver perpetration.

Medical Condition Risk Markers

Only one medical condition risk marker was analyzed: general overall health (r = -.026, p =.405, k = 2). There were other medical condition risk markers found, but each

of the other medical condition risk markers only had one reported effect size and therefore were not included in this dissertation study.

Cognitive/Physical/Mental Health Risk Markers

Nine cognitive/physical/mental health risk markers were analyzed. When combined, cognitive/physical/mental risk markers were found to significantly correlated with caregiver perpetration (r = .166, p < .01, k = 17). The following risk markers were found to be significant: depression (r = .312, p <.01, k = 7), anxiety (r = .212, p <.01, k = 3), stress (r = .531, p <.01, k = 2), suicidal ideation/self-harm (r = .275, p <.01, k = 3), Additionally, the following risk markers were found to be insignificant: ADLs (functional capacity) (r = .05, p =.365, k = 2), physical impairments (r = -.061, p =.304, k = 3), general mental health (r = .21, p =.073, k = 2), alcohol use (r = .033, p =.84, k = 7) and emotional limitations (r = .004, p =.979, k = 3).

Contextual/Environmental Risk Markers

Five contextual risk markers were identified for analyses: social support, hours of care provided by the caregiver, elder financially supports caregiver, elder is living with caregiver, and caregiver burden. When combined, contextual/environmental risk markers were found to significantly correlated with caregiver perpetration (r = .081, p < .01, k = 13). Hours of care provided by the caregiver was found to be significantly linked with caregiver perpetration (r = -0.019, p <.05, k = 4). Caregiver burden was also found to be significantly linked with caregiver perpetration (r = .169, p <.01, k = 8). Social support was found to be insignificantly correlated with caregiver perpetration (r = -0.072, p =.33,

k = 3). Additionally, living with the caregiver and elder financially supporting the caregiver were found to be insignificant (*r* = -0.043, *p* =.78, *k* = 2; *r* = 0.145, *p* =.40, *k* = 2).

Relational Risk Markers

Six relational risk markers were identified to analyze. When combined, relational risk markers were found to insignificantly correlated with caregiver perpetration (*r* = .146, *p* = .16, *k* = 10). Being emotionally abused by an elder (*r* = .373, *p* < .01, *k* = 2), and being in a current romantic relationship (dating or married) (*r* = 0.200, *p* <.01, *k* = 6) were found to be significantly linked with caregiver perpetration of elder maltreatment. Having a previous romantic relationship was close to being significantly linked with caregiver perpetration (*r* = -.200, *p*= .058, *k* = 3).The following relational risk markers were found to be insignificantly linked with caregiver perpetration: having an aggressive/conflictual relationship (*r* = .280, *p* = .138, *k* = 3), being violent towards others (*r* = .002, *p* = .99, *k* = 2), and being physically abused by an elder (*r* = .260, *p* = .177, *k* = 2).

Comparison of Categories

Table 5 show the categorization of the risk markers and how they compared to the other categories, as well as the individual risk markers within each category. Cognitive/physical/mental health risk markers overall were significantly linked with caregiver perpetration (*r*=.166, *p*<.01), This category also had the highest number of effect sizes to compare (*k*=17). Contextual/environmental risk markers were significantly

Table 5. Risk Markers by Category for Caregiver Perpetration

Caregiver Risk Marker	*k*	Mean *r*	95% LL/UL	p-value	B Sys
Relational Risk Markers	10	0.146	-0.06, 0.34	0.16	Mic, Exo
Being Emotionally Abused by Elder	2	0.373**	0.29, 0.44	0.00	Exo
Conflictual Relationship with Elder	3	0.280	-0.09, 0.58	0.14	Exo
Being Violent Towards Others	2	0.002	-0.90, 0.90	0.99	Exo
Divorced/Separated/Widowed	3	-0.200†	-0.39,0.01	0.06	Mic
Married/Dating/In Rom. Relationship	6	0.200**	0.04, 0.35	0.01	Mic
Being Physically Abused by Elder	2	0.260	-0.12, 0.57	0.18	Exo
Cognitive/Physical/Mental Health RM	17	0.166**	0.08, 0.25	0.00	Mic
Depression	7	0.312**	0.27, 0.35	0.00	Mic
Suicidal Ideation/Self-Harm	3	0.275**	0.19, 0.36	0.00	Mic
Stress	2	0.531**	0.24, 0.74	0.00	Mic
Anxiety	3	0.212**	0.06, 0.35	0.00	Mic
Alcohol Use	7	0.033	-0.28, 0.34	0.84	Mic
General Mental Health	2	0.21	-0.02, 0.42	0.07	Mic
ADLs (Functional Capacity)	2	0.05	-0.06, 0.16	0.37	Mic
Physical Impairments	3	-0.061	-0.18, 0.06	0.30	Mic
Emotional Limitations	3	0.004	-0.26, 0.27	0.98	Mic
Medical Condition Risk Markers					
General Overall Health	2	-0.026	-0.09, 0.04	0.41	Mic
Contextual/Environmental RM	13	0.081**	0.03, 0.13	0.00	Mic, Exo, Meso
Caregiver Burden	8	0.169**	0.01, 0.25	0.00	Mic
Hours of Care Provided	4	-0.019*	-0.04, -0.01	0.04	Mic
Living with Caregiver	2	-0.043	-0.34, 0.26	0.78	Exo
Elder Financially Supports Caregiver	2	0.145	-0.19, 0.45	0.40	Exo
Social Support	3	-0.072	-0.22, 0.07	0.33	Meso
Demographic/Individual Risk Markers	15	-0.03**	-0.05, -0.01	0.01	Mic, Meso
Income	2	0.023*	0.00, 0.05	0.04	Meso
Employment	5	-0.003	-0.14, 0.14	0.97	Meso
Age	12	-0.013	-0.04, 0.01	0.27	Mic
Education	4	-0.041	-0.18, 0.10	0.55	Meso

Note: B sys = what system risk marker or category correlates to within Bronfenbrenner's ecological model, Mic = Microsystem, Exo= Exosystem, Meso = Mesosystem, *k* = number of effect sizes; *r* = point estimate of the aggregate effect size; LL = lower limit, UL = upper limit, RM = risk marker
† p<0.1, * $p < .05$; ** $p < .01$.

linked with caregiver perpetration (r= .081, p <.01) and had 13 effect sizes to compare. Demographic/individual risk markers were significantly linked with caregiver perpetration (r= -.036, p<.01) and had 15 effect sizes to compare. Medical condition risk markers were not significantly linked with caregiver perpetration. However, only one risk marker, with only 2 effect sizes, was found to analyze. Finally, relational risk markers were found to be insignificantly linked with caregiver perpetration (p = .16) and had 10 effect sizes to analyze.

Cognitive/physical/mental health risk markers were compared to contextual/environmental risk markers and no statistical difference was found to exist (Q = 2.61, p = .12). Demographic/individual risk markers were compared with contextual/environmental risk markers and there was a statistically significant difference (Q = 14.634, p <.00). When comparing the two groups' correlation and confidence intervals, it can be said that contextual/environmental risk markers were more strongly linked to caregivers who are at risk of committing a negative act towards an elder, due to having a higher correlation and confidence interval. Finally, demographic/individual risk markers were compared with cognitive/physical/mental health risk markers and there was a statistically significant difference (Q = 17.05, p <.00). When comparing the two groups' correlation and confidence intervals, it can be said that cognitive/physical/mental health risk markers risk markers were more strongly linked to caregivers who are at risk of committing a negative act towards an elder, due to having a higher correlation and confidence interval. Relational risk markers and medical condition risk markers were not compared due to not being statistically significantly linked on their own.

CHAPTER 6

SUMMARY

This is the first meta-analysis to measure risk markers associated with caregivers who are at risk of committing a negative act towards elders. From over 30,000 Studies, 25 Studies were identified and met the inclusion criteria set forth by the research team and produced 116 effect sizes. From those 25 Studies, 25 different risk markers were analyzed to determine their correlation with caregiver elder abuse and neglect. After each risk marker was analyzed individually, they were categorized into the following five categories of risk markers: demographic/individual, medical conditions, cognitive/physical/mental health, contextual/environmental, and relational, risk markers. Each of the categories were compared to each other to determine if one category had more of a correlation that another.

Nine risk markers were found to have a significant link with caregivers who are at risk of committing a negative act towards elders. The following risk markers were found to be significant protective markers: age, general overall health, hours of care provided. In other words, an increase in age, general overall health, and hours of care provided were significantly negatively related to perpetration of elder maltreatment. The follow risk markers were found to be positively linked to perpetration: depression, anxiety, stress, self-harm, emotional abuse by elder, and caregiver burden. With an increase in any of the mentioned risk markers, there is an increase in the link to caregiver elder maltreatment. It is interesting to point out that hours of care provided is a protective marker when caregiver burden is a risk marker.

Theory

Although this meta-analysis helps establish some empirical benchmarks, more work is needed to explain the mechanisms by which the risk markers link with perpetrators of elder maltreatment. Some literature suggests that perpetrators of IPV share similar characteristics to perpetrators of elder maltreatment, such as mental health issues (e.g. depression and anxiety) and conflictual relationships (Dixon et al., 2007; Hassan et al., 2015). While this caregiver perpetration meta-analysis offers some empirical support for a connection between risk markers and perpetration of caregiver elder abuse and neglect, there is a paucity of theories dedicated to explaining elder violence. Instead, theories explaining child abuse or intimate partner violence (IPV) are reframed for explaining elder maltreatment (e.g. Caregiver Stress Theory regarding parents and child abuse repurposed to explain adults perpetrating violence against their aging parents). Bronfenbrenner's ecological theory and role accumulation theory can be used to categorize and understand risk markers and protective markers regarding perpetration of caregiver elder maltreatment.

Bronfenbrenner's Ecological Theory

The four systems within Bronfenbrenner's ecological model (Bretherton, 1993) can be used to categorize the risk markers associated with perpetration of caregiver elder abuse and neglect. Each individual risk marker was placed under a system and analyzed individually. Categories did not often fall neatly into each system, but within each category the individual risk markers were placed into a specific system.

Microsystem

The microsystem consists of few demographic/individual risk markers such as age, which was not found to be significantly linked with caregiver perpetration. Other risk markers in the microsystem include the caregiver's relational history. It was found that if a caregiver is in current romantic relationship they are at a higher risk of perpetration maltreatment. This could be due to the overlap within the systems of the caregiver and their significant other which increases the probability of maltreatment due to increased stress (Bretherton, 1993; Sieber, 1974). Additionally, the microsystem consists of cognitive/physical/mental health risk makers, the following were found to be significantly linked with perpetration of caregiver elder abuse were: depression, anxiety, stress, and suicidal ideation/self-harm.

Mesosystem

Risk markers that fall into the mesosystem – which focuses on the interactions between the different microsystems (Bronfenbrenner, 2005) – include the following risk markers: social support, income, education, and employment. While these risk markers fall into different categories, they all fall under the idea that they incorporate the interaction between microsystems. For example, income is considered a risk marker for perpetration of elder maltreatment. This could be due to the fact that a caregiver's income level impacts the type of facility they could work in, where they live, or the demographic of elder's they care for.

Exosystem

Risk markers that fall into the exosystem – which looks at different items that do not directly relate to the individual (Bronfenbrenner, 2005) – include the following risk markers: elder financially supports the caregiver, conflictual relationships with an elder, being emotionally abused by an elder. For example, being emotionally abused by an elder does directly affect the caregiver, it could be due to the elder having poor coping skills or having a history of trauma. These ideas are not directly related to the caregiver.

Macrosystem

There were no risk markers or protective markers that were found to be significantly linked in the macrosystem. Risk markers in the macrosystem would have included items such as caregiver's geographical location of job, type of facility the caregiver works in, etc. There were no risk markers identified that fell into this category. This could be due to lack of research performed or simply that these do not fall under a potential risk marker.

Role Accumulation Theory

Role accumulation theory relates to the results by understanding the link between caregiver burden and caregiver's potential for perpetrating elder abuse and neglect. It is interesting that both caregiver burden ($r = .0179$, $p < .01$, $k = 7$) and hours of care provided by the caregiver ($r = -.019$, $p < .05$, $k = 4$) were significant, even though the magnitude of effect sizes is very different, and hours of care provided by the caregiver is a protective marker. The findings contradict the theory in that, theory states that the more

roles one has the more stress they would accumulate (Martinez, 2010; Momtaz, 2013). It could be implied that the more hours of care one provides the more stress they would have due to having to manage multiple aspects of their lives. The findings state that, the more hours one provides for an elder the less likely they are to harm the elder. This could mean that, it is not the number hours, but the actual burden of the job that is a more pertinent risk marker. In other words, the more hours one provides care does not necessarily increase the burden of the job, maybe it allows them to spread their duties out over a longer period, so they do not feel so much burden.

Research

Demographic/Individual Risk Markers

Risk markers associated with the elderly include: age, education, employment status, SES, etc (Jackson & Hafemeister, 2011; Dong & Simon, 2014; Roberto, 2016). This dissertation does not support that employment status and level of education are significantly linked with perpetration of elder maltreatment. While this could be due to the small number of effect sizes analyzed, the preliminary results show that the only demographic risk marker linked with perpetration of elder maltreatment is age of the caregiver.

Interestingly, none of the studies used in this dissertation mentioned other markers such as wealth, financial problems, and criminal record. When combined, demographic/individual risk markers were the third strongest category of risk markers linked to perpetration of elder maltreatment and were found to be protective factors for perpetration of elder maltreatment.

Medical Condition Risk Markers

There are medical conditions found to be linked with increased odds of an elder being maltreated: general overall health (Jackson & Hafemeister, 2011; Dong & Simon, 2014; Roberto, 2016). Some researchers suggest that these conditions could be considered risk markers linked with caregiver perpetration (Jackson & Hafemeister, 2011). However, only one medical condition was found for analysis: general overall health of the caregiver. This risk marker was found to be insignificantly linked with perpetration of elder maltreatment. There were a few risk markers – stroke, pulmonary diseases, sleep problems, and hospitalizations - that were only mentioned in one study and were therefore excluded from the overall analysis. These findings indicate that, while, literature often reports on medical conditions being risk markers for perpetration, that (a) studies are not measuring these risk markers enough to know if these are empirically linked to perpetration and (b) our meta-analytics results do not support that idea that overall general health is empirically linked with perpetration of elder maltreatment.

Cognitive/Physical/Mental Health Risk Markers

Research has shown that mental health impacts the risk of abuse for elders (Jackson & Hafemeister, 2011; Dong & Simon, 2014; Roberto, 2016). These risk markers could conversely impact the perpetration of elder maltreatment. Of the nine risk markers found to analyze, depression, anxiety, stress, and suicidal ideation/self-harm where the only risk markers found to be significantly linked with perpetration. Interestingly, only

one study reported alcohol as potential risk markers, even though many people tend to view alcohol and drug use as marquee risk marker for caregiver perpetration.

However, there were no studies used in this dissertation that measured trauma as risk marker, which is often considered a risk marker for future perpetration of abuse in other contexts – i.e., IPV (Dixon et al., 2007; Hassan et al., 2015).

Contextual/Environmental Risk Markers

Previous research has shown links between two caregiver risk markers already: low social support and high caregiver burden/stress (Lee 2008; Yan & Kwok, 2010). Stress is influenced by a multitude of factors such as economic burden, employment burden, poor health, family burden, etc (Lee, 2008; Liu, Guo, & Bern-Klug, 2013; Yan & Kwok, 2010) Increased caregiver burden (stress) is positively correlated with an increased risk of elder abuse (Lee, 2008). The findings from this dissertation support the idea that caregiver burden is linked with perpetration of elder maltreatment, which fits within the concepts in role accumulation theory. The more roles that one fits into the more stress they might experience due to the competing roles; caregiver burden could be caused due to increased roles a caregiver experiences (Sieber, 1974). However, social support was not found to be a risk marker for perpetration. When combined, contextual/environmental risk markers were the second strongest category of risk markers linked to perpetration of elder maltreatment.

Relational Risk Markers

Research also shows the impact of relational risk markers on caregiver elder

maltreatment such as, marital status, marital status, and previous relational history (Lee, 2008; Yan & Kwok, 2010). Yet there was only one relational risk marker found to be significantly linked with perpetration of elder maltreatment: being emotionally abused by an elder. Having a previous romantic relationship was on the verge of being significant, and with more effect sizes, could potentially have become significant. While there were a few risk markers mentioned in only one study, they were excluded from the analysis. These risk markers include: marital status, childhood trauma, and elder behavioral problems. More research needs to be done in this area to garner enough data to support, or refute, the claims that relational risk markers are linked with perpetration of elder maltreatment. Therefore, it cannot be said with empirical certainty that relational risk markers put a caregiver at increased risk of perpetrating elder maltreatment.

Overall Findings

This dissertation results differed from the research related to elder maltreatment and the caregivers who are at risk of committing a negative act towards an elder. While individuals may argue the findings of this dissertation are incorrect, this dissertation challenges those assumptions. Individual studies may find significance, related to their specific population studied, but when the research was brought together as whole, the findings challenged those results. For example, social support is often thought of as a protective factor for caregivers who might be at risk of elder maltreatment. But this dissertation begins to challenge that belief. According to this dissertation, there is no link between the caregiver's social support and their risk of committing a negative act towards an elder.

Policy

Results of this dissertation can help inform future policies regarding caregiver elder maltreatment. By understanding risk markers associated with perpetration of elder maltreatment by caregivers, policies can focus on creating programs that decrease those risk markers. For example, caregiver burden is linked with perpetration of elder maltreatment. Future policies could target elder care facilities and decrease their ability to understaff their facilities, give additional break times during shifts, and increase pay rates so that caregivers feel less burden and more rewarded when caring for elders.

Risk markers that can influence policy would be mental health factors such as depression, anxiety, suicidal ideation/self-harm. Policies could be created to require caregivers of elders be given mental health services to target those at risk of perpetrating elder maltreatment and decrease those mental health symptoms. The high prevalence of mental health related risk markers is a cause for concern and should be addressed in policies related to elder maltreatment.

Additionally, this dissertation was able to use studies from outside the United States therefore it can begin to understand the distinct cultural impacts on caregiver risk markers for elder maltreatment. By looking at how different geographic locations prevalence rates compare, policies can be created that are culturally competent. While, this dissertation was able to identify different prevalence rates across geographical locations, there was such a wide range of variance that more research would need to be conducted before creating policies with a cultural lens.

Future Directions

As previously mentioned, caregiver burden is a risk marker for perpetration of elder maltreatment whereas hours of care provided is a protective factor. Perhaps the perception of the caregiver responsibility (burden) is what links more strongly with caregivers who are at risk of committing a negative act towards elders and not necessarily the number of hours provided. This could be helpful information for residential facilities, as they could develop new strategies to lessen the "burden-ness" of the caregivers. Furthermore, results will be able to show clinical implications elder care work. Findings from this dissertation will be able to inform the creation of training programs for individuals who care for elders as well as organizations that employ those caregivers.

By using the information described above regarding theories and results from the meta-analysis it can be beneficial for the creation of a screening and training tool for caregiver elder maltreatment. This screening tool would be twofold – first, to be used during the initial hiring process and then throughout a caregiver's employment as a training tool.

Hiring

When an individual is considered for a position caregiving for an elder, it is imperative to assess multiple aspects of their lives. Questions such as age, gender, ethnicity, marital status, educational history, current living situation, and previous employment are standard when hiring employees. Information regarding how theory can explain risk of caregivers perpetrating elder maltreatment and identified risk markers for caregiver elder maltreatment can prove beneficial for the employer.

Theory and Research Influence

Links between those risk markers and perpetration of caregiver elder maltreatment will be explained. Similarly, to the use of theories for hiring, research will be employed the same way. Findings from the meta-analysis regarding caregiver elder maltreatment as well as previous research findings can be used to identify which risk markers and protective markers the employee has. Research serves to demonstrate factual evidence of risk markers associated with caregiver elder maltreatment. For an employer to have access to the data they can become aware of potential risk markers and it can help inform them in their hiring practices.

Training

The data from the theories and research findings can also be utilized to create a training tool that organizations who work with the elderly can use when training their caregivers. This training tool can work at any stage of employment – pre or throughout employment. The information from the theories and research will be disseminated to the employees so they gain insight into the link between risk markers of caregiver elder maltreatment and perpetrator characteristics. Theories will be used to create understanding of how to explain caregiver elder maltreatment more in depth.

Theory and Research Influence

Bronfenbrenner's ecological theory (Bronfenbrenner, 2005), does well to categorize the different risk markers associated with caregiver perpetration of elder abuse and neglect. Role Accumulation Theory (Martinez, 2010; Sieber, 1974) does well to

explain the link between caregiver burden, stress, and other role related risk markers and the perpetration of caregiver elder abuse and neglect. Findings from this dissertation support the ideas that there are categories of risk markers that are more strongly linked with caregiver elder abuse and neglect. These include: demographic/individual risk markers, cognitive/physical/mental health risk markers, and contextual/environmental risk markers. Additionally, findings support that caregiver burden, stress, and mental health risk markers are linked with caregiver perpetration of elder maltreatment (Belfrage & Rying, 2004; Dixon et al., 2007; Hassan et al., 2015; Lee, 2008; Torres & Han, 2003; Yan & Kwok, 2010).

Limitations

While there are strengths to this dissertation, there are also a few limitations that need to be mentioned. The first, is the sparse number of studies included in the overall caregiver elder maltreatment meta-analysis. While there is no gold standard for meta-analyses when it comes to how many Studies needed, more Studies result in increased power for the meta-analysis (Borenstein, 2012; Cumming, 2012). Thus far, only twenty-five Studies were found that discuss caregiver elder maltreatment and have reported quantitative data.

From those 25 studies there were a few number of effect sizes that were reported by more than one study resulting in only 25 risk markers being able to be analyzed. Only four of those risk markers had more than four effect sizes to analyze. The larger number of effect sizes to analyze the more confident in the correlation the author can be. With the small number of effect sizes spread out over many risk markers, it is possible to say that

with an increase in effect sizes there would be a significant impact on the correlation and p-value.

Due to the small number of effect sizes for each risk marker and not all studies separating out risk markers by subtype, it was not possible to analyze the differences between the subtypes of abuse and neglect. Additionally, risk markers were not separated out between multivariate and bivariate data due to having a small number of multivariate effect sizes identified.

Conclusion

This meta-analysis brings together a consensus of research to create a benchmark for future research. From 25 studies, 25 risk markers were found to be analyzed. Demographic/individual, contextual/environmental, and cognitive/physical/mental risk markers are categories that are linked with caregiver perpetration of elder maltreatment. Nine individual risk markers were within those categories were found to be significantly linked with caregiver perpetration. While there are no elder abuse theories, Bronfenbrenner's ecological model and role accumulation provide a conceptual framework for understanding how to group the risk markers, as well as, why perpetration may occur. Competing roles and systems can lead to increased caregiver perpetration of elder maltreatment. This information can help inform future work with caregivers who care for elders both within organizations and at a individual level.

REFERENCES

Belfrage, H., & Rying, M. (2004). Characteristics of spousal homicide perpetrators: A study of all cases of spousal homicide in Sweden 1990–1999. Criminal Behaviour and Mental Health, 14(2), 121-133. doi:10.1002/cbm.577

Bretherton, I. (1993). Theoretical contributions from developmental psychology. In P. Boss (Author), Sourcebook of family theories and methods: A contextual approach (pp. 275-301). New York: Plenum Press.

Borenstein, M. (2012). Introduction to meta-analysis (2nd ed.). Chichester: Wiley.

Borenstein, M., Hedges, L., & Rothstein, H. (2007). Meta-analysis: Fixed vs. random effects. 1-162.

Bronfenbrenner, U. (2005). Making human beings human: Bioecological perspectives on human development. Thousand Oaks: Sage Publications.

Burnes, D., Pillemer, K., Caccamise, P. L., Mason, A., Henderson, C. R., Berman, J., . . . Lachs, M. S. (2015). Prevalence of and risk factors for elder abuse and neglect in the community: A population-based study. Journal of the American Geriatrics Society, 63(9), 1906-1912. doi:10.1111/jgs.13601

Card, N. A. (2016). Applied meta-analysis for social science research. New York: The Guilford Press.

Cooper, H. (2010). Research synthesis and meta-analysis: A step-by-step approach (4th ed., Vol. 2). Thousand Oaks, CA: SAGE.

Crosbie-Burnett, M., & Lewis, E. (1993). Contributions from social and cognitive behavioral psychology. In Sourcebook of family theories and methods: A contextual approach (pp. 531-561). New York, NY: Springer.

Cummings, G. (2012). Understanding the new statistics: Effect sizes, confidence intervals, and meta-analysis. New York, NY: Routledge.

Darling, N. (2007). Ecological Systems Theory: The Person in the Center of the Circles. Research in Human Development, 4(3-4), 203-217. doi:10.1080/15427600701663023

Dixon, L., Hamilton-Giachritsis, C., Browne, K., & Ostapuik, E. (2007). The Co-occurrence of Child and Intimate Partner Maltreatment in the Family: Characteristics of the Violent Perpetrators. Journal of Family Violence, 22(8), 675-689. doi:10.1007/s10896-007-9115-x

Dong, X. Q. (2015). Elder Abuse: Systematic Review and Implications for Practice. Journal of the American Geriatrics Society, 63(6), 1214-1238. doi:10.1111/jgs.13454

Dong, X., & Simon, M. A. (2014). Vulnerability risk index profile for elder abuse in a community-dwelling population. Journal of the American Geriatrics Society, 62(1), 10-15. doi:10.1111/jgs.12621

Hassan, M. A., Gary, F., Killion, C., Lewin, L., & Totten, V. (2015). Patterns of Sexual Abuse among Children: Victims' and Perpetrators' Characteristics. Journal of Aggression, Maltreatment & Trauma, 24(4), 400-418. doi:10.1080/10926771.2015.1022289

Higgins, J. P. T., & Thompson, S. G. (2002). Quantifying heterogeneity in meta-analysis. Statistics in medicine, 21, 1539-1558.

Huedo-Medina, T. B., Sanchez-Meca, J., Marin-Martinez, F., & Botella, J. (2006). Assessing heterogeneity in meta-analysis: Q statistic or I2 index? Psychological Methods, 11, 193-206.

Jackson, S. L., & Hafemeister, T. L. (2011). Risk factors associated with elder abuse: The importance of differentiating by type of elder maltreatment. Violence and Victims, 26(6), 738-757. doi:10.1891/0886-6708.26.6.738

Lee, M. (2008). Caregiver Stress and Elder Abuse among Korean Family Caregivers of Older Adults with Disabilities. Journal of Family Violence, 23(8). doi:10.1007/s10896-008-9195-2

Lipsey, M. W., & Wilson, D. B. (2001). Practical meta-analysis. Thousand Oaks, CA: Sage.

Orwin, R. G., & Vevea, J. L. (2009). Evaluating coding decisions. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds)., The handbook of research synthesis and meta-analysis. (2nd ed., pp. 177-203). New York: Russell Sage Foundation.

Martinez, D. J. (2010). Role accumulation theory and prisoner reintegration: The pursuit of transformative social roles. Probation Journal, 57(2), 139-151. doi:10.1177/0264550510362560

Melchiorre, M. G., Penhale, B., & Lamura, G. (2014). Understanding Elder Abuse in Italy: Perception and Prevalence, Types and Risk Factors from a review of the literature. Educational Gerontology, 40(12), 909-931. doi:10.1080/03601277.2014.912839

Momtaz, Y. A., Hamid, T. A., & Ibrahim, R. (2013). Theories and measures of elder abuse. Psychogeriatrics, 13(3), 182-188. doi:10.1111/psyg.12009

Pillemer, K., & Finkelhor, D. (1989). Causes of elder abuse: Caregiver stress versus problem relatives. American Journal of Orthopsychiatry, 59(2), 179-187. doi:10.1111/j.1939-0025.1989.tb01649.x

Roberto, K. A. (2016). The complexities of elder abuse. American Psychologist, 71(4), 302-311. doi:10.1037/a0040259

Roepke-Buehler, S. K., & Dong, X. (2015). Perceived Stress and Elder Abuse: A Population-Based Study of Adult Protective Services Cases in Chicago. Journal of the American Geriatrics Society, 63(9), 1820-1828. doi:10.1111/jgs.13613

Schofield, M. J., Powers, J. R., & Loxton, D. (2013). Mortality and Disability Outcomes of Self-Reported Elder Abuse: A 12-Year Prospective Investigation. Journal of the American Geriatrics Society, 61(5), 679-685. doi:10.1111/jgs.12212

Selwood, A., Cooper, C., & Livingston, G. (2007). What is elder abuse - who decides? International Journal of Geriatric Psychiatry, 22, 1009-1012

Sieber, S. D. (1974). Toward a Theory of Role Accumulation. American Sociological Review, 39(4), 567. doi:10.2307/2094422

Smith, G. R., Williamson, G. M., Miller, L. S., & Schulz, R. (2011). Depression and quality of informal care: A longitudinal investigation of caregiving stressors. Psychology and Aging, 26(3), 584-591. doi:10.1037/a0022263

Sommers-Flanagan, J., & Sommers-Flanagan, R. (2012). Cognitive-behavioral theory and therapy. In Counseling and psychotherapy theories in context and practice: Skills, strategies, and techniques (2nd ed., pp. 263-299). Hoboken, NJ: Wiley.

Torres, S., & Han, H. (2003). Women's Perceptions of Their Male Batterers' Characteristics and Level of Violence. Issues in Mental Health Nursing, 24(6-7), 667-679. doi:10.1080/01612840305317

Yan, E., & Kwok, T. (2010). Abuse of older Chinese with dementia by family caregivers: An inquiry into the role of caregiver burden. International Journal of Geriatric Psychiatry, 26(5), 527-535. doi:10.1002/gps.2561

Yan, E. C., & Tang, C. S. (2004). Elder abuse by caregivers: A study of prevalence and risk factors in Hong Kong Chinese families. Journal of Family Violence, 19(5), 269-277. doi:10.1023/b:jofv.0000042077.95692.71

APPENDIX A

CODE SHEET

Elder Abuse/Neglect Meta-Analysis
Code-Sheet

Coder

01) Coder ID Initials__ _____
02) Date Coded ___/___/___ (mm/dd/yy)

Study

03) Study ID Number _____

Source Characteristics

04) Last names of Author(s) _____

05) Gender of first author? _____(#)
0. Unknown
1. Male
2. Female

06) Year of printed Publication _____

07) Article/Chapter Title _____

08) Name of Journal/Book_____

09) Type of Publication ___ (#)
1. Journal Article
2. Book Chapter
3. Dissertation/Thesis
4. Conference Presentation
5. Other _____

10) Was the data collection process funded? ___ (0 = No/Unknown, 1 = Yes)

11) If funded, what was the source of funding? _____
0. Unknown/Not Applicable
1. Internal funding
2. External funding
3. Internal & External funding sources

12) List source(s) of external funding: _____

Sample Characteristics

13) From where were the participants recruited (clearly circle all that apply)?

0. Unknown
1. Military
2. National
3. University/Academic setting (non-clinical)
4. Social services
5. Hospital setting and Emergency Care
6. Emergency Care
7. Obstetrics/Gynecology clinic
8. Retirement center/Assisted Living Facility
9. Psychiatrist/Psychologist /Outpatient Mental Health/Clinic
10. Religious organization
11. Community
12. Other_____

14) List all #'s of *Additional* Type of Recruitment _____

15) What is the "Name" of data set (or if unavailable, brief description of data set)? _____

16) What was the combined sample size for *this* particular study? N = _____

17) What is the N (or the % of the N) for each gender & ethnic group in the study?
Males_____ Females_____

18) White/Caucasian_____ Black/African American_____
Latino/Hispanic_____ Asian _____ Native American_____
Other_____

19) Average Age of Participants: Females_____ Males_____ Combined _____

20) From where (geographically) was the sample collected? ____(#)
1. International
2. United States
3. Both

21) From which international country was the sample collected? _____

22) From which region within the US was the study conducted? ___(#)
- **0. Not Applicable**
- **1. Northeast**
- **2. South**
- **3. Midwest**
- **4. West**
- **5. Various regions**
- **6. Nationwide**
- **7. Unknown**

23) How was the data collected?____(#)
- **0. Unknown**
- **1. Paper/Pencil Survey &/or face-to-face interview (Elder participant/proxy)**
- **2. Internet survey (Elder participant/proxy)**
- **3. Telephone interview (Elder participant/proxy)**
- **4. Paper & Pencil Survey &/or face-to-face interview(Clinician/Caregiver)**
- **5. Internet survey (Clinician/Caregiver)**
- **6. Telephone interview (Clinician/Caregiver)**
- **7. Two or more of the above → (which #'s?_____)**

24) How did the authors draw the sample? ___ (#)
- **0. Unknown**
- **1. Convenience**
- **2. "Representative" (National or "Other type" of representative_____)**
- **3. Random**
- **4. Other_____**

25) What was the nature of study conducted? _____(#)
- **0. Unknown**
- **1. Cross-sectional**
- **2. Longitudinal**
- **3. Longitudinal (but <u>only</u> cross-sectional data reported)**

26) Were sample participants rewarded for their participation?____(#)
- **0. No/Unknown**
- **1. Yes**

27) Who reported the data?_____(#)
- **1. Female Elders *(and proxy)***
- **2. Male Elders *(and proxy)***
- **3. Male and Female Elders *(and proxy)***
- **4. Clinicians/Caregivers (*regardless of gender*)**

28) This Elder Abuse/Neglect data reflects:_____(#)

Single Gender Data	**1. Female Elder victimization** **2. Male Elder victimization**
Mixed Gender Data	**3. "Combined" male & female elder victimization** **4. Both males and females were included, but data represents "Males" and "Females" separately.**
Couples Data (IPV: Intimate Partner Violence)	**5. Male perpetration and female victimization** **6. Female perpetration and male victimization** **7. Both male and female perpetration and victimization (bi-lateral IPV)**

28A) Perpetrator's relationship to elder victim: _____ (#)

0. **Unknown/Undifferentiated**
1. **Stranger**
2. **Caregiver (Hired/"Trained")**
3. **Friend**
4. **Intimate partner (current or ex)**
5. **Child(ren)**
6. **Grandchild(ren)**
7. **Sibling(s)**
8. **"Undifferentiated Family" or Other Family Member(s) _____**

28B) Was the perpetrator a caregiver? _____ (#)

0. **Unknown**
1. **Yes**
2. **No**

29) Were established instruments used to measure the occurrence or severity of the *elder ABUSE*? _____(0 = No, 1 = Yes, 2 = Both)

30) What are the names of the established/standardized instrument(s) used to measure *elder ABUSE*?_____

31) Were established instruments used to measure the occurrence or severity of the *elder NEGLECT*? _____(0 = No, 1 = Yes, 2 = Both)

32) What are the names of the established/standardized instrument(s) used to measure *elder NEGLECT*?_____

33) Prevalence *Period*: _____ for COMBINED Elder Abuse/Neglect.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

34) Prevalence *Period*: _____ for Physical Abuse.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

35) Prevalence *Period*: _____ for Psychological/Emotional Abuse.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

36) Prevalence *Period*: _____ for Sexual Abuse.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

37) Prevalence *Period*: _____ for Financial/Fiduciary Abuse.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

38) Prevalence *Period*: _____ for Neglect (generic/combined).
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

39) Prevalence *Period*: _____ for Self-Neglect.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

40) Prevalence *Period*: _____ for Physical Neglect.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

41) Prevalence *Period*: _____ for Psych/Emotional Neglect.
Prevalence RATES for Females_____ Males_____
Combined (Males and Females) _____ Caregivers_____

42) What is your subjective quality rating of this article? _____(←Sum values)
_____a) N > 1,000
_____b) Clear definition of elder abuse/neglect
_____c) Clearly described sampling procedures & sample characteristics
_____d) Authors discussed how they handled missing data &/or attrition
_____e) Established instrument(s) for measuring elder abuse/neglect
_____f) Established instruments for risk markers
_____g) Data reported in a clear, organized manner
_____h) Univariate/Bivariate data reported
_____i) Multivariate data reported

43) Need to contact the author(s) for data/output? YES NO

Abuse **OR** *Neglect* **Type: _____Risk marker # ___ Name of risk marker _____**

Author's description of risk marker_____ Page# _____

Name of Instrument/Scale for Risk marker_____ **[*n* = ____]**

What data will be used for the effect size? ___ (#)

1. Pearson *r* /Correlations
2. *M* & *SD*
3. Hedges' *g* OR Cohen's *d*
4. *o* (odds ratio)
5. *β* (beta)
6. Chi-squared (X^2)
7. Z-score
8. N's & %s
9. Other

Who reported
M F U Cl Care
About Whom
M F U Care /// P V
$p <$

Multivariate

Independent groups	Group 1 = _____ Mean = _____ SD = _____ *N* = _____ Group 2 = _____ Mean = _____ SD = _____ *N* = _____ Group 3 = _____ Mean = _____ SD = _____ *N* = _____ Group 4 = _____ Mean = _____ SD = _____ *N* = _____