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RESILIENCE IN ADULT WOMEN WHO EXPERIENCED EARLY MOTHER LOSS

A Dissertation

Presented to the Faculty of

Antioch University Seattle

In partial fulfillment for the degree of

DOCTOR OF PSYCHOLOGY

by

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December 2020

RESILIENCE IN ADULTS WHO EXPERIENCED EARLY MOTHER LOSS

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Antioch University Seattle
in partial fulfillment of requirements for the degree of

DOCTOR OF PSYCHOLOGY

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ABSTRACT

RESILIENCE IN ADULTS WHO EXPERIENCED EARLY MOTHER LOSS

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Seattle, WA

The primary purpose of this dissertation study was to explore levels of resilience in adult women whose mothers died when the participants were children. The death of a mother during an individual's childhood is an adverse event that can affect all areas of that person's life. It is intuitive to believe that early mother death would cause long-term effects on the overall resilience levels of the individuals; however, there has been minimal research exploring resilience in this population. With a sample of 245 women throughout the United States, this study used the Connor-Davidson Resilience Scale 25 (CD-RISC-25) to begin investigating resilience in adult women who experienced childhood mother loss. The results of this study showed significant lower resilience mean scores for the mother-loss group when compared to the general population group. Furthermore, within-group differences were found when examining current age and resilience scores, with older women indicating slightly higher resilience scores than younger women. No statistically significant differences were found when comparing mean resilience scores for age at time of loss or length of time since loss. This dissertation is available in open access at AURA, http://aura.antioch.edu/ and Ohio Link ETD Center, https://etd.ohiolink.edu/ (pdf version only).

Keywords: resilience, mother loss, mother death, CD-RISC, childhood mother loss, parental loss, parental death

Dedication

This dissertation is dedicated first and foremost to my mother, who died when I was two years old. I feel her own resilient spirit living within me, helping me navigate this sometimes-difficult life. I also must dedicate this dissertation to ALL of the wonderful resilient women and men in my life: to my father, who died at the age of 93 with unfinished projects piled around him, providing inspiration to keep searching and keep learning; to my sisters and brothers who have each found their way in life, while still finding ways to show their “little sister” love and caring; and to all of my loved ones who have passed on to the next journey before me, providing continued spiritual guidance and strength throughout my life.

Finally, this dissertation is dedicated to all individuals whose mothers died when they were children, especially those who participated in this study. The loss of your mother can seem inconsolable, immeasurable, and irreplaceable. Yet, you continue on in the world, moving through the loss to become the best you can be.

> We find a place for what we lose. Although we know that after such a loss the acute stage of mourning will subside, we also know that a part of us shall remain inconsolable and never find a substitute. No matter what may fill the gap, even if it is completely filled, it will nevertheless remain something changed forever. . .
>
> —Sigmund Freud

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I have so much gratitude to my husband, Dave, who has given me immeasurable encouragement and support all of our years together. Without him, I would never have had the courage to pursue a doctorate degree in the first place, and I would have crawled under my desk a thousand times to hide from this dissertation without his continued coaxing.

To all of my family members, who kept asking, “How many more years???” NOW, you can call me Dr. Liz!! Thank you especially, to Peter, for hanging in there through my years of griping and whining and anxiety! Thanks for being my rock.

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CHAPTER I: INTRODUCTION

Purpose of the Study

The objective of this dissertation was to ascertain levels of resilience in male and female adults who experienced childhood death of their mothers. Mother loss can be devastating for a child and can impact the individual throughout subsequent adult life (Edelman, 1994; Ellis et al., 2013); however, long-term effects of mother loss are incredibly complex, difficult to delineate, and therefore difficult to research. The majority of mother loss research focuses on psychopathological difficulties experienced by individuals whose mothers died during childhood (e.g., Coffino, 2009; Tyrka et al., 2008), rather than on healthy or positive responses exhibited by this population. While it may seem intuitively appropriate to research the problems associated with mother loss, at least one study has found that only 10% to 15% of bereaved children experience long-term psychological issues (Dowdney, 2000). This leaves a gap in the research around the large percentage of mother-loss individuals who have been able to move through the initial distress of mother loss and live healthy adult lives. Resilience is a construct that includes the ability to move forward and even thrive after a traumatic or difficult event, such as mother loss (Masten & Wright, 2010; Reich et al., 2010). Resilience research includes studies of children, adolescents, and adults who have gone through various types of traumatic events. However, there is minimal research exploring resilience in adults who experienced the death of their mother during childhood. Determining levels of resilience in this population will help us further understand the long-term impacts of mother loss during childhood. Expanding our knowledge of this construct in relation to mother loss is important not just to motherless adults but also to the psychologists and mental health professionals who work with these individuals. With this increased knowledge, clinicians will be able to acknowledge levels of resilience, and

corresponding deficits or needs, in the clients whose mothers died during the client's childhood. Rather than focusing solely on child bereavement or child and adult psychopathology, mother-loss researchers can use this knowledge to study additional links between mother loss and resilience.

Theoretical Frameworks

Resilience research has created a plethora of definitions for resilience, as well as many theoretical models and frameworks to explain the factors and outcomes of resilience (Liu et al., 2017; Masten & Wright, 2010). Current research is informed by a theoretical model of resilience that aims to elucidate the multi-faceted interaction between the individual and the environment following a traumatic event, such as childhood mother loss (Frydenberg, 2017). Ideally, research investigating resilience in the population of individuals who experienced childhood mother loss would include a longitudinal study with access to details about familial and environmental factors throughout the lifetime, before and after the mother's death (Zautra et al., 2010). However, the current research was constrained by the timeframe of a doctoral program. Thus, this study utilized a quantitative methodology that measured mean levels of resilience at a single point in time, using a well-validated survey instrument, the Connor-Davidson Resilience Scale 25 (CD-RISC-25; Davidson & Connor, 2017). The data collected for this study are expected to help identify differences between the mean scores of the study participants and those of the general population. This analysis is a first step in evaluating resilience in adults who experienced mother loss as children.

Organization of Dissertation

This dissertation is separated into five chapters. The introductory chapter provides an overview of the study, including the purpose of the study, theoretical frameworks, research

question and some basic definitions of terms used throughout the dissertation. The second chapter provides a review of the literature on (a) short-term psychological responses to the death of a mother; (b) psychopathology in adults who experienced childhood mother loss; (c) history of resilience research and current models of resilience; and (d) resilience and loss in general, as well as loss related to death of a mother. Because the preponderance of research on individuals who experienced childhood mother loss has focused on childhood bereavement and psychopathology, it is important to review this broader span of literature. Examination of this literature provides a base upon which to understand the role of resilience research for the mother-loss population. Following the review of psychopathology literature are the literature review sections on resilience. Resilience research spans multiple decades, with continued debates about the definition and components of resilience, as well as differing opinions about how to measure resilience (Liu et al., 2017; Luthar et al., 2006). The review of resilience literature includes discussion of this history in order to understand the current gap in research on resilience and mother loss, as well as current research related to this topic.

The third chapter addresses the research methodology for this study. It describes the overall framework of the research conducted, including the rationale for research design and the choice of the CD-RISC-25 as the primary measurement instrument. Because this study was based on an online survey, the benefits and limitations of online data-gathering will also be discussed. Also included in this chapter are details of sampling and participant recruitment for the study, as well as the methods used to analyze the data.

The fourth chapter presents findings from the data, with statistical analyses to assess the significance of data relationships. The fifth and final chapter provides an interpretation and

discussion of the findings in the context of current research to identify their significance and relevance. Limitations of the study are also discussed, along with suggestions for future research.

Research Questions

The primary research question for this dissertation was: Is there a relationship between mean resilience scores, as measured by the CD-RISC-25, of the mother-loss group and the general population group? Additional research questions were based on comparisons of the data from within the sample obtained. These include the following:

- Is there a relationship between the participants' age at time of mother death and mean resilience scores, as measured by the CD-RISC-25?
- Is there a relationship between participants' resilience mean scores, as measured by the CD-RISC-25, and length of time since their mother's death?
- Is there a relationship between participants' resilience mean scores, as measured by the CD-RISC-25, and their current age?

Definitions of Relevant Terms

What follows is an introduction of terms used throughout this dissertation.

- *Adversity*: Negative life occurrences that can disrupt development and function of an individual or system.
- *Competence*: Ability to function effectively at the developmental level determined by societal expectations.
- *Protective Factor*: Attribute or circumstance that helps an individual or system cope with an adverse situation; moderates risk associated within a high-risk context.
- *Resilience*: Ability to recover, move forward and even thrive after experiencing a significant adverse or traumatic event.

- *Risk Factor*: Factor that indicates probability of increased negative outcome for individual or group.
- *Vulnerability*: Susceptibility to negative or harmful consequences from events or situations.

A more detailed discussion of these terms, as well as other words and phrases frequently used in resilience research, is included in Chapter II. This discussion will also include the history of changing definitions and the interactions among concepts related to resilience.

CHAPTER II: REVIEW OF LITERATURE

Choice of Topic

This dissertation's focus was influenced in part by author Hope Edelman. Edelman's 1994 book *Motherless Daughters: The Legacy of Loss* recounts how Edelman's own mother died in 1981 when Edelman was only 17 years old. While grieving this significant loss, Edelman searched for books, writings of any type, or support for children whose mothers had died. She found very little information. In the 1990s Edelman decided to interview women who had lost their mothers, leading to her 1994 non-fiction book. Edelman continues to publish books on the subject, and also gives talks and sponsors workshops. Due in part to her influence, motherless daughters support groups have formed throughout the United States and worldwide. This movement helped spread awareness of this difficult experience to mainstream society and underscored the need for further research into the impact of mother loss.

Maxine Harris, a clinical psychologist, also interviewed people who had lost a parent during childhood and published *The Loss That is Forever: The Lifelong Impact of the Early Death of a Mother or Father* in 1995. Dr. Harris was inspired to write this book by the stories she heard while interviewing women about their lives. Within the group of interviewees was a sub-group of women who had a parent die during childhood. Harris was intrigued by the impact this single event had on these women throughout their lifetimes, noting the differences among these women and others who had experienced other adverse childhood events such as abuse or neglect (Harris, 1995).

Strength and perseverance are two of many themes found in Edelman's and Harris's research. These attributes are found in resilience research and are identified as both internal characteristics of people with higher levels of resilience, as well as moderating factors that can

lead to resilience. Originally, the concept of resilience emerged from the exploration of an individual's ability to navigate life after a traumatic or stressful event (Deveson, 2003; Masten, 2014). Resilience is now seen and being studied in families, communities, workplaces, and the larger society (Masten, 2014). The focus for this study is psychological resilience as seen in individuals; psychological resilience indicates the ability of an individual to recover from an adverse event, adapt well to the consequences, and survive and thrive despite significant adversity and stress (Mukherjee & Kumar, 2017).

The study of resilience relies on identification of events that cause significant distress, or that are considered to be unfavorable to a person's development and well-being (Sandler et al., 2008). Researching traumatic non-normative events are the key to understanding resilience, since responses to traumatic events seem to differ among individuals. Some are able to cope with and move through the traumatic event without significant long-term impact, whereas a similar event can have a permanent negative effect on other people (Sandler et al., 2008). The death of one's mother during childhood is an example of a traumatic non-normative event that can initially be devastating for a child and can continue to impact the person throughout their life (Corr, 2010; Harris, 1995; Sandler et al., 2008). For some people, however, the influence of the mother's death may not be completely negative as time passes. As can be the case in response to other adverse events, some individuals adapt well to the consequences of mother loss, and in fact survive and thrive. Ann Masten (2014), a leading resilience researcher, identifies this as "ordinary magic," resilience present in our midst without general recognition of its extraordinary nature. It is not unreasonable to predict that this ordinary magic or resilience would also be true in the case of mother loss. However, references to resilience after mother loss rarely appear in the literature; rather, there seems to be an assumption that the effects of mother loss on the

individual are universally negative. The intention of this dissertation is to address this research gap by moving beyond the narrow focus on the negative impact of mother loss to examine other responses, specifically resilience.

Short-Term Psychological Consequences

Much of the research on childhood mother loss focuses on bereavement experiences and ensuing psychological effects of the loss. Overall, there seems to be a consensus that the death of a parent can have an adverse effect on children; however, there is little agreement about the severity or longevity of this negative effect. One part of this disagreement lies in the understanding of grief responses, and the expectations of timelines for returns to healthy functioning after a bereavement experience (Bylund-Grenko et al., 2016).

In general, grief responses for all people, adults and children, can follow several different trajectories (Bonanno et al., 2008). Bylund-Grenko et al. (2016) distinguished these paths as normal versus complicated grief (including variations such as prolonged or chronic grief), and as absent or delayed grief. Normal grief initially spikes after the death but eventually the person returns to pre-death level of functioning (Bylund-Grenko et al., 2016; Christ et al., 2002). People with a higher level of resilience tend to experience lower levels of intensity within this cycle. Complicated grief begins at low-level intensity, then quickly moves into high-level intensity, remaining at that level over a long period of time, generally more than six months (Bylund-Grenko et al., 2016; McClatchey et al., 2014). Absent grief and delayed grief often both include a high level of stress at the time of death, often due to the type of death or other environmental or psychological factors. A person experiencing absent grief may experience or display little to no emotional response after the death. Delayed grief, on the other hand, is indicated by a similar initial lack of response, followed by grief-related responses of varying

degrees occurring more than one year after the death (Bylund-Grenko et al., 2016; Christ et al., 2002).

Child and adolescent grief responses and bereavement can be similar to that found in adults, but with differences depending on developmental levels and type of loss (Luecken, 2008). Bereavement for children and adolescents who experience parental loss tends to follow trajectories that can include resolution of grief within the first year, with more gradual reduction of grief reactions over the first two years after the parental death (Luecken, 2008), or can entail prolonged grief, which tends to last more than two to three years after the death (McClatchy et al., 2014). Generally, children in the latter category have a prior history of depression (Dowdney, 2000; Melhem et al., 2011), and this prolonged grief causes more functional impairment. It is this group that has typically been studied the most, in order to identify ways to prevent mental health problems in the future (Christ et al., 2002). Risk factors such as a poor relationship between the bereaved child and the surviving parent; lack of communication about the deceased parent and grieving process; and pre-bereavement psychiatric problems have been observed to increase a child's difficulties in coping with parental loss (Ellis et al., 2013; Kranzler et al., 1990).

Overall, only 10% to 15% of bereaved youth without pre-death psychiatric difficulties have long-term problems related to parental death, according to Dowdney (2000). This illustrates that a large percentage of bereaved children are able to move through the impact of parental death without significant disruption of emotional and social functioning (Dowdney, 2000). As these children moved into adulthood, it is likely that psychological resilience played a part in their ability to function throughout their lives.

Long-Term Psychological Consequences

The long-term effects of parental loss in general can have a deleterious effect over some individuals during their lifetime, with studies linking parental loss to increased depression, anxiety, and suicidal ideation during adulthood (Gulden et al., 2015; Tyrka et al., 2008). For example, in 1987, Caserta et al. surveyed 109 women who were hospitalized for surgery. The purpose of this study was to identify vulnerability factors that might affect recovery from medical issues. Early death of mother (prior to age 17) was the most significant finding as an indicator of clinical psychiatric symptoms, specifically depression. A decade earlier, a study by Brown et al. (1977) also suggested an association between depression in women and early death of mother. Appel et al. (2016) reviewed the use of antidepressants as an indicator of depression in a large Danish population of adults and found that people who were bereaved as youth were more likely to use antidepressants as adults; the focus of the bereavement included either parent or other significant people. Nickerson et al. (2011) found that parental death during childhood was correlated with psychopathology, especially mood and anxiety disorders, as well as substance abuse issues. Another recent study by Berg et al. (2016) compared death of a parent by natural causes or external causes (suicide, homicide, or accidents). Early parental death by natural causes translated to a slight increase in risk of depression, while death by unexpected causes was linked to a much higher level of depression.

Identifying risk and vulnerability factors for suicide have led researchers to explore the impact of early parental loss for this specific area of concern (Dieserud et al., 2002; Guldin et al., 2015; Hollingshaus & Smith, 2015). In a study by Dieserud et al. (2002), suicide attempts were correlated with overall negative life events. Parental loss (including separation or death) prior to the age of 15 was shown to be a significant predictor of suicide attempts during adulthood

(Dieserud et al., 2002). Niederkrotenthaler et al. (2012) found that suicide risk increased for offspring of parents who had committed suicide according to the child's age at time of loss. Guldin et al. (2015) found that suicide risk was at a higher level for adults whose parents had died during childhood, regardless of the cause of death. That 40-year longitudinal study included a matched control group of non-bereaved children, thus diminishing the methodological concerns for use of retrospective data as well as lack of control groups (Guldin et al., 2015).

Irregularities in Methodology and Research Findings

Even though some general conclusions could be extrapolated from the literature reviewed thus far, it is difficult to draw uniform and reliable inferences about the pathological effects of childhood mother death, in part due to irregularities within the research (Crook & Eliot, 1980; Stikkelbroek et al., 2012). For example, the majority of the aforementioned studies did not focus primarily on mother death during childhood, but rather on parental death (including either parent), or parental loss as a whole (including death or permanent separation). Tennant (1988) and Crook and Eliot (1980) conducted analyses of the literature available at that point in time. These researchers criticized the methodology of research into this subject, with a particular critique of the use of "parental loss" as an inconsistently defined variable (Crook & Eliot, 1980; Tennant, 1988). Additionally, they also found that studies purporting to indicate parental death as a specific vulnerability factor for depression during adulthood often did not account for other factors related to the onset of psychopathology, such as adverse parenting, neglect, abuse, or prior childhood or familial psychopathology (Crook & Eliot, 1980; Tennant, 1988). In general, these researchers found that the research had not conclusively established a significant association between parental death during childhood and adult psychopathology (Crook & Eliot, 1980; Tennant, 1988).

Parental Loss Defined as Death or Separation

More recent research into parental loss has revealed that significant psychopathology is more often due to parental separation than to parental death (Kendler et al., 1992; Tebeka et al., 2016). Parental separation is usually referred to as permanent separation due to divorce, adoption by another adult, permanent institutionalization (e.g., incarceration) of the parent, or other situations that separate the child permanently from the parent (Coffino, 2009; Otowa et al., 2014).

Using a nationally representative sample of the U.S. population, a 2016 study found that parental divorce was associated with increased psychiatric disorders in adulthood, whereas early parental death was associated primarily with poorer physical health (Tebeka et al., 2016). Similarly, a male twin study by Otowa et al. (2014) found that parental separation, from either mother or father, was significantly associated with psychopathology in adulthood, including major depression, generalized anxiety disorder, panic disorder, phobia, drug abuse and dependence, and alcohol dependence. Parental death was associated with phobia and alcohol abuse and dependence in this study, with no significant difference in results between those who experienced death of a mother or father (Otowa et al., 2014). Another study explored environmental risk factors for various forms of psychopathology in 1,018 pairs of female adult twins (Kendler et al., 1992). They also found that non-death parental separation was a factor for major depression and generalized anxiety disorder, while panic disorder and phobia were associated with parental death.

Some studies included information about age at time of loss, adding additional complexity to the findings. According to a study by Agid et al. (1999), childhood loss (either death or separation) during younger years (defined as prior to age 8) is more associated with

psychopathology during adulthood than is loss for older children, particularly when it comes to bipolar disorder and schizophrenia. Coffino (2009), who studied non-death parental separation only, found that children who experienced parental loss between five and eight years old were more likely to develop major depression as adults, while there was no significant association between parental separation and depression for ages younger than five and older than eight.

In response to methodological concerns, researchers such as Tyrka et al. (2008) and Mack (2001) attempted to control for some of the possible mediating factors found in parental loss research. Tyrka et al. (2008) researched parental death or separation controlling for related risk factors such as history of depression or anxiety in family members, childhood neglect or abuse, and the child relationship with the surviving parent. The findings in this study support the premise that parental death may be a risk factor for depression, while the negative psychological effects of separation are predicated on the pre-separation dysfunction. The researchers did not differentiate between death of mother or father (Tyrka et al., 2008). Mack (2001) compared adults from different groups: early parental death, early parental separation, and intact families, as a way of identifying the different types of family disruption that could lead to psychological problems later in life. Mack found that parental death was linked to depression more strongly than was parental separation, with adult children of divorce or separation also exhibiting higher levels of self-confidence than those whose parent had died (Mack, 2001).

Longitudinal studies are particularly relevant for this dissertation because they can provide data linking a childhood event to adulthood. A longitudinal study by Koenen et al. (2007) found that early childhood factors, including parental death, were associated with Posttraumatic Stress Disorder (PTSD). For this study, loss of a parent was only one of several issues explored as a risk factor; however, it was identified as an important part of the overall

picture when exploring why some people develop PTSD from a traumatic event and others do not (Koenen et al., 2007).

Parental Death—Either Mother or Father

Some studies have centered on the effects of parental death without including separation in the definition of parental loss, several of which were reviewed previously in this section (e.g., Berg et al., 2016; Brown et al., 1977). Most of these studies included death of either the father or mother during childhood, with few studies focusing on the death of the mother only. Niederkrotenthaler et al. (2012) and Nickerson et al. (2011) found that mental health outcomes were worse for those who lost a parent at an earlier age. Nickerson et al. (2011) accounted for age at time of loss, time since loss, and adverse parenting practices to examine the impact of parental death during childhood. Niederkrotenthaler et al. (2012) studied a variety of risk factors that included parental death. Exploring the long-reaching effects of early parental loss, Kivelä et al. (1998) found that both men and women who lose a parent to death during childhood have a tendency towards depression in old age.

Lack of Psychopathology with Parental Death

Although the majority of the literature cited thus far appears to support the premise that parental loss can have a negative long-term impact into adulthood, other studies show little or no significant association between parental loss and adult psychopathology (Gregory, 1966; Stikkelbroek et al., 2012). For example, Stikkelbroek et al. (2012) conducted a longitudinal study in the Netherlands on parental death and lifetime prevalence of mental health issues. They focused on adults whose parents (either mother or father) had died before age 16. In contrast with the previously mentioned studies, these researchers found that only panic disorder was associated with parental loss during childhood. The researchers did not find any increase in other

mental health disorders, functional limitations, or use of mental health services (Stikkelbroek et al., 2012).

When examining the impact of parental death in childhood as a risk factor for depression, Jacobs and Bovasso (2009) found that the death of a father during childhood increased the rate for depression, but that death of mother during childhood was not a predictor for this condition. Tebeka et al. (2016) also found no increase in psychiatric disorders between subjects who had experienced parental death during childhood and a control group. Ragan and McGlashan (1986) utilized a sample of inpatient psychiatric patients to study the effects of childhood parental death and adult psychopathology. They concluded that parental death by itself was not a significant cause for psychopathology; however, it should be considered as part of the complex background that can exacerbate or create psychological problems.

Resilience

After this review of psychopathology literature related to mother loss, this next section begins a process that might explain how some individuals within this group are able to adapt well to the loss (Reich et al., 2010). The idea of positive adaptation is the basis of resilience; thus, the natural next step is to explore resilience in those who have experienced mother loss during childhood. Research into resilience as a response to loss adds additional information that can help us to understand this process (Boerner & Jopp, 2010).

Definitions of Resilience and Related Concepts

Initially, the concept of resilience was defined as the ability to “bounce back” from traumatic events, which was viewed as the capacity to return to pre-trauma functioning (Frydenberg, 2017). The definition of resilience has evolved over time, and has included many variations of its original simplistic sense (Frydenberg, 2017), resulting in a shift to a more

comprehensive definition: “Capacity (potential or manifested) of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development; positive adaptation or development in the context of significant adversity contexts” (Masten, 2014, p. 308). Luthar et al. (2000) provides a more succinct definition with: “a dynamic process encompassing positive adaptation within the context of significant adversity” (p. 543).

Despite differences in some specific respects, most definitions of resilience include the two core concepts of the experience of some type of adverse or stressful event, followed by recovery from the event, with positive adaptation and growth sustained over time. (Fletcher & Sarkar, 2013; Frydenberg, 2017; Reich et al., 2010). An adverse event, or adversity, is any type of event that creates stress for a person and potentially impedes the ability of the person to develop or function (Masten & Wright, 2010). Often a person experiences more than one adverse event or is prone to a multitude of different stressors; this can create difficulties in researching the effect of a single adverse event (Lee et al, 2013; Masten & Wright, 2010). Additionally, adversity can include either acute or chronic stressful situations (Lemery-Chafant, 2010). Acute stressors are those that happen suddenly, with little to no warning, such as a car accident or sudden death, whereas chronic stressors include situations that exist over a period of time, such as an extended illness or ongoing poverty (Frydenberg, 2017; Lemery-Chafant, 2010).

The final piece of defining resilience includes sustainability (Frydenberg, 2017; Masten & Wright, 2010). Resilience indicates an ability to sustain a level of adaptive functioning over time, which often includes not just adaptation but growth beyond the original level of expected functionality (Masten & Wright, 2010; Reich et al., 2010). Measuring the level of resilience in adults who experienced mother loss during childhood could help us understand adaptation to the mother loss, as well as the ability to sustain functioning throughout adulthood.

Other concepts central to understanding resilience are risk factors, vulnerability factors, and protective factors (Cicchetti, 1990; Masten, 2014; Zautra et al., 2010). Risk factors are defined as the "indicator of risk for a specified negative or undesirable outcome in a group or population" (Masten, 2014, p. 308), with *risk* defined as "higher probability of a negative (undesired) outcome" (Masten, 2014, p. 308). One of the first ideas identified as part of research into developmental psychopathology (Cicchetti, 1990; Masten, 2014), risk factors are now a common part of the vocabulary in fields of medicine and psychology as well as other fields of study (Zautra et al., 2010). Mother loss during childhood is not only considered an adverse event but can also be considered a specific risk factor for either short-term or long-term psychological issues (Niederkrotenthaler et al., 2012; Tyrka et al., 2008). Vulnerability factors, on the other hand, are the factors that can create susceptibility towards dysfunction or disease (Zautra et al., 2010). Masten (2014) defines vulnerability as "individual or system susceptibility or sensitivity specific to harmful consequences from threats or disturbances; moderator of adversity or risk that results in higher-than-typical negative effects" (p. 309). In general, parental loss during childhood can create vulnerability to future psychological issues (Caserta et al., 1987), especially when combined with additional risk factors such as poor parenting practices and childhood neglect (Nickerson et al., 2011).

Protective factors are those influences that are shown to mitigate the effects of adverse events (Richters & Weintraub, 1990). Masten (2014) defines a protective factor as "moderator of risk associated with better (desired) outcomes when risk is high than when risk is low (associated with statistical interaction effects); a predictor of desirable outcomes particularly in high-risk or adversity contexts" (p. 308). Early findings from resilience research identified three primary components of protective factors, including personality features, family cohesion and lack of

discord, and external support systems (Garmezy, 1993; Ong et al., 2010). For a child who has lost their mother specifically, several protective processes are viewed as important for achieving optimal development (Frydenberg, 2017). A positive relationship with a primary caregiver or attachment figure can be one crucial part of developing resilience (Masten & Coatsworth, 1998). Living and learning in an environment that allows for good cognitive development is another factor, according to Masten and Coatsworth (1998). Self-regulation in attention, emotion, and behavior is an additional characteristic found in the development of resilience (Masten & Coatsworth, 1998).

History of Resilience Research

The study of resilience began as part of a paradigm shift away from studying problems in individuals and communities towards studying what has worked well within individuals and communities (Luthar et al., 2000; Reich et al., 2010). Norman Garmezy, Michael Rutter, and Emmy Werner were three of many researchers who became curious about the numerous at-risk children who did not develop psychological problems in response to potentially harmful childhood environments or circumstances (Luthar et al., 2000; Masten, 2014). This interest in what was eventually called resilience led to a movement towards researching the internal attributes in addition to the external factors of these children, in order to understand the ways in which people can overcome adversity (Fletcher & Sarkar, 2013; Masten, 2014).

Following World War II, psychological researchers focused on the enormous task of identifying what made people mentally ill (Luthar et al., 2000; Rutter, 1990). This led to identification of risk factors for mental illness and further research into classification of high-risk populations (Luthar et al., 2000; Sameroff & Seifer, 1990). Norman Garmezy (1974) was one of the early resilience researchers who began studying people with schizophrenia to determine

causal factors for this illness (Luthar et al., 2000). During this time, Garmezy realized that people with schizophrenia who functioned well had higher premorbid functioning (Sameroff & Seifer, 1990). He, along with Rutter and Anne Masten, then began to study children of schizophrenic mothers to determine risk factors for schizophrenia (Luthar et al., 2000). They found that many children who were born to mothers with schizophrenia were able to do well in life.

During the same era as Garmezy's research, Emmy Werner began studying a cohort of children born in 1955 in Kauai, Hawaii (Luthar et al., 2006; Werner & Smith, 2001), often referred to as the Kauai Study. She and her fellow researchers continued to follow these children into adulthood, providing rich information on the long-term impact of childhood stressors (Werner & Smith, 2001). The development of this cohort was assessed at ages 1, 2, 10, 18, 32, and 40, with the aim of identifying risk factors and stressful life events, as well as protective factors (Werner & Smith, 2001). As Werner and Smith (2001) continued their research, they evaluated developmental milestones such as educational performance; behavioral problems; social interactions; family environment and interactions; and family socioeconomic status. As the participants aged, the evaluation focus shifted to identity development with corresponding assessments into the participants' sense of personal agency and self-esteem, as well as relationships, work, and plans for the future.

Because adult resilience is the focus of this dissertation, the assessments from the Kauai Study for the ages of 31 to 40 are of particular interest. During these ages, potentially tumultuous childhood and early adulthood events either led to a level of stable adaptation as adults or a continued trajectory of instability and unhealthy lives (Werner & Smith, 2001). This Kauai Study cohort experienced major stressors such as birth complications, unstable home lives, as well as undereducated parents with addiction and mental health issues (Werner & Smith, 2001). By age

40, more than 88% of the cohort had completed more than a high school education and were employed. More than 75% had been married at least once and had children (Werner & Smith, 2001). The majority of the cohort expressed satisfaction in life, with hope for the future, both theirs and their children's. A large percentage of this cohort described the life difficulties that they had faced as "learning experiences" (Werner & Smith, 2001, p. 50), lending credence to the idea of resilience within this population.

Eras or Waves of Resilience Research

Masten (2014) described resilience research as being categorized into four waves. The first wave of resilience research involved defining, measuring, and describing the phenomenon of good functioning in individual case studies of children who had suffered some type of traumatic event(s) and who had succeeded more than those who had not experienced adverse situations (Luthar et al., 2006; Masten & Wright, 2010).

The second wave of resilience research looked into the processes of resilience, searching for protective or preventive factors and influences (Masten, 2014). Resilience researchers acknowledged the idea that external forces may play a large part in determining resilience in children (Luthar et al., 2006). Additionally, the understanding of resilience began to shift from being viewed as a stagnant, fixed concept to one that was flexible and that fluctuated over time (Luthar et al., 2006). The impetus of this second wave was the basis of understanding what might protect an individual from developing psychological problems. Once this was understood, intervention programs could be developed that incorporated those protective factors (Masten, 2014).

Wave three of resilience research focused on providing interventions based on ongoing research of the questions from the previous research (Masten & Wright, 2010). This research

continued to identify the effects of risk factors and adverse events while advancing methods of expanding protective factors to increase resilience (Masten, 2014). Current resilience research (wave four) includes a broad range of scientific endeavors, including the study of genetics and dynamic interactions between both internal and external systems (Masten & Wright, 2010). Investigation has also moved beyond the study of child resilience factors to include resilience in adulthood, which is a natural extension of enhancing understanding of resilience over the lifespan (Strümpfer, 1999). Longitudinal studies such as Werner and Smith (2001) help bridge the gap between the study of children and that of adults by continuing the research with their original research cohort throughout adulthood. Current adult resilience research includes biological mechanisms and interactions with psychosocial factors (Feder et al., 2010), as well as emotional (Ong et al., 2010) and personality factors (Skodol, 2010). Adult resilience and loss have been studied in a broad sense, with loss including not only bereavement of any type, but also loss of resources or health (Boerner & Jopp, 2010). However, adult resilience has not been studied in relation to loss of mother during childhood. Boerner and Jopp (2010) emphasize the need for further research to understand resilience in relation to loss throughout the lifespan.

Models of Resilience

Theoretical models used to explain resilience continue to be adapted to the changing definitions and understanding of resilience. Rutter (1990) suggested that viewing vulnerability, risk, and protective measures as processes, rather than individual elements of the overall resilience picture could ameliorate these difficulties. This shift away from identifying specific variables or factors led to research focusing on protective mechanisms and processes as well as vulnerability and risk processes (Rutter, 1990). Resilience began to be viewed as an interactive,

multidimensional concept (Masten & Wright, 2010) with resilience itself seen as a process rather than an endpoint (Masten et al., 2004).

While debate continues over whether resilience is an individual trait or a dynamic process (Reich et al., 2010), current models of resilience tend towards either a person-centered focus or a variable-centered focus (Masten & Wright, 2010). Within the person-centered approaches, resilience is seen as either an interaction with an adverse event or events that creates positive growth within the person, or as an inherent interpersonal trait within the individual (Masten, 2001; Masten et al., 2004). Liu et al. (2017) defined person-centered frameworks of resilience as further divided into three categories, the developmental trajectory model, the coping outcome model, and personality-correlate model, all based on resilience as a trajectory of recovery after a traumatic event. In the developmental trajectory model, resilience is viewed as building on experiences of adversity as a developmental process, with a person becoming more resilient over time (Liu et al., 2017). A coping outcome model is based on the idea that resilience is a form of coping that helps a person return to normal, healthy functioning (Liu et al., 2017). With the personality-correlate or trait model, resilience is seen as an interpersonal trait that can be viewed on a continuum, with resiliency on one end and vulnerability on the other (Liu et al., 2017).

The variable-centered approaches focus on the links between predictors and outcomes (Masten, 2001; Masten et al., 2004). Within these models, resilience is either seen as a variable that can predict successful adaptation, or as a variable that is the outcome of the loss response. (Reich et al., 2010). In other words, if an individual is able to move through the loss, maintain functioning, and progress through life, this resilience may have developed primarily because of the loss, it may be because of the impact of the loss. On the other hand, this process may be due to inherent resilience within the individual (Reich et al., 2010). Both the variable-centered and

person-centered models have evolved over time to include various aspects of influence, creating a multi-layered approach to understanding resilience (Masten, 2014).

When viewing resilience as a multi-faceted construct, it is useful to refer to Bronfenbrenner's bioecological model of interaction between the individual and the environment (Frydenberg, 2017). This model posits that individuals are influenced by, as well as have influence on, the many systems surrounding them, through proximal processes (Bronfenbrenner & Morris, 2006). Developmental outcomes that arise from these processes can be identified as either competence or dysfunction (Bronfenbrenner & Evans, 2000; Bronfenbrenner & Morris, 2006). At the center of the model is the individual (Frydenberg, 2017). The next level of immediate influence surrounding the individual, the microsystem, usually initially includes the immediate family, and then expands to incorporate friends and schoolmates as these become more important in the person's life (Bronfenbrenner & Morris, 2006; Frydenberg, 2017). The interaction between the microsystem and the individual is the first stage of influence for children who experience mother loss. The microsystem eventually evolves to include the closest adult relationships, such as spouses or partners, as the person moves into adulthood. The third level of influence, the mesosystem, includes the more immediate sociocultural influences such as extended family, neighborhood, media influences, parental workplace, and churches (Bronfenbrenner & Morris, 2006; Frydenberg, 2017). The fourth level, the macrosystem, includes the general sociocultural system in which the individual resides. This can include laws, national culture, and historical influences. These tend to influence an individual on a more subtle level but can have a large impact on how well the individual is able to cope with adversity based on their standing within the larger culture (Bronfenbrenner & Morris, 2006; Frydenberg, 2017).

The interrelationships of these levels can influence an individual's ability to manage childhood mother loss and include internal and external factors related to resilience.

Liu et al. (2017) propose a new way of defining and researching resilience, the Multi-System Model of Resilience (MSMR), that relates well to the levels of influence seen in Bronfenbrenner's model of development. MSMR revolves around the idea that resilience needs to be viewed as an interactive and dynamic construct that cannot be explained by linear or one-sided models. Three primary factors are included in this model: Core Resilience, which includes intra-individual factors; Internal Resilience, which includes interpersonal factors; and External Resilience, which includes socio-ecological factors. Models of resilience such as the MSMR can help to expand our understanding of resilience, especially as we find ways to incorporate this type of model in resilience research on different populations.

Resilience and Loss

In 2010 Boerner and Jopp reviewed the literature on adult resilience and general loss, finding little research related specifically to adult resilience and loss, and no reference to mother loss during childhood and adult resilience. Within resilience research, there are varied opinions on how to identify resilience in relation to loss (Bonanno, 2008). When focusing on bereavement, research actually shows a large percentage of people who move through the bereavement process with minimal distress, including children (Boerner & Jopp, 2010). This has led researchers such as Bonanno (2008) to emphasize the recovery process of bereavement, shifting the focus towards resilience in relation to bereavement and loss. When Ben-David and Jonson-Reid (2017) completed a literature review on resilience and loss, they found a significant amount of both quantitative and qualitative research related to resilience in adults who were abused as children, but no research on mother death as a traumatic or adverse event.

Without referencing resilience specifically, Eisenstadt (1978) found that a high percentage of people considered “geniuses” had experienced early parental loss. He proposed a theory that was based on the processes that bereaved children go through in order to cope with parental loss. Eisenstadt’s theory includes the idea that creative genius and psychopathology are both based on some initial underlying similarities, such as vulnerability and poor ego defenses. A combination of internal and external forces then moves some individuals toward either healthy, or in some case, extraordinary functioning, while others move towards developing dysfunctional mental and behavioral problems (Eisenstadt, 1978). A 2015 study by Standing et al. reviewed people who experienced early parental loss and became eminent in their fields. They found that that early parental loss was linked to success in adulthood, with the presence of a mentor as a strong factor assisting in the overall success of the individual (Standing et al., 2015). While not specifically mentioning the concept of resilience, these authors provide additional impetus for exploring links between resilience and mother loss.

Measuring Resilience

Longitudinal studies in the field of resilience research that include adults beyond early adulthood are rare (Werner, 2013), in part because of the inherent difficulties in maintaining a research project for the requisite length of time. Thus, current research into adult resilience at a single point in adulthood provides a way forward when looking at resilience beyond childhood. Using instruments that measure resilience at a single point in time is currently a common research method (Windle et al., 2011). The resilience measurement tools include questions related to the factors generally associated with resilience. These factors include the concepts of hardiness or tenacity, adaptability, management of emotions, ability to form relationships, and spirituality, among others (Davidson & Connor, 2017).

Measuring resilience using quantitative methods involves identifying individual factors that play a part in the overall construct of resilience. Several researchers have taken on this task and have developed instruments intended to measure resilience in individuals (Connor & Davidson, 2003; Friborg et al., 2003, Smith et al., 2008). In 2011, Windle et al. evaluated 19 resilience measures in response to a lack of adequate review of current measurement scales, especially for measuring resilience in adults. They found no "gold standard" among the measurement scales. Their difficulties epitomize the continued challenges of finding objective means for assessing resilience. The following categories were assessed in determining the ratings for the review conducted by Windle et al. (2011): content validity, internal consistency, criterion validity, construct validity, reproducibility (including agreement on repeated measures and reliability), responsiveness, floor and ceiling effects, and interpretability (pg. 3–4). Of the 19 scales reviewed, the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), the Resilience Scale for Adults (Friborg et al., 2003), and the Brief Resilience Scale (Smith et al., 2008) received the best ratings for psychometric properties.

Connor-Davidson Resilience Scale

Developed by Kathryn Connor and Jonathon Davidson, the CD-RISC was formed in response to the need for an easy-to-use measure that could help quantify the idea of resilience (Connor & Davidson, 2003). The original CD-RISC included 25 questions with a five-point rating scale. The scale is a self-report measure, with questions designed to capture factors that relate to resilience. These factors include those related to intrapersonal abilities such as ability to process negative emotions, feelings of personal competence, and ability to continue through adversity (Connor & Davidson, 2003). Examples of interpersonal factors include ability to form and maintain relationships, acceptance of change, and spiritual influences (Connor & Davidson,

2003, p. 80). Currently the CD-RISC is available as the original 25-question, or as a 10- or 2-question version (Davidson & Connor, 2017).

The CD-RISC meets the criteria for a “good” psychological test as defined by Miller and Lovler (2016) in that it measures a variety of behaviors associated with resilience, and there are standardized procedures for administration and scoring (Davidson & Connor, 2017). The CD-RISC compares well to other instruments that measure similar concepts, creating support for the validity of this measure (Davison & Connor, 2017). In general, there is currently no “gold standard” measurement instrument for assessing resilience, however the CD-RISC has proven to be one of the more robust tests available at this time (Windle et al., 2011).

The focus of this dissertation is on the effect of the single adverse event of mother death during childhood. Exploration of additional stressors or adverse events were not included due to limitations inherent in the time and resources associated with dissertation completion.

CHAPTER III: METHOD

Research Questions and Null Hypotheses

1. Is there a relationship between mean resilience scores, as measured by the CD-RISC-25, of the mother-loss group and the general population group?

   Ho1: There is no statistically significant relationship between the mother-loss group and the general population group, as measured by the mean scores of the CD-RISC-25.

2. Is there a relationship between the participants' age at time of mother death and mean resilience scores, as measured by the CD-RISC-25?

   Ho2: There is no statistically significant correlation, as measured by the mean score of the CD-RISC-25, when comparing participants by age at time of mother death.

3. Is there a relationship between participants' resilience mean scores, as measured by the CD-RISC-25, and length of time since their mother's death?

   Ho3: There is no statistically significant correlation between length of time since participants' mother's death and their resilience mean scores, as measured by the CD-RISC-25.

4. Is there a relationship between participants' resilience mean scores, as measured by the CD-RISC-25, and their current age?

   Ho4: There is no statistically significant correlation, as measured by the mean score of the CD-RISC-25, when comparing participants by current age.

Participants

The individuals eligible for this study were from a population that included adults (age 18 and older), living within the United States, whose mothers died when those persons were children (age 18 or younger). The death of the mother had to have been more than five years

prior to the time of the study. There were no limitations on participation other than the ability to read English and the ability to access the survey online. The survey was initially completed by both women and men; however, because of the limited number of male respondents, the final analysis was completed using only the data from women.

Participants were recruited online through a variety of sources (Appendix D). The primary contact person for each Motherless Daughters support group throughout the United States was emailed (Appendices D and E) to request that they post the study announcement or distribute the recruitment flyer at their next meeting (Appendix F). Membership provided access for the researcher to professional social networking sites such as LinkedIn and ResearchGate, where the study announcement was posted. Other social media outlets such as Facebook did not require permission to announce the study and were also utilized. The announcement on social media outlets (Appendix G) included a request for friends and family to further distribute the request for participants. Participants could be included in an optional random drawing for two $25 gift cards by submitting their email address.

The intended sample size was between 120 to 175 participants. According to Smith (n.d.). 120 participants provide statistical power at a 7.5% confidence interval, with a .90 confidence level and .5 standard deviation. The number of initial respondents was 329 and the final number of participants included was 245 women.

Measures and Procedures

Demographic Questionnaire

A demographic questionnaire (Appendix A) developed by this researcher was utilized to gather information about current age, gender, location (state of residence), and age at the time of loss. The data from this questionnaire was used to further describe the sample and investigate the

relationship between the demographics of the mother-loss subjects and resilience scores.

Connor-Davidson Resilience Scale-25

The primary measurement survey instrument chosen for this study was the CD-RISC-25 (Appendix B). As discussed in the previous chapter, the CD-RISC was developed as a way to quantify concepts related to resilience (Connor & Davidson, 2003). The CD-RISC-25 is a self-rating scale with 25 items. The responses are given using a 5-point Likert scale from 0 (not true at all) to 4 (true nearly all the time). The CD-RISC-25 was identified by Windle et al. (2011) as one of the most psychometrically robust resilience measurement scales available at this time. Use of this instrument as part of an online survey is included in the terms of agreement for the CD-RISC-25 (see Appendix C).

Psychometric Properties of CD-RISC

The reliability and validity of the CD-RISC were initially assessed by Connor and Davidson with six separate groups: a community sample (Group 1), primary care outpatients (Group 2), general psychiatric outpatients (Group 3), clinical trial of generalized anxiety disorder (Group 4), and two clinical trials of PTSD (Groups 5 and 6; Connor & Davidson, 2003). To measure construct validity, the CD-RISC-25 was correlated with measures of hardiness, perceived stress, and stress vulnerability, which are all factors related to resilience, as well as measures of disability and social support. CD-RISC scores were correlated with a sexual experience scale to assess divergent validity. Test-retest reliability was assessed using Groups 4 and 5, with no clinical change between two consecutive visits (Davidson & Connor, 2017). Internal consistency was assessed in subjects from Group 1, with Cronbach's α of .89 for the full scale (n1⁄4577); item-total correlations ranged from 0.30 to 0.70 (Connor & Davidson, 2003). The mean scores in this original validation study were U.S. general population: 80.7; primary

care population: 71.8; psychiatric outpatients: 68.0; generalized anxiety: 62.4; and PTSD samples: 47.8/52.8. The total possible mean score for the CD-RISC-25 is 100.

Since 2003, researchers have utilized the CD-RISC with a variety of populations in different countries, including general population samples, adolescents, elders, trauma survivors, various professional or athletic groups, as well as groups with psychiatric disorders and medical health issues (Davidson & Connor, 2017). It has been translated into more than 50 different languages and continues to be used by researchers throughout the world.

Administration and Scoring of CD-RISC-25

The CD-RISC-25 is a self-administered scale and can be performed with paper and pencil or via an online platform. The participant is directed to respond to each statement based on their experiences of the past month or according to how they might have responded to a specific situation if they did not have a related experience. Each item has a possible score from zero to four, with the range for the overall score being 0–100, which is the sum of the individual scores for all items (Davidson & Connor, 2017).

Data Collection Platform

An online survey was chosen for this study in order to access a large number of participants and as diverse a range as possible from throughout the United States in a manner that was cost effective and time efficient. The survey was administered through SurveyMonkey, an online survey and data collection platform designed specifically for professionals, researchers, and individuals to create surveys and collect information via the internet (SurveyMonkey.com).

The SurveyMonkey platform includes assistance in organizing survey results and exporting them into an Excel spreadsheet or Statistical Package for the Social Sciences (SPSS). All surveys hosted through SurveyMonkey are automatically Secure Sockets Layer (SSL)

encrypted, which creates a secure connection between the user and the internet server; this protects the data collected through the surveys from being accessed by outside persons. SurveyMonkey automatically records all IP addresses of survey respondents, deleting data after 13 months. The researcher owns the rights to all survey data.

The items from the CD-RISC-25 were entered into the survey website to match the format of the printed copy of the CD-RISC-25 (Appendix B), with the response matrix matching the original questionnaire. Each item response had a checkbox (circle) that could be clicked on to indicate the participant's response. The participant was only allowed to choose one response per item. All items were accessible as a scrolling web page with items in the order provided on the printed CD-RISC-25.

Online Questionnaire Procedure

Interested individuals were directed to the study's survey link listed on all recruitment materials. After participants clicked on the study link, they were directed to answer the screening (qualifying) questions (Appendix H). When a participant answered "yes" to all of the screening questions, they were directed the next web page that included the informed consent and participation agreement (Appendix H). At the end of the informed consent, participants were directed to give their consent by selecting "I agree to participate in this survey," and then were provided access to the demographic questionnaire (Appendix A). Once the participant answered all the questions on the demographic form, they were directed to the web page containing the items from the CD-RISC-25. Upon completing the CD-RISC-25 survey, the participants were thanked for their participation and instructed that they could submit their email address for a chance to win a $25 gift card.

The researcher closed the survey when the number of responses reached more than twice the minimum intended sample size of 120 and when there had been no additional responses for a month.

Data Analysis

Data from the survey were exported from SurveyMonkey into an Excel spreadsheet in numeric form. The data were screened to include only data from participants who had completed the survey in its entirety. The data from these participants were then exported into SPSS where all the data were coded. The statistical analysis of the data was conducted with the guidance and assistance of a professional statistician.

A total of 329 individuals responded to the survey, with 250 participants completing the survey in its entirety. Two hundred forty-five of the total number of participants identified as female, five identified as male, and none identified as a non-binary gender category. Because of the low number of male participants, the data analysis was completed using only the female participants in order to streamline the process. After a review of the male participants' information, it was concluded that this decision would not impact the overall results of the study. Therefore, from hereafter the analysis and information presented is based on the 245 female participants.

After the data were exported into SPSS (v. 25), it was coded and checked for errors. This involved checking the data to make sure there were no missing cases, and all the values were within the range of possible scores for each variable. No errors were found. The independent variable used was the resilience mean scores of the participants as measured by the CD-RISC-25. The resilience mean score is calculated by adding the Likert scale responses (ranging from 0 – 4) for the 25 items. Mean scores can range from 0 to 100. The dependent variables used for this

study were participant age when their mother died, the length of time since their mother died, and the current age of the participants.

The data for all variables were examined for outliers and assumptions of normality using the Explore option in the SPSS Descriptive Statistics menu. This option provides the basic descriptive statistics in addition to information on the distribution of scores. An outlier is any data point that differs substantially from the other data points (Bethlehem, 2009). For this study, an outlier was defined as any data point that was $\pm$ 3 standard deviations from the mean. Examining the data for normal distribution is a necessary step for deciding whether to use parametric or non-parametric techniques of analysis (Pallant, 2016). Parametric tests tend to be more powerful; however there more assumptions that need to be met in order to use a parametric test. When using a parametric technique, the data needs to be either ratio or interval level data obtained through random sampling. Additionally, there is an assumption that the data from the two groups are homogenetic, or in other words, there is similar variability of scores within each group (Pallant, 2016).

Statistical Tests Used for Data Analysis

For Ho1, a single-sample *t*-test was used to compare the difference in mean resilience scores between the mother-loss group and the general population group to test the null hypothesis. A single sample *t*-test is a parametric technique used to compare the mean of one group with a known mean (Glen, 2015). A *t*-test provides a *t*-value which indicates the amount of difference between the groups. If the value is less than or equal to .05, there is a significant difference between the group scores. If the value is above .05, there is no significant difference (Pallant, 2016).

Correlation analyses were completed to test the three null hypotheses regarding relationships between the participants' resilience mean scores and the dependent variables of participant age when their mother died, the length of time since their mother died, and the current age of the participants. Pearson product-moment correlation procedure is a parametric technique used to test the relationship between two variables. The assumptions necessary to use the Pearson correlation technique are similar to those mentioned previously, including using interval or rational data that is normally distributed with similar variability in scores for both variables (Laerd Statistics, 2018a). The relationship between the variables must also be linear (Pallant, 2016). Pearson correlation provides the correlation coefficient *r* to identify the direction and strength of relationship between the variables. Pearson's *r* can range from -1 and +1, with the direction of the relationship indicated by the positive or negative sign. The value of Pearson's *r* indicates the strength of the relationship, with a higher number (in either direction) showing a stronger relationship. Spearman's Rank Order Correlation is the non-parametric alternative which can be used when the data is not normally distributed. Spearman's correlation provides the correlation coefficient *rho*, with the same parameters as Pearson's r (Laerd Statistics, 2018b). The procedure for requesting a correlation analysis on SPSS was used to provide both Pearson *r* as well as the Spearman *rho* (Pallant, 2016).

CHAPTER IV: RESULTS

Descriptive Statistics

Participant Demographics

Participants for this study included 245 women whose mothers had died when the participants were children. All of the participants were over the age of 18 and were residing in the United States at the time of the study.

The current age of participants ranged from 21 to 74 (Mean = 48.08; SD = 11.34). Age at time of mother loss ranged from 0 to 18, which was the entire age range identified for this survey. The mean age at time of mother loss was 11.37 (SD = 4.33). The length of time since mother death was calculated by subtracting current age from age at time of mother death. This data ranged from five to 66 years, with a mean of 36.71 (SD = 12.65; Table 1).

Table 1

Demographics of Sample

Demographic	Mean	SD	Range
Current Age	48.08	11.34	21-74
Age at time of mother loss	11.37	4.33	0-18
Length of time since mother loss	36.71	12.65	5-66

Participants responded from 43 of the 50 states within the United States. The states in which the participants resided were categorized into four regions, (U.S. Census Bureau, n.d.). The largest group of participants was from the Northeast (29%), and the smallest group was from the West (19%). The highest number of respondents (41) was from the state of California, while 14 states included only one respondent per state (Table 2).

Table 2

Region of Residence

	n	%
Northeast (Connecticut, Delaware, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont)	72	29.4
Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Ohio, Wisconsin)	62	25.3
South (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia)	64	26.1
West (Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington)	47	19.2

Statistics and Data Analysis

The responses of the 245 women participants were used to answer the four research questions. The variables used were resilience of the participants as measured by the CD-RISC-25, the current age of the participants, their age when their mother died, and the length of time since their mother died (Table 3). These variables were used in a one-sample *t*-test to test the first null hypothesis, and Spearman's Rank Order Correlation and Pearson product-moment correlation procedures to test the other null hypotheses.

Table 3

Description of Variables Used in Analyses of Research Questions

Variable	Min	Max	M	SD
Resilience of participants	33	97	70.1	14.1
Age of participants	21	74	48	11.3
Age of participants when mother died	0	18	11.3	4.33
Length of time since mother died	5	66	34.7	12.6

Research Question One

Is there a relationship between mean resilience scores, as measured by the CD-RISC-25, of the mother-loss group and the general population group?

Ho1: There is no statistically significant correlation between the mother-loss group and the general population group, as measured by the mean scores of the CD-RISC-25.

A single-sample-*t*-test was conducted to compare mean resilience scores of the mother-loss group to the mean score of the randomly drawn population used by the CD-RISC authors (80.4). The results (Table 4) show a significant difference between the mother-loss group (M = 70.17, SD = 14.15) and the randomly drawn population sample (M = 80.4, SD = 12.8; $t(244) = -11.32$, $p < .001$). The magnitude of the difference in the means (mean difference = -10.32 , 95% CI: -12.01 to -8.45) was very large (eta squared = .28). This means that the overall resilience level of the mother-loss group was significantly lower that than the resilience level of the general population group. Because of these results, the null hypothesis (Ho1) was rejected.

Table 4

Comparison of Resilience Scores Between Mother-Loss Group and Randomly Drawn Population Sample

							95% confidence interval of the difference	
Variable	M	Test value	*t*	*df*	*p*	Mean difference	Lower	Upper
Resilience	70.17	80.40	-11.32	244	< .001	-10.23	-12.01	-8.45

Research Question Two

Is there a relationship between the participants' age at time of mother death and mean resilience scores, as measured by the CD-RISC-25?

Ho2: There is no statistically significant correlation, as measured by the mean score of the CD-RISC-25, when comparing participants by age at time of mother death.

The data for the dependent variable of age at time of mother death did not fit a normal distribution pattern, thus a non-parametric test was chosen to test this null hypothesis. The relationship between resilience (as measured by the CD-RISC-25) and age at time of mother death was investigated using Spearman's Rank Order Correlation, which provides the correlation coefficient *rho*. There was no significant correlation between the two variables, *rho*(244) = .049, *p* = .44. The results also indicated that the amount of variance, also known as the coefficient of determination, was .24%, meaning that there the age at time of mother death had very little effect on resilience scores (Table 5). Based on these results, the null hypothesis (Ho2) was accepted.

Table 5

Correlation of Resilience and Age at Time of Mother Death

			Resilience Score	Age at mother death
Spearman's *rho*	Resilience mean score	Correlation coefficient	1.000	.049
		Sig. (2-tailed)		.441
		n	245	245
	Age at mother death	Correlation coefficient	.049	1.000
		Sig. (2-tailed)	.441	
		n	245	245

Research Question Three

Is there a relationship between participants' resilience mean scores, as measured by the CD-RISC-25, and length of time since their mother's death?

Ho3: There is no statistically significant correlation between length of time since participants' mother's death and their resilience mean scores, as measured by the CD-RISC-25.

The relationship between resilience mean scores (as measured by the CD-RISC-25) and length of time since mother death was investigated using Pearson product-moment correlation coefficient. The results of the analysis (Table 6) show no significant relationship between resilience and the length of time since the participants' mother's death, $r(244) = .099$, $p = .12$. The amount of variance was .0098, meaning that less than 1% of the variance in resilience scores can be attributed to length of time since mother death. Because of these results, the null hypothesis (Ho3) was accepted.

Table 6

Correlation of Resilience and Length of Time Since Mother Death

		Resilience mean score	Length of time
Resilience mean score	Pearson correlation	1	.099
	Sig. (2-tailed)		.124
	n	245	245
Length of time	Pearson correlation	.099	1
	Sig. (2-tailed)	.124	
	n	245	245

Research Question 4

Is there a relationship between participants' resilience mean scores, as measured by the CD-RISC-25, and their current age?

Ho4: There is no statistically significant correlation, as measured by the mean score of the CD-RISC-25, when comparing participants by current age.

Pearson Product Moment correlation procedure was also used to determine the relationship between the participants' resilience (as measured by the CD-RISC-25) and their current age. The results of the analysis (Table 7) showed a low positive correlation between these two variables, $r(243) = .13$, $p = .04$, indicating that as the participants' ages increased, so did their resilience scores. The results show that while only 1.8% of the difference in resilience can be attributed to participants' age, it is significant enough to reject the null hypothesis (Ho4).

Table 7

Correlation of Resilience and Current Age

		Resilience mean score	Current Age
Resilience mean score	Pearson correlation	1	.134*
	Sig. (2-tailed)		.036
	n	245	245
Current Age	Pearson correlation	.134	1
	Sig. (2-tailed)	.036	
	n	245	245

*Correlation is significant at the 0.05 level (2-tailed).

Summary of Findings

The findings of the data analysis indicated that there was a significant difference between the mean resilience scores of the mother-loss group and the population group. The mean

resilience scores for the mother-loss group were significantly lower than the population group. Therefore, the null hypothesis for the primary research question, that there would be no difference in mean resilience scores, was rejected.

The null hypothesis for the second research question, that there would be no statistically significant correlation between the resilience mean scores based on participant age at time of mother death, was not rejected as no difference was found among the identified age groups.

The third research question included a null hypothesis that also predicted there would be no statistically significant correlation between length of time since the mother's death and the participant's resilience mean scores. The statistical analysis showed no differences in the time since mother loss and the resilience scores, therefore the null hypothesis stands.

For the fourth research question, the null hypothesis was there would not be a statistically significant correlation between the participant's current age and their resilience mean scores. This null hypothesis was rejected, as there was a slight positive relationship between the participant's current age and their resilience scores.

CHAPTER V: DISCUSSION

Discussion

The primary purpose of this study was to explore levels of resilience in adult women whose mothers died when the participants were children. This question was chosen because there is a tacit, and perhaps even explicit, assumption in the literature that mother loss has a negative effect on individuals throughout their lifetime. However, there is minimal research supporting these claims other than studies focused on psychopathology (e.g., Appel et al., 2016; Berg et al., 2016). This lack of research leads to questions about the broader impact of mother loss. Are there other ways in which mother loss affects an individual? If research points towards a negative impact overall, what is that impact and how do we find out more about it? What exactly is the nature of the influence of mother loss? Where does the construct of resilience in this population fit into this broader picture? This dissertation begins to lay the groundwork for understanding resilience and mother loss so we can then explore these and other questions in future research projects.

In addition to exploring basic resilience levels within the mother-loss population, this study also explored resilience score differences within the sample group depending on (a) age at the time of mother loss, (b) length of time since the death of their mother, and (c) current age. The CD-RISC-25 and a simple demographic survey were used to obtain the data for this survey. The 245 women who completed this study resided throughout the United States, ranging in age from 21 to 74. No ethnic or socioeconomic details were gathered for this study.

Lower Resilience Scores

The most noteworthy result of this study came from the primary research question. The data showed a significantly lower resilience score for the mother-loss group than that of the

general population group. This finding supports the idea that has previously been assumed in the literature that the death of mother during childhood has a negative effect throughout an individual's life. The sizeable difference between the scores of the general population and the mother-loss group clearly warrants further investigation and study of what might cause a reduction in resilience in this population. For example, would these results be the same with the death of the father? Or is the death of the mother the significant part of the equation? If the death of the mother is the key factor, what are the reasons for this significant impact?

Perhaps the results could be attributed to the traumatic impact of mother loss during childhood, similar to children who suffer other types of traumatic events that continue to impact them throughout their lives (Campbell-Sills et al., 2009). The field of resilience research is based on studying children who have lived through traumatic events and grown to be successful adults. Additional research could look further into resilience and mother death with a factor analysis or item-by-item analysis of resilience scores to identify which aspects of resilience are most influential. As a reminder, a factor analysis was not completed with the CD-RISC-25 because there is no consistent support for specific factors with this measure (Davidson & Connor, 2017). Additional questions arise when we look specifically at the relationship between mother death and resilience in adult women. What does a mother give to a child that the loss would cause such a significant impact? Is it related to basic caretaking? Is it more about the attachment providing the sense of security and safety, and when that is taken away from the child, it takes away the basis for resilience? Is the importance of mother so ingrained into our sociocultural being that we cannot adapt and thrive without the presence of a mother? We do have answers to these questions from viewpoints such as attachment theory, developmental models, and developmental

psychopathology. However, to answer these questions from the perspective of resilience and mother death during childhood requires further research that integrates these concepts.

Many other factors that might affect resilience in the mother-loss population were not considered in this dissertation. Perhaps the most obvious factor is that of a substitute mother figure. The mother is viewed in our society as the primary caretaker and attachment figure for children; however, the loss can be mitigated if there was a grandparent, stepmother, aunt or uncle, or other significant person to take the place of overall caregiving (Bowlby, 1960, 1982; Masten, 2013). Likewise, if the surviving parent was able to fulfill the caretaking role without too much difficulty, this could also provide a buffer that might enhance resilience. Other disruptions in the household such as changes in socioeconomic status or household location might also be mitigated by either the presence of a supportive mother figure or the ability of the surviving parent to manage changes with the least amount of disruption possible.

Healthy grieving, which can be supported by the adults in the child's life, is another component that may impact the long-term resilience of mother-loss individuals. Child bereavement research shows that children are more likely to have difficulty grieving their parental loss if the surviving parent struggles with the grieving process and particularly if the child is not allowed to process their grief (Koblenz, 2016). Thus, it is possible that disruption in a healthy grief process could affect the long-term resilience throughout adulthood.

Age at Time of Mother Death

In relation to the second research question, it was anticipated that there might be differences associated with the death of mother during particular developmental stages based on the concept of developmental timing. A traumatic event during childhood often has different consequences depending on the developmental level of the child (Christ, 2000; Zelazo, 2013).

For example, Bifulco et al. (1992) found a link between depression in adults whose mothers died prior to age six, while Coffino (2009) found a significant connection between depression and mother loss between the ages of five years old and second grade (approximately seven years old). Thus, the lack of significant differences found in this study leads to additional questions about resilience and age differences that could be explored in future research.

Length of Time Since Mother Death

No differences were found between the length of time since mother loss and resilience scores. The requirement for this study was that five years must have passed since the death of the participant’s mother. This time period would allow for the majority of participants to have moved through the initial and longer-term “normal” grief and mourning process (Bylund-Grenko et al., 2016; Prigerson et al., 1995). One explanation for these results is that the women have established a way of coping, or a set schema within a lower resilience level that has stabilized over time. As with the other results from this dissertation, this information leads to questions that could be explored with further research, such as if there are any differences based on any specific aspects of resilience.

Increased Resilience With Age

For the fourth research question, small correlational differences were found as age increased. This result is similar to the findings of Werner and Smith (2001), who found that most adults gained resilience as they became older, as evidenced by successful adaptation and contentment with their lives. Terrill et al. (2016) also found that older age was associated with increased resilience when studying resilience in adults with disabilities. Some of the possible reasons for increased resilience include fewer demands on time and energy as an individual

moves out of middle age into older adulthood (Terrill et al., 2016), as well as an overall increase in emotional regulation and problem-solving abilities (Gooding et al., 2012).

Limitations

Originally, this study was designed to evaluate resilience scores in both women and men but did not garner enough responses from men. The ability to draw on a broader base of participants in a future research endeavor might increase the number of male participants, which would address this obvious limitation of this study. In addition, the participants in this study were largely drawn from women who belonged to Motherless Daughters support groups throughout the United States. The choice of participating in a support group creates a self-selection bias that may have influenced the results. Thus, further research should include drawing from a wider scope of participants.

Another limitation includes the fact that this study used only one instrument for measuring resilience. This design was intentional in order to keep the results focused solely on the topic of resilience and mother death during childhood. However, additional measures could have been used to provide a broader range of results related to this population and resilience, such as a measure related to complicated grief (Prigerson et al., 1995).

Online surveys are beneficial due to the ease of use and lower cost for the researcher. However, this is also a limitation for this study. Although the majority of people in the United States have access to the internet, the type of internet access as well as comfort level with using the internet for a survey might have prevented some potential participants from completing the survey. Black and Hispanic individuals are more likely to use phones for internet access (Perrin & Turner, 2020) which can be a limiting factor in survey completion rates for these populations. In addition, Black, Hispanic, lower income, and rural households are all less likely to have high-

speed internet access (Anderson & Kumar, 2019; Perrin, 2019) which can create an additional barrier to completing an online survey.

Suggestions for Future Research

The results of this study provide many additional avenues for further research, some of which have already been discussed. In addition, further studies could explore if the existence of a substitute mother figure affects long-term resilience. A meta-analysis by Lee et al. (2013) found that protective factors provided the largest impact on resilience when compared with risk factors and demographic factors. Thus, exploring protective factors such as positive attachment figures and appropriate grief support would add to the understanding of resilience in this population. One option considered for this dissertation was the relationship between adult attachment and current levels of resilience in this population which could lead to additional information helpful for both research and clinical treatment. Investigating other protective factors such as stability within the household, socioeconomic stability, and supportive social networks could also be part of future research.

Developmental psychology research continues to explore the interconnectedness between significant events in a child's life and both external and internal factors that affect their psychological development, such as stress tolerance and social/cognitive functioning as well as social relationships and culture (Zelazo, 2013). Mother-loss research would benefit from including many of these developmental factors in relation to resilience as adults. Some questions related to this potential research include exploring the balance between risk and protective factors focusing on family resilience would provide another possible research avenue (Shulman, 2016), perhaps within the framework of a longitudinal study beginning with the death of mother, measuring both family and individual resilience throughout childhood and adulthood.

In summary, future research could be focused on many different directions, such as from the viewpoint of developmental or attachment theories, bereavement and complicated grief processes, or exploring differences based on sex/gender, race/ethnicity, and socioeconomic status. Because we now know more about the size and nature of the effect of mother loss and resilience, we can continue research with a structured approach to understand more about this relationship.

Resilience is viewed as the ability to “bounce back” from adversity (Frydenburg, 2017). The childhood death of a mother is an adverse event that can affect all areas of an individual’s life thus it is intuitive to believe that early mother death would cause long-term effects on the overall resilience levels of the individuals. This study begins the exploration of these effects and provides a framework for future research. With the results of this study, we now know that childhood mother death is a factor in the overall levels of resilience for this sample. Although the sample is not representative of this population group, this provides a basis for further research that will increase our understanding of mother loss during childhood.

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Appendix A

Demographic Questionnaire

1. What is your current age? ____________

2. Which is your identified gender?

☐ Female
☐ Male
☐ Transgender/Unsure/questioning
☐ Other: write in: _______________________

3. In which state do you live? _________

4. How old were you when your mother died? __________

Appendix B

Connor-Davidson Resilience Scale 25 (CD-RISC-25)

Copy of the CD-RISC-25 removed due to copyright issues.

Appendix C

Connor-Davidson Resilience Scale (CD-RISC) Use Agreement

Dear Liz:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). We are pleased to grant permission for use of the CD-RISC in the project you have described under the following terms of agreement:

1. You agree (i) not to use the CD-RISC for any commercial purpose unless permission has been granted, or (ii) in research or other work performed for a third party, or (iii) provide the scale to a third party without permission. If other colleagues or off-site collaborators are involved with your project, their use of the scale is restricted to the project described, and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.

2. You may use the CD-RISC in written form, by telephone, or in secure electronic format whereby the scale is protected from unauthorized distribution or the possibility of modification. **In all presentations of the CD-RISC, including electronic versions, the full copyright and terms of use statement must appear with the scale. The scale should not appear in any form where it is accessible to the public, and should be removed from electronic and other sites once the project has been completed.**

3. Further information on the CD-RISC can be found at the www.cd-risc.com website. The scale's content may not be modified, although in some circumstances the formatting may be adapted with permission of either Dr. Connor or Dr. Davidson. If you wish to create a non-English language translation or culturally modified version of the CD-RISC, please let us know and we will provide details of the standard procedures.

4. Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items respectively. When using the CD-RISC 25, CD-RISC 10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale.

5. A student-rate fee of $ 20 US is payable to Jonathan Davidson at 325 Magnolia Drive, Chapel Hill, NC 27517, USA, either by PayPal (www.paypal.com, account mail@cd-risc.com), cheque, bank wire transfer (in US $$), international money order or Western Union.

6. Complete and return this form via email to mail@cd-risc.com.

7. In any publication or report resulting from use of the CD-RISC, you do not publish or partially reproduce items from the CD-RISC without first securing permission from the authors.

If you agree to the terms of this agreement, please email a signed copy to the above email address. Upon receipt of the signed agreement and of payment, we will email a copy of the scale.

For questions regarding use of the CD-RISC, please contact Jonathan Davidson at mail@cd-risc.com. We wish you well in pursuing your goals.

Sincerely yours,

Jonathan R. T. Davidson, M.D.
Kathryn M. Connor, M.D.

Agreed to by: Elizabeth Schmitz-Binnall

[signature] 11/6/17
Signature (printed) Date

PsyD Student
Title

Antioch University Seattle
Organization

Appendix D

Recruitment Site List

Motherless Daughter Support Groups
(http://hopeedelman.com/support-groups/?type=support_group&filter_country=US&pg=1)
Locations:
Akron, Ohio
Atlanta, Georgia
Austin, Texas
Baltimore Motherless Mothers, Baltimore, Maryland
Boston Area Motherless Daughters, Boston, Massachusetts
Charlotte Motherless Daughters, Charlotte, North Carolina
Chicago Loyola Hospital, Chicago, Illinois
Chicago Motherless Daughters, Chicago, Illinois
Cleveland Motherless Daughters, Cleveland, Ohio
Columbus Motherless Daughters, Columbus, Ohio
Connecticut Motherless Daughters, Wilton, Connecticut
Denver, Colorado
Dubuque Motherless Daughters, Dubuque, Iowa
Family Lives On, Philadelphia, Pennsylvania
Green Bay Motherless Daughters, Green Bay, Wisconsin
GroundNote Counseling, Seattle, Washington
Henderson, Nevada
Las Vegas, Nevada - United States
Hospice & Community Care, Lancaster, Pennsylvania
Houston Area Motherless Daughters, Houston, Texas
Hudson Motherless Daughters, Hudson, New York
Indianapolis Motherless Daughters, Indianapolis, Indiana
Kentfield & Marin Motherless Daughters, Kentfield, Lagunitas, California
Las Vegas Meetup Group, Las Vegas, Nevada
Miami Beach Motherless Daughters, Miami Beach, Florida
Mid-Michigan Motherless Daughters, Lansing, Michigan
Mill Valley/San Francisco Motherless Daughters, Mill Valley and San Francisco, California
Twin Cities Motherless Daughters, Minneapolis/St. Paul — Twin Cities
Missing Mother, Tallahassee, Florida - United States
Motherless Daughters – East Bay, Oakland, California
Motherless Daughters Grief Group, Lincoln, Nebraska
Motherless Daughters Ministry, Cincinatti, Ohio - United States
Motherless Daughters of Ithaca (NY), Ithaca, New York - United States
Motherless Daughters of Los Angeles, Los Angeles, California
Motherless Daughters of New England, Boston, Maryland - United States
Motherless Daughters of New Jersey, Edison, New Jersey - United States
Motherless Daughters of New Orleans, New Orleans, Louisiana
Motherless Daughters of Orange County, Orange County, California
Newark, Ohio
Northern New Jersey Motherless Daughters, Montclair, New Jersey
Northern Virginia Motherless Daughters, Vienna, Virginia
NYC Motherless Daughters, New York, New York

Oakland Motherless Daughters, Oakland, California
Omaha Motherless Daughters, Omaha, Nebraska
Orlando Metro Motherless Daughters, Orlando, Florida
Phoenix, Arizona
Pittsburgh Motherless Daughters, Pittsburgh, Pennsylvania
Portland, Maine
Remembering Our Mothers — Annual Luncheon, Louisville, Kentucky
Saint Louis Motherless Daughters, Saint Louis, Missouri
San Gabriel Valley Motherless Daughters, San Gabriel Valley (Los Angeles), California
Southeast Michigan Motherless Daughters, Royal Oak, Michigan
The Lowell Area Motherless Daughters, Lowell, Maine
The San Francisco Motherless Daughters, San Francisco, California
The San Jose Motherless Daughters Group, San Jose, California
The Twin Cities Motherless Daughters Group, Saint Paul, Minnesota
Torrance, California
Triangle Motherless Daughters, Raleigh, North Carolina
Troy Motherless Daughters, Troy, Michigan
D.C. Urban Moms, Washington D.C., Washington, District Of Columbia

Professional Membership Organizations
ResearchGate.net
Academia.com
American Psychological Association (APA)
APA Division
APA Division 38 (Health Psychology)
APA Division 12 (Society of Clinical Psychology)
APA Division 32 (Society for Humanistic Psychology)
Washington State Psychology Association
Collaborative Family Healthcare Association

Colleges and Universities
Antioch University
Central Washington University
Pierce College
Carroll College
Eastern Washington University
University of Puget Sound

Social Media and Internet sites
Facebook
Therapy groups on Facebook
LinkedIn.com
Twitter
Craigslist
Call for Participants (https://www.callforparticipants.com)
Psychological Research on the Net (https://psych.hanover.edu/research/exponnet.html

Appendix E

Recruitment Flyer

Mother Loss Study

Did your mother die before you turned 18 years old?

Would you like to participate in an anonymous online research study?

The purpose of this study is to find out about resilience in people whose mothers died when they were children.

How to participate in this study: It is a simple online questionnaire that includes some basic information and 25 questions. You can complete the questionnaire by going to: (insert link to survey)

For questions, please contact the researcher, Elizabeth Schmitz-Binnall, at

Appendix F

Email Copy

Hello, my name is Elizabeth (Liz) Schmitz-Binnall. I am completing my doctoral degree in clinical psychology at Antioch University Seattle. My dissertation research focuses on resilience in adults whose mothers died when they were children, and I am currently seeking participants for an online survey. I am asking permission to post a brief description of my study and a link to the associated survey on the (listserv or website), as follows:

*Alternate copy for support groups: I was also hoping you might post or distribute the attached flyer at your next Motherless Daughters group meeting.

Seeking adults whose mothers died when they were children

The purpose of this study is to find out about resilience in people whose mothers died when they were children.

Participation is confidential.

Participation requirements:

The inclusion criteria for participation in this study are as follows:

- Over 18 years of age
- Mother died during childhood
- More than 5 years since death of mother
- Living in the United States
- Internet access

Full participation in the study would involve the following:

- Complete of an online survey; estimated complete time 15-20 minutes

Link to complete survey: (survey link)

For more information, please contact Elizabeth Schmitz-Binnall at [redacted].[redacted]

Antioch University Seattle IRB #00000; Approved (DATE)
Elizabeth Schmitz-Binnall, Psy.D. Student

Appendix G

Social Media Copy

I am currently recruiting participants for my dissertation project on resilience in adults whose mothers died when they were children. I am looking for adults in the U.S. whose mothers died more than 5 years ago. This is an Internet survey that will be completely anonymous. If you know anyone (either women or men) whose mothers died when they were children, please share this link with them (survey link). They will be asked to complete a short survey with some basic information and 25 items. Please do NOT tell me if you or someone you know participates in the survey. Any questions can be directed to me at [redacted] Thank you! ☺

Appendix H

Screening Questions

This is the first step toward determining if you are eligible to take the main survey. This part has 4 questions. You can quit the survey at any time if you decide not to complete it. Thank you for your participation.

1) Are you at least 18 years old? ☐ Yes ☐ No

2) Did your mother die before you were 18 years of age? ☐ Yes ☐ No

3) Has it been more than 5 years since your mother died? ☐ Yes ☐ No

4) Do you live in the United States? ☐ Yes ☐ No

Appendix I

Informed Consent Form

Study title: Resilience in adults who experienced early mother loss

Principal Researcher: Elizabeth Schmitz-Binnall, Psy.D. Student, Antioch University Seattle

You are invited to participate in a research study. The purpose of this research study is to explore levels of resilience in people who lost their mothers to death during childhood. This research study is a requirement for a doctorate in clinical psychology program at Antioch University Seattle.

You are being asked to participate because your mother died when you were a child, you are an adult, it has been more than 5 years since your mother died, and you live in the United States.

If you participate in this research, you will be asked to provide some basic demographic information (gender, current age, age at time of your mother's death, and location – what state you live in). You will then be asked to answer 25 questions that have an answer scale from 0 (*not true at all)* to 4 (*true nearly all the time)*.

The risk inherent in this study is the potential stress of emotional topics coming up within the interview process. Know that thinking of personal experiences related to unpleasant memories can be uncomfortable or overwhelming for some people.

If, while answering the survey questions, you become overwhelmed by these feelings you are encouraged to: reach out to a psychotherapist, call your local crisis hotline, call the National Suicide Hotline at 1-800-273-8255and/or access online crisis chat at http://crisisclinic.org/find-help/crisis-chat/. A potential benefit of participation in this study may include the personal satisfaction of being part of a research study.

Your participation will take approximately 15-20 minutes.

Your participation in this research is strictly voluntary. You may refuse to participate at all, or choose to stop your participation at any point in the research, without fear of penalty or negative consequences of any kind.

The information/data you provide for this research will be treated confidentially, and all raw data will be kept in an online secured data file by the principal investigator. Results of the research will be reported as aggregate summary data only, and no individually identifiable information will be presented.

You also have the right to review the results of the research if you wish to do so. A copy of the results may be obtained by contacting the principal investigator at the address below:

Elizabeth Schmitz-Binnall, email:

There will be no direct or immediate personal benefits from your participation in this research.

The results of the research may contribute towards a better understanding of people who lost their mother during childhood.

The primary researcher conducting this dissertation study is Elizabeth Schmitz-Binnall, Psy.D. Student. The supervising dissertation chair is Dana Waters, Psy.D., who can be contacted at [redacted] If you have questions later, you may contact Elizabeth Schmitz-Binnall at [redacted]

This research study has been reviewed and certified by the Institutional Review Board, Antioch University, Seattle. For research-related problems or questions regarding participants' rights, please contact Antioch University's Institutional Board Chair, Mark Russell, Ph.D. at [redacted]

Electronic Consent:
If you wish to participate in this study, please select the "**I agree to participate in this study"** button below. Please print a copy of this consent form for your records. Clicking on the "Agree" button indicates that:

a) You are 18 years of age or older.
b) Your mother died before you were 18 years old, and more than 5 years ago.
c) You are currently living in the United States of America.
d) You are giving electronic consent to participate in this study.
e) You have read and understood the above information.
f) You understand that your participation in this study is voluntary and that you may withdraw from this study at any time without consequences by exiting the site.
g) You understand that you may print a copy of this consent form for your records.
h) You understand that there is a list of resources available to you at (website).

☐ **I agree to participate in this study.** I understand that by clicking "I Agree", I am electronically consenting to participate in this study. I understand that my participation in this study is completely voluntary and that I may withdraw from this study at any time. I understand that I may print a copy of this consent form for my records.