

Siblings of Young Homicide Victims: Comparisons with a Matched Sample

By

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B.A., The University of Victoria, 2010

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Abstract

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Does the murder of a sibling affect the health and well-being of siblings over the longer term? Between 2009 and 2013 there was an annual average of 562 homicides in Canada (Statistics Canada, 2013) and 14,767 in the United States (FBI, 2013). Anecdotal report and a small body of literature suggest siblings' lives are impacted by the murder of a sister or brother and that there are lasting effects. For the most part, however, siblings of murder victims are largely ignored by research. Studies that do exist rely mainly on qualitative data from small, non-representative, and mixed samples. This study used a quasi-experimental design to compare data previously obtained from 67 Canadian and American homicide-bereaved siblings with data from 80 comparison participants, matched as a group on age and sex. Groups were compared on measures of SES, overall general health, subjective distress, perceived social support, life-satisfaction, recollections of growing up, and self-worth. Homicide-bereaved siblings reported significantly higher levels of current subjective distress, less perceived social support, and less positive recollections of growing up in the years following a sibling's murder. Despite ongoing subjective distress, homicide-bereaved siblings reported self-worth and life satisfaction equivalent to comparison participants. Preliminary data support the continued theoretical and applied research exploring the overlap of trauma and grief in homicide bereavement and of intervention protocols. Findings from this study will inform criminal justice professionals, victim service workers, counsellors, family members, friends, and community members supporting those who have lost a brother or sister to murder.

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Chapter One

INTRODUCTION AND LITERATURE REVIEW

The notion that someone can intentionally intrude into my life, cause pain to one I hold dear, rob that person of their life and me of them and that there is absolutely nothing I can do to prevent it...this is powerlessness, vulnerability and anxiety at its height (Rynearson; as cited in Glasgow, 2013).

Violence impacts every country and community around the world. The average global homicide rate is 6.2 per 100,000 population (United Nations, 2014). In 2013 the murder rates in Canada and the United States, respectively, were 1.44 (Statistics Canada, 2014) and 4.5 (FBI, 2013). Between 2009 and 2013, the annual average numbers of homicides were 562 in Canada (Statistics Canada, 2013) and 14,767 in the United States (FBI, 2013). The majority of homicides in Canada are committed by acquaintances (e.g., a casual acquaintance, close friend, or dating partner) (44%) or family members (35%) of the victims (Statistics Canada, 2012).

By definition, homicide includes first-degree murder, second-degree murder, (nonnegligent) manslaughter, and infanticide. Murder is defined by the Canadian Criminal Code as the deliberate killing of a person (Government of Canada, 2015a) and, by the United States Federal Bureau of Investigation (FBI), as the “wilful killing of one human being by another” (FBI, 2013). For the purposes of this thesis, the terms homicide and murder are used interchangeably, where homicide refers strictly to culpable homicide. Culpable homicide is murder (Government of Canada, 2015b).

The sudden and often unpredicted experience of losing a loved one to homicide has a severe impact on the mental and physical health of surviving family, friends (Clements & Burgess, 2002; Murphy et al., 2003), and siblings (Applebaum & Burns, 1991; Freeman, Shaffer, & Smith, 1996; Pretorius, Halstead-Cleak, & Morgan, 2010). Although there is a sizable research body regarding the experiences of individuals who have lost a loved one to murder, the majority of these studies utilized anecdotal and qualitative evidence from small, non-representative samples (e.g., King, 2004). Many studies used mixed samples of parents, spouses, friends, children, siblings, and/or grandparents (e.g., Cowels, Murphy, & Saunders, 1988; Mezey, Evans, & Hobdell, 2002); some combined those who had lost a loved one to homicide with those who had lost their loved ones to other types of sudden violent causes, such as suicide (e.g., Applebaum & Burns, 1991); and others have reviewed the existing literature (e.g., Asaro & Clements, 2005). Barely any studies have focused singularly on the experiences of the siblings of homicide victims. As noted by Asaro and Clements (2005), the developmental milestones of childhood, adolescence, and early adulthood are compromised by losing a sibling to murder. Furthermore, although helpful, anecdotal and qualitative evidence only contributes in part to the affecting of policy and practice. For all these reasons, the purpose of this thesis is to explore indicators of health and well-being in young (early adulthood and younger) siblings of murder victims compared with a comparison group of non-murder bereaved siblings matched as a group on sex and current age.

In an attempt to inform policy, victim support services, and clinical practice with regard to the siblings of murder victims, the objectives of this study were: (a) to contribute a quantitative study to the small number of qualitative studies regarding siblings of murder victims, and (b) to compare the health and well-being of siblings bereaved by murder in

childhood, adolescence, or young adulthood to a comparison group. The primary research question was: Does the murder of a sibling have health and well-being implications for surviving siblings over the longer term such that murder-bereaved siblings are distinguishable from a comparison group on measures of general health and well-being?

Before providing a summary of my review of the literature, the developmental context for this research is provided through a brief overview of developmental psychology regarding childhood, adolescence, and early adulthood. Next discussed are how the concepts of general health and well-being are currently described in the literature, and how they are used in research, health promotion, and intervention formats. Following this the literature pertaining to the loved ones of murder victims is described and reviewed. Specifically, common reactions to the trauma and loss experienced by this population of people are outlined.

Childhood, Adolescence, and Early Adulthood

Erikson (1997) believed that human development was ongoing and cumulative from birth to death, unfolding through eight discrete and recursive psychosocial crises or tasks. In particular, Erikson worked to show that the navigational outcomes of psychosocial tasks contributed to and, for the most part, explained the psychological well-being and functioning of the individual at any one point in development. Erikson's psychosocial theory of development continues to be used in research and practice as a developmental framework with which to conceptualize, explain, and study human development and functioning across the lifespan. Because (a) the research question for this thesis focuses on the effect of the murder-death of a sibling on surviving siblings aged up to and including young adulthood, and (b) 72% of the sample of siblings of murder victims in this study were of adolescent or emerging adulthood age

when their siblings were murdered, Stages 5 and 6 of Erikson's psychosocial theory of development are only briefly discussed (see Table 1).

Adolescence typically refers to the period of development between childhood (age 11 or the beginning of puberty) and adulthood (Berk, 2008; Broderick & Blewitt, 2002; Erikson, 1997; Wade, Tavis, Saucier, & Elias, 2004, p. 514). Although adolescence includes a wide range of maturity levels (Miller, 2009a), Erikson believed the primary developmental crisis of adolescence has to do with identity versus identity confusion (1997). Furthermore, adolescence is typically a time when individuals learn to trust themselves and commit themselves to causes or ideologies, referred to by Erikson as *fidelity* (1997, p. 60). Identity formation is strongly influenced by interactions with family, culture, neighbours, peers, and teachers; but most particularly, by those with peers (Broderick & Blewitt, 2002, p. 314). Adolescents tend to identify with social groups and the values represented by those groups (Erikson, 1997, p. 72). Interactions with family also play a significant role in identity formation (Friedman, 1999). For example, relationships with siblings play a significant role in an adolescent's identity formation (McGoldrick, Watson, & Benton, 2005; Wong, Branje, VanderValk, Hawk, & Meeus, 2010). Siblings can "become the models for future relationships with friends, lovers, and other contemporaries" (McGoldrick et al., 2005, p. 154, as cited by Stonebridge, 2015).

The period between ages 18 and 25 are referred to as "young adulthood" (Erikson, 1997) or "emerging adulthood" (Arnett, 2008). Current conceptualization of emerging adulthood now extend this developmental period from beyond age 25 to as late as 29 (Arnett & Fishel, 2013, p. 11). Erikson (1997) contended that young adulthood is characterized by the psychosocial crisis of intimacy versus isolation (p. 67). Building off, perhaps, most particularly, the quality of achieved trust established in oneself, others, and the world together with one's accrued sense of

autonomy versus shame or self-doubt, the adolescent begins to develop a sense of identity with which, later, as a young adult, he or she will face the task of joining with others. While romance is often an important component of this stage, intimacy can be found in other significant relationships (Erikson, 1997). For Erikson, the antithesis of intimacy was the sense of isolation, which, he said, refers to our fears of remaining “separate and unrecognized” (Erikson, 1997, p. 70).

The impact of losing a sibling to homicide on an individual’s psychosocial development is unknown due to little research exploring the experiences of this population. Levers (2012) believed exposure to traumas has the potential to “establish pathways of development that may deviate from a healthy norm and even initiate a developmental trajectory eventually marked by developmental psychopathology” (p. 5). Indeed, and as noted earlier, the literature included reference to qualitative evidence that suggests losing a family member to homicide can challenge the completion of developmental tasks (Asaro & Clements, 2005). While there was diversity regarding the individual experience of family members of murder victims, many of the studies reviewed by Asaro and Clements (2005) suggested there was also much consistency among these experiences. However, due to the paucity of research focusing solely on the experience of siblings of homicide victims, it is unknown how applicable this conceptualization is to the sibling experience of homicide-loss, and what impact a sibling’s murder has on siblings’ general health and well-being over time.

The concepts of health, well-being, and psychological distress are defined and described here as further context for considering the impact of losing a brother or sister to murder during early adulthood years or younger.

Health, Well-being, and Psychological Distress

Health and well-being are multidimensional and overlapping constructs. Health is a multicomponent concept: “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 2006). The World Health Organization has not changed this definition of health from 1948 when the WHO Constitution entered into force, and retains this definition on its website today. The WHO definition of health aligns closely with the definition of wellness endorsed by the National Wellness Institute (n.d.): “Wellness is holistic and multidimensional, encompassing physical, mental, social, and spiritual well-being.” Wellness, according to the National Wellness Institute (n.d.), is a positive and affirming state of being and functioning. Seligman (2011) has developed a model of wellness, defining and characterizing wellness as comprising—and requiring—the cultivation of five, of what may be called, ways of relating to life and living, namely: the cultivation of (a) positive emotion; (b) engagement; (c) relationship, (d) meaning; and (e) achievement. Wong (2015) said that wellness is an effortful and intentional process “involving personal responsibility and commitment” (p.1).

Self-perceived or subjective well-being is an evaluation of life as a whole in terms of overall happiness and the pleasantness of life (Diener, Emmons, Larsen, & Griffin 1985); the hedonic balance between positive and negative affective appraisals and (more cognitively driven) life-satisfaction (Chen et al., 2012; Corrigan, 2000). Indeed, life-satisfaction is used in empirical studies as an indicator of subjective well-being (Mcdowell, 2006, p. 206). Subjective well-being has a bidirectional relationship with health in general, possibly even contributing to its maintenance (Steptoe, Deaton, & Stone, 2015). The literature has hotly debated the distinction between subjective and psychological well-being (e.g., Chen et al., 2012). Psychological well-being is defined as the capacity to feel, think, and act in ways that enhance

our inherent abilities to realize our self-potential (Chen et al., 2012), to enjoy life, and to deal with the inevitable and unavoidable adversities and challenges of life (Wong, 2015).

Experientially, psychological well-being is a sense of composure or (for some) spiritual well-being, and is the antithesis of feelings, and behavioural and physiological symptoms, of distress (parentheses are mine; Wong, 2015). Interestingly, in their 2015 review paper of the associations between subjective well-being, health, and age Steptoe and colleagues (2015) collapsed across the hedonic and eudemonic distinctions, defining subjective well-being as comprising evaluative well-being (or life satisfaction), hedonic well-being (feelings of happiness, sadness, anger, stress, and pain), and eudemonic well-being (sense of purpose and meaning in life). In collapsing across hedonic and eudemonic distinctions, Steptoe et al. (2015) may have more fully captured the human condition within the human (subjective) experience of well-being.

Psychological distress is a common-sense index of general health and well-being. Psychological distress is mental and social suffering in response to unmet needs, demanding life circumstances (Ridner, 2004), traumatic life events, or existential concerns. Psychological distress is a sense of discomfort and distress accompanied subjectively by one or more of demoralization and pessimism towards the future, anguish and stress, self-depreciation, social withdrawal and isolation, somatization, and withdrawal into oneself (Masseé, 2000). A defining and signal characteristic of psychological distress is that it does harm, either temporary or permanent, to the person (Ridner, 2004).

In the review of the related literature that follows, the literature pertaining to the experience of losing a loved one to murder for family members in general, and for siblings, most

specifically is described, discussed, and evaluated. The literature pertaining to the trauma and grief associated with losing a loved one to homicide is then described.

Literature Review

The Experience of Murder: A Glimpse Only

Grief counsellor Laurence Miller (2009a) described murder as “the ultimate violation that one individual can inflict on another, a brutal, deliberate assault forced upon an unwilling victim” (p. 68). When compared to other forms of loss, a number of researchers have suggested losing a loved one to murder typically results in more complicated bereavement than loss through suicide, motor vehicle accidents, or illness (Armour, 2006; Baliko & Tuck, 2008; King, 2004; Morrall, Hazelton, & Shakleton, 2011; Riches & Dawson, 1998; Rynearson & McCreery, 1993; Vigil & Clements, 2003). People who have lost a loved one to homicide are confronted with a wide array of traumatic experiences beyond simply the loss of their loved ones—being notified of the murder, interrogated by police, having to identify the body, having the media portraying the victim unfavorably, having to endure long, unsatisfying legal proceedings (Armour, 2006; Clements & Burgess, 2002; Freeman et al., 1996; King, 2004), and being the victims of unfavourable social stigmatization within their communities (Armour, 2006; King, 2004). Families of victims are also reported to experience subsequent adverse life events, including financial loss and strain (Asaro & Clements, 2005; King, 2004).

A number of researchers have noted family members and friends of homicide victims experience survivor guilt and blame themselves for the murder (Asaro & Clements, 2005; Bard & Sangrey, 1986; Clements & Burgess, 2002; Janoff-Bulman, 1985; King, 2004; Miller, 2009b; Rinear, 1988). Survivor guilt is defined in the Encyclopedia of Disaster Relief as guilt that results from believing the bereaved person should not have survived or that they have done

something wrong (Mitchem, 2011). For example, siblings may blame themselves for not protecting their brother or sister (Asaro & Clements, 2005) and parents may feel guilty about being alive while their children have died (Worden, 2009, p. 225). Survivor guilt may be particularly prominent when the surviving friend or family member was exposed directly to the situation in which the loved one was killed (Worden, 2009, p. 225). Self-blame for the homicide of a loved one may increase the survivor's sense of control, decrease their feelings of vulnerability, and may allow them to re-establish their assumption that the world is meaningful and comprehensible (Clements & Burgess, 2002; Rinear, 1988). However, these benefits come at a cost. Self-blame may increase guilt, reduce support and sympathy from others, lead to extreme over-protection of other loved ones, and increase feelings of violation if others appear to validate their guilt (Rinear, 1988). In other words, while self-blame might allow for the reinstatement of the belief in the world as meaningful and comprehensible, it is unlikely to support the belief of self as worthy.

The murder of a loved one was associated with a number of negative health outcomes (Clements & Burgess, 2002; King, 2004; Miller, 2009a). For example, the literature included numerous examples of friends or family members of homicide victims struggling with high levels of anxiety and depression (Armour, 2006; Clements & Burgess, 2002; Freeman et al., 1996; Miller, 2009a), and in the first few years following a murder, mortality rates were reported to be higher among victims' family members when compared to the general population (Armour, 2003; Schlosser, 1997; Sprang, McNeil, & Wright 1993). While not constrained to murder-bereavement, Prigerson and his colleagues (1997) found long-term traumatic grief, anxiety, and depression predicted cancer, heart trouble, high blood pressure, and negative eating habits. Family members and friends of homicide victims in studies discussed in the literature, also

commonly struggled with gastrointestinal, appetite, cardiovascular, energy, skin, sleep, and immune system problems (Clements & Burgess, 2002; King, 2004; Miller, 2009a; Rynearson & McCreery, 1993). In an attempt to cope some surviving family and friends may begin, increase (Miller, 2009a), or struggle with drugs and alcohol (Clements & Burgess, 2002; King, 2004). Substance use and dependence are correlated with exposure to trauma (DSM-V, 2014).

The social world of those who have lost someone to homicide was also noted to be deeply impacted by the loss of their loved one (Bard, 1982). Researchers cited in the literature suggest many surviving family members feel isolated, alone, and without social support (King, 2004; Rynearson & McCreery, 1993). As Murphy and his colleagues (2002) described: “The impact of the murder reverberated throughout the whole of the victim’s social and family network and across the generations, creating the impression of many lives having been destroyed as a result of this single event” (p. 70). Furthermore, according to Stretesky, Shelly, Hogan, and Unnithan (2010), multiple researchers have suggested that social interactions have the potential to secondarily victimize surviving friends and family members. As a result, not only are family members exposed to the trauma of losing their loved ones, but they are also exposed to trauma associated with these potentially distressing and overwhelming social interactions. Adding to this narrowing of the social world, those bereaved by murder often have difficulty maintaining employment (Clements & Burgess, 2002; King, 2004).

Within a family, losing a family member to homicide can also dramatically change communication patterns, family roles, and result in instability (Asaro & Clements, 2005; King, 2004). Moreover, 35% of homicides in Canada are intrafamilial resulting in imprisonment of the offending family member, rifts with members of the extended family, and foster placement of children (Statistics Canada, 2012). Baliko and Tuck (2008) suggested that the stress associated

with homicide bereavement, strained relationships and that this experience could either dissolve relationships or ultimately strengthen them. How relationships are impacted appeared to be significantly influenced by the unique characteristics of the relationships prior to the death (Riches & Dawson, 1998). Furthermore, differences in coping strategies between family members were noted as contributing to misunderstanding, friction, anger, frustration, and on-going family conflict (Asaro & Clements, 2005; Miller, 2009a).

The importance of strong interpersonal relationships for adapting to losses, such as losing a loved one to murder, was emphasized by a number of researchers (e.g., Armour, 2002; Mezey et al., 2002; Murphy et al., 2002). Although many surviving family members and friends described great difficulty in talking about the deceased with others in their lives (Armour, 2002; Asaro & Clements, 2005; Riches & Dawson, 1998), close relationships were put forward as a means to providing support and understanding, both of which promote grief work and the management of on-going sources of distress (Armour, 2002; Baliko & Tuck, 2008; Mezey et al., 2002; Murphy et al., 2002). However, Asaro and Clements (2005) noted speaking with others about the murder can be even more difficult when the details of the murder are particularly horrific or involve the deliberate infliction of pain before the death. Although many surviving family members and friends may be able to engage with others in meaningful ways, some may withdraw and isolate themselves (Miller, 2009a). Armour (2003) suggested the bereaved's attempts to make meaning of their losses may be dependent on supportive and validating interactions with others.

The experiences of surviving family members and friends were often greatly influenced by the community and the media (Armour, 2003; Asaro & Clements, 2005; Clements & Burgess, 2002; Stretesky et al., 2010). The public's response to homicide has been described as the most

troublesome response for family members and friends of homicide victims (Armour, 2002; Dannemiller, 2002). Many research participants report that the homicide was followed by an initial outpouring of support from the community that tended to dwindle over time (Baliko & Tuck, 2008). This dwindling of support was particularly distressing because the need for support would often increase as time progressed. Clements and Burgess (2002) suggested the dwindling of support may be due to people feeling discomfort or awkwardness in relating to those bereaved by murder because they do not know what to say. Baliko and Tuck (2008) suggested that failure to acknowledge the homicide by community members was perceived to be the most distressing response by their participants. While some surviving family members and friends attempted to suppress or control their emotional experiences to feel normal, others were encouraged to express their emotions and “let it all out” (Miller, 2009a). Disenfranchised grief is a related concept linked to social support.

Some family members, such as siblings, and friends of homicide victims may experience disenfranchised grief—when the survivor is not accorded a “right to grieve” (Doka, 2002, p. 5), or where they receive little or no support from their communities (Neimeyer & Jordan, 2002). Disenfranchised grief, or “hidden sorrow” as used by Doka in the title of his 1989 book, *Disenfranchised Grief: Recognizing Hidden Sorrow*, might be linked to the survivor’s particular relationship to the murder victim, or to the victim being a member of a marginalized group, for example those involved in prostitution, drugs, domestic violence, or other criminal activities (Doka, 2002; Jones & Beck, 2007). In her article reporting on her phenomenology study of people who had lost a loved one to homicide, Armour (2002) found that many surviving family members and friends described feeling betrayed/abandoned by their friends, family, and community. Armour (2002) explained that many surviving family members and friends who

reported these experiences had changed their perspectives about other people in general; this finding was consistent with what was found in two other studies (Armour, 2006; Mezey et al., 2002), namely that survivors said that they mostly considered others to be untrustworthy and unsupportive. Beliefs about the beneficence of others had become shifted and altered, and surviving friends and family members reported the social world they knew before the homicide no longer existed (Armour, 2002; Asaro & Clements, 2005). Contributing to their sense of abandonment, were insensitive questions or comments from community members (Armour, 2002; Armour, 2006; Baliko & Tuck, 2008). An example provided by Armour (2006) was one cited in Peterson (2000), namely that of being advised by members of religious communities to get rid of their anger and forgive so that they may be granted eternal salvation. One participant in Armour's (2002) study explained "anyone who says, 'God never gives us anything that we can't handle' hasn't been through shit. That['s] all I can tell them" (p. 375).

Many surviving family members believed that they had been stigmatized by the community (Armour, 2002; Armour, 2006; Riches & Dawson, 1998); however, this result has not been found by other researchers (Baliko & Tuck, 2008). Riches and Dawson (1998) hypothesized perceptions of stigmatization may obstruct the grieving process by interfering with the surviving family member's ability to communicate with others about their loss. This was further supported by Armour (2003) who suggested meaning making is often compromised by stigmatization and the interpretations of the death made by others in the community.

The role of the media was controversial within the literature. The media can be a useful source of information for family members and friends at the same time as, and seemingly for the most part, a source of frustration and hurt. While the media were able to provide details regarding the death that could help family and friends to make sense of what happened and

promote coping in some cases, interactions with the media were described as distressing and as potential sources of on-going victimization by surviving family and friends (Armour, 2002; Asaro & Clements, 2005; Clements & Burgess, 2002; Riches & Dawson, 1998; Stretesky et al., 2010). Media representatives can be considered intrusive, and surviving family and friends may believe media portrayals of the deceased were inaccurate or disrespectful (Armour, 2006). Furthermore, surviving family and friends reported believing that the media prioritized the rights of the public to information over their rights to privacy (Armour, 2002; Riches & Dawson, 1998).

Possibly the most frustrating interactions noted in the literature for surviving family and friends, were those involving representatives from law enforcement and the criminal justice system (Freeman et al., 1996; Stretesky et al., 2010). Homicide was noted as being unique from other forms of loss because surviving family and friends tend to be involved with the criminal justice system for long periods of time (Morrall et al., 2011; Riches & Dawson, 1998). In the eyes of the law, homicide is considered a crime against the state, not against the family or friends of the victims (Armour, 2002). As a crime against the state, the needs of surviving family and friends are routinely circumvented for legal requirements mandated to protect the accused (Armour, 2006). Parents and partners are often interrogated as potential perpetrators and prevented from seeing the body (Armour, 2002; Mezey, et al., 2002; Morrall et al., 2011). Sometimes it is months before the body is released and seen by the family (Riches & Dawson, 1998). Riches and Dawson (1998) proposed “comprehending the news of the death, initial mourning, and longer term grief are all subordinated to the needs of social and legal procedures” (p. 143). Negative interactions with law enforcement are associated with higher levels of

depression, anxiety, and general symptom severity in the surviving friends and family of homicide victims (Amick-McMullan et al., 1989).

Across studies, a major complaint made by many surviving family members and friends of homicide victims, was that they were rarely provided with information about the homicide, the perpetrator, or the legal proceedings (Armour, 2002; Freeman et al., 1996; Riches & Dawson, 1998; Stretesky et al., 2010). This information is often sought by surviving family and friends so that they can make sense of what happened and learn why their loved ones were murdered (Stretesky et al., 2010). However, information that could compromise the prosecution of the case cannot be provided by law enforcement. This is not always explained to family members and friends of homicide victims. There were numerous reports in the literature of law enforcement withholding information, only to have surviving family and friends learn the information they were seeking months later at the trial (Armour, 2002; 2006). As one daughter explained: “the information about [how] my dad was killed with 75 wounds and...butchered would probably have been a good thing to tell us at some point. Rather than finding out at the trial 3 months later” (Armour, 2002, p. 375).

Many surviving family members and friends reported being disenfranchised and enraged by the legal system’s failure to punish the perpetrator in a way they would have liked (Armour, 2002; Freeman et al., 1996). When perpetrators are not punished to the degree family members believe to be fair, this can shatter their assumptions about the world being a fair and just place (Braun & Berg, 1994). In this way, beliefs about the criminal justice system, with which they are now involved, are threatened (Stretesky et al., 2010). In the United States and Canada, 37.5% (FBI, 2012) and 24% (Statistics Canada, 2012) of homicides, respectively, are never solved, leaving the surviving family members and friends with no possibility of revenge,

retribution, or punishment (Armour, 2006). Even if convicted, perpetrators may be eligible for parole in 10 years. These parole hearings can trigger grief and trauma symptoms, long after the homicide took place (Armour, 2006), and mourning may also be prolonged by the state of the legal proceedings (Miller, 2009a). A number of researchers suggested that interactions with the criminal justice system may not only prolong bereavement but these interactions may secondarily victimize the surviving family and friends of homicide victims (Armour, 2002; Baliko & Tuck, 2008; Morrall et al., 2011; Riches & Dawson, 1998; Stretesky et al., 2010).

Losing a loved one to homicide can result in a unique combination of trauma and grief reactions. Within the literature, researchers reported surviving family and friends self-report intrusive symptoms, avoidance symptoms, alterations in arousal and reactivity, and negative alterations in cognitions/mood consistent with psychological trauma-related distress (e.g., Applebaum & Burns, 1991; Armour, 2006; Clements & Burgess, 2002; Freeman et al., 1996; King, 2004; Miller, 2009a; Rynearson & McCreery, 1993); and emotional, physical, cognitive, and behavioural symptoms consistent with typical grief reactions (e.g., Armour, 2006; Freeman et al., 1996; Miller, 2009a). Overall, surviving family and friends regularly described difficult social experiences within their families, communities, as well as with the media and law enforcement.

The Experience of a Sibling's Murder

There is very little literature regarding the experience of losing a sibling to murder. From the research which does exist, it is evident that siblings go through a series of challenging experiences, not the least of which includes having to cope with traumatized and grieving parents (Applebaum & Burns, 1991; Freeman et al., 1996) and, in many instances, with social stigma (Armour, 2006).

Freeman, Shaffer, and Smith (1996) interviewed 15 siblings (aged 7-18) of murder victims from the New York area, and compared data collected from control participants from the same schools. These interviews were conducted, on average, five months following the murder. They found the siblings of murder victims were significantly more impaired than control participants, as measured by the Child Behavior Checklist (CBCL; Achenbach, 1991). Furthermore, they found 80% of siblings who had lost a brother or sister to murder compared to only 10% of control participants, met DSM-III-R criteria for depression, PTSD, or anxiety disorders. Qualitative evidence collected by Freeman and her colleagues (1996) suggested the siblings who had lost a brother or sister to murder also suffered with a series of grief and trauma related experiences. For example, bereaved siblings reported missing their dead brother or sister immensely, experiencing significant sadness and anger, avoiding reminders of their dead brother or sibling, and feeling as if their experiences were not real. Moreover, surviving siblings commonly reported experiencing uncontrollable intrusive fantasies about their sibling's fear and pain before they died. The bereaved siblings also reported a series of relationship difficulties, including becoming aggressive with peers and experiencing difficulties with parents. Notably, only 5 of the 15 siblings who had lost a brother or sister to murder had any formal psychological support or assistance, and this support was due to behavior problems originating after the murder.

In their 2010 phenomenology study, Pretorius, Halstead-Cleak, and Morgan interviewed three sisters (aged 39, 26, and 24) whose brothers had been murdered in South Africa. The sisters were interviewed approximately eight years after the murder of their brothers. These researchers identified seven major themes from their interviews with the siblings. All three siblings reported (a) shock and disbelief that their brothers had been murdered so suddenly and

in such a violent nature, and (b) recollecting experiences they had shared with their brother throughout their lives, as well as guilt and self-blame due to not being able to prevent the murder. The third major was described as (c) rupturing and fragmenting of relationships within the surviving sisters' families. Two of the three sisters reported their parents getting divorced following the murder and attributed these divorces to stress created by the murder. While (d) desperately wanting support, the sisters often withdrew from their families and friends, resulting in feelings of isolation and despair. The sisters also reported (e) becoming preoccupied with seeking justice and revenge, even occasionally to the detriment of their existing relationships. The sixth theme included (f) the attempted reformulation of religious and existential beliefs. Lastly, the sisters reported experiences of (g) resilience, healing, and growth. The sisters described being motivated by a need to re-establish control and meaning in their lives, and that they had become more compassionate and sensitive people who appreciated life more fully.

The grief of child and adolescent siblings of homicide victims may be ignored, discounted, or disenfranchised when compared to that of parents (Applebaum & Burns, 1991; Asaro & Clements, 2005; Clements & Burgess, 2002; Masters, Friedman, & Getzel, 1988). Parents not only grieve the loss of their child but also the loss of their parental role with the deceased child; both of these loss experiences can greatly impact parents' relationships with surviving children (Asaro & Clements, 2005). Some parents become overprotective of the surviving siblings, while others become less attentive and monitor their surviving children's activities less (Freeman et al., 1996). The siblings of homicide victims often fear their parents have forgotten about them, feel the need to compete with the memory of the deceased, feel jealous of the deceased, and experience survivor guilt (Asaro & Clements, 2005; Clements & Burgess, 2002; Freeman et al., 1996; King, 2004; Miller, 2009a). Feeling isolated from their

parents may be particularly challenging to the surviving siblings because often, according to Wall and Levy (1996), parents are essential in helping young people adapt following loss due to murder. Yet, parents who are traumatized themselves are likely to either not notice or attend to signs of trauma (as opposed to grief) in their children (Applebaum & Burns, 1991; Pynoos & Nader, 1988). In their 1991 study, Applebaum and Burns interviewed 20 siblings (aged 3-23) who had lost a brother or sister to either accidental death or murder, and their parents. All of the surviving siblings reported post-traumatic stress symptoms (as defined by DSM III-R). In fact, 60% of the siblings were in the moderate to severe range for PTSD. However, many parents were relatively unaware of the full extent of their surviving children's suffering. For example, 90% of siblings reported feeling estranged from others, while only 40% of parents believed their children felt this way. As well as reports of estrangement from others, parental reports were significantly different from sibling reports for intrusive thoughts, reliving/flashbacks, psychological distress at symbolic events, avoidance of activities, and physiological distress at symbolic events. Applebaum and Burns (1991) thought these discrepancies were mainly due to siblings trying to protect their parents and parents either not being able to, or wanting to, recognize their surviving children's distress due to focusing on their own experiences. However, trauma unnoticed or left unattended in childhood has demonstrated developmental ramifications over time (Blum, 2003; Pynoos, Steinberg, & Piacentini, 1999). While numerous factors other than parental factors conceivably contribute to how siblings are affected by the murder of a brother or sister, the loss of their sibling as an important component of their social world (Armour, 2006), and their age and level of development (Wall & Levy, 1996) are also likely to play a role.

Finally, child and adolescent siblings often avoid discussing the deceased in an attempt to avoid making their parents distressed (Applebaum & Burns, 1991; Freeman et al., 1996). It is likely this avoidance may impair the grieving process (Freeman et al., 1996). Also evident in the research, was that some siblings were exposed to challenging parental responses to the murder (e.g., drug use, alcoholism, depressive withdrawal), some to social stigma (Armour, 2006; Clements & Burgess, 2002; Vigil & Clements, 2003), some engaged in self-blame (Miller, 2009a), some were expected to return to school in less than a week following the loss of a loved one to homicide (Clements & Burgess, 2002; Vigil & Clements, 2003), and some reported insensitive responses from peers, teachers, and instructors—which can have a negative impact on psychosocial development (Clements & Burgess, 2002; Freeman et al., 1996, Miller, 2009a; Vigil & Clements, 2003).

The studies regarding siblings of victims of murder conveyed the severe and long term impact that the murder of a sibling and the ensuing events and experiences can have on siblings. From the literature, it was evident that people who had lost a sibling to murder exhibited high levels of psychological distress, felt isolated from their families and peers, and tended to struggle with trauma and grief experiences which are different and separate from those of their parents. However, with the exception of the Freeman, Shaffer, and Smith (1996) study, studies generally had relatively small non-representative samples, from small geographic areas, were qualitative, and did not include a comparison group. This thesis was designed to further the study of siblings of young murder victims by addressing these limitations. In the section below, the literature pertaining to the trauma and grief associated with the loss of a loved one to homicide is discussed and critiqued.

Trauma and Grief

As relatively far back now as 1993, Rynearson and McCreery noted the importance of being able to recognize trauma symptoms in murder-bereaved persons, which may impair the grieving process possibly because “the disintegratory effects of traumatic imagery and avoidance on cognition, affect and behavior impair the more introspective and reflective demands of acknowledging and adjusting to the loss” (p. 260). In other words, trauma symptoms interfere with the completion of the tasks of grief (Worden, 2009, p. 7). Alternatively, it might be that the reflecting and remembering components of grieving itself can trigger trauma symptoms (Armour, 2006). Irrespective of the direction of effect, it is important to keep in mind the substantial overlap between trauma and grief symptoms (Mccoyd, Walter, & Levers, in Levers, 2012; Worden, 2009, p. 6), and, that behaviourally at least, reactions to both trauma and grief can appear quite similar (Worden, 2009, p. 6). Given this overlap, in the sections that follow, theoretical and operational definitions of both trauma and grief, and an overview of both specific to the experience of murder, are provided.

Trauma. The word trauma originates from the Greek word for “wound.” Trauma can not only wound the physical body, but may also result in psychological, spiritual, and existential wounds (Levers, 2012, p. 1). The definition of trauma is a relatively new social construct that continues to evolve. Broad consensus conceives of trauma as an event which is extremely difficult and overwhelming for individuals (Briere & Scott, 2006). Social constructivism would however suggest that what an individual perceives as an extremely distressing event is the product of subjective interpretation. Trauma is widely considered to manifest in observable and measurable symptoms of psychological distress, namely avoidance, intrusion, and hyperarousal, as measured for example by the Impact of Events Scale-Revised (Weiss, 2007). Levers (2012, p.

1) suggested these symptoms of trauma fail to grasp the full extent, complexity, and range of human responses to trauma. For example, negative alterations in cognitions and moods are also common reactions to trauma described by surviving friends and family members within the literature (Asaro & Clements, 2005; Clements & Burgess, 2002; Freeman et al., 1996; King, 2004; Rynearson & McCreery, 1993). Alterations can include “persistent (and often exaggerated) negative beliefs or expectations about oneself or the world,” persistent blame of self or other for the traumatic event, persistent negative trauma-related emotions (e.g., fear, horror, guilt, or shame), markedly reduced interest in activities which were significant before the murder, feeling alienated or isolated, and the inability to experience positive emotions (DSM V, 2014, p. 273). Many of these negative alterations in cognitions or mood associated with trauma have long since been (e.g., Freud, 1914-1916; Lindemann, 1944) and continue to be (e.g., Worden, 2009), characterized as normal grief reactions by researchers and writers, once again speaking to the reported overlap between normal reactions to trauma and grief. As another example of the range of human responses to trauma, in her 1992 book *Trauma and Recovery*, Judith Lewis Herman spoke about terror and disconnection as the core experiences of trauma. Herman described the experience of terror as one of disempowerment, helplessness, and abandonment, with disconnection epitomizing shattered trust in oneself, others, and the world. Outside of witnessing a murder, or where murder is a result of terrorism, gang violence, or similar, it might be argued that the experience of terror is not necessarily a component of the response to the trauma of being murder-bereaved. However, Herman’s conceptualization of the response to trauma as including terror is included here because there appeared to be evidence of this in the literature, notably: the siblings of murder victims in the Freeman et al. (1996) and the Pretorius et al. (2010) studies described experiences consistent with both terror and

disempowerment. For example, participants in these studies described feeling abandoned by their peers and families, helpless to protect themselves from being victimized, incapable to adjust to the loss (disempowered), and struggling with beliefs about themselves being unworthy, others being dangerous, and the world being unfair. Consistent with the psychiatric conceptualization of the human response to trauma, Herman recognized the experience of hyperarousal and intrusion symptoms; however, she also recognized the presence of constrictive symptoms such as depression, numbing, and dissociation. Herman also described an ongoing cycle between intrusive and constrictive symptoms, what she referred to as “the dialectic of trauma” (p. 47), to be a reliably observed pattern among those who have experienced trauma, particularly among those without support. In sum, current conceptualizations of trauma hold the hallmark features to be those of avoidance, intrusion, hyperarousal, and altered cognitions or assumptions and beliefs about oneself, others, and the world.

Avoidance. Avoidance refers to deliberate and persistent attempts to avoid reminders of the traumatic event (DSM V, 2014, p. 275). Within the literature, the finding that family members and friends of homicide victims regularly report avoidance behaviours such as avoiding people, places, situations, thoughts, or feelings that remind them of the deceased or of the murder itself, was well documented (Armour, 2006; Clements & Burgess, 2002; Miller, 2009b; Rynearson & McCreery, 1993). Rynearson and McCreery (1993) suggested avoidance behaviors are often employed as an attempt to avoid triggering dreaded intrusive symptoms. Avoidance behaviours may impair the grieving process and can greatly restrict the lives of those who have lost a loved one to murder, as well as lead to significant distress and impairment (Freeman et al., 1996).

Intrusion. Intrusive symptoms are described by the DSM V (2014, p. 275) as “involuntary and intrusive distressing memories... [Which] usually include sensory, emotional, of physiological behavioral components.” Cognitively, intrusions may also manifest not only as memories, but also as dreams or fantasies about a traumatic event that was experienced by a close family member or close friend. Many surviving friends and family of homicide victims describe intrusive symptoms such as nightmares, flashbacks, or involuntary intrusive thoughts (Armour, 2006; Clements & Burgess, 2002; King, 2004; Miller, 2009a; Rynearson & McCreery, 1993); all or any of which can be experienced multiple times a day and interfere with a person’s functioning, for example, the ability to concentrate (DSM V, 2014, p. 272). As explained by Rynearson and McCreery (1993), intrusive symptoms can be a great source of distress even though the murder is rarely witnessed directly. The sense of powerlessness and helplessness due to an inability to control these intrusions, often leads to a sense of dread about experiencing intrusions. As well as intrusive memories and nightmares about the homicide (Rynearson & McCreery, 1993), family members and friends also regularly report intrusive thoughts related to being informed about the death, having to identify the body, legal proceedings, insensitive reactions from others, inflammatory media portrayals, and intrusive fantasies (Miller, 2009a; Riches & Dawson, 1998; Rynearson & McCreery, 1993; Spungen, 1998, as cited by Armour, 2006). Intrusive fantasies typically include thoughts about saving the deceased and getting revenge (Miller, 2009a). Rynearson and McCreery (1993) were of the impression that intrusions complicate recovery.

Hyperarousal. Hyperarousal can be defined as a heightened sensitivity to potential threats and can sometimes manifest as difficulty sleeping, irritable or aggressive behavior, self-destructive or reckless behavior, exaggerated startle responses, and problems with concentration

(DSM V, 2014, p. 275). Family members and friends of homicide victims also commonly experience alterations in arousal and reactivity, including hyperarousal (Armour, 2006; Clements & Burgess, 2002; King, 2004; Miller, 2009a). Armour (2006) suggested the heightened level of arousal following the loss of a loved one to homicide intensifies emotional reactions. Furthermore, increased arousal may trigger responses to previously benign stimuli and reinforce avoidance behaviour (Armour, 2006).

Altered cognitions or assumptions and beliefs about the self, others, and the world.

Traumatic events, by common definition, disrupt and challenge belief systems and outlooks on life. For example, the commonly quoted rhetorical question: “Why do bad things happen to good people?” In now-seminal work by Janoff-Bulman (1985), three typical and fundamental assumptions about the world, self, and others were proposed: (a) the world is comprehensible and understandable/meaningful (the “just-world hypothesis”); (b) the self is worthy; and (c) others are benevolent. For example, people often believe that the world has an inherent sense of justice, that good things happen to good people and bad things happen to bad people. In practical terms, it seems that interpretive cognitive frameworks underlie and facilitate the common-sense “theories” that people have about how the world works or should work. When a loved one is murdered, the “just-world-theory” is usually contradicted (Janoff-Bulman, 1985; Stretesky et al., 2010). When a person’s social theories are incongruent with their experiences, they are likely to experience psychological distress (including grief) that is prolonged until they change their perspective of the event or change their assumptions about the world (Armour, 2003; Braun & Berg, 1994; Janoff-Bulman, 1985). When this discrepancy is successfully reduced, eliminated, or bridged, the world is once again seen as comprehensible and life as worthwhile—and levels of subjective distress, correspondingly lower.

Grief. Grief can be defined as an individual's physical and psychological experience of a loss and the process occurring after the loss can be referred to as mourning (Worden, 2009, p. 37). Many researchers have suggested individuals who lose a loved one to murder experience grief in a way that is more severe, exaggerated, intense, and prolonged than those bereaved by other forms of loss (Baliko & Tuck, 2008; King, 2004; Morrall et al., 2011; Murphy et al., 2003; Neimeyer, Prigerson, & Davies, 2002; Riches & Dawson, 1998; Vigil & Clements, 2003), including loss through suicide, motor vehicle accidents, or illness (Armour, 2006; Baliko & Tuck, 2008; King, 2004; Morrall et al., 2011; Riches & Dawson, 1998; Rynearson & McCreery, 1993; Vigil & Clements, 2003).

Work focusing on the development of a theoretical framework for grief as a way to understand the human response to loss began in the early 20th century. Freud described mourning as “a profoundly painful dejection, cessation of interest in the outside world, loss of the capacity to love, [and] inhibition of all activity” (Freud, 1914-16). In 1944, following the death of nearly 500 people in the Boston area due to an accidental fire at a nightclub in 1942, Erich Lindemann completed ground-breaking research when he worked with 101 individuals bereaved by this tragedy. He identified six characteristics of normal grief: (a) somatic or bodily distress of some type, (b) preoccupation with the image of the deceased, (c) guilt relating to the deceased or circumstances of the death, (d) hostile reactions, (e) the inability to function as one had before the loss, and (f) development of traits of the deceased in their own behaviour (Lindemann, 1944). Many researchers have followed Lindemann's study in an attempt to understand grief and bereavement better. Some more notable grief researchers and writers include Bowlby (1980), Kubler-Ross (1969; although Kubler-Ross more specifically discussed the psychological stages traversed in the dying process, and arguably laid the foundation for the

understanding of anticipatory grief), Niemeyer (2003), and Worden (2009). In his 2009 book, *Grief Counselling and Grief Therapy: A Handbook for the Mental Health Practitioner (4th ed.)*, Dr. J. William Worden attempted to compile the staggering amount of grief literature from over the last century. In order to do so, he described common physical sensations, feelings, cognitions, and behaviors experienced or engaged in by those grieving. In the sections below, common grief reactions and responses within these domains are described. While these are described as common across persons, there is a large amount of variability among the experiences of those bereaved and a wide range of reactions to loss can be considered normal (or typical, if not, expectable). As suggested by Worden (2009), responses to loss are mediated by a number of variables, including: the deceased person, the nature of the attachment to the person, how the person died, historical antecedents such as previous exposure to challenging experiences, personality variables, social variables such as the amount of social support available, and concurrent stresses (pp. 57-75). While a comprehensive review of all grief literature is beyond the scope of this thesis, literature particularly relevant to those bereaved by murder will be focused on. In the sections which follow, physical sensations, feelings, cognitions, and behaviors commonly described by bereaved individuals in general, and by the family and friends of homicide victims specifically will be discussed.

Physical sensations. Those grieving often report a wide array of distressing physical sensations (Lindemann, 1944; Worden, 2009, p. 23). According to Worden, therapists and counsellors can often overlook clients' physical sensations and pointed out that these can play significant roles in the grieving process (p. 23). Some of these physical sensations include: (a) hollowness in the stomach, (b) tightness in the chest, (c) tightness in the throat, (d) oversensitivity to noise, (e) a sense of depersonalization, (f) breathlessness, feeling short of

breath, (g) weakness in the muscles, (h) lack of energy, and (i) dry mouth. Somatic complaints such as these are commonly reported by child and adolescent siblings of homicide victims (Miller, 2009a).

Feelings. Grief is accompanied by many feelings and an absence of feelings. Grief includes feeling sad, angry, helpless, guilty, anxious, lonely, frightened, shocked, and nothing. All of these feelings are normal, and the pattern and timing of feelings are not linear. When a death is sudden and unexpected most especially, it is common to experience a sense of shock or numbness (Worden, 2009, p. 17). Some researchers have suggested this numbing may prolong the grief process by preventing the exploration and expression of emotional material (Lindemann, 1944; Miller, 2009b; Rynerason & McCreery, 1991). Others (e.g., Parkes & Weiss, 1983) have suggested that in the short term at least, numbing is an extremely normal response and should not be considered an unhealthy reaction.

Feeling numb is typically replaced by a series of challenging emotions. Sadness is the feeling most commonly reported by those bereaved (Worden, 2009, p. 18). Worden (2009) explained that while experiencing this sadness can be overwhelming and feared by bereaved individuals, not experiencing this sadness can lead to complicated mourning (p. 19). It is also normal for individuals to experience anger following a loss (Worden, 2009, p. 19). According to Worden, anger is often at the root of many problems in the grieving process, and, if it is not acknowledged, it can lead to complicated mourning (Freeman et al., 1996). With regards to grief in general, anger typically comes from two sources: not being able to do anything to prevent the death, and regression to an earlier developmental state in which anger is the manifestation of anxiety about not being able to exist without the deceased (Worden, 2009, p. 19). It is also common for bereaved individuals to feel anxiety (Worden, 2009, p. 20), especially when

grieving a violent death such as homicide (Armour, 2006; King, 2004). Anxiety can range from insecurity to panic with intense and persistent anxiety suggesting complicated bereavement (Worden, 2009, p. 20). Warden (1976) proposed two primary sources of anxiety following the death of a loved one: (a) fear regarding an inability to survive without the deceased, and (b) a heightened sense of one's own mortality (i.e., existential anxiety). Other common emotions reported by bereaved people in general include loneliness, fatigue, and yearning (Worden, 2009).

While many family members and friends of homicide victims reported emotions commonly associated with normal grief, they also described very intense, visceral feelings that exceed typical grief reactions (Armour, 2006; Miller, 2009b; Morrall et al., 2011). In a study by Morrall et al. (2011), those who had lost a loved one to murder described their emotions as “devastation” and “emotional agony.” Many people who have lost a loved one to murder can vividly describe their emotions long after the homicide, and report that many of their feelings remained indefinitely (Baliko & Tuck, 2008; King, 2004; Murphy, 1999). Furthermore, Miller (2009a) suggested feelings of distress are positively correlated with the amount of intentionality and maliciousness possessed by the murderer.

Anger and rage was a common theme throughout the literature in descriptions of grief in response to murder-loss. Anger was described as incredibly intense and multidirectional (Armour, 2003; Armour, 2006; Asaro & Clements, 2005; Baliko & Tuck, 2008; Clements & Burgess, 2002; Clements & Weisser, 2003; King, 2004; Mezey et al., 2002; Miller, 2009a; Morrall et al., 2011; Riches & Dawson, 1998), and Doka (1996) explained “the normal anger associated with grief is compounded by the desire to destroy the murderer of the loved one” (p. 53). In addition to the perpetrator, family members' rage was targeted at the criminal justice system, medical service providers, members of the community, and the friends and family

members themselves (Baliko & Tuck, 2008; Clements & Burgess, 2002; Clements & Vigil, 2003; Clements & Weisser, 2003; Mezey et al., 2002; Miller, 2009; Riches & Dawson, 1998; Stretesky et al., 2010). However, some research participants claimed that they were able to overcome their anger, often this was associated with their beliefs that “justice” was done. This took time and was facilitated by the bereaved gaining insight into how the anger was adversely affecting their lives (Baliko & Tuck, 2008).

Another common theme in the literature was for the family and friends of murdered individuals to experience guilt, self-reproach, shame, and anxiety (Asaro & Clements, 2005; Clements & Burgess, 2002; Clements & Vigil, 2003; Miller, 2009a; Worden, 2009, p. 20). Clements and Burgess (2002) explained that from their experience, children are often ashamed of and guilty about, their “bad” thoughts or feelings provoked by the murder. This guilt is often intertwined with anger (Miller, 2009b). Surviving family and friends of murder victims reported feeling guilty about living while the victim died, not being able to prevent the death, and about any actions they believed may have contributed to the homicide (Asaro, 1992, as cited by Asaro & Clements, 2005; Clements & Burgess, 2002; Clements & Vigil, 2003; Mezey et al., 2002; Miller, 2009b; Riches & Dawson, 1998). Also documented in the literature, was the finding that some people bereaved by murder reported anticipatory anxiety about losing other loved ones (Rinear, 1988), or about their own mortality (Clements & Burgess, 2002; Miller, 2009a). For example, Rinear (1988) surveyed 237 parents across the United States who had lost at least one child to murder and found 25% of these parents reported fearing for the life of their partners, and 44% for their remaining children. Anxiety regarding their own mortality may be particularly relevant to child and youth-aged siblings of homicide victims (Clements & Burgess, 2002; Miller, 2009a).

In summary, while the full range of normal emotional reactions and responses to loss are present for those who have lost a loved one to murder, these are typically exaggerated in both intensity and duration. Intense, multidirectional anger and even rage, as well as sadness, guilt, shame, and anxiety are all common responses to losing a loved one to murder reported within the literature.

Cognitions. Consistent with the emotional experience of numbness and shock, bereaved individuals typically report an initial stage of disbelief (Worden, 2009, p. 24). It is often difficult for bereaved individuals to order their thoughts, concentrate, and retain information (Clements & Burgess, 2002; Worden, 2009, pp. 24-25). Following a loss, bereaved individuals commonly report becoming preoccupied with thoughts about the deceased and how to recover from their loss, and experiencing intrusive thoughts about the their loved one's suffering or dying (Worden, 2009, p. 25). These cognitions are described by Worden as normal responses to loss and closely resemble the normal reactions to trauma described earlier.

Worden (2009) also noted that bereaved individuals also report sensing the presence of the deceased and suggested that this is the cognitive counterpart of emotional yearning (p. 25). Worden also said that, similar to sensing their loved one's presence, bereaved individuals also commonly report both auditory and visual hallucinations; which he referred to as normal and usually of a temporary duration (pp. 25-26). Nolen-Hoeksema (2001) concluded that in an attempt to cope with distressing situations, bereaved individuals persistently and repetitively think about how bad they feel and about the circumstances that precipitated their feelings. I believe it is possible that this preoccupation is related to cognitive processes employed for meaning making/reconstruction (I describe meaning making/reconstruction in greater detail in the next section).

In the particular of losing a loved one to murder, cognitive disbelief and denial are commonly described by those who have lost a loved one to murder (Armour, 2006; Clements & Burgess, 2002; King, 2004; Riches & Dawson, 1998). The literature also contained numerous examples of the surviving family and friends of homicide victims becoming preoccupied with thinking about the deceased, the events that lead to their murder, the murder itself, and fantasies of revenge/prevention (Armour, 2006; Clements & Burgess, 2002; Clements & Vigil, 2003; Miller, 2009a). Also reported in the literature, was that some family and friends of murder victims report thinking about suicide (King, 2004). There was very little evidence noting surviving family and friends of murder victims reporting hallucinations, which I think could be due to a fear of being pathologized or judged.

Over the last few decades, numerous researchers have suggested individuals often employ cognitive mechanisms in an attempt to make/reconstruct meaning following a significant loss or traumatic experience (e.g., Armour, 2003; Braun & Berg, 1994; Neimeyer et al., 2002; Park, 2010). In the section below, I describe current literature on meaning making in general, and literature specifically focusing on meaning making by those who have lost a loved one to murder.

Meaning making. Researchers have described meaning making/reconstruction as an important component of the grieving process, concluding that those who are able to engage in these processes are typically better adjusted following a loss (Murphey et al., 2003; Niemeyer et al., 2002; Worden, 2009, p. 4). It is, however, difficult to find a consistent operational definition for “meaning making” in the literature (Park, 2010) or for what “meaning” actually refers to. In her comprehensive review of the meaning making literature, Park (2010) provided a general definition of meaning making as being a cognitive process in which we engage to reduce

discrepancies between the appraised meaning of a stressful event and our global beliefs and goals. Experiences are interpreted (i.e., their meaning is appraised) through cognitive frameworks or schema that accrue with and across development; Park (2010) described these cognitive frameworks as “global meaning systems” (p. 2), and, as I noted earlier, Janoff-Bulman (1985) used the term, “assumptive worlds.” Park (2010) described global meaning systems to consist of beliefs regarding, for example, self, others, predictability, justice, and control; Janoff-Bulman (1985) proposed three typical and fundamental assumptions about the world, self, and others (i.e., (a) the world is understandable/meaningful (the “just-world hypothesis”); (b) the self is worthy; and (c) others are benevolent). Park (2010) explained we constantly engage our cognitive global meaning framework in appraising and assigning meaning to situations. When the assigned meaning of an experience is incongruent with our global meaning systems, we experience distress. This distress activates higher-order, conscious meaning making processes, such as active cognitive attempts to make sense of what happened, finding existential purpose or meaning in life, and attempting to make meaning through action (Armour, 2003). These processes are intended to reduce the discrepancy between our appraised meaning of the experience and our global meaning systems.

Echoing this line of thinking, Malina-Musamba and Maundeni (in Levers, 2012, p. 78) explained that it is because “trauma and loss both entail a destabilizing set of forces that can leave people in a vulnerable state, [they are left] questioning their assumptions about the way the world works and their place in it.” A number of researchers have suggested meaning making is an important component of adapting to loss (e.g. Murphey et al., 2003; Worden, 2009, p. 4). Parents who lost children to homicide, suicide, or accidents and who had “found meaning,” had statistically significant less distress, greater marital satisfaction, and better physical health

(Murphey et al., 2003). But, people often struggle to make sense of what has happened (and finding existential meaning/purpose) when they lose a loved one to homicide (Armour, 2002; Armour, 2006; Davis, Wortman, Lehman, & Silver, 2000; King, 2004; Murphey et al., 2003; Neimeyer et al., 2002; Rynearson, 2001; as cited by Armour, 2003; Riches & Dawson, 1998; Stretesky et al., 2010; Wall & Levy, 1996, as cited by Levers, 2012, p. 255). Multiple researchers have suggested the experience of losing a loved one to murder drastically violates a person's global meaning systems and meaning making is extremely unlikely (King, 2004). Supporting this, is the finding reported by Murphy, Johnson, and Lohan (2003) that 66% of the parents in their study who had experienced their children dying from homicide reported not being able to find meaning five years after the death. One of the most prolific researchers working with people who have lost a loved one to murder, Marilyn Armour, said that she believed the difficulty in making meaning experienced by the surviving family and friends of homicide victims may be the result of "problems with reflection, incoherent realities, and the lack of a supportive and accepting audience for meaning reconstruction" (2003, p. 521). This difficulty to comprehend what has happened, or to uncover a reason/cause for the death, is the result of a number of factors (Armour, 2006). For instance, homicides are typically unexpected and the motives of the perpetrator are often unknown. Also, information about what happened to their loved ones is either unknown or withheld by law enforcement for criminal case-proceeding reasons (Freeman et al., 1996; Stretesky, Shelly, Hogan, & Unnithan, 2010). Making meaning in terms of understanding the sequence of events leading up to, or uncovering a reason or cause for the murder, appeared to me from my reading of the literature, to be doggedly pursued by family members and friends. In some cases, and as I have noted previously, it is even the case that some family and friends of murder victims blame themselves for the murder (Asaro & Clements,

2005; Bard & Sangrey, 1986; Clements & Burgess, 2002; Janoff-Bulman, 1985; King, 2004; Miller, 2009b; Rinear, 1988). From the perspective of meaning making, it seems that whether this self-blame is justified or not, self-blame for the homicide of a loved one may increase a sense of control, decrease feelings of vulnerability, and may allow the person to re-establish their assumption that the world is meaningful and comprehensible (Clements & Burgess, 2002; Rinear, 1988). In other words, while self-blame might allow for the reinstatement of the belief in the world as meaningful and comprehensible, it is unlikely to support the belief of self as worthy. The fundamental assumption regarding the self as worthy is further challenged by social stigma, isolation, lack of social support, inability to control their traumatic stress symptoms, having their privacy violated by the media, and their lack of representation in the criminal justice process. Janoff-Bulman (1985) suggested that the grieving process may be complicated for people who have lost a loved one to homicide because their ability to view themselves in a positive light is disrupted.

In her 2002 phenomenology study exploring meaning making with those who have lost a loved one to homicide ($N = 38$), and expanded further in a second study in 2003 ($N = 38$), Armour found the family members of homicide victims in this study attempted to make meaning through action. Armour (2003) believed attempts at meaning making requiring reflection were impaired by traumatic imagery and the avoidance commonly associated with bereavement due to homicide. In response to these difficulties, Armour proposed the surviving family of murder victims may use action with symbolic significance to reconstruct meaning through action as the “intense pursuit of what matters” (p. 526). Three broad categories of meaning making grounded in action were identified and described by Armour (2003): (a) declarations of truth, (b) fighting for what is right, and (c) living in ways that give purpose to the loved one’s death. Armour

(2003) believed these actions may help not only to reconstruct meaning but also establish/reinforce a sense of mastery and control for murder-bereaved persons. Armour suggested when a sense of accomplishment results from these actions, positive affect may be increased and the construction of a coherent narrative may be supported.

While research on meaning making is still in its infancy, numerous researchers (e.g., Armour, 2002; Clements & Burgess, 2002; Rynearson, 2001) have suggested meaning making/reconstruction is both an immensely important and incredibly challenging cognitive experience for those who have lost a loved one to murder.

Behaviors. There are a number of behaviors associated with grief. Behaviours include, for example, absentmindedness, restless hyperactivity, sighing, crying, treasuring objects of the deceased, going to places that remind the bereaved of the deceased avoiding reminders of the deceased/the death, social withdrawal, and in some cases, using substances as a way of coping (Worden, 2009, pp. 26-30). Avoidance behaviors and social withdrawal are explored in many studies related to those bereaved by the murder of a loved one (Armour, 2006; Clements & Burgess, 2002; Freeman et al., 1996; Miller, 2009a; Rynearson & McCreery, 1991). Reports from the surviving friends and family of murder victims describing avoidance behaviors are not surprising to me given avoidance behaviors are normal reactions to both loss and trauma. Freeman et al. (1996) and Rynearson (2001) suggested however, avoidance and experiencing traumatic imagery prolonged the grieving process by restricting the ability to acknowledge and adjust to losses. Furthermore, avoidance can be particularly challenging because many homicides take place close to home, resulting in on-going exposure to these challenging stimuli (Freeman et al., 1996). Stretesky et al. (2010) wrote that, often motivated by an urge to get revenge and justice, the family and friends of homicide victims may also attempt to assist by

attempting to apprehend the perpetrator. They may also take precautionary measures to protect themselves and their loved ones; Clements and Burgess (2002) and Miller (2009a) described some people who have lost a loved one to murder may install alarm systems, carry weaponry, and avoid situations/locations.

In sum, grief is associated with a number of emotional, physical, cognitive, and behavioral experiences as I have just detailed. While those who have lost a loved one to murder regularly reported grief experiences similar to those described in the above sections, it is clear from the literature that grief in response to murder might be qualitatively different and more complex. For example, grief was described as not only being subjugated to the processing of the (un)reality of murder as the cause of a loved one's death, but also as being delayed or interrupted by the ongoing sequelae and demands of a murder (e.g., investigation, criminal court proceedings)—each new piece of information about the murder stimulating re-evaluation of information already known and possibly retriggering trauma and grief symptoms, thereby further compounding the interruption of (Armour, 2006), or inhibiting (Cowles, 1988) normal grieving. This idea of being taken up by the experiential trauma of murder to the neglect of the grieving process, was well explained by Rynearson and McCreery in 1993, saying that “the disintegratory effects of traumatic imagery and avoidance on cognition, affect and behavior impair the more introspective and reflective demands of acknowledging and adjusting to the loss.” Some researchers and authors (e.g., Armour, 2006; King, 2004; Neimeyer et al., 2002; Rando, 1993; Sprang, 1995; Stretesky et al., 2010) suggested that the increased intensity and duration of grief reactions of the surviving family and friends of murder victims make the grief response unusual, and speculated the mourning in response to murder aligns with what Horowitz and his colleagues

in 1980 described as “complicated mourning,” and which Prigerson and colleagues (1999) went on to theorize and forward as a disorder called “traumatic grief.”

Complicated Mourning and Traumatic Grief

In the early nineteenth century, Freud (1917/1957) and Abraham (1927) differentiated normal grief from pathological grief. In 1944, Erich Lindemann described a number of deviations from typical grief reactions, and termed these “morbid grief reactions” (p. 144). Over the last century, numerous researchers have described unusual reactions to loss as abnormal grief reactions, pathological grief, unresolved grief, complicated mourning, chronic grief, delayed grief, and exaggerated grief (Worden, 2009, p. 2). Horowitz, Wilner, Marmar, and Krupnick (1980) described these grief reactions as:

[T]he intensification of grief to the level when the person is overwhelmed, resorts to maladaptive behaviour, or remains interminably in the state of grief without progression of the mourning process towards completion...involv[ing] processes that do not move progressively towards assimilation or accommodation but instead, lead to stereotyped repetitions or extensive interruptions of healing. (p. 1157)

Horowitz and his colleagues suggested this pattern of grief response to be one of *complicated mourning*, characterized by increased intensity and/or duration as opposed to the presence or absence of particular behaviors or symptoms. Complicated mourning is also associated with clinical depression, anxiety, phobias, alcoholism, substance use, and PTSD (Worden, 2009, pp. 142-144).

Consistent with the description of complicated mourning, there is a sturdy body of literature suggesting the surviving family and friends of murder victims tend to exhibit unusually long and intense grief reactions (Armour, 2006; King, 2004; Neimeyer et al., 2002; Rando, 1993;

Redmond et al., 1989; Sprang, 1995; Stretesky et al., 2010). Redmond (1989) documented severe grief reactions following a homicide, three to five years following the loss. Armour (2006) suggested complicated mourning may be due to the death being the result of human intent, the death being unpredictable, being left with minimal information to make sense of what happened, and the potential for the deceased to have suffered prior to death.

Since Horowitz and his colleagues' work in the 1980s, researchers have proposed a diagnostic disorder called "traumatic grief" or "complicated grief" composed of two symptom clusters: (a) separation distress (Cluster A), and (b) traumatic distress (Cluster B; Prigerson et al., 1999). Many of the symptoms within these clusters are reported by those who have lost a loved one to murder (see Table 2).

Taken together, it seems to be that theoretical and clinical speculation both point to the combination of trauma and grief reactions delaying and prolonging re-adjustment to life following the murder-loss of a loved one (Amick-McMullan, Kilpatrick, Veronen, & Smith, 1989; Armour, 2006; Freeman, Shaffer, & Smith, 1996; Rynearson & McCreery, 1993).

Research Rationale, Purpose, and Hypotheses

Rationale

The impact of losing a sister or brother to homicide on a sibling's development is relatively unknown. However, it is conceivable that experiencing this violation could have a profound impact on developmental outcomes over time (Asaro & Clements, 2005) of a sibling. While the research regarding the experiences of murder-bereaved siblings continues to expand, the majority of these studies are qualitative and utilize anecdotal accounts gathered from small non-representative samples. The validity of the conclusions of these studies may be questioned by the limitations posed by their methodologies. In an attempt to fill this gap within the

literature, inform policy, and influence the development of appropriate services, I designed and completed my study to quantitatively compare the health and well-being outcome of a group of siblings who lost a brother or sister to murder with a comparison group.

Purpose

The purpose of my study was therefore to collect data on measures of health and well-being outcome in murder-bereaved siblings and to compare this with data collected from comparison participants who grew up with at least one sibling. The two objectives of this study were: (a) to contribute a quantitative study to the small number of qualitative studies regarding siblings of murder victims, by (b) comparing the health and well-being of individuals who lost a sibling to murder in childhood, adolescence, or young adulthood to a comparison group.

Research Question

The primary research question asked in this study was: Does the murder of a sibling have health and well-being implications for surviving siblings over the longer term such that murder-bereaved siblings are distinguishable from a comparison group on measures of general health and well-being? To help me answer this question, I developed four sub-questions with which to compare the health and well-being of siblings who have experienced the murder-loss of a sibling (Murder Group) with that of comparison siblings (Comparison Group). Drawing from literature on the loved ones of murder victims, developmental psychology, trauma, and grief, my four questions were: (1) Do the groups differ in current socioeconomic status? (2) Does general health differ between the groups? (3) Do the groups differ in the amount of subjective distress they currently experience? (4) Do the groups differ in terms of subjective well-being?

Sub-Questions and Hypotheses

Question 1. Do the groups differ in current socioeconomic status? The American Psychological Association (APA) commonly conceptualizes socioeconomic status (SES) as a combination of income, occupation type, and education (APA, 2015). Given the multitude of research with people who have lost a loved one to murder suggesting that adjustment and daily life are put on hold and interrupted through the ongoing personal and systemic sequelae and demands of murder-loss, I suspected these experiences would interfere with the above measures of SES.

Hypothesis 1: The siblings of homicide victims will differ significantly in socioeconomic status as measured by income, occupation type, and academic achievement, when compared to the Comparison Group.

Question 2. Does general health differ between the groups? The research has suggested losing a loved one to murder is associated with a number of negative physical health concerns (Clements & Burgess, 2002; King, 2004; Miller, 2009a). I generated three hypotheses to test the degree to which these conclusions apply to siblings who have lost a brother or sister to murder.

Hypothesis 2A: The siblings of homicide victims will report their current overall general health as significantly worse than the Comparison Group.

Hypothesis 2B. Siblings who have lost a brother or sister to murder will report missing significantly more school/work days in the last 3 months because they were not feeling well, than reported by the Comparison Group.

Hypothesis 2C. Siblings who have lost a brother or sister to murder will report going to school/work significantly more often in the last 3 months despite not feeling capable of doing their work or performing their work duties, than reported by the Comparison Group.

Question 3. Do the groups differ in the amount of subjective distress they currently experience? Studies involving family members and friends of murder victims have suggested psychological distress associated with the murder and loss of their loved one is persistent (e.g., Freeman et al., 1996; Rynearson & McCreery, 1993). I created two hypotheses to compare the psychological distress experienced by siblings who have lost a brother or sister to murder against that of comparison participants.

Hypothesis 3A. The siblings of homicide victims will report significantly more subjective distress related to both the murder and the loss of their sibling for all three subscales on the IES-R than that reported by the Comparison Group in relation to a self-identified challenging or stressful experience during their growing-up years (0-25 years).

Hypothesis 3B. Using (a) Creamer, Bell, and Failla's (2003) suggestion that a score of 33 on the IES-R correctly identifies 90% of individuals eligible for a DSM-IV-TR PTSD diagnosis, and (b) given the findings that homicide-bereavement includes traumatic distress, I hypothesized that *significantly more siblings who have lost a brother or sister to murder will score greater than 33 on the composite score of the Impact of Events Scale-Revised than will participants in the Comparison Group.*

Question 4. Do the groups differ in terms of subjective well-being? To answer the question of the effects of the loss of a sibling to murder on a sibling's subjective well-being, I created four hypotheses to test four components of well-being: social support, positive recollections of the past, overall life satisfaction, and perceived self-worth.

Hypothesis 4A. Siblings who have lost a brother or sister to murder will report significantly less perceived current social support than the Comparison Group.

Hypothesis 4B. Siblings who have lost a brother or sister to murder will report significantly less positive recollections of their pasts as measured by reports of being less happy and feeling more different than reported by the Comparison Group.

Hypothesis 4C. Siblings who have lost a brother or sister to murder will report significantly less overall life satisfaction than the Comparison Group.

Hypothesis 4D. Siblings who have lost a brother or sister to murder will report significantly lower perceived self-worth than the Comparison Group.

Chapter 2

METHODS

Does the murder of a sibling have health and well-being implications for surviving siblings over the longer term such that murder-bereaved siblings are distinguishable from a comparison group on measures of general health and well-being? To answer this research question posed for my thesis, I collected data from 80 individuals who grew up with a sibling—the Comparison Group—to compare with data (Study 1) previously collected by Dr. Tasker from 67 individuals who lost a sibling to murder while growing up—the Murder Group.

Research Approach and Study Design

A quasi-experimental comparative approach was used to answer the research question. Convenience sampling was used to accrue an aggregated Comparison Group, matched on age and sex with the Murder Group. Dependent variables included various measures of health and well-being. This study was completed as the second arm of Dr. Tasker's larger study investigating the experience and needs of siblings of young murder victims and the impact of murder on siblings' ongoing development and overall well-being.

Sample Recruitment and Participants

In total, 147 individuals participated in this study. There were 67 siblings of murder victims (16 males, 51 females) making up the Murder Group, and 80 participants (16 males, 64 females) making up the Comparison Group.

Murder Group

Recruitment. Ethical approval for Study 1 was obtained from the Human Research Ethics Board (HREB) at the University of Victoria in British Columbia, Canada where Dr.

Tasker is an Associate Professor in the Counselling Psychology program in the Faculty of Education. (Research Ethics Protocol # 09-326.)

The initial target population for the study was siblings of murder victims in Canada who were aged 25 or younger when their sibling was murdered. Dr. Tasker was interested in the experience of children and youth up-to-and-including emerging adulthood (18 to 25 years; Arnett, 2000). By definition, emerging adulthood typically involves a continuing need for support (financial, emotional) from parents, instability, and identity exploration (Arnett, 2000, 2004). Given the study's purpose—to document the experience of siblings who often feel ignored or “lost in the shuffle” (study participant)—Dr. Tasker did not include a minimum/maximum length of time since the time of murder as an inclusion criterion because she felt it was counter to the study's guiding purpose and, to her, unethical to deny the voice of a sibling expressing interest in participating in the study.

Dr. Tasker used non-probability sampling methods to inform potential participants of the study through listserv broadcasts, public monthly e-newsletters, and website-postings of the study poster (all available in English and French) by homicide and victim groups (e.g., Canadian Victim Resource Foundation, Canadian Crime Victim Foundation, Parents of Murdered Children); word of mouth from victim service workers, support groups, and victim families (families often get to know each other in their particular regions and provide support for each other on an informal basis); and a press release that resulted in a small and highly time-constrained one time call for participants. She was also contacted directly by several families who were in attendance at the Canadian Crime Victim Gala Event held in May 2009 in Toronto where the award of the study grant was announced, or at the Victim of Homicide Conferences

held in 2011 and 2013 in Edmonton where she was invited to talk about the sibling experience of the murder of a sister or brother.

Siblings interested in participating in the study contacted Dr. Tasker directly through email or phone. As such, the recruited sample is a self-selected, non-probability sample characterized by participants' willingness to participate. Dr. Tasker purposely did not set a sample target size in the interests of ethical and sensitive recruitment of the sample population of interest; this approach constrains coercion (Doyle, 2001). Also, because murder cases are public (to keep libel from being published about victims), many of the details of both the deceased and the family are already public. This being the case, Dr. Tasker believes siblings of murder victims are more likely to consent to participate in a study such as this than, for example, siblings of sexual assault victims.

Dr. Tasker is confident that siblings who responded to the calls for participation in the study did so at their own volition. In addition, she thought this approach to recruitment would ensure the siblings of murder victims agreeing to participate considered themselves emotionally ready to undertake the task. Dr. Tasker reports, many siblings appeared eager to participate in the study because they were hopeful that the research will contribute toward improvement and change in the way families generally and siblings, specifically, are regarded and dealt with beginning from the time of notification of kin. When parents called expressing interest for or on behalf of their children, Dr. Tasker provided information to the parent to discuss with their child/children. Participants younger than 13 years were required to provide written consent from a parent to participate in the study. Youth aged 13 to 16 years were able to provide consent to their participation and did not require the written consent of a parent (Human Research Ethics

Board, University of Victoria, 2009). Following receipt of consent, participants were provided with unique access codes, which they used to access the online questionnaire package.

While Dr. Tasker had set the initial target population for the study to comprise siblings of murder victims in Canada who were aged 25 or younger when the murder occurred, *when* siblings who had been older than 25 at the time of the murder began contacting her, knowing full well that they did not meet the age requirements but expressing a strong interest in participating, she included them. Dr. Tasker felt it was unethical to deny these siblings the opportunity to participate in the study on methodological grounds of being “ineligible.” Furthermore, she had recently learned of the contention that reaching adulthood in North America and industrialized societies appears to be an even “longer road” (Arnett, 2004, p. 3) than previously considered, extending now from beyond age 25 to as late as 29 (Arnett & Fishel, 2013, p. 11). Dr. Tasker also decided to open the study to include siblings from America when it became evident to her that they were interested in participating in the study. Inclusion criteria for participation in the study were thus: (a) full- or half-brother/sister relationship to the murder victim; and (b) reading and writing literate in one of English or French. The eventual study sample comprised 67 siblings (40 Canadian, 27 American) of 56 murdered siblings (30 Canadian, 26 American).

Collapsing across Canadian and American sibling participants. In order to assess whether it was empirically acceptable to collapse across all participants, it was necessary to confirm that doing so did not hide or blur important age (participant-age at time of murder) or country distinctions between Canadian and American sibling participants. To do this, Dr. Tasker established and assessed 5 comparisons, using the more conservative and well-documented 18-25 age-range definition of emerging adulthood: Comparison 1: Canadian siblings vs. American siblings; Comparison 2: Canadian siblings ≤ 25 vs. American siblings ≤ 25 ; Comparison 3:

Canadian siblings ≤ 18 vs. American siblings ≤ 18 ; Comparison 4: American siblings ≤ 25 vs. American siblings >25 ; and Comparison 5: Canadian siblings ≤ 25 vs. Canadian siblings >25 .

Each comparison was assessed by examining between-group differences on 13 continuous and 5 non-continuous variables. The 13 continuous variables assessed were: number of years from murder; participant's age at time of murder; age-difference between participant and murdered sibling; perceived level of social support received following the murder; perceived level of current social support; perceived level of victimization following the murder; perceived level of victimization currently; satisfaction with police communication with them; satisfaction with the investigation; satisfaction with the criminal justice system; satisfaction with the media's communication with them; satisfaction with the media's reporting; satisfaction with victim service and criminal injury programs. The 5 non-continuous variables were those of sex; participant's education level at time of the murder; whether the murder was cleared or not; relationship between the offender and victim; whether the participant attended court or not.

Two-sample *t*-tests and ANOVA for continuous data, and chi-squared tests for non-continuous categorical data, were used. To control for Type 1 error as a result of assessing for differences across multiple variables, Dr. Tasker used a conservative *p*-value, $p < .01$, for tests on both continuous and categorical data. She used mean imputation for continuous data and, for categorical data, "Unsure/Don't know/Cannot remember" responses were designated missing.

There were no statistically significant differences found for Comparison 1 (Canadian vs. American siblings) and Comparison 4 (American siblings aged 25 or younger vs. American siblings older than 25 when the murder occurred). One statistically significant difference was found between groups on Comparisons 2 (Canadian siblings ≤ 25 vs. American siblings ≤ 25), 3 (Canadian siblings ≤ 18 vs. American siblings ≤ 18), and 5 (Canadian siblings ≤ 25 vs. Canadian

siblings >25). For Comparison 2, Canadian siblings reported significantly less agreement ($p = 0.006$) with the statement of being “satisfied with the support and services offered by crime victim services and/or criminal injury programs (e.g., emotional support and counselling, compensation)” following the murder of their sibling, than American siblings. For Comparison 3 (Canadian siblings ≤ 18 vs. American siblings ≤ 18), Canadian siblings indicated significantly less agreement ($p = 0.01$) with the statement "I was satisfied with the way representatives from the media communicated with me and responded to my needs and questions", than American siblings. For Comparison 5 (Canadian siblings ≤ 25 vs. Canadian siblings >25) there was a statistically significant ($p = 0.004$) mean difference of 3.2 years in the age-gap between siblings and their murdered siblings in the two groups. The mean age-gap was 4.49 ($SD = 3.28$, $range = 1-16$) years for siblings who had been 25-years-of-age or younger and 7.33 ($SD = 3.33$, $range = 1-12$) years for siblings who had been older than age 25.

Dr. Tasker and I agree these three single-variable differences do not represent systematic or meaningful differences across the groups. Furthermore, she is confident that the assessment and empirical evidence presented suggest the groups are similar and that it is therefore reasonable for us to combine participants into one sample comprising siblings of young murder victims in North America.

Murder Group: Sample characteristics. On average, the siblings of murder victims were 20.3 years old at the time of the murder ($SD = 8.9$, $range = 6-40$ years); 76% of the siblings had been 25 or younger, and 84% had been younger than 29. The mean age-gap between the participating and murdered sibling was 5.1 years ($SD = 3.48$; $range = 1-16$ years); 70% of siblings were 6 or less years younger or older than their murdered sibling. At the time of participation, 42% of the sibling participants were age 29 or younger. Also, 14.58 years had

passed, on average, since the murder ($SD = 13.24$, $range = 1-54$, $skewness = 1.31$) and 52% of the murders had taken place 10 or fewer years ago. More than half of the murders (57%) occurred in the 2000s. Three siblings had witnessed the murder of their sibling. The 67 participating siblings represent 56 murdered siblings (51% brothers) with a mean age of 20.9 years ($SD = 5.86$; $range = 4-35$); 87% were age 25 or younger at the time of their death. At the time of data collection, 23 of the 30 (77%) murders in the Canadian sample and 19 of the 26 (73%) in the American sample, had been “cleared” (a charge had been laid and in some cases, prosecuted; the accused was deceased or had committed suicide).

Comparison Group

Ethical approval for the comparison study was obtained from the Human Research Ethics Board (HREB) at the University of Victoria in British Columbia, Canada (Research Ethics Protocol # 14-310).

Recruitment. Comparison participants needed to be at least 13 years old (due to requirements of ethical approval), be literate in English, have had at least one sibling at some point in their life before the age of 25, and not have lost a sibling to murder. While some participants in the Comparison Group are personal contacts of mine, the majority (approximately 75%) were recruited through list serves, social media, class presentations, snowball sampling, and informational posters within the community of Victoria in British Columbia, Canada. Recruitment of comparison participants began in October 2014 and concluded in January 2015.

Typically, potential participants informed about the study e-mailed me for either more information or to indicate they were interested in participating. Exactly 100 individuals volunteered to participate as comparison participants. These potential participants were provided

additional information about the study, a study identification number, and a link to the online survey. Eighty participants completed the online survey.

Comparison Group: Sample characteristics. On average the Comparison Group ($n = 80$) was 32.0 years old when they participated in this study ($SD = 13.2$, $range = 13-66$); 39% of comparison participants were 25 years old or younger, and 56% were 29 or younger when they participated. Similar to the Murder Group, the Comparison Group was 80% female and 20% male. Approximately half of the individuals in the Comparison Group attended post-secondary education full time (51%) and 43% of comparison participants had annual personal incomes less than or equal to, \$20,000 Canadian dollars. Also, the vast majority (95%) of the comparison participants primarily spoke English.

Murder and Comparison Groups Equality

In total, 147 individuals participated in this study. Two sample, two-tailed t -tests (with pooled variances) and Pearson chi-square analyses were used to assess for homogenous grouping of the two groups. Significance was set at $p < 0.05$ for continuous data (using MYSTAT Bonferroni correction to adjust individual p -values as to not inflate the probability of type 1 error), and $p < .01$ for categorical data. There were no statistically significant differences between the two groups in the sex of participants (16 males and 51 females in the Murder Group; 16 males and 64 females in the Comparison Group), $\chi^2(1, N = 147) = 0.32, p = 0.57$; age of participants (Murder Group, $M = 34.9$ years, $SD = 13.7$, $range = 9-63$; Comparison Group, $M = 32.0$ years, $SD = 13.2$, $range = 13-66$), $t(145) = -1.32, p = 0.56$; and number of siblings (Murder Group, $M = 3$ [including murdered sibling], $SD = 1.95$, $range = 1-8$; Comparison Group, $M = 2.1$, $SD = 1.6$, $range = 1-9$), $t(98) = -2.12, p = 0.11$. Data were, however, missing for 45 (67%) siblings in the Murder Group because they had not been collected as part of Study 1; two (3%)

participants in the Comparison Group did not respond to this question. Siblings of murder victims and comparison participants also did not differ in their current relationship statuses, $\chi^2(2, N = 147) = 2.26, p = 0.47$. Twenty-three (34%) of the siblings of murder victims and 36 (45%) comparison participants were not in a relationship when completing the survey. Ten (15%) of the siblings of murder victims and 13 (16%) comparison participants were in a serious dating relationship, and 34 (51%) versus 31 (48%) were married or common-law/cohabitating. There was no significant difference, between the groups, in terms of being parents; 54% and 34% of the Murder and Comparison groups, respectively, had children; $\chi^2(1, N = 147) = 5.94, p = 0.02$. Although siblings in the Murder Group had more ($M = 1.27, SD = 1.44, range = 0-5$) children than the Comparison Group ($M = 0.78, SD = 1.22, range = 0-4$), the difference was not statistically significant; $t(145) = -2.25, p = 0.08$. All participants in both groups were literate in English. However, 6 participants (2 siblings of murder victims and 4 comparison participants) primarily spoke a language other than English when at home. Neither of the groups was able to estimate their family incomes while growing up. Twenty-five (37%) of the siblings of murder victims and 17 (21%) comparison participants either did not know their family income or preferred not to answer this question. Given this large amount of missing data, hypothesis testing using chi-square tests was inappropriate. Finally, the two groups were not significantly different on two self-report items indexing family and social stability and satisfaction “while growing up (i.e., 0-25 years)” (Comparison Group) or “before the murder of my sibling” (Murder Group—who were 20.3 years old on average when their sibling was murdered; $SD = 8.9, range = 6-40$). Twenty five (37%) and 32 (40%) of the participants in the murder and comparison groups reported NOT experiencing “family stability and satisfaction” while growing up, $\chi^2(1, N = 147) = 0.11, p = 0.74$; and 21(31%) and 28 (35%) participants in the two groups

reported NOT experiencing “social stability and satisfaction” when they were growing up, $\chi^2(1, N = 147) = 0.22, p = 0.64$. Taken together, the groups are sufficiently similar on the demographics compared to be considered equivalent. (See Table 3.)

Data Collection

Data Collection Procedure for the Murder Group

Dr. Tasker used a CallWeb-based questionnaire package comprising eight individual questionnaires. The CallWeb-based questionnaire package was programmed, hosted, and received by the secure Computer Aided Web Interviewing (CAWI) system used by of R. A. Malatest & Associates Ltd. (Malatest) website (www.malatest.com). The internet was selected as the venue for data collection to maximize and facilitate data collection reach. Documented empirical data have shown that responses to online questionnaires more accurately capture sensitive information compared with face-to-face interviews and pencil-and-paper questionnaires (Gorbach et al., 2013; Gribble, Miller, Rogers, & Turner, 1999; Supple, Aquilino, & Wright, 1999; Torangeau & Yan, 2007; Turner et al., 1998), possibly as a result of respondents’ increased perceptions of privacy and the anonymous (Supple et al., 1999; Torangeau & Yan, 2007), safe, and familiar environments of their own home or workplace computers. A relatively recent study using a web-based questionnaire assessment of trauma in an at-risk college population, demonstrated the reliability of online questionnaires in collecting data on sensitive topics, possibly accounted for by online questionnaires being less intrusive compared with other formats (Read, Farrow, Jaanimägi, & Ouimette, 2009).

The CallWeb system has multiple levels of password protection to ensure that data are limited to authorized users (staff members with Client/Consultant authorization having access) only. For example, passwords are changed at regular intervals and during staff turnover:

“Unauthorized access to data is as close to impossible as one can reasonably assure” (R. A. Malatest & Associates, Ltd., personal communication, August 7, 2009). Encryption programs are used for all client data transmitted electronically with authorized staff users only. Malatest is a 100% Canadian owned and operated corporation and is not subjected to the provisions of the US Patriot Act. At minimum, Malatest research staff has Enhanced Reliability security clearance obtained from Public Works and Government Services Canada; senior staff have Secret or Top Secret security clearance. All staff members are required to sign a confidentiality agreement upon hiring and the Victoria office has received Top Secret Facility Security Clearance from The Canadian and International Industrial Security Directorate (CIISD) that provides the authority to hold information up to and including the PROTECTED “B” level. The Michael Smith Foundation for Health Sciences (MSFHR), Social Sciences and Research Council of Canada (SSHRC), Natural Sciences and Engineering Research Council of Canada (NSERC), University of Alberta, University of Calgary, and University of Victoria are among Malatest’s major clients. All data are stored on a server housed within the Victoria office. Physical access to this database is protected by multiple levels of security. All downloaded hard copy information is kept in locked rooms, locked filing cabinets or both. On completion of the data collection phase, Malatest prepared final fully labeled SPSS data and text (containing open-ended fields) files for Dr. Tasker. All hard copy information was handed over to Dr. Tasker and Malatest deleted all electronic data and destroyed any remaining hard copy information by a secure shredding service that provides certificates of destruction.

On receiving spoken or written requests for access to complete the online study questionnaire package, Dr. Tasker provided participants with unique access code buttons (i.e., randomly generated passwords required to enter the questionnaire document). Participants had

no access to other participants' web-based questionnaires or responses. Participants were able to save their work and return to it at any time prior to submitting each questionnaire, by using their unique access coder to re-enter the questionnaire at their convenience and readiness.

Dr. Tasker reminded participants that it was their choice to complete any or all of the questionnaires, how much information they wished to provide to questions, and that they were free at any point to stop participating altogether. Participants were asked to complete the questionnaire within 2 weeks of their first access. Dr. Tasker followed-up with participants within 2 days after the elapse of the 2-week period, and once more 2 weeks later. Once the questionnaire was submitted by the participant, a thank you message was generated acknowledging receipt of that particular questionnaire, and the participant's access to the questionnaire was lost. Two participants requested to complete the questionnaires using paper-pen format rather than electronically. Dr. Tasker mailed both participants a questionnaire package together with a stamped, self-return envelope. On return of the questionnaires, a research assistant transferred the data to the CallWeb system for each participant using access codes assigned to each. Once entered, both hardcopies were destroyed.

Data Collection Procedure for the Comparison group

The survey was accessible to comparison participants online through *FluidSurveys*TM, an online survey tool hosted by a Canadian server. As such, participants' confidentiality is not at risk because *FluidSurveys*TM do not fall under the jurisdiction of the USA Patriot Act, which "permits U.S. law enforcement officials, for the purpose of an anti-terrorism investigation, to seek a court order that allows access to the personal records of any person without that person's knowledge" (Government of Canada, 2006). Participants were provided information about the study and provided consent to participate by entering their unique study identification number

and proceeding to complete the survey. By using the study identification number, and not entering their names onto the survey, participant anonymity was increased. Participants were informed that their survey responses would be kept confidential unless they indicated they meant to harm themselves or others, reported a child or vulnerable adult at risk of abuse, or their records were subpoenaed. I kept a private list of who was assigned each identification number in-case it was necessary to revoke confidentiality due to a response meeting the criteria described above. No participant responses met these criteria. Participants were informed they had until the end of December, 2014 to complete their surveys. If they had expressed interest in participating in the study and were provided a study identification number, but they had not completed the survey by November 1st and/or December 1st they were sent an e-mail reminder. All participants in the Comparison Group received an e-mail thank-you letter for participating.

Measures

The CallWeb-based questionnaire package sent to the siblings of murder victims (Study 1) included a battery of 7 individual questionnaires. With the exception of the *Impact of Event Scale-Revised* (IES-R; Weiss & Marmar, 1997) and *Satisfaction with Life Scale* (Diener, 2002; Diener, Emmons, Larsen, & Griffin, 1985), Dr. Tasker developed the instruments specifically for this study. In some cases (e.g., Health Status), these questionnaires included item subsets from existing instruments. The specific development of other instruments was based on a comprehensive review of the developmental, trauma, grief, and homicide literature, and through the use of expert opinion (Streiner & Norman, 2003, p. 18). In areas of study with limited existing research bases, using expert opinion (e.g., focus groups, key informant interviews, expert consultation) for the development of instruments is a relevant and acceptable source of items (Streiner & Norman, 2003, pp. 15-18). Specifically, Dr. Tasker sought expert opinion

input from victim support group coordinators and from representatives of victim policy groups and homicide investigation teams. It is important to note however, that the instruments developed specifically for Dr. Tasker's study have not been psychometrically assessed.

For the present comparison study, I adapted the questionnaire package used in Study 1 for use with participants in the Comparison Group. Dr. Tasker and I collaborated on these adaptations. We attempted to maintain the integrity and meaning behind each of the survey instruments by only sparingly making minor adjustments to the wording of questions. Comparison Group participants therefore completed the same instruments modified to be appropriate to their group membership. For example, whereas the prompt question in the IES-R completed by participants in the Murder Group asked participants to rate how distressing each difficulty had been for them during the past seven days with respect to "the fact that your sister or brother was murdered," Comparison Group participants were asked to rate how distressing each difficulty had been for them during the past seven days with respect to the stressful, challenging and/or upsetting experience/s from their childhood (ages 0-25) that they had been asked to list before completing the IES-R. Instruments used in the study were the following:

1. Demographic and Background Information questionnaire
2. Social Support scale
3. Health Status questionnaire
4. Self-Worth scale
5. Looking Back Across My Childhood questionnaire
6. Impact of Event Scale-Revised
7. Satisfaction With Life questionnaire

Demographic and Background Information

The *Demographic and Background Information* questionnaire comprised a 36 check-box and rating scale items developed specifically for Dr. Tasker's original study. The questionnaire included traditional demographic (e.g., age, relationship status) items as well as items related to the murder/violent crime specifically (e.g., relationship of the offender to the victim; where the violent crime occurred; was the offender a young, high risk, or first time offender, or out on bail or parole). Also included as a single question, was a 22-item question assessing self-perceived health and well-being where participants were asked to select those items, among the 22, that corresponded with their health and well-being history (e.g., multiple minor medical problems, hospitalization for medical problems, chronic emotional problems, educational difficulty, employment difficulty, drug/alcohol abuse, legal problems, social stability and satisfaction). Four Likert-scale items were included to assess level of satisfaction with the criminal justice process and crime victim injury and service programs. Where relevant, demographic variables were assessed at three time points: prior to and following a sibling's murder-death, and currently. For the Comparison Group, we removed all murder-specific items and changed the stem question for the 22-item question assessing self-perceived health and well-being; the stem question was changed from asking participants to check items applying to their general health and well-being "before the murder of my sibling, I experienced ..." to "while growing up (ages 0-25), I experienced ...". When all was said and done, the *Demographic and Background Information* questionnaire completed by comparison group participants, comprised 15 check-box and rating scale items in total.

Social Support Scale

Dr. Tasker used a single-item scale to assess how much social support participants felt they experienced after the murder and currently. Using a 7-point Likert scale where 1 = *no agreement*, 3 = average agreement, 5 = good agreement, and 7 = *total agreement*, participants were asked to rate their level of agreement with the statements “I had a lot of social support after the murder of my sibling” and “Currently, I have a lot of social support in my life.” Space was provided for participants to explain or expand on their ratings if they wanted to. We made no changes to the Social Support Scale for use in the Comparison Group.

Health Status Questionnaire

The *Health Status* questionnaire is a 5-item self-report instrument developed for this research program to assess self-perceived health status. Question 1 was adapted from one of three items used by Eisen, Ware, Donald, and Brook, (1979) to assess children’s current general health (which they, in turn, had adapted from Ware and Karmos’s (1976) assessment of perceived current general health in adults); Question 1(a) asked, “Before the murder, in general my health was (excellent, good, fair, poor),” and Question 1(b), “In general, my health right now is (excellent, good, fair, poor).” General health perception reflects physical, mental, and social components of health, and communicates valuable information about health (Eisen et al., 1979). Space was provided for participants to expand on or explain their evaluation. Question 2 asked participants if their health changed at any time after the murder (Yes/No); if yes, participants were asked to explain in what way(s) their health in general had changed. Questions 3 to 5 assessed functional health (the ability to carry out daily activities; Ware, 1986 cited in Murphy et al., 1999), measured by two performance components: absenteeism and performance itself. Absenteeism was assessed in the past (“at any time after the murder”) and currently (“in the past

3 months”) by asking siblings how much more (*1* = a little more, *2* = somewhat more, *3* = a lot more) than typically before the murder they were absent from school or work, and how many days (not applicable, none, 1-3 days, 4-7 days, 8-13 days, 14 or more days) in the past 3 months they had missed school or work because they were not feeling well; the latter question was used to index current functional health. For the Comparison Group, we removed questions asking about the participants’ health before the murder and if their health had changed after the murder.

Self-Worth

The *Self-Worth* questionnaire comprises a single-item asking participants to provide a response rating for the single item statement “My belief and confidence in my personal value as an individual person is (*1* = Excellent, *2* = Good, *3* = Fair, *4* = Poor).” No modification was necessary for administration in the Comparison Group.

Looking Back Across my Childhood Questionnaire

The *Looking Back Across my Childhood* questionnaire includes 15 items and was also designed specifically for Study 1. The intention for this questionnaire was to gather information about the contextual worlds and psychosocial domains of participants’ development prior to and after the murder of their sibling.

Four items were posed as statements, for example: “At any time prior to the murder, I remember feeling “different” from my friends or classmates and other people.” Participants responded using a 7-point Likert-rating, where *1* = no agreement, *3* = average agreement, *5* = good agreement, *7* = total agreement. Participants were invited to say what they based their ratings on and space was provided for this. To encourage looking back across the years, reflection, and narrative, Dr. Tasker asked 11 open-ended questions using Rogerian language that was warm, unconditional, and positive in regard; for example: “When you think back, what

did you do to cope—good or bad but in the best way that you knew how to at the time—with the murder of your sister or brother? Did this work?” Because Dr. Tasker was invested in being open to collecting information representative of the whole person of the sibling, 5 items regarding sources of pride and the possession of strengths and talents were also included in the questionnaire, for example: “I am most proud of” In modifying this questionnaire for the Comparison Group, we simply asked participants about their lives “while growing up.” For example, “Growing up, I remember feeling “different” from my friends or classmates and other people.” We removed all 4 items posed as statements pertaining to ways of responding to the murder of a sibling, and we retained all 5 items collecting information representative of the whole person of participants.

Impact of Event Scale - Revised

The IES scale was developed by Horowitz, Wilner, and Alvarez (1979) as a 15-item self-report measure of “the current degree of subjective impact experienced as a result of a specific event” (p. 209). As such, the IES is a measure of subjective distress. The *Impact of Event Scale–Revised* (IES-R; Weiss & Marmar, 1997) includes 22 items designed to assess subjective distress to a specific life event. Participants are asked to read each of the 22 statements describing a distress symptom and to indicate how much each difficulty bothered them during the past 7 days, where 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, and 4 = Extremely. Distress symptoms include those of avoidance (8 items; e.g., “I stayed away from reminders of it”), intrusion (8 items; e.g., “Any reminder brought back feelings about it”), and hyperarousal (6 items; e.g., “I was jumpy and easily startled”). Mean scores thus range from 0 through 4 for each subscale. Originally developed by Horowitz et al., (1979) as a 15-item self-report measure tapping intrusion and avoidance symptoms, the IES was revised by Weiss and

Marmar (1997) to include items on hyperarousal and flashback experiences. The IES-R is possibly the most widely used (Hyer & Brown, 2008) and useful (Creamer, Bell & Failla, 2003) self-report measure to assess the degree of and recovery (Hyer & Brown, 2008) from trauma. While the IES-R was designed to reflect DSM-IV (American Psychiatric Association, 1994) criteria for PTSD (Keane, Silberbogen, & Weierich, 2008, pp. 300-301), its use is not intended as a diagnostic tool (Hyer & Brown, 2008). Moreover, the IES-R is probably best considered a measure of *general subjective distress* rather than the more tightly defined PTSD (my emphasis; Creamer et al., 2003).

To assess the IES-R, Weiss and Marmar (1997) conducted preliminary psychometric evaluations using four sample populations drawn from Emergency Medical Service workers and earthquake survivors. They reported high internal consistency ratings ranging from 0.79 to 0.91 across the 3 subscales. Test-retest reliability in the sample with the shorter interval between measures, ranged between 0.89 and 0.91. More recent psychometric evaluations of the IES-R by Creamer and colleagues (2003) in a sample of veterans of the American involvement in Vietnam, shows the IES-R to have high internal consistency ($\alpha = 0.96$) and test-retest reliability ($ICC = 0.87$). They also reported high construct validity as suggested by high correlation coefficients between the IES-R composite scores and PTSD Checklist (PCL). A non-exhaustive review of publications employing the IES-R and listed on Medline shows that the IES-R has been translated into Japanese, Chinese, Korean, French, and Spanish, and that it has been used across a broad range of trauma survivors (e.g., Vietnam veterans, motor vehicle accidents survivors, life threatening cardiac survivors). Also meaningful and of particular relevance to Dr. Tasker's research, is that the IES-R appears to be robust in its ability to evaluate and distinguish between

the degree of distress responses across differential time intervals between the traumatic event and the time of its administration (Hyer & Brown, 2008).

As mentioned above, the distress response to the murder of a loved one is well-documented to comprise both trauma and grief responses independent of but not separate from one another. Also, the psychological response to the fact that their sibling's death was as a result of human intent is likely to take temporal precedence over the psychological response to the loss itself. Recognizing these as at least two aspects of the dual trauma/grief experience of loss through murder, Dr. Tasker adapted the instructions of the IES-R so that participants completed two iterations of the IES-R.

Participants in the Murder Group were first asked to complete the IES-R “with respect to the fact that your brother or sister was murdered;” and thereafter, to complete a second IES-R with the instruction this time to focus on the “loss of your sister or brother” (underlining in the original). Regarding this second iteration of IES-R completion by participants, some might argue that using the IES-R to assess distress related to the loss of a loved one, is simply inappropriate. In response to this, Dr. Tasker believes the general distress and “trauma” most of us intuitively and humanly imagine or know through personal experience of loss associated with the natural or non-violent sudden death of a loved one, supports the face-validity she ascribed to the IES-R in adapting the question to refer to the loss of their sibling.

To further check herself on her admittedly common-sense approach, Dr. Tasker conducted a visual (eyeballing) comparison of items on the IES-R with items on the *Texas Revised Inventory of Grief* (TRIG; Faschingbauer, Zisook, & DeVaul, 1987). The TRIG is a 2-part self-report measure designed to assess grief and bereavement reactions and needs retrospectively and currently. Respondents are asked to indicate whether each of the 8 items in

the retrospective scale and 13 items in the current scale, are Completely True, Mostly True, Both True and False, Mostly False, or Completely False. Given the anchoring of the IES-R in the present (i.e., during the past seven days), Dr. Tasker was only interested in items in Part II (“Present Emotional Feelings”) of the TRIG. Interestingly 6 of the 13 TRIG items appear conceptually to load with 11 of the 22 IES-R items; at face value, 6 TRIG items appear to correspond with 6 IES-R items tapping avoidance responses (Items 5, 7, 8, 11, 12, and 22), with 4 IES-R items tapping intrusion (Items 3, 6, 9, and 16), and with 1 IES-R item tapping hyperarousal (Item 4). Therefore, Dr. Tasker believes the IES-R, to some degree at least, appears to qualitatively reflect and capture some degree of the distress response present in or common to both trauma and grief. Moreover, while the IES-R is commonly spoken of as a measure of trauma, it was originally developed and revised more broadly to assess *subjective distress* in response to a specific event (Horowitz et al., 1979, p. 209; Weiss & Marmar, 1997).

Creamer et al. (2003) suggested a composite score of 33 on the IES-R possesses the “highest overall diagnostic power” (p. 1494) to identify individuals with sufficient symptoms for a DSM-IV-TR PTSD diagnosis. Specifically, scores of 33 on the IES-R have a positive predictive power of 0.90 and a negative predictive power of 0.84. In other words, Creamer et al. (2003) found that scores of at least 33 correctly identified individuals with a PTSD diagnosis 90% of the time, and scores under 33 correctly identified individuals without a PTSD diagnosis 84% of the time.

Satisfaction with Life Questionnaire

The *Satisfaction with Life* questionnaire comprised Ed Diener and colleagues’ 5-item global measure of satisfaction with life, the *Satisfaction with Life Scale* (SWLS; Diener, 2002; Diener, Emmons, Larsen & Griffin, 1985) (e.g., “In most ways, my life is close to my ideal”),

and one item (“I am completely satisfied with my job or with what I am doing at school”) from Amy Wrzensniewski’s *Work-Life Survey* (2002). Both scales have been used with permission. Participants were asked to rate their responses to each of the 6 items using a 7-point Likert-rating, where 1 = no agreement, 3 = average agreement, 5 = good agreement, 7 = total agreement. Participants were provided with space and invited to say what they based their ratings on if they wanted to.

Satisfaction with life is a component of general well-being (Corrigan, 2000) and is commonly used in outcome research. The SWLS (Diener, 2002; Diener et al., 1985) measures “global life satisfaction” defined as a “global assessment of a person’s quality of life according to his chosen criteria” (Shin & Johnson, 1978, p. 478). Diener et al. (1985) believed judgments of satisfaction were based on comparisons of one’s life with an appropriate standard. Items on the SWLS are highly intercorrelated, which is desirable in instruments designed to assess one’s life (Pavot, Diener, Colvin, & Sandvik, 1991). A composite score for the SWLS is obtained by summing the five items (range: 5-35; Hicken, Putzke, Novack, Sherer, & Richards, 2002). High scores indicate very high satisfaction with life and low scores indicate low satisfaction with life. Studies have suggested the SWLS is a valid and reliable measure of satisfaction with life. Hicken et al. (2002) reported an acceptable Cronbach’s alpha (0.80 to 0.89) and test-retest reliability (0.54 to 0.83); and Pavot et al. (1991) and Diener et al. (1985) both found a unitary factor structure for the SWLS. No modifications to the composite 6-item *Satisfaction with Life questionnaire* were necessary for the Comparison Group; participants in both groups responded to the same 6 items.

Data Analysis

A between-group design was used for all data analyses. All data were thoroughly multiple times to decrease the probability of entry error. Means were imputed for missing data and for outliers greater than 3.5 standard deviations from their group means, which were removed. All measures were assessed for normality. Pearson chi-square analyses, with a restricted p -value (significance at $p \leq 0.01$) and one-tailed, 2-sample t -tests were used for hypothesis testing when appropriate. To help reduce the probability of type 1 error, the MYSTAT Bonferroni probability adjustment was applied to all t -tests (all p -values quoted in this section are MYSTAT Bonferonni adjusted). Given the unequal sample sizes of the two groups, pooled variances were used. All analyses were conducted using MYSTAT software.

Cohen's d was used to assess the magnitude of the differences between the groups. Cohen's d is independent of sample size and defined as the difference between two group means divided by the pooled standard deviation (Becker, 2000). Effect sizes are considered small when $d \leq 0.2$, medium when $d \geq 0.5$, and large when $d \geq 0.8$ (Cohen, 1988, p. 25, as cited by Becker, 2000).

With more detailed regard to how the handling of missing data, group means were imputed for missing responses that represented no more than 10% of the data provided by the participant for the question in concern; for questions where participants provided multiple responses on a continuous scale; for "I would prefer not to answer/no response" response selections; and for outliers greater than 3.5 standard deviations from their group means. Only two values met the criteria to be classified as outliers. Both of these values were provided by the siblings of murder victims for the item on the *Looking Back Across My Childhood Questionnaire* asking participants to rate the extent to which they felt different from friends, classmates, and

other people after the murder. These 2 participants' responses were 4.37 and 3.55 standard deviations lower than the group mean, respectively. By imputing the group means for missing data points, the variability of responses was decreased without changing the mean values. This likely increased the t -values obtained. In order to address this, the Bonferroni probability adjustment and a restricted p -value for chi-square analyses were used to decrease the likelihood of obtaining false positives.

The amount of missing data on some questions in this study was inflated by a number of siblings of homicide victims not completing large portions of their surveys. Specifically, 6 (9%) participants in the Murder Group did not complete the *Health Status Questionnaire*, 8 (12%) did not complete the *Looking Back Across my Childhood* questionnaire, and 11 (16%) did not complete any of the IES-R or the *Satisfaction with Life* questionnaires. Given this, it was decided that in order to be included in the hypothesis testing participants must have provided *at least a single response* regarding the hypothesis being addressed. For example, group means were not imputed for the 11 siblings of murder victims who did not provide a single response on the IES-R; these 11 siblings were simply excluded from the t -tests evaluating whether or not the siblings of murder victims experienced more subjective distress than comparison participants. These same 11 participants were, however, included in other analyses addressing other research questions to which they had provided responses. In an attempt to maintain the homogeneity of the groups, for each member of the Murder Group excluded from a particular analysis, a Comparison Participant of the same sex and within three years of the age of the excluded sibling from the Murder Group, was randomly selected to also be excluded from the analysis for that hypothesis.

Further to the use of the IES-R to assess subjective distress in siblings of murder victims, and given the well documented trauma/grief duality hypothesis of murder-bereavement as was laid out in Chapter 1, Pearson correlation coefficients were computed to assess the use of the IES-R as a way to separate out the subjective distress of siblings of murder victims in response to the fact that their sibling was murdered independent of the loss of their sibling, and vice versa. While the constructs being measured by each of the three subscales appear to be related, I believe the constructs are distinct enough to be interpreted individually. (See Table 4.)

Chapter 3

RESULTS

In this chapter, results are reported for all hypotheses testing for each of the four sub-questions asked in my study: (1) Do the groups differ in current socioeconomic status? (2) Does general health differ between the groups? (3) Do the groups differ in the amount of subjective distress they currently experience? (4) Do the groups differ in terms of subjective well-being?

Question 1: Do the Groups Differ in their Current Socioeconomic Statuses?

Hypothesis testing began by comparing the two groups on three components of socioeconomic status (SES): income, occupation, and education (APA, 2015).

Hypothesis 1: The siblings of homicide victims and comparison participants will differ significantly in socioeconomic status as measured by income,^[1] occupation type, and academic achievement, when compared to the Comparison Group. All participants provided at least one response to items related to this hypothesis. Pearson chi-squares, with a p -value restricted to 0.01, were used to test Hypothesis 1. Overall, mixed evidence was found for supporting the retention of Hypothesis 1. There were no observable differences between the two groups on measures of current estimated income ($\chi^2(3, N = 129) = 7.01, p = 0.072$), types of

¹ Annual income response categories were written as dollar income values, for example, 1 = Under \$10,000 and 2 = \$10,000-\$19,999. Because the Murder Group included both Canadians ($n = 40$) and Americans ($n = 27$), we made the assumption that Canadians interpreted the categories in terms of the Canadian dollar (CAD), and Americans, in terms of the US dollar (USD). To make sure that categories nonetheless were roughly dollar-for-dollar equivalent, we used the Bank of Canada's 10-Year Currency Converter (<http://www.bankofcanada.ca/rates/exchange/10-year-converter/>) to establish the average exchange rate across the period of data collection for Study 1 (i.e., January, 2010 – January, 2013). The exchange rate ranged from a low of CAD/USD = 0.93 (May, 2010) to a high of CAD/USD = 1.06 (July, 2011). Assuming a midpoint exchange-rate value of CAD/USD = 0.995 across the study period, we considered the annual income categories to be equivalent for Canadian participants' responses as a function of the CAD and for American participants' responses as a function of the USD. Clearly, annual income as a variable is different from the spending power afforded by annual income; we did not assess spending power as a variable and thus report only on current estimated personal income levels reported by participants.

occupation ($\chi^2(3, N = 145) = 1.05, p = 0.79$), or academic achievement ($\chi^2(3, N = 147) = 7.84, p = 0.049$).

Despite finding that the two groups were statistically similar in terms of income, there were nearly twice as many siblings of homicide victims (43%) than comparison participants (23%) who were making over \$40,000 annually. Unfortunately, the legitimacy of these findings may be questioned because 18% of siblings of homicide victims, and 9% of comparison participants, did not disclose their current personal income. All siblings of homicide victims answered the question on occupation type, and only two (3%) comparison participants did not provide responses to this question. Regarding academic achievement, while there were more comparison participants who had completed university/college, more siblings of homicide victims had completed graduate professional training. Overall, the two groups were not statistically significantly different on any of the three measures of SES. Hypothesis 1 was not supported.

Question 2: Does General Health Differ Between the Groups?

Six (9%) siblings of homicide victims were excluded from analyses because they did not provide a single response to any of the survey questions related to this question. For the analyses for Question 2, 6 comparison participants of the same sex within three years of each sibling's age were randomly selected and excluded. This was done in an attempt to maintain homogeneity of the groups resulting in effective sample sizes of $n = 61$ (Murder Group) and $n = 74$ (Comparison Group) for Question 2's analyses. A one-tailed ($p \leq 0.01$), two-sample t -test with pooled variances, and Pearson chi-square analyses with a restricted p -value (significance at $p \leq 0.01$) were used to test for differences in general health between the two groups.

Hypothesis 2A: The siblings of homicide victims will report their current overall general health as significantly worse than the Comparison Group. Hypothesis 2A was not supported. The two groups did not show a significant difference in their ratings of self-perceived general health on a 4-point scale, where higher ratings reflected poorer general health; $t(133) = -2.12, p = 0.02$. As a group, siblings of homicide victims perceived their general health to be between fair and good ($M = 2.12, SD = 0.78$) compared with comparison participants who perceived their general health being close to excellent ($M = 1.85, SD = 0.68$). Cohen's d effect size was small ($d = 0.37$). Hypothesis 2A was not retained.

Hypothesis 2B: Siblings who have lost a brother or sister to murder will report missing significantly more school/work days in the last 3 months because they were not feeling well, than reported by the Comparison Group. Hypothesis 2B was supported. Of the 135 participants included in the data analysis for Question 2, there were 17 (28%) siblings of murder victims and 2 (3%) comparison participants who did not respond to this item, further reducing the effective sample sizes to $n = 44$ (Murder Group) and $n = 72$ (Comparison Group). A Pearson chi-square analysis with a restricted p -value (significance at $p \leq 0.01$) was used to test Hypothesis 2B. There was a statistically significant difference in the number of days missed by each of the groups, $\chi^2(2, N = 116) = 10.56, p = 0.005$. Whereas 50% (22) Murder Group compared with 75% (53) Comparison Group participants reported no absence from school or work in the past 3 months for the reason of feeling unwell, 18% (8) Murder Group compared to 3% (2) Comparison Group participants reported missing 4 or more days in the same period because they had felt unwell. Hypothesis 2B was supported.

Hypothesis 2C: Siblings who have lost a brother or sister to murder will report going to school/work significantly more often in the last 3 months despite not feeling

capable of doing their work or performing their work duties, than reported by the Comparison Group. Hypothesis 2C was not supported. Of the 135 participants included in the data analysis for Question 2, there were 16 (26%) siblings of murder victims who did not respond to this item, and 5 (8%) who selected the response *I = Not applicable*. All comparison participants provided a response to this item, however 2 (3%) selected *I = Not applicable*, and 1 (2%) participant selected *7 = Unsure/don't know/cannot remember*. These participants were excluded from the analysis, resulting in effective sample sizes for this analysis of $n = 40$ (Murder Group) and $n = 71$ (Comparison Group). A Pearson chi-square analysis was used to test Hypothesis 2C. There was no observable difference between the two groups in the number of days they went to school or work in the last three months despite not feeling capable to do their work or complete their duties, $\chi^2(2, N = 111) = 5.12, p = 0.08$. While 12 (30%) Murder Group and 32 (45%) Comparison Group participants reported never having gone to school or work in the past 3 months when they had not felt well enough to do their work or capably perform their duties, 14 (35%) Murder Group and 12 (17%) Comparison Group participants reported going to school or work 4 or more days in the past 3 months despite feeling so. Hypothesis 2C was rejected.

Overall, findings for Question 2 point to little difference between the two groups on the measures used to assess general health.

Question 3: Do the Groups Differ in the Amount of Subjective Distress they Currently Experience?

Eleven (16%) siblings of homicide victims were excluded from hypothesis testing addressing Question 3. These participants did not, even partially, complete the Impact of Events Scale-Revised (IES-R) portion of the survey. Following my decision rule noted earlier, 11

comparison participants matched on sex and within 3-years of the age of the 11 siblings of homicide victims were randomly selected and excluded from data analyses for Question 3.

Hypothesis 3A. The siblings of homicide victims will report significantly more subjective distress related to both the murder and the loss of their sibling for all three subscales on the IES-R than that reported by the Comparison Group in relation to a self-identified challenging or stressful experience during their growing-up years (0-25 years).

Hypothesis 3 was supported. One-tailed, two sample *t*-tests (with significance at $p \leq 0.01$), with pooled variances to test Hypothesis 3 by comparing the groups on all three subscales of the IES-R were used. All *p*-values reported below have been adjusted using MYSTAT Bonferroni adjusted *p*-values to reduce the probability of type 1 error. As explained in Chapter 2, the siblings of homicide victims completed the IES-R twice, once regarding subjective distress relative to the murder, and once regarding subjective distress relative to the loss of their sibling. Means were imputed for 9% of data missing for siblings of homicide victims' responses, and for 2% missing for comparison participants. One Murder Group participant only completed the IES-R with reference to the murder of his or her sibling. However, because this participant partially completed this portion of the survey, group means were imputed for his or her missing responses.

There were statistically significant differences found between the groups for both sets of IES-R comparisons testing hypothesis 3A. The first set of *t*-tests compared IES-R subscales scores for the Comparison Group with those of the Murder Group relative to the murder of their sibling. There were significant differences between scores on avoidance ($t(123) = 4.24, p < 0.001$), intrusion ($t(123) = -6.14, p < 0.001$), and hyperarousal ($t(123) = -5.62, p < 0.001$) subscales. Cohen's *d* effect sizes ranged from moderate to high: 0.75 (avoidance), 1.09

(intrusion), and 0.98 (hyperarousal). The second set of *t*-tests compared IES-R subscales for the Comparison Group with those of the Murder Group relative to the loss of their sibling. There were significant differences between scores on avoidance ($t(123) = -3.66, p = 0.002$), intrusion ($t(123) = -6.30, p < 0.001$), and hyperarousal ($t(123) = -5.69, p < 0.001$) subscales. Cohen's *d* effect sizes ranged from moderate to high: 0.65 (avoidance), 1.12 (intrusion), and 0.99 (hyperarousal). (See Table 5 for descriptives.)

These results suggested siblings of homicide victims experienced overall greater subjective distress defined in terms of avoidance, intrusion, and hyperarousal symptoms compared with comparison participants. Hypothesis 3A was supported.

Hypothesis 3B. Significantly more siblings of homicide victims will score greater than 33 on composite score of the IES-R than will participants in the Comparison Group.

Hypothesis 3B was supported. Pearson chi-square analyses, with a restricted *p*-value (significance at < 0.01) were used to test hypothesis 3B. Compared to 7% of the Comparison Group with a composite IES-R score greater than 33, significantly more siblings of homicide victims (41%) had a composite score greater than 33 on the IES-R (Murder), $\chi^2(1, N = 125) = 20.35, p < 0.001$. There were also significantly more siblings of homicide victims (36%) with a composite IES-R (Loss) score greater than 33, compared to the 7% of the Comparison Group, $\chi^2(1, N = 125) = 15.66, p < 0.001$. Hypothesis 3B was retained.

Question 4: Do the Groups Differ in Terms of Subjective Well-Being?

Two sample *t*-tests (with an uncorrected significance at $p < 0.01$), with pooled variances were used to test hypotheses related to the fourth research question. To reduce the probability of type 1 error, all *p*-values reported below are MYSTAT Bonferroni adjusted *p*-values.

Hypothesis 4A. The siblings of homicide victims will report significantly less perceived current social support than the Comparison Group. Hypothesis 4A was supported. All siblings of homicide victims and 98% of comparison participants provided responses to this question. Group means were imputed for missing values. Siblings of homicide victims ($M = 5.08, SD = 1.74$) reported significantly less social support than comparison participants ($M = 5.89, SD = 1.18$); $t(145) = 3.34, p = 0.003$. Cohen's d was consistent with a medium effect size ($d = -0.54$). Hypothesis 4A was retained.

Hypothesis 4B. The siblings of homicide victims will report significantly less positive recollections of their growing-up years as measured by reports of being less happy and feeling more different than reported by the Comparison Group. Hypothesis 4B was supported. Eight (12%) siblings of homicide victims did not provide a single response to the *Looking Back Across my Childhood* portion of their surveys; these participants and 8 corresponding comparison participants were excluded from this hypothesis testing. Group means were imputed for a single comparison participant with a missing value for the single-item assessing having been a "happy kid," and for two comparison participants with missing values for the single-item assessing "feeling different" growing up; all 3 had completed all other items for Question 4. After the murder of their siblings, as a group siblings of homicide victims ($M = 3.09, SD = 1.72$) reported significantly less agreement about being a "happy kid" overall than comparison participants while they were growing up ($M = 5.14, SD = 1.59$); $t(129) = 7.12, p < 0.001$. The effect size was very large ($d = -1.25$). In contrast, siblings of homicide victims ($M = 6.29, SD = 1.22$) reported significantly more agreement about "feeling different" from their friends, classmates, and others after the murder than the amount of agreement reported by the

Comparison Group about “feeling different” while growing up ($M = 4.20$, $SD = 1.88$); $t(129) = -7.37$, $p < 0.001$. The effect size was also very large ($d = 1.32$). Hypothesis 4B was retained.

Hypothesis 4C. The siblings of homicide victims will report significantly less overall life satisfaction than the Comparison Group. Hypothesis 4C was not supported. Eleven (16%) siblings of homicide victims did not provide responses to the items on the *Satisfaction with Life Scale* portion of the survey. These 11 participants from the Murder Group and 11 corresponding comparison participants were excluded from this hypothesis testing. Group means were imputed for an additional 1% of comparison participant responses due to missing values. Siblings of homicide victims ($M = 4.03$, $SD = 1.41$) reported overall life satisfaction that was not statistically significantly different from the Comparison Group ($M = 4.68$, $SD = 1.17$); $t(123) = 3.19$, $p = 0.015$. Cohen’s d was consistent with a medium effect size ($d = -0.50$). Given the lack of evidence, Hypothesis 4C was rejected.

Hypothesis 4D. The siblings of homicide victims will report significantly lower perceived self-worth than the Comparison Group. Hypothesis 4D was not supported. Seven (10%) siblings of homicide victims were excluded from this hypothesis testing because they did not provide a response to this question. As per my decision rule, 7 comparison participants of the same sex and within three years of the corresponding sibling’s age, were randomly selected and deleted from this hypothesis test. There was no statistically significant difference between siblings of homicide victims’ ($M = 2.20$, $SD = 0.94$) and comparison participants’ ($M = 1.97$, $SD = 0.87$) perceived self-worth; $t(131) = 1.45$, $p = 0.13$. Cohen’s d effect size was small ($d = 0.25$). Hypothesis 4D was rejected.

Summary of Hypothesis Testing

Hypothesis testing provided support for hypotheses suggesting that, as a group, siblings of homicide victims experienced greater psychological distress and less perceived social support compared with the Comparison Group. Furthermore, siblings of homicide victims were significantly more likely to recall feeling less happy and more different from their peers in their years of growing up following their sibling's murder, than what comparison participants recalled feeling while growing up. By way of providing a summary snapshot of the two groups in terms of their proportional representation across the four research questions asked in this study, and, for which, results have been reported above, see Table 7.

Post-hoc Analyses and Findings

Question 3: Subjective Distress

In an attempt to get a more fine-grained picture of the subjective distress reported by the two groups on the IES-R, mean scores were used to devise and divide participants' subjective distress levels into three broad ranges of distress. Specifically, participants' ratings on the IES-R rating scale were treated as continuous data and (artificially) conceptualized three broad ranges of distress as low (operationalized as range = 0-1.4), moderate (range = 1.5-2.9), and high (range = 3-4). In other words, the low range includes mean IES-R scores between zero ("not at all" distressed) and just below the midpoint of 1 ("a little bit" distressed) and 2 ("moderately" distressed). The high range includes mean IES-R scores between 3 ("Quite a bit" distressed) and 4 ("Extremely" distressed). The moderate range thus falls on the continuum between the end of the low and the start of the high range. Intervals are not equal. Next, the proportion of participants within each range for each of the three subscales was computed. The overriding majority (> 87%) of the Comparison Group fell within the low range on all three subscales, and,

when collapsed across the three subscales, 90% fell within the low range. In contrast, the Murder Group was more evenly spread out between low and moderate ranges of current subjective distress levels. Collapsing across the three subscales, about 60% of the Murder Group fell into the low range (for both IES-R iterations), and another third were grouped in the moderate range of reported subjective distress referring to the murder (37%) or loss (32%) of their siblings. Less than 8% of the Murder Group fell within the high range on either of the two IES-R iterations, and less than 1.5% of the Comparison Group did so. Taken together, while significantly higher levels of current subjective distress were established for siblings of murder victims relative to a comparison group, the majority (around 60%) of the siblings participating in this study reported low levels of current subjective distress and approximately 35% reported levels of current subjective distress in the moderate range. (See Table 8.)

Question 4: Subjective Well-being

Post-hoc examination of differences between groups for items on the *Satisfaction with Life Scale* revealed an interesting distinction between the two groups. Each set of items was separately subjected to a two-sample, two-tailed *t*-test (significance set at $p < 0.05$) and significance was assessed using the Bonferroni probability adjustment to establish the statistical significance, if any, of the differences between the two groups across individual item responses. Of the 6 items included in the Satisfaction with Life section, there were statistically significant post hoc differences between the two groups on two items. Siblings in the Murder Group reported lower agreement with the statements “I am completely satisfied with my life” and “If I could live my life over, I would change nothing.” These two differences were statistically significant and their effect sizes were moderate ($d = 0.48$ and 0.61 respectively). (See Table 9.)

Chapter 4

Discussion

The primary purpose of my study was to compare the health and well-being of 67 siblings of murder victims with a comparison group of siblings who have not experienced a sibling murder. While it is undeniable that the murder of a sibling is beyond a typical stressful life experience and that siblings are likely to be affected by both the trauma and the loss of losing a sibling to murder, existing research is limited. By employing a quasi-experimental comparative design to investigate the effect of the murder of a sibling in terms of overall health and well-being outcome, the findings of this study are preliminary. The findings from this study will inform policy and professionals working with this population.

It is important to frame the findings of this study within the developmental context of when the murders occurred in the lives of the siblings participating in this study. With the exception of 9 of the 67 siblings who were between the ages of 6 and 10 when their siblings were murdered and 10 siblings who were adults, the majority (72%) of the siblings were adolescents or emerging adults. Adolescence and emerging adulthood are both developmental periods of tremendous physical, emotional, cognitive, and social change (Arnett, 2007; Broderick & Blewitt, 2010). These periods are typified by exploration of, and commitment to, romantic relations and to employment, education, and career paths (Frye & Liem, 2011). Furthermore, adolescence and emerging adulthood typically involve self-focus and identity exploration (Arnett, 2007; Broderick & Blewitt, 2010). Identity development is impacted by sibling relationships (Wong, Branje, VanderValk, Hawk, & Meeus, 2010) and by the social context of the young person's world (Broderick & Blewitt, 2010). Conceivably, the impact of a sibling's

murder during adolescence and emerging adulthood may be carried in some part by the relative developmental vulnerability characteristic of adolescence and emerging adulthood.

Assessing the Equivalency of the Comparison Group

The Murder and Comparison Groups appear to be relatively similar across a number of important demographic variables, developmental milestones, and exposure to challenging life experiences (with the exception of the Murder Group being the only group who had lost a sibling to murder), including potentially traumatic events such as physical or sexual assault or a life-threatening accident. There were no statistically significant differences between the Murder Group and the Comparison Group on sex; age; number of siblings; relationship status; likelihood of being parents, or number of children they had; self-reported family stability and satisfaction growing up; or self-reported social stability and satisfaction growing up. Furthermore, the qualitative data collected suggests participants in the Comparison Group also experienced a variety of challenging, stressful, or upsetting life experiences including the death of immediate family members, parental alcoholism, sexual assaults, domestic violence, conflicts with peers, family home relocations, and mental health concerns. Similarly, before the murder, participants in the Murder Group also experienced a variety of the same challenging and potentially traumatic life experiences as reported by the Comparison Group. There is the possibility that there were pre-existing differences in family incomes while growing up, between the groups. Unfortunately, large portions of both groups could not recall, did not know, or chose to not report their family incomes while they were growing up. Twenty-five (37%) of the Murder Group and 17 (21%) of the Comparison Group either did not know their family income or preferred to not answer this question.

I also informally compared the Comparison Group (ages 13-66) with the Canadian and American general public on demographic data reported by Statistics Canada and the US Social Security Administration. In terms of annual personal income categories, the Comparison Group was proportionally representative of the Canadian (CA) population² with the breakdown as follows: (a) *Less than* \$10,000 = 24% Comparison Group versus 20% CA; (b) *Less than* \$20,000 = 41% Comparison Group versus 53% CA; (c) *Less than* \$40,000 = 72% Comparison Group versus 79% CA; and (d) *More than* >\$100,000 = 1% Comparison Group versus 2% CA. Whereas median annual personal income was less than \$20,000 for the Comparison Group, it was \$32,020 for Canadians (reported for 2013; Statistics Canada, 2015) and \$28,031 for Americans (US; reported for 2013; Social Security Tax Records, 2015). Regarding level of education, for people over the age of 25, educational attainment was: (a) *high school graduates* = 86% Comparison Group, 89% CA, and 89% US; (b) *any post-secondary degree* = 34% Comparison Group, 53% CA, and 43% US (Canadian and American data reported for 2012 by the National Center for Education Statistics, 2015); and (c) *graduate professional training* (MA MSc, MD, MBA, or PhD) = 8% Comparison Group, 7% CA (Statistics Canada, 2013), and 10% US (United States Census Bureau, 2014). The rather minimal discrepancies in median annual personal income and in the proportion of Comparison Group participants with a post-secondary degree are likely due to the relatively greater proportion of young people in the Comparison Group, when compared to the general US and Canadian samples.

² Canadian figures represent annual personal incomes reported for 2013 by Statistics Canada in 2015. This level of detail for annual incomes of Americans was difficult to decipher from the US Census Bureau's data tables. Also, the US Census Bureau report "household income" and not personal income. However, the typical individual American was reported to earn \$28,031 per year (reported as the median wage for 2013 in the US Social Security data set), and \$50,000.00 as the average American household income in 2012.

Overall, the Comparison Group and the Murder Group appeared to be similar on a number of important variables, and the Comparison Group appears to be at least reasonably representative of Canadians and Americans in general, in terms of personal income and educational achievement.

Summary and Discussion of Findings Comparing the Health and Well-being of Siblings of Murder Victims to that of a Comparison Group

Several statistically significant and meaningful differences were found between the siblings of homicide victims and the comparison participants in this study, despite using conservative statistical methods to determine statistical significance. Results are largely consistent with the message communicated by the existing literature suggesting the siblings of homicide victims are impacted by the murder of their siblings (Applebaum & Burns, 1991; Freeman et al., 1996). In this next section the results of hypothesis testing conducted to answer my research question are described and discussed.

Question 1: Do the Groups Differ in their Current Socioeconomic Statuses?

The Murder Group and Comparison Group did not differ significantly in socioeconomic status as measured by income, occupation type, and academic achievement. It has been suggested in anecdotal report and previous literature that it is common for the loved ones of murder victims to experience difficulties at work and school (Asaro & Clements, 2005; Freeman et al., 1996; King, 2004). On the surface, the results of this study seem contrary to these findings; the siblings of homicide victims and the comparison participants reported similar current annual incomes, occupations, and levels of academic achievement. However, a number of factors should be considered when attempting to interpret my results.

In terms of annual income, 12 (18%) participants in the Murder Group did not report their current annual income. In order to meet the requirements of a chi-square analysis, I had to collapse personal annual income response-categories into four relatively large categories (0-\$20,000, \$20,000-\$40,000, \$40,000-\$60,000, and over \$60,000). While close to a third (31%) of the Murder Group and nearly half (43%) of the Comparison Group reported annual incomes less than \$20,000, less than 15% in either group reported current annual incomes over \$60,000 (Murder Group = 15%, Comparison Group = 11%). In collapsing across income response-categories, I inadvertently reduced the variability of responses, thus I likely reduced the sensitivity of the chi-square to detect significant differences. However, failure to detect differences in annual incomes is more likely to reflect the target population—siblings who were bereaved by murder *before* reaching adulthood. By this I meant that the participants in the Murder Group (and therefore, in the Comparison Group) were relatively young (mean age = 34.9 years, $SD = 13.70$) at the time of participation, and just over half (52%) of their siblings had been murdered 10 or less years earlier. As a consequence, participants in the study were more likely to be in their early earning years. In Canada, young people aged 25-29 make 64% less disposable income on average than Canadians aged 50-54 (Conference Board of Canada, 2014). This wage gap is now at its highest level since 1984. Due to these economic trends it is possible a floor effect is taking place with the participants in this study. It is also worth mentioning again that the median annual income for Canadians was \$32,020 in 2013 (Statistics Canada, 2015) and \$28,031 for Americans in 2013 (Social Security Administration, 2015). It is possible the annual incomes of the siblings of murder victims and the comparison participants in this study do differ but the reduced variability due to the floor effect, combined with the small number of income categories with large ranges, and the missing data from 12 participants in the Murder Group, all

reduced the likelihood of detecting a statistically significant difference in annual incomes between the two groups.

Consistent with finding no significant differences in annual incomes, there was also no observable difference in the types of occupations possessed by each of the groups. Luckily, the question regarding occupation type had a very high response rate (99%). Unfortunately, the categories of potential occupations were also quite broad, and it was necessary to collapse responses into these broad categories to meet the requirements of running a chi-square analysis, once again reducing variability and therefore, the likelihood of detecting significant differences between the groups. Whereas just under half (48%) of the Murder Group and less than one-third (26%) of the Comparison Group were currently employed full time (i.e., approximately a 2:1 ratio), the opposite was true for currently attending school, college, university or a training program fulltime. In this case, 16% of the Murder Group compared to 51% of the Comparison Group were attending fulltime education or training programs (i.e., a 1:3 ratio). Through post-hoc analyses, I established that the difference between the two groups in terms of the number of participants attending fulltime education or training, was statistically significant, $\chi^2(2, N = 147) = 19.35, p < .001$. I think it is also interesting and important to point out that 15% of the Murder Group compared with only 1% of the Comparison Group identified as homemakers, possibly reflecting in a limited way anecdotal report of an increased valuing of family and relationships over occupation being observable in the developmental outcomes of siblings of homicide victims. Just under 20% of the Murder Group but not a single participant in the Comparison Group said that they were currently unemployed or not working by choice. I am not sure why this is so, but it could be the case that a subset of the Murder Group were not working as a function of relatively recent bereavement or because they were on compassionate leave or

disability. Both speculations are reasonable. First, when they participated in the study, 21 (31%) siblings had lost a brother or sister to murder within the last 5 years and of these 21 siblings, 6 had been bereaved as little as one year previously. Second, as a group, compared to the Comparison Group, the Murder Group was significantly more likely to have been currently experiencing elevated levels of subjective distress as measured on the Impact of Event Scale-Revised (IES-R). More so, the differences between groups on subjective distress indices of avoidance/numbing, intrusion, and hyperarousal, were all large differences. In terms of employment occupation types characterizing the two groups, a slightly larger proportion of participants in the Murder Group (34%) reported current occupations as skilled (e.g., baker, barber, chef, electrician, fireperson, mechanic) or professional (e.g., manager of medium sized business, nurse, optician, pharmacist, higher executive, owner of a large business) compared to the Comparison Group (27%). Conversely, a slightly larger proportion of the Comparison Group (14%) was working in unskilled/semi-skilled (e.g., janitor, construction helper, unspecified labor) jobs compared to the Murder Group (12%). These differences were however, not statistically significant. Similar to the picture for current annual income discussed above, the types of occupations reported by the participants in this study are also likely influenced by their relatively young age. That said, a statistically significant post-hoc finding related to occupation and work is most interesting: As a group, the Murder Group were significantly more likely than the Comparison Group to endorse the demographic item “employment difficulty” (defined as job losses, changes, and dissatisfaction); 33% of the Murder Group versus 13% of the Comparison Group endorsed this item as true, $\chi^2(2, N = 147) = 8.63, p < .01$. This is consistent with the findings of Asaro and Clements (2005), Freeman et al. (1996), and King (2004) who all noted that loved ones of murder victims typically experience difficulties at work and school.

There was no statistically significant difference in the level of academic achievement between the groups. Twenty five percent of both groups had completed high school or less. The majority (46%) of the Murder Group had completed either a non-college or university training program or partial college or university, and another 15% were college or university graduates. In the Comparison Group, 34% of participants had completed a non-college or university training program or partial college or university, and another 34% had graduated from college or university. A slightly greater percentage of the Murder Group (13%) compared to the Comparison Group (8%), had completed graduate-level training (e.g., MA, MSc, MD, MBA, PhD). What these differences mean is not clear to me. That said, what I can infer from the raw data for participants *between 18 and 25 years old* (the typical undergraduate age), is that 93% (27 of 29) of the comparison participants were enrolled in post-secondary education compared to 27% (3 of 11) of the siblings of homicide victims of the same age group. While it is tempting to infer that the siblings of homicide victims in this study did not have incomes or occupations which differed from a Comparison Group composed largely of post-secondary students, this seems premature based on the incomplete information provided by the data and findings I have reported here.

Question 2: Does General Health Differ Between the Groups?

The experience of stressful and potentially traumatic experiences have long-been established as correlates of general health and well-being outcome (e.g., Bonnano, 2010), and have been reported in the literature for murder bereavement. For example, gastrointestinal, appetite, cardiovascular, energy, skin, sleep, and immune system problems have all been reported by the family members of murder victims in the literature (Clements & Burgess, 2002;

King, 2004; Miller, 2009a; Rynerason & McCreery, 1991). I was curious if the groups differed in terms of current general health. My hypotheses were partially supported.

The two groups showed a small but not statistically significant difference in their ratings of self-perceived general health. Siblings reported their general health to be slightly less than good, while comparison participants reported their general health as slightly more than good. This small difference did, however, approach statistical significance (Bonferroni corrected $p = 0.02$). This finding of no statistical difference is remarkable given the documented associations between bereavement and physical health. There was no correlation between the amount of time (years) since the murder and siblings' ratings of their overall general health, ($r(65) = 0.06, p = 0.63$).

There was a statistically significant difference between the two groups in the number of days missed in the last three months due to not feeling well. Of the 44 siblings of murder victims who answered this question, 50% had not missed any days but 18% reported missing four or more days of school or work in the previous three months. In comparison, of the 72 comparison respondents, 74% reported no absenteeism and 3% had missed four or more days of school or work in the previous three months. This result of a statistically significant difference in absenteeism in the previous three months is interesting given the lack of difference in self-perceived general health. It could have been that participants missed days of work due to “not feeling well” as related to low mood or elevated psychological distress, but because no data were collected on the level of subjective distress experienced in the same three months referred to in the question, I am not able to assess this speculation. This speculation is, however in line with the finding by Keyes (2007) that missed days of work and cutbacks in the amount of work are highest among individuals scoring low on measures of psychological well-being.

Both groups reported a similar likelihood of going to school or work in the past three months despite not “feeling capable of doing your work or performing your work duties.” If a difference did exist, the ability to detect a statistically significant difference between the groups on this question may have been reduced by collapsing the five original response-categories into three relatively large categories (none, 1 to 3 days, and 4 or more days) because of near-zero data points in some categories (e.g., only one comparison participant endorsed the response-option of 14 or more days). With hindsight, I would redesign the question by asking participants to simply estimate the number of days they went to school or work in the last three months despite not feeling capable to do their work or perform their duties on a continuous scale, and use t-tests for hypothesis testing.

Question 3: Do the groups differ in the amount of subjective distress they currently experience?

People who have lost a loved one to homicide must cope with a wide array of traumatic experiences beyond simply the loss of their loved ones. These include, being interrogated by police; being called upon to identify the body; reading unfavourable media portrayals of the victim; and enduring long, often unsatisfying legal proceedings (Armour, 2006; Clements & Burgess, 2002; Freeman et al., 1996; King, 2004). Furthermore, siblings of homicide victims not only lose a sibling but also cope with traumatized and grieving parents (Freeman et al., 1996). There is also little that is private about murder bereavement because of the public nature of homicide as a crime against the state. The depiction of the murder of a loved one as a traumatic experience taking precedence over the grief experience of losing of a loved one was discussed in the literature by Applebaum and Burns in 1991; and Rynearson and McCreery (1993) noted the importance of being able to recognize trauma symptoms which may impair the grieving process

in murder-bereavement. To assess if siblings in the Murder Group could differentiate between their trauma and grief-associated difficulties in terms of subjective distress experienced in the past seven days, we asked them to complete two iterations of the IES-R. For the first iteration, we used *murder as cause of their sister or brother's death* as the stressful life event and as a proxy for trauma. For the second iteration, we used the *loss of their sister or brother* as the stressful life event and as a proxy for grief.

There was a statistically significant, as well as a large meaningful difference (as suggested by large Cohen's d values) between the two groups on the amount of current subjective distress as measured on both sets of IES-R. Siblings reported experiencing significantly greater levels of avoidance/numbing, intrusion, and hyperarousal in the previous week compared to the Comparison Group. Using the 5-point scale on the IES-R where 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, and 4 = Extremely, in response to the murder (M) and the loss (L) of a sibling, siblings in the Murder Group reported currently experiencing just more than "a little bit" of avoidance ($M^{\text{Murder, Loss}} = 1.1$) and hyperarousal ($M^{\text{Murder, Loss}} = 1.2$), and slightly more intrusion ($M^{\text{Murder, Loss}} = 1.5$). In contrast, the Comparison Group reported levels less than a "little bit" for avoidance ($M = 0.5$), intrusion ($M = 0.6$), and hyperarousal ($M = 0.3$). Eleven (16%) siblings of murder victims did not complete the IES-R portion of their surveys. These siblings were not different from those who did complete the IES-R questionnaires in terms of current age ($t(65) = 1.63, p = 0.11$), time since the murder ($t(65) = 0.77, p = 0.45$), or age at the time of the murder ($t(65) = 1.33, p = 0.19$). There were insufficient data points to meet the requirements of a chi-square to test for differences in sex between the responders and non-responders. However, I found almost no difference in the proportion of male siblings who did not (25%) and who did (24%) complete the IES-R portions of their surveys.

Collapsing across the three subscales, about 60% of the MURDER GROUP reported current subjective distress in the low range (mean IES-R scores 0-1.4) on both IES-R iterations, and another third reported levels in the moderate range (mean IES-R scores 1.5-2.9) in response to the murder (37%) or loss (32%) of their siblings. Less than 8% of the Murder Group reported current distress levels in the high range (mean IES-R scores 3-4), and less than 1% of the Comparison Group did so. Taken together, while significantly higher levels of current subjective distress were established for siblings of murder victims relative to a comparison group, the majority (around 60%) of the siblings participating in this study reported current subjective distress to be in the low range and approximately 35% reported current subjective distress to be in the moderate range.

I wondered if the number of years from the murder of a sibling was linked to the amounts of current distress reported by siblings in the study. Does time really heal? Interestingly, time (number of years since the murder of a sibling) appeared mostly to facilitate an easing of subjective distress associated with the act of murder as cause of death (i.e., the traumatic element), but not with the loss (i.e., the grief element) of a sibling. This supports Applebaum and Burns' (1991) contention and Rynearson and McCreery's (1993) suggestion, that the grief element of murder-loss is overshadowed and its processing held back by the trauma of murder as the cause of a loved one's death. Time was significantly and negatively associated with the level of subjective distress on all three subscales, such that current levels of avoidance, intrusion, and hyperarousal correlated with the act of murder as the cause of death, were all significantly more likely to be lower the greater the number of years from the murder. Across the three subjective distress subscales of the IES-R (Murder), time since the murder accounted significantly for 10% of the variability in siblings' current levels of avoidance ($r(54) = -0.32, p = \leq 0.05$), intrusion

($r(54) = -.31, p = \leq 0.05$), and hyperarousal ($r(54) = -0.33, p = \leq 0.05$). In contrast, the only effect time seemed to have on subjective distress resulting from the loss itself of a sibling, was on the easing of avoidance, ($r(54) = -0.32, p \leq 0.05$); time accounted for 10% of the variability in siblings' current levels of avoidance associated with the loss of their siblings. Taken together, it appears that time does contribute if not to healing, then at least to the easing of subjective distress in response to the trauma of murder as the cause of a sibling's death.

There were no statistically significant within-group differences between siblings of homicide victims' responses on any of the three subscales whether responding to the "murder" or to the "loss" of a sibling. This finding of no difference could be the result of the question being poorly designed or confusing for siblings participating in the study, or that the context-setting prompts were inadequate in some way. Before completing the first iteration of the IES-R, siblings were prompted to "focus on the act of murder as how your sister or brother died." Similarly, before completing the second iteration of the IES-R, siblings were informed that the focus now was "not on the act of murder as how your sister or brother died [but] on the loss of your sister or brother." However, on visual examination of the data, there is observable variability in individual ratings on the same items across the two iterations of the IES-R. This suggests that siblings were indeed holding murder as the focus first, and responding to each item accordingly, and then holding loss as the focus and providing responses to each item with loss in mind. One interpretation of the finding of no difference is that, at the phenomenological level of subjective distress, there is no distinction between the murder and the loss of a sibling. It might be that the cognitive scramble and subjective distress that ensue from living (suffering) with the traumatic horror of murder and all that follows in its wake, overwhelms or drowns out the subjective distress of loss bereavement, as originally suggested by Applebaum and Burns (1991).

Alternatively, the finding of no difference in subjective distress indicators in response to (a) murder as cause of a sibling's death, and (b) the loss aspect of a sibling's death, might rather mean that the experience (and phenomenology) of the murder of a sibling is not truly separable from loss. In other words, that grief is not put on hold but rather subsumed within a more encompassing grief experience characterized by indicators of subjective distress that are amplified and which persevere across an extended period of time measured in years.

On average, for both iterations of the IES-R, the siblings of homicide victims in this study rated all of the 22 items or "difficulties" (Weiss & Marmar, 1997) described on the IES-R as being more distressing in the last seven days than did comparison participants. However, the six items with the greatest differences (more than 1 full point on the 0-4 IES-R scale) between the Murder Group's responses on *both* iterations of the IES-R when compared with those of the Comparison Group, were item numbers: (3) other things kept me thinking about it, (6) I thought about it when I didn't mean to, (9) pictures about it popped into my mind, (16) I had waves of strong feelings about it, (18) I had trouble concentrating, and (21) I felt watchful or on-guard. In addition, with reference to the loss but not the murder of their sibling, the Murder Group's average rating for Item 12 (I was aware that I still had a lot of feelings about it, but I didn't deal with them) was also a full point higher than the Comparison Group. Items 3, 6, 9, and 16 are from the Intrusion subscale, 18 and 21 from the Hyperarousal subscale, and Item 12 is from the Avoidance subscale. These observations thus seem to illustrate and emphasize the overlap between the elements of trauma and grief in the bereavement of sibling's murder-death. In other words, that the elements of trauma and grief following the murder of a sibling are more entangled in their phenomenology than they are separable at conceptual and theoretical levels.

If this is so, then, perhaps, this is because grief following from the murder-loss of a sibling *is* complicated at the level of subjective distress. Given the nature of murder, it is reasonable that because the evolution of the natural grief process will be practically and psychologically complicated by the more or less chronic-intermittent interruption over years—for some, years-upon-years-upon-years—by the machinery of the criminal investigation, media, criminal justice process, correction system, and for some families, the reopening of cases; and more than likely by the disassembly of fundamental assumptive worldviews and beliefs about themselves, other people, and the world; that the elements of trauma and grief will be more fused than separate, and that this accounts for murder-related grief and bereavement being complicated and slow to sort through at the level of subjective distress.

This characterization of a perhaps to-be-expected complicated grief process that evolves “naturally” in response to the murder of sibling is consistent with the conceptualization of complicated grief (Horowitz et al., 1980) as a psychological construct. Given the nothing-at-all-normal nature of losing a sibling to murder, the construct of complicated grief is a meaningful and, I think, compassionate, *characterization* (vs. diagnosis) of the distress and suffering of siblings of murder victims. To me, this is consistent with Rynearson and McCreery’s (1991) suggestion that the experience of those who have lost a loved one to murder be characterized as a combination of trauma and grief. These findings from my study extend this characterization by confirming that the subjective distress associated with the two elements of trauma and grief are indeed overlapping, and most particularly so at the levels of intrusion and hyperarousal.

Compared to 7% of the Comparison Group with a composite IES-R score greater than 33, a substantially and significantly greater proportion of the Murder Group had a composite score greater than 33 on the IES-R. Forty one percent of the Murder Group had composite scores

greater than 33 on the IES-R *murder* iteration, and 36% on the IES-R *loss* iteration. Creamer et al. (2003) suggested a score of 33 on the IES-R could correctly identify approximately 90% of individuals eligible for a DSM-IV-TR PTSD diagnosis. If Creamer and his colleagues (2003) are accurate, approximately 40% of the Murder Group and 7% of the Comparison Group would therefore be eligible for a DSM-IV-TR PTSD diagnosis. This finding is interesting for two reasons. First, the 7% proportion of the Comparison Group meeting the Creamer et al. suggested IES-R diagnostic threshold for PTSD, almost exactly reflects the *lifetime prevalence* estimates for PTSD in the United States of 8.7% (DSM-V, 2014, p. 276) and 9% in Canada (Van Ameringen, Mancini, Patterson, & Boyle, 2008), yet our sample was a relatively young sample ($M = 32$, range = 13-66) meaning that we would have expected a lower eligibility rate for a PTSD diagnosis within our Comparison Group. One explanation is that our Comparison Group was not a “Pollyanna” group, for lack of a better description. Combined, the 80 comparison participants self-reported a total of 175 “challenging, stressful, or upsetting” life events, including for example, 6 instances of severe accident, physical illness or injury; 7 instances of maltreatment (physical, sexual, emotional, or unspecified abuse); 4 instances of sexual violence; 12 instances of parental divorce or separation; 6 deaths of a parent; 3 suicides of a family member; 12 instances of chronic stress and dysfunction in the home; and 16 instances of frequent family relocations and changing schools. Alternatively of course, it could be that a composite score of 33 casts too wide of a net and in so doing, inflates the identification and diagnosing of PTSD. I think this is perhaps the case. Certainly, within our sample of comparison participants, it seems odd that while 7% of the Comparison Group would be eligible for a PTSD diagnosis using the Creamer et al. criterion, less than 1.5% reported current distress in the high range on any one of the three subscales. Rather, it looks like Creamer et al.’s criterion for PTSD is indeed

a big net, catching individuals experiencing levels of self-reported subjective distress somewhat above 1 = A little bit and just less than 3 = Quite a bit. Collapsed across the three subscales, 9.2% of the Comparison Group reported a moderate range of current distress, which closely resembles the 7% established under the Creamer et al. composite-score-greater-than-33 diagnostic criterion for PTSD. In other words, a diagnosis of PTSD using Creamer's diagnostic criterion for the IES-R includes the experience of subjective distress beginning from more-than-low overall levels (i.e., average scores from 1.5 on the 0-4 scale). A similar story is provided by the data from the Murder Group iterations of the IES-R. Separate administrations of the IES-R with the focus either on the act of the murder, or on the loss, of a sibling, would have identified, respectively, 41% and 36% of the Murder Group as eligible for a PTSD diagnosis using the Creamer et al. criterion. These findings are consistent with the previous findings of Freeman et al. (1996), Rynearson and McCreery (1993), and Murphy et al. (2003) who found high rates of PTSD prevalence among people who have lost a loved one to murder, even years after the murder. At the same time, fewer than 9% of the Murder Group reported current subjective distress in the high range on any one of the three subscales or when collapsed across the three subscales, on both IES-R iterations. Collapsed across the three subscales, 36% of the Murder Group completing the IES-R (Murder) iteration reported distress falling in the moderate range—very close to the 41% with composite scores greater than 33. Collapsed across the three subscales for the IES-R (Loss), 32% of the Murder Group' reported distress fell in the moderate range—just slightly lower than the 36% eligible for a PTSD diagnosis using Creamer et al.'s criterion. Once again, it looks like Creamer et al.'s criterion for PTSD is indeed a big net, catching individuals experiencing levels of self-reported subjective distress beginning from above low. I wonder if this finding helps to explain the anecdotal narrative (and, in some cases,

secondary victimization) of PTSD associated with murder bereavement? That is, that a substantial subset of murder-bereaved are receiving a diagnosis of PTSD when it might be more accurate (and compassionate) to assess and contextualize their elevated but “moderate” (using the IES-R) levels of subjective distress as signs and symptoms of their posttraumatic stress and not as pathology or disorder?

Question 4: Do the Groups Differ in Terms of Subjective Well-being?

The National Wellness Institute conceptualizes wellbeing as a positive and affirming state of being and functioning. For the purposes of this thesis I attempted to compare the groups on four measures of subjective wellbeing: perceived social support, positive recollections of the past, overall life satisfaction, and perceived self-worth.

The Murder Group reported significantly less agreement with the statement “currently, I have a lot of support in my life” than did the Comparison Group. On average, whereas the Murder Group reported good agreement the Comparison Group’s level of agreement was higher. This difference showed a moderate effect size ($d = -0.54$) and was statistically significant ($p < 0.01$). Seventy two percent of the Murder Group reported good to complete agreement, compared to 90% of the Comparison Group. At the low end of the scale, 11% of the Murder Group and barely 2% of the Comparison Group disagreed completely or slightly. This finding reflects previous qualitative research in which the loved ones of homicide victims reported feeling isolated, misunderstood, and different from others (King, 2004; Rynearson & McCreery, 1993), and on-going family conflict (Asaro & Clements, 2005; Miller, 2009a). This finding is also in line with anecdotal suggestions that siblings experience low social support, and with anecdotal report from siblings themselves. For example, in the qualitative data collected by Dr. Tasker for the larger Study 1, one participant wrote, “What bothered me after my brother's

murder is that my friends weren't really helpful with my case. They weren't really there supporting me, i wanted them to talk to me about it, but i'm guessing they just don't understand.”

Another participant whose brother had been murdered explained his rating on the single-item scale in this way:

My parents totally disappeared from my life. They didn't have any interest in me, or in being there for me, or in parenting me. I was 20 but I still needed parents for guidance and emotional support. I was hurt and angry that they didn't care about me anymore... It was also really hard to talk with peers about my brother's death. No one had ever encountered it before, and it was so hard for people to hear, and think about, their siblings dying, that I felt horrible for talking about my brother and making them realize that it's a possibility. I also felt like they just couldn't ever understand what it was like.

I am not aware of any other empirical efforts to quantify the subjective experience of being supported among murder-bereaved siblings, and so it is not possible to compare this finding of a good (although not as strong as that reported by the Comparison Group) level of agreement about currently having a lot of social support, or to say how it contributes to the understanding of the experience of siblings. Thorough content analysis of the qualitative data collected for Study 1 should provide context and insight for understanding this finding. Certainly, the lower level of agreement in the Murder Group may also be promoted by changes to fundamental worldview assumptions and beliefs, which have been theorized and qualitatively documented in the literature (Armour, 2003; Janoff-Bulman, 1985). For example, Armour (2003) found that when a loved one had been murdered, many individuals came to see themselves as unworthy of love, other people as selfish and untrustworthy, and the world as a dangerous and chaotic place. In

fact, a sibling in Dr. Tasker's data set for Study 1 said exactly as much when she wrote: "This one act changed my life so traumatically. I lived life so alone for so many years. Never feeling good enough to be loved. Never important enough to be loved." These cognitive and affective changes are likely supported and exacerbated by perceived or actual experiences of being ignored, discounted, or disenfranchised as reported in the literature (Asaro & Clements, 2005; Clements & Burgess, 2002; Masters, Friedman, & Getzel, 1988). Given these experiences and possible concomitant changes to fundamental assumptions about self, others, the world—and therefore, about the nature of life generally—it makes sense to me why a sibling of a murder victim may both withdraw socially and develop reduced motivation to seek social relationships. Therefore, given the likely changes to their fundamental assumptions and motivation to seek relationships, it is not surprising to me that the Murder Group reported significantly less agreement about having a lot of perceived social support in their current life compared to the Comparison Group.

As expected, the Murder Group reported significantly less agreement with the statement about being a "happy kid" overall while growing up following the murder of their sibling than comparison participants while they were growing up. The effect size was very large ($d = -1.25$). When asked if they remembered feeling any happiness while growing up "at any time after the murder," one sibling in Dr. Tasker's data set explained:

I was miserable, angry and had no idea how to cope. When you hurt, you want your parents to provide support, but when my brother was murdered, they were in such pain and had no idea how to help their surviving children. My family was nearly destroyed and the relationships are still very strained.

A post-hoc comparison (significance set at $p < 0.05$) of the siblings of homicide victims ($M = 5.83$, $SD = 1.46$) greater level of agreement about having been a “happy kid” overall *before* the murder occurred compared to that of the Comparison Group’s ($M = 5.14$, $SD = 1.59$) recollection of being a “happy kid” while growing up, was significant ($p = 0.02$). Interestingly, there was a statistically significant and negative correlation ($p < 0.001$) between the amount of time (years) since the murder and the siblings’ ratings of how happy they were *before* the murder. Time since the murder explained 22% of the variance in the siblings of homicide victims’ ratings of how happy they were before the murder. In order to check for the possibility that recollections of happiness while growing up become less positive over time more generally, I examined the association between current age and levels of agreement about having been a “happy kid” while growing up within the Comparison Group; this association was not significant ($p = 0.29$); increasing age accounted for only 2% of the variance in comparison participants’ ratings of happiness while growing up. It seems that siblings’ recollections of how happy they were prior to the murder are slightly idealized, but as time passes these recollections become more realistic.

Compared to comparison participants, siblings of homicide victims also reported a statistically significant higher level of agreement about “feeling different” from their friends, classmates, and other in their growing-up years *following* the murder of their sibling, but not before. In fact, the mean agreement level for the Murder Group was almost total agreement (6.29; 7 = total agreement) about feeling different from friends and others in the years following the murder versus that of the Comparison Group, which was between average and good ($M = 4.20$); the effect size of this difference was large ($d = 1.32$). Many of the studies pertaining to the siblings of murder victims that I reviewed included direct quotes from participants describing

feeling different from others following the murder (e.g., Freeman et al., 1996; Pretorius et al., 2010). Furthermore, in the qualitative data collected for Study 1, many siblings of homicide victims provided responses consistent with feeling and believing they had become different when their sibling was murdered. For example, one sibling in Dr. Tasker's data set explained, "I felt like an outsider, I didn't fit any more." Unlike the contrast effect I found for retrospective memory of being a "happy kid" prior to the murder-loss of a sibling, which declined across siblings as a function of time, there was no contrast effect for retrospective memory of "feeling different" following the murder of their siblings. The change appears to be enduring and irreversible.

While I failed to find a statistically significant difference between the two groups in terms of subjective life satisfaction ($t(123) = 3.19, p = 0.015$, significance set at $p < 0.01$), the difference showed a medium effect size ($d = -0.50$) and p was approaching significance. Power to detect statistically significant differences was, however, reduced because 11 participants from the Murder Group did not complete this question. As I described in the Results section, these 11 siblings did not differ on age, time since murder, or age at time of murder from those who did complete this question. Inasmuch as satisfaction with life is an indicator of positive functioning (Vleiorus & Bosma, 2005) and subjective well-being (Mcdowell, 2006, p. 206), and because satisfaction with life is used as an outcome measure in studies on stress, social support, and coping (Mcdowell, 2006, p. 206), it also seems puzzling for siblings who have lost a brother or sister to murder to report similar levels of overall life satisfaction to comparison participants when they also reported much higher subjective distress, less perceived social support, and less positive recollections of their growing up following the murder of their sibling (as measured by the questions comparing happiness and feeling different from friends, classmates, and other

people after the murder). One explanation might be that because perceived life satisfaction is subjective there is the possibility that those who have lost a sibling to murder may rate their current life satisfaction relative to the dissatisfaction they experienced in the early months or first years following the murder. In other words, perhaps their current lives do not seem so bad, considering how horrible it used to be. Of the 6 items included in the Satisfaction with Life section, there were statistically significant post hoc differences between the two groups on two items. Siblings in the Murder Group reported lower agreement with the statements “I am completely satisfied with my life” and “If I could live my life over, I would change nothing”; and the differences were moderate in size ($d = 0.48$ and 0.61 respectively). At the same time as feeling this way, it seems that Murder Group siblings were able to recognize, possibly even appreciate and value, the conditions of their life as excellent, having achieved or attained what they consider to be “the most important things in life”, and being relatively satisfied in their work or schooling.

There was no statistically significant difference between the two groups on the measure of perceived self-worth. If experiencing the murder of their sibling shattered their fundamental assumption of being worthy, I expected finding lower perceived self-worth for the Murder Group. Interestingly, however, the siblings of murder victims in this study did not report less perceived self-worth than comparison participants. Within the qualitative data collected by Dr. Tasker for the greater study, however, there are numerous examples of siblings being proud of their ability to persevere despite losing their sibling to murder. When asked what she was most proud of, one sibling described her “strength to endure and live on,” another participant was proud of how he was able to “make healthy connections and rely on someone, and trust someone, even though my brother died and my parents let me down,” while another explained he was most

proud that “I did not try to push it away or avoid it. I dealt with it head on. I did things that I knew would be painful but that I also knew I needed to do to have no regrets later in life.” Also, among Dr. Tasker’s data, many siblings of murder victims provided accounts of how they were of how they were able to be successful parents, spouses, and friends despite what had happened to them. For example, one participant explained she was proud of “The mom and wife I’ve been. My girls grew up in a very loving home, they always knew that they were loved, wanted, and cared for.”

Strengths and Limitations of the Study

The two major strengths of this study are its quasi-experimental design and the size/nature of its sample. There are very few studies specifically exploring the experience of murder victims’ siblings. The studies that do exist are primarily qualitative and with small samples gathered from constrained geographical regions. For example, Freeman et al. (1996) had a total sample size of 15 siblings all from near the Manhattan area in New York City, USA; Applebaum and Burns (1991) had a total sample size of 20 sampled from two support groups in Washington State and Maryland State, USA; and Pretorius et al. (2010) collected interview data from 3 sisters in South Africa whose brothers had been murdered. Other studies have employed samples that include siblings with other family members and friends of the victim, or with siblings and family members bereaved by other sudden or violent means (e.g., suicide), including vehicular homicide (i.e., involuntary manslaughter while DUI). What is important and novel about the present study is (a) its large ($n = 67$) sample composed exclusively of bereaved siblings of victims of criminal homicide categorized as cleared (73%) or unsolved-but-suspected, cases of first or second degree murder, from diverse geographic regions across Canada and the United States; (b) the inclusion of a large ($n = 80$) comparison group that was similar on important

variables with the exception of having lost a sibling to murder; and (c) the collection of data using multiple measures of health and wellbeing.

Using a quasi-experimental comparative research design for explorative research in “hard-to-reach” (Magnani, Sabin, Saidel, & Hechathorn, 2005) populations like siblings of murder victims, allows the researcher a first-go attempt at determining a possible link between an independent variable (e.g., losing a sibling to murder or not) and dependent variables (e.g., health and wellbeing). The validity of conclusions is increased by having a large sample size, and groups which are similar on a number of important variables. A large sample size increases the power to detect statistically significant differences between groups and the probability of meeting the assumptions of statistical testing. Meeting the assumptions of statistical testing decreases the probability that one group is disproportionately impacted by extraneous variables which could impact the outcome measures. Therefore, I increased the trustworthiness of my conclusions by having a large sample size. Also, by including multiple measures of health and wellbeing I was able to gather a large and diverse amount of data which greatly exceeds previous studies with this population. The inclusion of a comparable comparison group helps sift the response to murder from that of other stressful and potentially traumatic life events. In doing so, findings from this study begin to clarify the impact of murder on siblings’ overall health and well-being.

There are a few limitations of the present study. Both groups were composed of convenience samples and included greater proportions of females. While females are generally more likely to participate in studies such as this, sex appears to have no significant effect on trauma outcome trajectories (Bonanno et al., 2005). Also, convenience sampling is considered appropriate when conducting preliminary or explorative research for the generation of

hypotheses for testing in future studies, most particularly in “hard-to-reach” populations (Magnani et al., 2005). The same holds true for the cross-section design of my study; cross-section research, by definition, is exploratory and descriptive. In assembling the Comparison Group, I did not ask about participants’ nationalities. In other words, we are not sure if any or how many of the comparison participants are of Canadian, American, or other nationalities. Not controlling for culture is another limitation of this study given the influence of culture on grieving behaviours (P. Clements, personal communication, August 21, 2015) and trauma reactions. Levers (2012) believed culture greatly impacts how “people make meaning of trauma, the rituals for expressing the impact of trauma, and the manner in which people are able to heal” (p. 12). Therefore, if the proportions of individuals from various cultures differed between the groups in this study, this may have had a large impact on the findings and their interpretation. While I wanted to recruit a comparison group that included Canadian and American participants in a similar proportion to that of the Murder Group (40 Canadians, 27 Americans), this was not feasible in terms of time within the context of Master degree thesis completion. The sampling procedures employed for recruiting the Comparison Group included, although certainly not limited to, brief informational presentations at the beginning of a handful of university classes where the lecturer responsible had given me permission—this may have contributed to the fact that there were approximately three times more students in the Comparison Group, as compared to the Murder Group.

Unfortunately, there were many missing responses for the siblings of murder victims in this study. For example, data were missing from more than one-third of the Murder Group on the questions about school/work attendance, approximately 18% did not report their personal incomes, and 16% did not complete the IES-R or SWLS portions of their surveys. In cases

where data missing was more than 10%, I excluded those participants from the analysis of the particular item or question at the expense of power. For missing data not less than 10%, I imputed means at the cost of reduced variability and slightly deflated p -values, and used the Bonferroni probability adjustment for t -tests and restricting the p -values (significance at 0.01) for Pearson chi-square analyses. It is not clear why responses were not provided for some questions, although two reasons might be emotional arousal or the length of the survey (the survey completed by the Murder Group was substantially longer than that for the Comparison Group and also included a large number of qualitative questions, which increased the time, cognitive, and affective burden for participants in the Murder Group relative to the Comparison Group). However, there were no differences in age, sex, or years since the murder between those who did and did not answer entire portions of the survey. It is also possible some of the participants who had lost a sibling to murder elected to leave portions of the survey they believed did not apply to them blank.

Some findings are complicated by the limitations posed by the statistical tests conducted. Most notably, to meet the requirement of at least five responses per cell to run a Pearson Chi-Square analysis, I needed to collapse across categories of responses (e.g., income was originally measured in 7 categories but had to be collapsed into four (\$20,000) categories). Inadvertently, this may have reduced the sensitivity to detect differences. For measuring categorical data such as occupation, future researchers could increase the number of responses in each cell by using more efficient categories denoting occupation types than what were used in this study. Or some variables, such as income, could be estimated on a continuous scale, which would allow the use of t -tests to detect for differences between the means. Using t -tests to compare incomes would likely increase the validity of any conclusions regarding potential differences between the

groups. While appropriate for the exploratory and preliminary nature of this study, the study overall is by definition limited by the simple univariate analyses that I used.

Implications and Applications for Counselling

I felt very lost in the shuffle at the time and found that there was little in the way of help for siblings. ~Study 1 sibling (personal communication with Dr. Tasker, March 8, 2011)

Appropriate and qualified counselling support and intervention services are not readily accessible to siblings of young murder victims, and few counselling professionals have clinical experience or training in working with siblings bereaved by homicide. There is only a limited body of literature discussing the effectiveness of individual or group therapies for those bereaved by homicide. Some studies report few survivors utilizing counselling, psychiatric help, or medical interventions (Freeman et al., 1996; Mezey et al., 2002; Murphy et al., 2002). Dr. Laurence Miller who wrote a pair of 2009 articles (2009a & 2009b), emphasized the importance of establishing a safe and supportive therapeutic relationship between the client and the therapist, being patient and collaborative with the therapeutic process, and being aware of counselling theories regarding trauma and grief. In the second paper, Miller (2009b) described practical interventions for working with the family members of murder victims. The findings from this study will contribute to the clinical and counselling literatures and knowledge base on murder bereavement.

Consistent with the results of Applebaum and Burns (1991) who found 90% of the sibling survivors in their study felt estranged from others, the siblings of murder victims in our study also reported lower levels of perceived social support and feeling more different than peers, classmates, and other people following the murder. The finding that siblings in the Murder Group were statistically more likely to recall “feeling different” from their peers, classmates, and

other people in their growing-up years following the murder of their sibling than were siblings in the Comparison Group to recall feeling different when they were growing up, is important information for counsellors to hold in mind when working with siblings, whether soon after the murder or years later. I recall an experience my supervisor related to me following her Keynote presentation of preliminary findings from Study 1 at the 2013 Victims of Homicide Conference held in Edmonton, Canada, that I had attended with her. Shortly after her presentation the younger sister of 21-year-old university student murdered a few months before, related how comforted and relieved she had felt to hear that other siblings of murder victims also “felt different” from their friends and other people. In particular, she made reference to the experience of one of the study siblings (who was 14 when her sister was murdered in 2008) whose quote was included in the keynote presentation slides:

I hate being treated differently. People did not talk to me the same. I was the dead girls family. These people would cry over a lost t-shirt, but I felt I out grew them mentally, they do not know what it is like to really lose, to really know what it is like to be hurt or damaged.

Feeling different and set-aside has been described in the literature in conjunction with the secondary losses, disruptions, and dislocations of murder. Many siblings feel set aside by (understandably) psychologically absent parents, peers, and other existing social support systems. Another participant (who was 23 when her sibling was murdered in 2010) in this study’s sample of siblings, explained her subjective experience of feeling poorly supported and consequently, isolated and alone, in this way:

I would say since the murder the amount of support i have felt has decreased. I personally am not one for talking about my feelings or asking for support from people but even my

good friends no longer offer emotional support. I think they know it upsets me to talk about it so they do not bring it up. I think it may also be that they have never really suffered a traumatic loss so they assume I have moved on or that it no longer affects me on a daily basis. (from Study 1)

Counsellors will do well to keep in mind the finding of feeling different and the related finding of decreased perceived social support. To me, these two findings most particularly demonstrate the importance of establishing a supportive, compassionate, safe, and trusting therapeutic alliance, and for counsellors to be highly responsive and patient when counselling this population. In order to do this, therapists can utilize strong fundamental communication skills to demonstrate the core conditions of unconditional positive regard, accurate empathy, and congruence (Rogers, 1951). Baranowsky, Gentry, and Schultz (2011) recommend focusing on communicating competence, a non-anxious presence, and warm-confidence to promote the development of a strong therapeutic alliance. To further facilitate a trusting and safe relationship, Miller (2009b) encourages psychotherapists to challenge the typical boundaries of the therapist-client relationship by being available for support outside of session, while simultaneously facilitating the client's autonomy. By establishing and maintaining a strong therapeutic alliance with the client, and engaging in relevant conversation to promote emotional processing at least and, at best, the massive restructuring of assumptive worldviews, the therapist may reduce the perceived lack of support and feelings of "being different" reported by the siblings of murder victims in this study.

What do I mean when I say that this study points to and emphasizes the importance of patience when working with this population? The siblings of murder victims of this study reported low to moderate levels of subjective distress which, in many cases, continued for

decades following the murder. Miller (2009b) explains distress may continue indefinitely and insensitive suggestions that the loved ones of murder victims will (or should) “get over it” or “move on” or are “stuck” can irrevocably damage the therapeutic relationship. Instead, it appears as if it is appropriate to use a client-centered approach to therapy in which the client can determine the therapeutic goals, and the pace at which these goals are achieved. Miller (2009b) recommends collaborating with the client to determine which goals should be prioritized and which goals can be worked on in the future. As I have mentioned throughout this thesis, researchers have suggested trauma symptoms often interfere with resolving the tasks of grieving (Freeman et al, 1996; Rynearson & McCreery, 1993, p. 258). While this is likely, the elements of trauma and grief elements of the subjective distress of siblings in this study were indistinguishable. Due to the significant overlap between trauma and grief experiences, it seems impractical and perhaps even a disservice to exclusively work on trauma experiences prior to bereavement. Furthermore, if therapy is approached with the inflexible mindset that trauma must be focused on before grief, counsellors may inadvertently be imposing their agenda upon surviving siblings. Herman (1992) explains those who have experienced trauma are often disempowered, and therapeutic approaches which are insufficiently collaborative can unintentionally result in secondarily victimizing the client. Instead, it seems more appropriate to routinely collaborate with the client to determine realistic and attainable goals the client is motivated to work towards. In the immediate aftermath of the murder, surviving friends and family members may need to focus on immediate practical concerns (interacting with law enforcement or the media, maintaining their employment, etc.) as opposed to resolving trauma or grief symptoms (Miller, 2009b). Furthermore, because the siblings of murder victims in this study reported subjective distress associated with both trauma and grief symptoms, I believe it is

important to be aware of therapeutic interventions we can use to help with these experientially overlapping challenges. Given this study's findings of (a) ongoing elevated levels of current subjective distress in this sample, where (b) the greatest difference from comparison participants was noticed for a subset of intrusion and hyperarousal difficulties, I wonder if the inclusion of appropriately timed conversations and imaginal exercises about both the murder and the loss of a sibling, might allow the murder bereaved client to expose and visit their inside-horror in a safe, supported, contained, and potentially relieving way. In so doing, counsellors can equip murder bereaved clients with social-cognitive and emotion-regulating strategies to unpack their trauma-and-grief of murder. If consistent with the wishes of the client, one model for helping reduce subjective distress symptoms (intrusions, avoidance, hyperarousal, and negative alterations in cognitions and mood) is Judith Lewis Herman's (1992) Triphasic Model of Trauma Recovery, which recommends focusing on (a) safety and stabilization, (b) trauma memory reprocessing, and (c) reconnection. (This treatment model was further expanded upon by Baranowsky, Gentry, and Schultz's (2011) in their book *Trauma Practice: Tools for Stabilization and Recovery*.)

While helping reduce the distress clients experience due to the trauma of the negative life event, it may also be helpful to be mindful of Worden's five tasks of grieving (2008, pp. 39-53). These tasks include: (a) accepting the reality of the loss, (b) processing the pain of grief, (c) adjusting to a world without the deceased, and (d) finding an enduring connection with the deceased in the midst of embarking on a new life. Furthermore, it may be useful to consider Armour's (2003) proposition that we can help the loved ones of murder victims by helping them make meaning through action. Some examples of meaning making through action described by Armour in her 2003 article include exposing hypocrisy, fighting for what is right, using their experience to help others, and deliberately attempting to give a positive value to the homicide. Counsellors can also

use a constructivist approach to support siblings to integrate the experience and loss and to renegotiate assumptions and beliefs about themselves, others, and the world, and to rebuild life philosophies. Related to my suggestion of incorporating gradual exposure exercises such as imaginal flooding, Joseph and Linley (2005), speak strongly to the need for counsellors to not jump on the low-probability bandwagon. That is, for counsellors to not fall into the trap of promoting the social-convention message and attitude that something like this is unlikely to happen again. By doing so, counsellors may inadvertently encourage clients to maintain their pre-trauma assumptions despite evidence that their original assumptions are untrue (“If I am a good person, I am protected for adverse life events because the world is safe, meaningful, and just”). According to Joseph and Linley, this may result in development of more rigid defenses and heightened vulnerability to PTSD symptoms. Instead by acknowledging that while the probability of murder reoccurring in their life is low, but the probability that other challenging and potentially traumatic life events will occur in the client’s life is high, counsellors can help the client adapt their fundamental assumptions to more realistically reflect their experiences and life. This attitude and message, say Joseph and Linley, will promote and foster accommodation and not assimilation of the trauma/loss experience; accommodation, in their view, is what underlies and supports the integration of stressful life events and healthful adjustment.

Overall, given the phenomenology of murder and the findings discussed in the literature and reported from this study, the take-home message for me as a soon-to-be registered Clinical Counsellor, is that murder bereavement is likely to be more complex qualitatively than that following the loss of loved one to a more normative *but no less* significant or tragic, and not necessarily less sudden (e.g., dying in a car accident), or unusual (e.g., drowning when caught in a rip tide while surfing), and perhaps even, violent (e.g., suicide), cause of death. Finally, the

importance of patient, empathic, collaborative, and brave listening as the most important skill in working with this population who are both traumatized and bereaved, cannot, I do not think, be overstated.

Conclusion

This thesis-study increases our understanding of the impact of losing a brother or sister to murder on long-term health and wellbeing. Compared to other research with this population, this study contributes importantly in terms of its scope and research design. Similarities between the groups prior to the murder suggest those in the Murder Group had relatively normal lives until their sibling was murdered. When compared to a Comparison Group similar to the greater North American public on a number of important variables and inclusive of participants reporting multiple types and instances of stressful and potentially traumatic life events growing up, siblings of murder victims reported lower levels of perceived social support, missing more days of school or work in the last three months, and greater levels of current subjective distress experienced as symptoms of avoidance, intrusion, and hyperarousal. Siblings of murder victims also recalled feeling more different from their peers, classmates, and other people, and being less happy in their growing-up years. Undoubtedly, the siblings of murder victims were profoundly impacted by the murder and loss of their brother or sister. Yet, no differences were discernable in income, occupation, and academic achievement; self-perceived general health; overall life satisfaction, and perceived self-worth. This may have been due to the methods used for measurement and comparison, the relatively young nature of this sample, or perhaps these results indicate a capacity in the siblings who participated in the study to endure their suffering and continue with life. Hopefully the findings of this study can help educate members of the criminal justice system, victim service workers, and helping practitioners who come into contact

with those who have lost a sibling to murder and their families, about these on-average health and wellbeing outcomes of siblings of young murder victims. In particular, I would like to see information and education efforts being directed to increasing clinical practice awareness and understanding of the finding of no experiential distinction between the two elements of trauma and grief associated with the murder-loss of a sibling. Certainly, this finding of no measurable evidence of a distinction between the two elements might rather reflect a limitation of the IES-R. However, my strong sense is that the experiential response to the murder-loss of a sibling is one of a single and messy experience with the edges between trauma and grief, blurred. It could be that beyond the acute stages of murder-loss, siblings do not perceive themselves as oscillating clearly between periods of trauma and periods of grief. Awareness of this messy grief will go some way to build understanding and increase empathy for siblings caught up in the life-altering experience of losing a sibling to murder. My hope is that increased knowledge and awareness such as this will inform and support interventions and clinical practice so that siblings do not need to endure their suffering alone, or be rushed or misunderstood through their lived experience and processing of trauma-and-grief. Furthermore, I hope the results of this thesis will give a voice to some of the many people across Canada and the United States who have lost a sibling to murder.

There are days when I feel like the murder happened yesterday, and others when it seems like another life. I don't miss my brother any less now, even with all the time that has passed. I think what time has allowed me is not to break down so easily at the little things, and to more easily revert to remembering the good things that make me smile.

~ The sister of brother murdered in 2002 when she was 15 years old; from Study 1 ~

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Table 1

Erikson's Psychosocial Crises of Adolescence and Early Adulthood

	Psychosocial crises	Radius of significant relations	Basic strengths
Adolescence	Identity vs. Identity Confusion	Peer groups, outgroups, and models of leadership	Fidelity
Young Adulthood	Intimacy vs. Isolation	Partners in friendship, sex, competition, and cooperation	Love

Note. Table in Erikson, E. (1997). *Life Cycle Completed*. W. W. Norton & Company, Inc. New York, NY, 32-33.

Table 2

Refined Criteria for Traumatic Grief

 Criterion A

1. Person has experienced the death of a significant other
2. Response involves 3 of the 4 symptoms below experienced at least sometimes:
 - (a) intrusive thoughts about the deceased
 - (b) subjective sense of numbness, detachment, or absence of emotional responsiveness
 - (c) Searching for the deceased
 - (d) Loneliness as a result of the death

Criterion B

1. Purposelessness or feelings of futility about the future
 2. Subjective sense of numbness, detachment, or absence of emotional responsiveness
 3. Difficulty acknowledging the death (e.g., disbelief)
 4. Feeling that life is empty or meaningless
 5. Feeling that part of oneself has died
 6. Shattered world view (e.g., lost sense of security, trust, control)
 7. Assumes symptoms or harmful behaviors of, or related to, the deceased person
 8. Excessive irritability, bitterness, or anger related to the death
-

Note. Table in Prigerson, H.G. et al. (1999). Consensus criteria for traumatic grief: A preliminary empirical test. *British Journal of Psychiatry*, 174, 67-73.

Table 3

Demographics: Siblings With and Without a Sibling who was Murdered Before Adulthood

	Murder Group (<i>n</i> = 67)			Comparison Group (<i>n</i> = 80)			Statistic
	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>	
Sex	67	23.9% males, 76.1% females		80	20.0% males, 80.0% females		$\chi^2(1, N = 147) = 0.32, p = NS$
Current age	67	34.9	13.7	80	32	13.2	$t(145) = -1.32, p = NS$
Number of siblings	22	3	2.0	78	2.1	1.6	$t(98) = -2.12, p = NS$
Current relationship status	67	34% not in a relationship		80	45% not in a relationship		$\chi^2(2, N = 147) = 2.26, p = NS$
Children	67	53.7% had children		80	33.8% had children		$\chi^2(1, N = 147) = 5.94, p = NS$
Number of children	67	1.27	1.44	80	0.78	1.22	$t(145) = -2.25, p = NS$
Family stability and satisfaction growing up ¹	67	62.6% agreed		80	60.0% agreed		$\chi^2(2, N = 147) = 0.11, p = NS$
Social stability and satisfaction growing up	67	68.7% agreed		80	65.0% agreed		$\chi^2(2, N = 147) = 0.22, p = NS$

Notes. Neither of the groups was able to accurately estimate their family incomes while growing up. Twenty-five (37%) of the siblings of murder victims, and 17 (21%) comparison participants either did not know their family income or preferred not to answer this question. Given this large amount of missing data, hypothesis testing using two-sample t-tests was inappropriate.

¹ Growing up refers to the years from birth to 25 and for the Murder Group, to the years growing up before the murder of their sibling occurred.

Significance was set at $p < 0.05$ for continuous data and adjusted using MYSTAT Bonferonni correction; and $p < .01$ for categorical data.

Table 4

Assessing the use of the IES-R as a way to Distinguish Between the Subjective Distress of Siblings in Response to the Murder-of versus Loss-of a Sibling

		Murder Group (n = 56)			Comparison Group (n = 80)		
		Avoidance	Intrusion	Hyperarousal	Avoidance	Intrusion	Hyperarousal
IES-R (Murder)							
	Avoidance	1.000					
	Intrusion	0.53**	1.000				
	Hyperarousal	0.47**	0.73**	1.000			
IES-R (Loss)							
	Avoidance	1.000					
	Intrusion	0.46**	1.000				
	Hyperarousal	0.35**	0.61**	1.000			

** Correlation is significant at the 0.01 level (2-tailed).

IES-R = Impact of Event Scale - Revised.

Table 5

Do the Groups Differ on Ratings (0-4)¹ of Current Subjective Distress Severity as measured on the Impact of Events-Revised (IES-R) Rating Scale?

	Murder Group		Comparison Group		Statistic
	(n = 56)		(n = 69)		
	Mean	SD	Mean	SD	
IES-R (Murder)					
Avoidance	1.1	0.9	0.5	0.6	$t(123) = -4.24, ** d = 0.75$
Intrusion	1.5	0.9	0.6	0.7	$t(123) = -6.14, ** d = 1.09$
Hyperarousal	1.2	1.1	0.3	0.6	$t(123) = -5.62, ** d = 0.98$
IES-R (Loss)					
Avoidance	1.1	1.0	0.5	0.6	$t(123) = -3.66, ** d = 0.65$
Intrusion	1.5	0.9	0.6	0.7	$t(123) = -6.30, ** d = 1.12$
Hyperarousal	1.2	1.2	0.3	0.6	$t(123) = -5.69, ** d = 0.99$
Composite score > 33					
(Murder)	41% participants		7% participants		$\chi^2 (1, N = 125) = 20.35 **$
Composite score > 33					
(Loss)	36% participants		7% participants		$\chi^2 (1, N = 125) = 15.66 **$

Note. The Murder Group completed 2 iterations of the IES-R, in response to (1) murder as cause, (2) the loss. The IES-R was administered once only to the Comparison Group.

** Significant at the 0.01 level (1-tailed).

¹The IES-R uses a 5-point rating scale to assess amount of subjective distress in the past 7 days, with 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, 4 = Extremely.

Table 6

Do the Groups Differ on Indicators of Subjective Well-being and Recall of Growing up?

	Murder Group			Comparison Group			Statistic
	<i>(n = 67)</i>			<i>(n = 80)</i>			
	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>	
Social support	67	5.08	1.74	80	5.89	1.18	$t(145) = 3.34, **$ $d = -0.54$
I was a "happy kid" growing up	59	3.09	1.72	72	5.14	1.59	$t(129) = 7.12, **$ $d = -1.25$
I "felt different" while growing up	59	6.29	1.22	72	4.20	1.88	$t(129) = -7.37, **$ $d = -1.32$
Overall life satisfaction	56	4.03	1.41	69	4.68	1.17	$t(123) = 2.81,$ $d = -0.50$
Self-worth	60	2.20	0.94	73	1.97	0.87	$t(131) = -1.45,$ $d = 0.25$

Note. ** Significant at the 0.01 level (1-tailed).

Table 7

Summary Table: Murder Group vs. Comparison Group: Four Research Questions

	Murder Group <i>n</i> = 67			Comparison Group <i>n</i> = 80			Significance
	<i>n</i>	Mean/Mode	<i>SD</i>	<i>n</i>	Mean/Mode	<i>SD</i>	
QUESTION 1							
Annual personal income	55	0-\$20,000		74	0-\$20,000		NS
Occupational type	67	53.7% no current occupation ¹ 17.9% professional or senior business sectors		78	59.0% no current occupation 14.1% unskilled, semi-skilled, sales & clerical 14.1% professional or senior business sectors		NS
Academic achievement	67	46.3% certification from training institute or partial college/university		80	33.8% certification from training institute or partial college/university 33.8% college or university graduate		NS
QUESTION 2							
General health	61	2.12	0.78	74	1.85	0.68	NS

	Murder Group			Comparison Group			
	<i>n</i> = 67			<i>n</i> = 80			
	<i>n</i>	Mean/Mode	<i>SD</i>	<i>n</i>	Mean/Mode	<i>SD</i>	Significance
Number of days absent past 3 months	44	50.0% missed no days		72	73.6% missed no days		**
		31.8% missed 1-3 days			23.6% missed 1-3 days		
		18.2% missed 4 ≤ days			2.8% missed 4 ≤ days		
Number of days attending when not feeling capable past 3 months	40	30.0% no days		71	45.1% no days		NS
		35.0%, 1-3 days			37.9%, 1-3 days		
		35.0%, 4 ≤ days			17.0%, 4 ≤ days		
QUESTION 3							
<i>IES-R (Murder)</i>							
Avoidance	56	1.1	0.9	69	0.5	0.6	**
Intrusion	56	1.5	0.9	69	0.6	0.7	**
Hyperarousal	56	1.2	1.1	69	0.3	0.6	**
<i>IES-R (Loss)</i>							
Avoidance	56	1.1	1.0	69	0.5	0.6	**
Intrusion	56	1.5	0.9	69	0.6	0.7	**
Hyperarousal	56	1.2	1.2	69	0.3	0.6	**

	Murder Group			Comparison Group			
	<i>n</i> = 67			<i>n</i> = 80			
	<i>n</i>	Mean/Mode	<i>SD</i>	<i>n</i>	Mean/Mode	<i>SD</i>	Significance
IES-R composite score	41% participants			7% participants			**
> 33 (Murder)							
IES-R composite score	36% participants			7% participants			**
> 33 (Loss)							
QUESTION 4							
Social support	67	5.08	1.74	80	5.89	1.18	**
I was a "happy kid"	59	3.09	1.72	72	5.14	1.59	**
growing up							
I "felt different"	59	6.29	1.22	72	4.20	1.88	**
growing up							
Overall life satisfaction	56	4.03	1.41	69	4.68	1.17	NS
Self-worth	60	2.20	0.94	73	1.97	0.87	NS

Note. ** Significant at the 0.01 level (1-tailed).

¹ Included "homemaker," "retired," "unemployed/not working by choice," "fulltime school, college, university," "none of the above."

Table 8

*Proportion of Participants in Low, Moderate and High Subjective Distress Ranges*¹

	LOW	MODERATE	HIGH
	(<i>M</i> = 0.-1.4)	(<i>M</i> = 1.5-2.9)	(<i>M</i> = 3-4)
	%	%	%
Murder Group (<i>n</i> = 56)			
<i>IES-R</i> (Murder)			
Avoidance	67.9	32.1	0.0
Intrusion	48.2	46.4	5.4
Hyperarousal	60.7	32.1	7.1
Average across 3 subscales	58.9	36.9	4.2
<i>IES-R</i> (Loss)			
Avoidance	71.4	23.2	5.4
Intrusion	46.4	46.4	7.1
Hyperarousal	64.3	26.8	8.9
Average across 3 subscales	60.7	32.1	7.1
Comparison Group (<i>n</i> = 69)			
Avoidance	91.3	8.7	0.0
Intrusion	87.0	11.6	1.4
Hyperarousal	92.8	7.2	0.0
Average across 3 subscales	90.3	9.2	0.5

¹ As measured on the *Impact of Event Scale-Revised* (IES-R; Weiss & Marmar, 1997).

Table 9

Post-hoc Inspection of Between-Group Differences on Satisfaction with Life Scale Items

	Murder Group		Comparison Group		Statistic
	<i>n</i> = 56		<i>n</i> = 69		
	Mean	<i>SD</i>	Mean	<i>SD</i>	
In most ways, my life is close to my ideal.	4.18	1.75	4.93	1.44	$t(123) = 2.62,$ $d = 0.47$
The conditions of my life are excellent.	4.77	1.64	5.15	1.46	$t(123) = 1.36,$ $d = 0.24$
I am completely satisfied with my life.	3.98	1.72	4.72	1.34	$t(123) = 2.69,*$ $d = 0.48$
So far I have achieved or gotten the most important things I want in life.	4.63	1.83	4.76	1.44	$t(123) = 0.46,$ $d = 0.08$
If I could live my life over, I would change nothing.	2.55	1.90	3.67	1.80	$t(123) = 3.35,*$ $d = 0.61$
I am completely satisfied with my job or with what I am doing at school.	4.05	2.11	4.75	1.57	$t(123) = 2.13,$ $d = 0.38$

* Significant at the 0.05 level (2-tailed).

Appendix A

Comparison Participant Survey

Growing up with a sibling.

The overall purpose of this study is to better understand the lives and experiences of individuals who grew up with a sibling. **For this study, I am interested in collecting information from a matched sample of sisters and brothers who have not lost a sibling as a result of murder. Eventually,** this information will be used to compare with information that has already been collected from sisters and brothers who lost a sibling to homicide while growing up.

This study that you are participating in is called “Siblings of young murder victims: **Comparisons with a matched sample.**”

This research is **important** because so little is known about the lives of the brothers and sisters of young homicide victims. Anecdotal evidence from parents and now-grown brothers and sisters tells us that homicide can profoundly affect the self-esteem, behaviour and choices siblings make as they go through childhood, adolescence and emerging adulthood.

This study will compare what we have already found about individuals who have lost a sibling to homicide while growing up with information collected from siblings who have not. By making this comparison, we as researchers, are more capable of making informed and trustworthy research conclusions. Perhaps most importantly, by participating in this study you are helping bring attention to the siblings of homicide victims as secondary victims of homicide. The awareness of brothers and sisters as secondary victims will help to support the need for change in policy and practice.

For this study, I am interested in collecting information from sisters and brothers who have not lost a sibling as a result of murder.

Participation in this study is **voluntary** and involves your completing the survey that follows this introduction. All information will remain **confidential** except if (1) you were to report a child or vulnerable adult at risk of abuse, (2) you were to report intent to harm yourself or others, or (3) your records were subpoenaed by the court. All information collected will be kept in a secure place by the researchers.

SOME QUESTIONS ON THE SURVEY MAY NOT APPLY TO PARTICIPANTS UNDER THE AGE OF 17. PLEASE SKIP SURVEY QUESTIONS THAT DO NOT APPLY IF THERE IS NO “DOES NOT APPLY” OPTION.

Your survey and all other information collected will be assigned a Study Identity Number; in this way all information collected remains **anonymous to everyone but the Primary Investigator.**

You can withdraw from the study at any point by emailing me, Kenneth Wright, the Primary Investigator, to request withdrawal from the study. You also do not have to answer any questions you do not want to answer. You can also save your responses and return to the survey at a later time. It is also important you do not feel any obligation to participate due to any personal relationship with the Primary Investigator (Kenneth Wright).

Potential Risks:

As part of the survey, participants will be asked to fill out the Impact Events Scale, with regards to potentially challenging events they experienced in their childhood. Filling out this questionnaire could potentially promote discomfort or distress. However, the items on the Impact Events Scale are close-ended (e.g., checkboxes) and do not ask participants to describe challenging experiences in great detail. ALSO, YOU CAN SAVE YOUR RESPONSES AND RETURN TO THEM AT A LATER DATE PRIOR TO SUBMITTING. While it is possible participants could experience stress and/or discomfort while filling out the survey used in this study, it is unlikely this stress and/or discomfort will exceed that which is normally encountered by the participant in aspects of their everyday life.

Upon request, participants will be provided with a comprehensive list of support resources including accessible national online and crisis lines available 24 hours a day, 365 days a year.

I would also very much appreciate your help in identifying and telling other possible participants about the study. They can contact me directly on kwright3@uvic.ca.

Please do not hesitate to contact me or my supervisor, Dr. Susan Tasker (stasker@uvic.ca; tel: 250.721.7827) for any further information or clarification.

Sincerely, **Kenneth Wright, BSc.**

Graduate Student, Counselling Psychology

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BIOGRAPHIES

Kenneth Wright is the Primary Investigator for this study. Kenneth is in the process of completing his Master's Degree of Counselling Psychology at the University of Victoria. Kenneth is conducting this study to fulfill the thesis component of his program. Kenneth received his Bachelor's Degree of Sciences in Psychology at the University of Victoria. Prior to starting his Master's program, Kenneth worked at the Cridge Centre for the Family's Brain Injury Services supporting male survivors of traumatic brain injury. Kenneth completed his graduate training internship at the Vancouver Island Men's Trauma Centre where he worked with low income populations and male survivors of trauma.

Dr. Susan Tasker is a faculty member in the Faculty of Education at the University of Victoria, and Kenneth Wright's thesis supervisor. Susan obtained her PhD in Psychology from McMaster University and is a Certified Canadian Counsellor. Prior to joining the faculty at UVic, Susan taught undergraduate students at McMaster University and Sheridan College, and graduate students in the Master of Counselling Psychology program offered by the Campus Alberta consortium (Calgary University, Lethbridge University, and Athabasca University). Also, Susan owned and operated a private practice in Burlington, Ontario where she counselled individuals and families dealing with everyday life concerns, trauma, and uncertainty. Susan has received training as a Compassion Fatigue specialist and her research interests lie in the area of coping with and adjusting to life following a traumatic life event.

I understand that by (1) entering the Study Identity Number assigned to me, and (2) continuing on to respond to the survey that follows, that I (*and your parents, if you are under 17*) am (3) consenting to my participation in the study “Siblings of young murder victims: Comparisons with a matched sample,” and that (4) I have had an opportunity to have any questions answered by the Primary Investigator (Kenneth Wright).

Enter study Identification number here _____

Demographics

SOME QUESTIONS ON THE SURVEY MAY NOT APPLY TO PARTICIPANTS UNDER THE AGE OF 17. PLEASE SKIP SURVEY QUESTIONS THAT DO NOT APPLY IF THERE IS NO “NOT APPLICABLE” OPTION.

1. What is your current age?

2. What language do you speak most often at home?
 - 1) English as first language
 - 2) Other

3. What is your current relationship status?
 - 1) Single
 - 2) Serious dating relationship
 - 3) Married
 - 4) Common-law/cohabiting
 - 5) Separated
 - 6) Divorced
 - 7) Widowed

4. Do you have any children?
 - 1) No
 - 2) Yes

5. Please fill out the table below describing the gender and age of your child(ren).

	Age	Gender
1 st child		

2 nd child		
3 rd child		
4 th child		
5 th child		

6. What is the highest level of education you have completed?
- 1) Less than 7th grade
 - 2) Junior high school (9th grade)
 - 3) Partial high school (10th or 11th grade)
 - 4) High school graduate
 - 5) Private training institution course/program
 - 6) Partial college or university (at least 1 year of college, university or specialized training)
 - 7) Standard college or university graduate
 - 8) Graduate professional training (MA, MSc, MD, MBA, PhD)
7. Currently, I am: (please select all that apply)
- 1) Employed fulltime
 - 2) Employed part-time
 - 3) Attending school fulltime
 - 4) Attending school part-time
 - 5) Retired
 - 6) Unemployed or not working by choice
 - 7) None of the above
8. What is your educational status?
- 1) Enrolled in junior or high school
 - 2) Enrolled in college, university or private training institution
 - 3) Other/not applicable
9. Currently, my main occupation is:
- 1) Homemaker
 - 2) Unskilled (attendant, janitor, construction helper, unspecified labour, porter, food and beverage services e.g., Tim Hortons, Pizza Pizza)
 - 3) Clerical and sales, technician, bank teller, bookkeeper, clerk, draftsman, timekeeper, or secretary.
 - 4) Semi-skilled (hospital aide, painter, bartender, restaurant server, bus driver, cutter, cook, drill press, garage guard, checker, waiter, spot welder, machine operator)

- 5) Skilled manual – usually having had some training (baker, barber, brakeperson, chef, electrician, fireperson, lineperson, machinist, mechanic, paperhanger, painter, repairperson, tailor, welder, policeperson, plumber)
- 6) Administrative personnel, manager, minor professional, owner/proprietor, of small business: bakery, restaurant, car dealership, engraving business, plumbing business, florist, decorator, actor, reporter, travel agent
- 7) Manager of medium sized business, nurse, optician, pharmacist, social worker, teacher
- 8) Higher executive, higher professional, owner of a large business
- 9) Retired
- 10) Unemployed/not working by choice
- 11) Fulltime student at school, college, or university
- 12) None of the above

10. My current estimated family income level (annually; social economic status) is:

- 1) Under \$10,000
- 2) \$10,000 to \$19,999
- 3) \$20,000 to \$39,999
- 4) \$40,000 to \$59,999
- 5) \$60, 000 to \$79,999
- 6) \$80,000 to \$99,999
- 7) \$100,000 and over
- 8) Don't know
- 9) I would prefer to not answer this question/no response

11. My current estimated personal income level (annually; social economic status) is:

- 1) Under \$10,000
- 2) \$10,000 to \$19,999
- 3) \$20,000 to \$39,999
- 4) \$40,000 to \$59,999
- 5) \$60, 000 to \$79,999
- 6) \$80,000 to \$99,999
- 7) \$100,000 and over
- 8) Don't know
- 9) I would prefer to not answer this question/no response

12. While growing up (ages 0-25) my family income level (annually; social economic status) was:

- 1) Under \$10,000
- 2) \$10,000 to \$19,999
- 3) \$20,000 to \$39,999
- 4) \$40,000 to \$59,999
- 5) \$60, 000 to \$79,999
- 6) \$80,000 to \$99,999
- 7) \$100,000 and over

- 8) Don't know
 9) I would prefer to not answer this question/no response
13. While growing up (ages 0-25) I experienced: (select all that apply)
- 1) Multiple minor medical problems
 - 2) Chronic medical problems (e.g., cancer, heart disease, diabetes)
 - 3) Chronic emotional problems (e.g., episodes of significant anxiety, depression)
 - 4) Hospitalization for medical problems
 - 5) Hospitalizations for psychiatric problems
 - 6) Suicidal thoughts
 - 7) Suicidal attempts
 - 8) Employment difficulty (e.g., job losses, changes, and dissatisfaction)
 - 9) Educational difficulty (e.g., incomplete courses, school dropout)
 - 10) Serious conflicts
 - 11) Drug/alcohol abuse history
 - 12) Drug/alcohol abstinence
 - 13) Legal problems
 - 14) Convictions
 - 15) Charges
 - 16) Criminal involvement]
 - 17) Family stability and satisfaction
 - 18) Social stability and satisfaction
 - 19) Satisfaction in and with my life
 - 20) Satisfaction in my free time
 - 21) None of the above
 - 22) I would prefer not to answer this question/no response

Please read the following statement and rate your level of agreement with this statement, using a 7 point scale with 1 = no agreement and 7 = total agreement.

14. Currently, I have a lot of social support in my life...

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

Health Status

This section is going to ask you questions on your general health. We ask that you please complete all the checkbox items. **JUST A REMINDER, YOU CAN SAVE YOUR RESPONSES AND RETURN TO THEM AT A LATER DATE PRIOR TO SUBMITTING. SOME**

QUESTIONS BELOW MAY NOT APPLY TO PARTICIPANTS UNDER THE AGE OF 17. PLEASE SKIP SURVEY QUESTIONS THAT DO NOT APPLY IF THERE IS NO “NOT APPLICABLE” OPTION.

1. In general, my health right now is:
 - 1) Excellent
 - 2) Good
 - 3) Fair
 - 4) Poor
 - 5) Unsure/don't know/cannot remember

2. How many days in the past 3 months have you missed school/work because you weren't feeling well?
 - 1) Not applicable
 - 2) None
 - 3) 1 to 3 days
 - 4) 4 to 7 days
 - 5) 8 to 13 days
 - 6) 14 or more days
 - 7) Unsure/don't know/cannot remember

3. How many days in the past 3 months have you gone to school/work even though you didn't feel capable of doing your school work or performing your work duties?
 - 1) Not applicable
 - 2) None
 - 3) 1 to 3 days
 - 4) 4 to 7 days
 - 5) 8 to 13 days
 - 6) 14 or more days
 - 7) Unsure/don't know/cannot remember

Self-Worth

This short module asks about your personal view of your self-worth.

1. My belief and confidence in my personal value and worth as an individual person is:
 - 1) Excellent
 - 2) Good
 - 3) Fair
 - 4) Poor
 - 5) Unsure/don't know

Looking Back Across my Childhood

Please read the two statements below and rate the degree to which you agree or disagree with each statement by clicking the corresponding check-box. You are free to leave out any question if it upsets you. **JUST A REMINDER, YOU CAN SAVE YOUR RESPONSES AND RETURN TO THEM AT A LATER DATE PRIOR TO SUBMITTING. FOR PARTICIPANTS UNDER THE AGE OF 17, PLEASE SKIP SURVEY QUESTIONS THAT DO NOT APPLY.**

1. Overall, I was a happy kid.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

2. Growing up, I remember “feeling different” from my friends or classmates and other people.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ Unsure
1	2	3	4	5	6	7	8

Please complete the following sentences. Please write as much or as little as you would like.

3. Growing up, I dreamed of becoming...

4. What I remember most about my parents and family life while growing up is...

5. The things that bothered me most while growing up were...

6. I am most proud of...

7. I am least proud of...

Impact of Events Scale

SOME PARTICIPANTS MAY FIND THE FOLLOWING SECTION DISTRESSING. TO REITERATE, ALL INFORMATION PROVIDED BY YOU ON THIS SURVEY WILL REMAIN CONFIDENTIAL, UNLESS (1) YOU WERE TO REPORT A CHILD OR VULNERABLE ADULT AT RISK OF ABUSE, (2) YOU WERE TO REPORT INTENT TO HARM YOURSELF OR OTHERS, OR (3) YOUR RECORDS WERE SUBPOENAED BY THE COURT. ALSO, ALL INFORMATION COLLECTED WILL BE KEPT IN A SECURE PLACE BY THE RESEARCHERS. FUTHERMORE, YOU CAN SAVE YOUR RESPONSES AND RETURN TO THEM AT A LATER DATE PRIOR TO SUBMITTING.

Please list one or more (up to five) experiences from your childhood (ages 0-25) that you found stressful, challenging, and/or upsetting. PLEASE DO NOT DESCRIBE THESE EXPERIENCES IN GREAT DETAIL (I.E. AVOID NAMES, PLACES, DATES, ETC. AND ONLY USE GENERAL TERMS).

Please attempt to complete the following section with these stressful experiences in mind. Below is a list of difficulties people sometimes have after stressful life events. Please read each of the 22 difficulties listed, and then indicate how distressing each difficulty has been for you **during the past seven days**.

With respect to the particularly challenging experiences from your childhood, how much were you distressed or bothered by the following difficulties in the **past seven days**?

Prompt	Not at all	A little bit	Moderately	Quite a bit	Extremely	Don't know/unsure
Any reminder brought back feelings about it.						
I had trouble staying asleep.						
Other things kept making me think about it.						
I felt irritable and angry.						
I avoided letting myself get upset when I thought about it or was reminded of it.						

With respect to the particularly challenging experiences from your childhood, how much were you distressed or bothered by the following difficulties in the **past seven days**?

Prompt	Not at all	A little bit	Moderately	Quite a bit	Extremely	Don't know/unsure
I thought about it when I didn't mean to.						
I felt as if it hadn't happened or wasn't real.						
I stayed away from reminders about it.						
Pictures about it popped into my mind.						
I was jumpy or easily startled.						

With respect to the particularly challenging experiences from your childhood, how much were you distressed or bothered by the following difficulties in the **past seven days**?

Prompt	Not at all	A little bit	Moderately	Quite a bit	Extremely	Don't know/unsure
I tried not to think about it.						
I was aware that I still had a lot of feelings about it, but I didn't deal with them.						
My feelings about it were kind of numb.						
I found myself acting or feeling as though I was back in time.						
I had trouble falling asleep.						

With respect to the particularly challenging experiences from your childhood, how much were you distressed or bothered by the following difficulties in the **past seven days**?

Prompt	Not at all	A little bit	Moderately	Quite a bit	Extremely	Don't know/unsure
I had waves of strong feelings about it.						
I tried to remove it from my memory.						
I had trouble concentrating.						
Reminders of it caused me to have physical reactions such as sweating, trouble breathing, nausea, or a pounding heart.						
I had dreams about it.						

With respect to the particularly challenging experiences from your childhood, how much were you distressed or bothered by the following difficulties in the **past seven days**?

Prompt	Not at all	A little bit	Moderately	Quite a bit	Extremely	Don't know/unsure
I felt watchful or on-guard.						
I tried not to think about it.						

Satisfaction with Life Scale

Below are statements that you may agree or disagree with. Please read each one and then select the response that best describes how strongly you agree or disagree. **JUST A REMINDER, YOU CAN SAVE YOUR RESPONSES AND RETURN TO THEM AT A LATER DATE PRIOR TO SUBMITTING.**

1. In most ways, my life is close to ideal.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

2. Conditions of my life are excellent.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

3. I am completely satisfied with my life.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

4. So far, I have achieved or gotten the most important things I want in life.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

5. If I could live my life over, I would change nothing.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

6. I am completely satisfied with my job or with what I am doing at school.

No agreement		Average agreement		Good agreement		Total agreement	Don't know/ unsure
1	2	3	4	5	6	7	8

Other comments

Please feel free to detail any other thoughts, comments or feelings you may have experienced that you think we have not covered with this questionnaire or anything else that you would like us to know about your wellbeing as a child and/or adolescent.

Appendix B

Information Letter for Comparison Participants

Do you have a sibling?

To Whom It May Concern,

RE: INVITATION TO PARTICIPATE IN A RESEARCH STUDY

This study explores the wellbeing of individuals who grew up with at least one brother or sister.

Participation is **voluntary** and will include the completion of an online survey (takes about 15-20 minutes). The only identifying information you will enter into the survey will be a Study Identity Number; in this way all information collected remains **anonymous to everyone but the primary researcher**. All information will remain **confidential** and will be kept in a secure place by the researchers. Confidentiality will only be breached if (1) you were to report a child or vulnerable adult is at danger of being abused, (2) you indicate you intend to harm yourself or others, or (3) your records are subpoenaed by the courts.

Participants can withdraw from the study at any point and you do not have to answer any questions on the survey you do not want to answer. It is also important you do not feel any obligation to participate due to any personal relationship between you and the Primary Investigator (Kenneth Wright). **If you are interested in participating in this study, please contact Kenneth Wright using the information below. If you are under 17 years of age, please ask your parents to contact Kenneth Wright on your behalf.**

Information gathered from this study will be compared to information gathered from another study with individuals who had a sibling murdered while they were growing up.

This research is **important** because so little is known about the lives of the brothers and sisters of young homicide victims. Anecdotal evidence from parents and now-grown brothers and sisters tells us that homicide can profoundly affect the self-esteem, behaviour and choices siblings make as they go through childhood, adolescence and emerging adulthood.

This study will compare what we have already found about individuals who have lost a sibling to homicide while growing up with information collected from siblings who have not. By making this comparison, we as researchers, are more capable of making informed and trustworthy research conclusions. Perhaps most importantly, this comparison will help to bring attention to the siblings of homicide victims as secondary victims of homicide. The awareness of brothers and sisters as secondary victims will help to support the need for change in policy and practice.

Some questions on the survey may not apply to participants under the age of 17. Please skip survey questions that do not apply if there is no “not applicable” option.

Potential Risks:

As part of the survey, participants will be asked to fill out the Impact Events Scale, with regards to potentially challenging events they experienced in their childhood. Filling out this questionnaire could potentially promote discomfort. However, the items on the Impact Events Scale are close-ended and do not ask clients to describe challenging experiences in great detail. While it is possible participants could experience stress and/or discomfort while filling out the survey used in this study, it is unlikely this stress and/or discomfort will exceed that which is normally encountered by the participant in aspects of their everyday life.

Upon request, participants will be provided with a comprehensive list of support resources including accessible national online and crisis lines available 24 hours a day, 365 days a year.

I would very much appreciate your help in identifying and inviting possible participants to the study. Please do not hesitate to contact myself for any further information or clarification.

IF YOU ARE INTERESTED IN PARTICIPATING PLEASE CONTACT KENNETH WRIGHT BY PHONE OR E-MAIL (CONTACT INFORMATION PROVIDED BELOW).

Sincerely, **Kenneth Wright, BSc.**

Department of Educational Psychology and Leadership Studies, University of Victoria

250-217-7898

Kwright3@uvic.ca

BIOGRAPHIES & CONTACT INFORMATION

Kenneth Wright is the Primary Investigator for this study. Kenneth is in the process of completing his Master's Degree of Counselling Psychology at the University of Victoria. This study will eventually be used to fill the thesis component of his program. Kenneth previously acquired his Bachelor's Degree of Sciences in Psychology at the University of Victoria. Furthermore, Kenneth has previously worked at the Cridge Centre for the Family's Brain Injury Services supporting male survivors of Traumatic Brain Injury. During his Master's program, Kenneth has also with low income populations and male survivors of trauma at the Vancouver Island Men's Trauma Centre.

Contact Information:

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Dr. Susan Tasker is the Kenneth Wright's thesis supervisor and a member of his Supervisory Committee. Susan obtained her PhD. Psychology from McMaster University and is a Certified Canadian Counsellor. Susan is currently a faculty member, performing research, teaching, and mentoring at the University of Victoria. Previously, Susan has taught undergraduate students at McMaster University and Sheridan College, and graduate students in the Master of Counselling Psychology program offered by the Campus Alberta consortium (Calgary University, Lethbridge University, and Athabasca University). Also, Susan has had her own private practice in Burlington, Ontario where she counselled individuals and families dealing with everyday life concerns, trauma, and uncertainty.

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