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Predictors of Fear of Death and Self-Mortality:

An Atlantic Canadian Perspective

By

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A Thesis Submitted to  
Saint Mary's University, Halifax, Nova Scotia  
in Partial Fulfillment of the Requirements for  
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## Abstract

Predictors of Fear of Death and Self-Mortality:  
An Atlantic Canadian Perspective

By Trinda L. Power

Despite the ever-increasing body of knowledge about fear of death, death attitudes in Atlantic Canada have rarely been examined. Furthermore, prior research has often not accounted for the impact of interactions between variables that are predictive of death fear. The present study was undertaken to explore fear of death in Atlantic Canada as a function of gender, age, religiosity, perceived time-left-to-live, and the interactions between these variables, using the Multidimensional Fear of Death Scale (MFODS). Predictions about cause, age, marital status and place of death were also derived from the Do-It-Yourself-Death-Certificate as a means of obtaining participants' conceptions surrounding their own deaths. Predictions were compared with actuarial data to determine their accuracy. The sample consisted of 144 university students (111 women and 33 men) age 18 to 57, ( $M = 23.6$ ,  $SD = 7.4$  years). Results showed significant main effects for gender, religiosity and age, and significant interaction effects between gender and religiosity, gender and time-left-to-live, age and religiosity, gender, age, and religiosity, and gender, age, religiosity and time-left-to-live, on fear of death. Women were more fearful for significant others and of the dead, whereas men who predicted having greater time-left-to-live had greater fears of the unknown and of experiencing a conscious death. Religious participants expressed greater fears in more MFODS domains than non-religious participants. In addition, younger, more religious participants and older, less religious participants had higher fears of experiencing a premature death. Overall, both men and women made inaccurate death-related predictions when compared to actuarial data. The present findings are discussed in terms of limitations, need for examination of interaction effects of variables predictive of death fear, and implications for death-related issues in Atlantic Canada.

June, 2005

### Dedication

This work is dedicated to my husband Rob, without whose tireless encouragement and support I would have given up long ago, and to my son Matthew, for being so patient with me on the days following many long nights of staying up late working on this project.

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“ Dying is fine but Death ? O baby I wouldn't like Death if Death were good”

- e.e. cummings

One might suppose that in a new millennium with life expectancy having increased an average ten years in the last century alone (Canadian Global Almanac, 1999), Canadians would report having less to fear from death than any generation in history. Decimating epidemics such as small pox and tuberculosis have been virtually eliminated from this country and survival rates for many other diseases (e.g., cancer) have jumped dramatically, while the prospect of a horrific, painful death has been diminished through modern pain management and medical practices. But although an understanding of the processes of aging and death has become broader (Kastenbaum, 2000) and the ability to ameliorate the painful effects of dying has grown considerably, Canadians seem no less concerned about mortality than ever before. Becker (1973), in his book *Denial of Death*, asserts that all human beings experience fear and anxiety at the knowledge that their death is inevitable. Yet despite universality in death concern and an increasing amount of psychological literature focusing on death-related attitudes (Neimeyer, Wittkowski & Moser, 2004), relatively few studies have examined death-related attitudes in Canada (e.g., Littlefield & Fleming, 1984; Lonetto, Fleming, Gorman & Best, 1975; Robinson & Wood, 1984), with even fewer (e.g. Flint, Gayton & Ozmon, 1983) focusing on death attitudes in Atlantic Canada. Furthermore, of the few Canadian studies available, the interaction effects between variables, such as age, gender and religiosity as predictors of fear of death, and expectations surrounding death, have not been examined.

The issue of fear of death is one that holds particular significance for the Atlantic region of Canada. The region has a lower than average life expectancy, higher than average rates for many fatal illnesses, below average income levels and a population that is older than the national mean (Statistics Canada, 1997; Statistics Canada, 2005). In addition, smoking and obesity rates in the Atlantic region are among the highest in the nation (Statistics Canada, 1999; Statistics Canada, 2001) creating a greater risk of premature death. It is these health status indicators that underscore the need for a study into attitudes and fears toward death and dying in the Atlantic region. Furthermore, examining attitudes may help foster a greater understanding of the lack of health-related behaviours in which Atlantic Canadians engage.

### *Death Defined*

A concise definition of death is difficult to ascertain. Legal and medical systems are still attempting to deal with precisely when the moment of death occurs (Kastenbaum, 2000). A cursory definition can be found in Webster's New World Dictionary (1994) which defines death as "the act or fact of dying; permanent ending of all life in a person, animal or plant" (p. 335). The Oxford English Dictionary (1989) augments this simple statement with "the state of being without life, animation, or activity; as a personified agent usually figured as a skeleton" (p. 303). Historically, religious views in Western Culture perceived death as the time in which the soul leaves the body, transforming into a new state of being. The Catholic Church differentiated between clinical death and true death; true death being the time at which the individual undergoes judgment from God and passes into eternity, occurring approximately two hours after clinical death (Moraczewski & Showalter, 1982).

The medical profession, and the general public as a whole, has traditionally defined death as a cessation of spontaneous heartbeat and respiration (Moraczewski & Showalter, 1982; President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, 1981; Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death, 1968). Because the heart was thought to be the primary organ in the body, its failure was considered to mark the onset of death. The law reflected this position (Black's Law Dictionary, 1968). Advances in medical technology however, have precipitated a reevaluation of this traditional understanding of death. Resuscitative and supportive measures have allowed for the continued functioning of the heart and lungs in individuals with little or no chance of recovery (e.g., massive irreversible brain damage) and organ transplants have enabled such situations as the removal of a "dead" person's heart to be transplanted into a "living" person's body whose own heart has stopped (President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, 1981). Gaining more widespread acceptance is the definition of death as irreversible coma resulting from the destruction of the whole brain (i.e., brain stem, midbrain, & forebrain) whereby an individual elicits no response to pain, lacks movement, has no reflexes and has a flat electroencephalogram; this is also termed brain death (Linehan, 1981). Debate continues, however, over whether brain death should entail the death of the whole brain or the neo-cortex, the portion of the brain responsible for consciousness, intelligence and social interaction (Linehan, 1981; Veatch, 1976). In many cultures, death of the body does not mean death of the individual, thus fear of death may be either a fear of corporeal demise, spiritual demise or both.

### *Why Do We Fear Death?*

Since the early beginnings of research about death in the field of psychology, researchers have sought to determine what factors have been most salient concerning attitudes about death. Gender, religious commitment, and age, for example, have often been examined in the context of death-related fear. Acknowledgement of concern about death is now widely recognized in the psychological literature, with fear of death being the central tenet (Cicirelli, 1999; Conte, Plutchik & Weiner, 1992; Feifel & Branscomb, 1973; Kastenbaum & Aisenberg, 1972; Kastenbaum & Costa, 1977; Feifel, 1969; Feifel & Hermann, 1973; Feifel & Nagy, 1981; Hinton, 1967; McCarthy, 1980; Stringfellow, 1963; Swenson, 1961; Templer, 1971). But what is it about death that makes people react with fear?

According to Becker (1973), fear of death is natural and exists in all human beings; however, when people are questioned about their feelings toward their own mortality they tend to minimize or deny these fears. Early psychological research has shown that people either express little concern about death (e.g., Middleton, 1936) or do not report what they actually believe (Alexander, Colley & Alderstein, 1957). Becker (1973) maintains that fear of death is an emotional manifestation of a self-preservation instinct that people must have in order to strive toward maintaining their existence. This fear, however, must lie below conscious awareness so that it does not inhibit a person's overall functioning. Although the majority of people may not think about death or question their own individual worth, instead choosing to focus time and energy on the achievement of goals, needs and desires, it is when they begin to question their self-worth that they think about their own mortality. These thoughts may be accompanied by a sense



of fear or terror. The fear is adaptive, however, as it serves to keep the person safe by signaling the need to act in such a way that reduces the threat of self-destruction (Becker, 1973).

Lending support to this position is Terror Management Theory (TMT; Harmon-Jones, Simon, Greenberg, Pyszczynski, Solomon & McGregor, 1997). It postulates that humans share the same basic instinct for survival with all living creatures, but what makes humankind distinct is the capability for awareness about its own mortality. Despite the most extraordinary efforts people may exert in an effort to continue to exist, it is the dichotomy between the knowledge that death is unavoidable and the desire for survival that creates a potential for terror. In order to reduce feelings of terror, people subscribe to a particular cultural worldview, that is, a set of beliefs shared by many individuals that provides meaning and a guarantee of a symbolic or literal immortality for those who meet the standards of this worldview. Furthermore, through subscription to the worldview, people achieve a greater sense of self-esteem that serves to make them feel a stronger sense of permanence in their cultural belief, and therefore, a stronger belief in their own immortality. In both Becker's theory and TMT, fear of death becomes an impetus for personal betterment; the end product being avoidance of thoughts of one's own mortality in the former, and in the latter a means of achieving a feeling of immortality. It is this same set of cultural beliefs that define for individuals what death means.

### *Fear of Death Conceptualized*

Early psychological research traditionally viewed death as unitary concept, although more recently it has been regarded as one that is multidimensional (Lester, 1994; Neimeyer & Moore, 1994; Wong, Reker & Gesser, 1994). For instance, a person

may fear his or her own death, the death of another or the effects of death (Becker & Bruner, 1931) or fear the dying process (Collett & Lester, 1969). Kastenbaum and Aisenberg (1972) identified six specific death-related fears from a self/other orientation that include: a fear of dying, a fear about what might happen following death, and a fear of extinction. The fear of self-extinction, considered by the authors to be the “basic death fear”, involves a realization of separation from environment and from people. For the child, it is a fear of abandonment whereas for the adult, it is a fear that the things that have come to represent them (e.g., possessions and attachments) will not live on and that they will be forgotten.

Adding to the work of Kastenbaum and Aisenberg and extracting components from their six death-related fears, Florian and Kravitz (1983) have proposed a conceptual model of personal death fear. Comprised of three elements it includes an "intrapersonal" fear encompassing an end to one's existence, an "interpersonal" fear, entailing a loss in social identity and personal relationships; and a "transpersonal" fear, relating to fears of punishment following death (p. 605). The intrapersonal fear, akin to Kastenbaum and Aisenberg's (1972) fear of self-extinction, is referred to as the basic death fear since it is distinct from any other life fear one may have and because it is not founded in personal experience.

### *Early Psychological Research*

The earliest direct techniques that tapped into fear of death were the questionnaire and the interview (Lester, 1967). Psychological research using direct questionnaire methods showed that individuals expressed little concern about death (Middleton, 1936), despite the opposite evidenced in other disciplines (e.g., philosophy, religious studies).

Consideration was not given to the fact that people might not always have reported what they actually believed (Alexander, Colley & Alderstein, 1957). Since the majority of early research on death anxiety was psychoanalytically based (e.g., Meissner, 1958; Sarnoff & Corwin, 1959) and because anxiety was thought to lie below the level of consciousness, a number of projective techniques were used to identify death fear (Lester, 1967; Lifton, 1979). Commonly used procedures included word association tests (e.g., Golding, Atwood & Goodman, 1966), Galvanic Skin Response (e.g., Alexander & Alderstein, 1958; Meissner, 1958), imagery tasks (e.g., Lester & Lester, 1970) and the Thematic Apperception Test (e.g., Rhudick & Dibner, 1961). Support for these procedures began to wane as researchers began questioning their reliability and validity (Kastenbaum, 2000; Neimeyer, 1997). Small homogeneous populations, psychoanalytically based assumptions, and the problem of social desirability limited their scope and breadth. Coincident was the growing popularity of more direct methods of attitude assessment (e.g., the questionnaire) found in social psychology. Additionally, many researchers abandoned more intense, time consuming methods (e.g., GSR) for brief, easy to score questionnaire methods that circumvent some, though not all, of these early limitations.

### *Contemporary Psychological Research*

The 1970's through the 1980's and into the 1990's saw a sharp incline in interest in psychological research on death (Dickstein, 1972; Feifel, 1969; Feifel, 1990; Lester, 1967; McCarthy, 1980; Neimeyer, Wittkowski & Moser, 2004) that has resulted in more than 1000 death-related articles having been published to date (Neimeyer & VanBrunt, 1995). Along with this increase came what have been called "clean" studies in which

experimental procedures were used to examine death concerns well evidenced in other disciplines (Kastenbaum & Aisenberg, 1972). Methodologically, a move toward psychometrically validated and reliable questionnaires for measuring death-related concerns has occurred (Neimeyer, 1994). However, there continues to be a great deal of inconsistency in the conclusions arising from the multitude of research. Variability of findings has stemmed in part from the use of varying ages, populations and assessment tools in addition to the use of global measures versus multivariate measures to tap into death-related fear (Cicirelli, 1999). At present however, most psychometric instruments account for the multidimensionality of death fear and thus assess its various aspects (Cicerilli, 2002). Recent studies have resulted in the discovery of several interesting findings with respect to differences in gender, age and religiosity on fear of death.

#### *Gender Differences in Fear of death*

Numerous researchers (e.g., Christ, 1961; Diggory & Rothman, 1961; McDonald, 1976; Middleton, 1936; Neimeyer & Moore, 1994) have examined gender differences in fear of death but conclusive findings have been elusive. Pollack (1979) and Neimeyer, Wittkowski and Moser (2004) provide overviews of studies examining gender differences and highlight inconsistencies in the findings.

In general, women are reported to possess a greater overall fear of death (DaSilva & Schork, 1984; McDonald, 1976; Neimeyer & Moore, 1994; Templer & Ruff, 1971; Templer, Ruff & Franks, 1974; Ray & Najman, 1974) and think about their own deaths more frequently (Middleton, 1936) than do men. Examining gender differences in death attitudes as a function of specific fears, Lester (1972) found that women express a greater fear of dying than do men but they do not differ from men on fears about others dying or

on a general fear of death. From these findings, Lester (1972) suggested that women have greater fear of death in certain specific areas rather than in a general overall fear of death domain. Furthermore, using the MFODS, Neimeyer and Moore (1994) found that women had greater fears on most subscales but that they were less fearful of the unknown than were men. Similarly, Cicirelli (1998) found that women reported higher fears on four of the eight MFODS subscales.

DaSilva and Schork (1984) have attributed variances in attitudes between men and women to differences in early socialization. For women, death was more openly talked about during childhood, whereas for men, death was an uncomfortable topic or was rarely discussed. Furthermore, Templer, Ruff and Franks (1971) found correlations to exist between death anxiety scores and same sex parent and child. Death anxiety scores have also been shown to correlate between parents within the same family, suggestive of a similar interpersonal and environmental milieu for the acquisition of death anxiety rather than one that is borne in early development. Similarly, social status, surroundings, cultural background and interpersonal relationships may contribute largely to death attitudes (Ellard, 1968). Other studies however, have found no gender differences among attitudes towards death (e.g., Christ, 1961; Feifel & Branscomb, 1973; Kalish, 1963; Rhudick & Dibner, 1961; Swenson, 1961).

Despite these inconsistencies, general patterns have emerged regarding gender differences (Pollack, 1979). There appears to be a trend in the direction that either women report to fear death more than men do or that there are no significant gender differences. Furthermore, these differences may be a reflection of the varying assessment devices employed, differing socialization between boys and girls or the differences in cognitive

structures between men and women. At present, it is unknown whether gender differences exist in fear of death in Atlantic Canada, nor are there studies examining the relationships between gender and other variables such as age and religiosity on fear of death.

### *Religiosity and Fear of Death*

The development of world religions has been fostered by a driving force to address the issue of human mortality (Becker, 1973). From this standpoint, it might be expected that differing attitudes toward death might be the result of differing religious ideologies. Consistent findings have remained elusive however, with both positive and negative correlations existing between fear of death and degree of religious affiliation (e.g., Fiefel, 1959; Florian & Har-Even, 1983; Fortner & Neimeyer, 1999; Swenson, 1961). These differences may be accounted for by doctrinal and sectarian differences between religions, or by inconsistencies in the way in which religiosity is measured. A number of studies have looked at religious affiliation and fear of death, which are described in some detail below. These studies have measured religiosity as it pertains to a Judeo-Christian perspective.

For instance, Swenson (1961) concluded that individuals with little religious affiliation have more fearful death attitudes than individuals with stronger religious conviction. In addition, Feifel and Nagy (1981, p. 284) found that people who declared themselves as less religious in both "conduct and creed" reported to possess a greater fear of death than those with stronger religious beliefs. Conversely, Feifel (1959) concluded that "the religious person, when compared to the nonreligious individual, is personally more afraid of death" (p.29) and offered the explanation that greater fears arose from a

concern about what might happen after death (e.g., not going to Heaven) as well as a concern about the cessation of current experiences on earth. Kastenbaum and Aisenberg (1972) also placed a fear of death in the context of a fear of an afterlife whereby punishment plays a major part, as did Florian and Har-Even (1983) who found that people declaring themselves religious expressed a greater fear of death and of punishment in the hereafter in addition to a fear of consequences to family and friends.

McDonald (1976) found no significant differences in fear of death between religious and non-religious Mormon and non-Mormon undergraduate university students and Feifel and Branscomb (1973) concluded that an overall aversion to death was found regardless of religiosity. Furthermore, Feifel and Branscomb (1973) found no significant differences between religious and non-religious participants in a healthy and terminally ill sample. Although it has been postulated that personality traits (e.g., dependency, hypochondria, hysteria and impulsivity), as measured by the Minnesota Multiphasic Personality Inventory (MMPI), correlate positively and more highly with death concern than religiosity (Rhudick & Dibner, 1961), it has been suggested more recently that early socialization into religious beliefs and death concepts is more influential on the acquisition of death fears than specific neurotic personal characteristics (Westman & Brackney, 1990).

A non-linear trend has also been supported in the psychological literature in which individuals at both ends of the spectrum (i.e., non-religious and very religious) indicate less fear of death than those expressing ambivalence (Alexander & Alderstein, 1958; Florian & Kravitz, 1983). The strongly religious feel confident that they are bound for the afterlife and so they face death with optimism, while the strongly non-religious

face no fear of retribution following their passing.

In summary, from a Judeo-Christian perspective, religion can be considered as either a buffer against death anxiety or as a source of special concern, such as, fear of damnation, salvation or immortality (Kastenbaum, 2000). Due to a lack of adequate research on the matter in Atlantic Canada, it is undetermined whether strength of religious conviction plays any role in ameliorating or increasing death-related anxiety. In the absence of such studies to the contrary, the tenets of TMT would suggest then from a Judeo-Christian perspective, increased religiosity should diminish fear of death. Religiosity in the context of the present study should be understood from a Christian perspective with respect to afterlife, doctrinal adherence, and spirituality, as the Atlantic Provinces are primarily Catholic or Protestant (Statistics Canada, 2005).

#### *Age and Fear of Death*

Age has also been a factor frequently examined in relation to fear of death, although findings have been inconclusive. For instance, Rasmussen and Brems (1996) reported that an inverse relationship exists between age and fear of death, with younger people expressing greater fear of death than older people (Kastenbaum, 1992). In addition, Gesser, Wong and Reker (1988) suggested that the relationship between age and fear of death is curvilinear, with fear of death peaking at its highest level for middle-aged adults. Furthermore, Kastenbaum (2000) reported that no relationship between advancing age and fear of death exists while others (e.g., Christ, 1961; Rhudick & Dibner, 1961; Lester, 1972; Swenson, 1961; Templer, Ruff & Franks, 1971) have found that age is not a factor influencing fear of death. Despite the lack of conclusive evidence showing age to be a predictor of death fear, it has been concluded that specific concerns about death



differ by age level (Kastenbaum, 2000). Younger generations express concern about leaving dependents behind, whereas older generations worry about becoming a burden to others. In this respect, age can be a useful tool examining how and why people think about death.

The relationship between age and gender on fear of death has also been explored. Neimeyer, DePoala, Griffin and Young (2003) reported that older women have a greater fear of the dead than do men, as measured by the MFODS. However, Cicirelli (2001) examined the relationship between age and gender on fear of death using the MFODS and found that gender effects were similar for both older and younger adults. Such studies that examine more than one factor in relation to fear of death hint at the possibility that significant relationships may exist between death fear and certain specific populations within these factors (e.g., women who are young and religious).

#### *Death-Related Predictions*

Researchers have sought to determine the ways in which individuals conceive of their own deaths. For example, Middleton (1936) examined attitudes about death in a sample of college students through the use of an open-ended questionnaire. General trends revealed by the data showed that nearly one-quarter of participants thought about which disease would cause their death, with cancer, tuberculosis and heart disease being the most frequently mentioned, and that over half of participants expected to die in car accidents.

Similar results have been obtained with studies using more direct methods of assessment (e.g., Kastenbaum & Aisenberg, 1972; Lonetto, Fleming, Gorman & Best, 1975; Sabatini & Kastenbaum, 1973; Simpson, 1975). These studies have used the Do-It-

Yourself-Death-Certificate (DIYDC), an adapted version of the State of Michigan death certificate. It has been used as a measure of attitudes toward personal mortality and general orientations toward death. An individual's estimates of life span, time-left-to-live, cause of death, method of body disposal and interval between onset of fatal illness or injury and death may be learned from the DIYDC (Sabatini & Kastenbaum, 1973). The DIYDC can also be used as either a dependent variable (with which to provide such information as described above) or as an independent variable as a "stimulus configuration that exposes the respondent to the prospect of his [or her] own death" (Kastenbaum & Aisenberg, 1972; p. 21).

Kastenbaum and Aisenberg (1972) administered the DIYDC to participants enrolled in death education courses. The authors reported that heart failure was the most frequently predicted cause of death by more than half of the participants, and was mentioned four times more often than the second leading cause of death, which was due to natural causes occurring in old age. Automobile accidents, murders, suicides and other forms of violent deaths combined were reported as frequently as old age as a predicted cause of death. Death by cancer was estimated by 4.2 percent of the sample, a figure underestimated by 400 percent in comparison to mortality rates at the time. In addition, strokes, arteriosclerosis and pneumonia followed cancer as the other most prevalent choices for diseases causing death.

Gender differences were also evident with respect to the anticipated causes of death. Based on participants' predictions, women were five times more likely to die from old age, three times more likely to die in car accidents and two-times more likely to die of cancer than were their male counterparts. However, women were half as likely to die

from heart attack than were men.

In a similar study, Simpson (1975) administered a death certificate to medical, nursing, and divinity students enrolled in a death-related course. Findings were consistent with those found by Sabatini and Kastenbaum (1973), such that participants either under or overestimated items compared to actuarial data. As well as being the most commonly predicted cause of death, heart attacks were overestimated in comparison to actuarial data, while cancer, stroke, and suicide were significantly underestimated. Additionally, the participants expected to die at an older age, in an expedient manner and with an underestimated rate of cancer, stroke and suicide than indicated by actuarial data, despite the fact that they were students with health professional training.

In a Canadian study, Lonetto, Fleming, Gorman and Best (1975) administered the DIYDC to students enrolled in a Psychology of Death course. Their participants also projected unrealistic death estimates in comparison to actuarial data. As in prior research, cancer was grossly underestimated. Heart attacks were the most frequently projected cause of death by one-third of participants followed by death from traffic accidents. Women predicted death by heart attack or traffic accident rather than by natural causes or suicide. Age was considered a factor determining certain death attitudes, although this relationship was not strong. Other findings indicated that the older one is at the time of death, the stronger the feeling that an accidental death is preferred over a natural one, that the death occur in a rural area, and that a spouse will still be surviving.

In summary, the DIYDC can be a useful tool for examining individuals' fear of death. It may supply data that provides insight into a person's fear of death when confronting one's own mortality. Additionally, from the items on the DIYDC, it is

possible to derive personal attitudes on impending death. Understanding such attitudes is an important factor especially for those in the mental health and medical fields when assisting those who are facing death.

### *Limitations of Past Research*

The body of past research, while establishing a reasonable basis of methodology for further research, has nevertheless left some pressing questions unanswered. While studies have suggested that detailed examination of specific demographic factors have a bearing on one's fear of death, much work remains to be done with respect to examining the impact of these factors in concert with one another on fear of death. Such prior studies have considered fear of death among populations that do not share all of the demographic characteristics of this region and may therefore not be applicable to Atlantic Canada.

### *Overview of Thesis*

This research was conducted to examine aspects of death and dying (i.e., fear of death and self-mortality) in a Nova Scotia University student sample. Due to the limited research on death attitudes and perceptions in Canada, most notably the Atlantic Provinces, this research is aimed at gaining insight into local attitudes and perceptions. The following hypotheses were tested:

- H1: Participants rating themselves as not religious will have a greater fear of death than participants rating themselves very religious.
- H2: Participants predicting that they have less time-left-to-live will have greater death fear than participants predicting that they have more time-left-to-live.
- H3: Women will have a greater fear of death than will men in specific death

domains.

H4: Older participants will express greater fears of death than younger participants.

H5: Participants will make inaccurate death-related predictions related to cause, place, age and marital status at time of death as compared to actuarial data.

H6: Gender differences will exist with respect to death-related predictions.

## Method

### *Participants*

One hundred and forty-four Saint Mary's University undergraduate students volunteered to participate. There were 111 women and 33 men, ranging in age from 18 to 57, with a mean age of 23.6 ( $SD = 7.4$  years). The women ranged in age from 18 to 51, with a mean age of 22.6 ( $SD = 6.5$  years). The men ranged in age from 18 to 57, with a mean age of 26.8 ( $SD = 9.2$  years). Of the 111 women, 44.9% were Catholic, 24.6% were Protestant, 7.2% declared no religious affiliation, and 21.7% declared "other" religious affiliation. Of the 33 men, 30.8% reported to be of Catholic faith, 15.4% were Protestant, 38.5% declared no religious affiliation and 15.4% declared "other". Nearly 40% of men reported to be not religious, while 30.8% reported to be very religious, and 30.8% reported to be somewhat religious. For women, 21.7% reported to be not religious, 5.8% reported to be very religious, and 72.5% reported to be somewhat religious.

### *Instruments*

A demographic questionnaire (Appendix D) was administered in order to obtain general information about the participants (e.g., age, gender, religiosity).

*The Multidimensional Fear of Death Scale.* Hoelter's (1979) Multidimensional Fear of Death Scale (MFODS) is a 42-item measure of fear of death (Appendix E). Items are rated on a 5-point Likert-type scale ranging from strongly agree (1) to strongly disagree (5). Five items are reverse-scored to control for response bias. Eight subscales

have been derived from the MFODS assessing eight dimensions of death fear (see Table 1). Lower scores on each subscale represent a higher fear of death. Internal consistency was calculated using Chronbach's alpha. The results showed good internal consistency with coefficients ranging from .50 to .80. Both Hoelter (1979a) and Walkey (1982) have reported good internal consistency of the MFODS with coefficients ranging from .65 to .82 and .65 to .80, respectively. Convergent validity has been supported by moderate intercorrelations of a number of the MFODS subscales with the Threat Index (DePaola, Neimeyer, Lupfer and Fiedler, 1994). Construct validity has been established and test-retest correlation over a 3-week period was .85 (Neimeyer & Moore, 1994).

*Table 1*

*Observed Internal Consistency (Chronbach's Alpha), Means and Standard Deviations for Subscales of the Multidimensional Fear of Death Scale*

Subscale	No. of items	<u>M</u>	<u>SD</u>	Observed Alpha
Fear of the dying process	6	2.16	0.89	.80
Fear of the dead	6	2.70	0.90	.74
Fear of being destroyed	4	2.97	1.10	.68
Fear for significant others	6	1.71	0.77	.82
Fear of the unknown	5	2.79	0.74	.50
Fear of conscious death	5	3.00	0.99	.77
Fear for the body after death	6	3.26	0.96	.78
Fear of premature death	4	2.52	1.03	.79

Note. Lower scores on each subscale represent higher fears of death.

*The Do-It-Yourself-Death-Certificate.* The DIYDC is an adapted death certificate used by the state of Michigan (Appendix F). According to Sabatini and Kastenbaum (1973) the DIYDC is an effective measure of attitudes toward personal mortality in that it asks participants to complete items on the form based on what they believe will actually be written on their death certificate someday. I used the DIYDC to measure attitudes about self-mortality.

### *Procedure*

Psychology professors were contacted and when permitted, the researcher attended the final 5-minutes of class to recruit participants (Appendix A). Sign-up sheets specifying time and room number of testing and code word for the study were posted on a psychology bulletin board in a main hallway adjacent to the psychology department (Appendix B). Questionnaires were administered to groups of 6 to 10 participants in university classrooms. Before providing participants with the questionnaire packages, they were informed that the subject matter dealt with their opinions about death and were advised not to participate if they felt the subject matter might cause them distress. Participants were also advised that their answers on the questionnaires would be anonymous and kept confidential. They were then provided with and asked to sign consent forms if they agreed to participate (Appendix C). The researcher then read the instructions aloud (Appendix A). Pencils were provided to the participants upon request. Participants were given envelopes containing a demographic questionnaire, and the MFODS and the DIYDC in counterbalanced order. Upon completion of the measures, the participants were advised to place the questionnaires back inside the envelopes, seal the envelopes, and then drop them in the box provided. A debriefing sheet was also provided

to the participants upon their departure from the group testing room (Appendix A).

## Results

### *Overview*

In order to gain insight into death attitudes in the Atlantic Provinces, several major sets of analyses were conducted for these data. The first goal was to determine whether levels of death fear vary as a function of a person's gender, age, level of religious conviction, and prediction of how much longer they would live. In order to do this, regression analyses were conducted using these four variables as predictor variables, with the MFODS and its 8 subscales as dependent variables. The regression models also included all possible two-way, three-way and four-way interactions among the variables though for exploratory purposes.<sup>1</sup> Additional exploratory curvilinear analyses were conducted for religiosity on the MFODS and its subscales to determine whether a non-linear relationship existed for religiosity and death fear. Previous research (e.g., Florian & Kravitz, 1983) has supported the existence of a curvilinear relationship, and as such, has reported that people expressing ambivalence about their religious convictions evidence a greater fear of death than those expressing strong religious convictions or none at all. For this data, with the exception of a potential curvilinear effect on MFODS subscales five and six, that is, on fear of the unknown and on fear of conscious death, a curvilinear relationship for religiosity and death fear was not found to exist. Therefore on these data, linear regression analyses were conducted. However for subscales five and six, any

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<sup>1</sup> For regression analyses with interaction terms, it is recommended that continuous variables be centered prior to data analysis to reduce the occurrence of multicollinearity (Aiken & West, 1991). This procedure was executed in this research for the continuous variables of age, religiosity and time-left-to-live. For example, participants' mean age was subtracted from each participant's actual age resulting in a mean deviation variable centered on zero.



interaction effect of religiosity should to be interpreted with caution.

The second goal of this study was to explore participants' predictions about their own deaths using the DIYDC. Specifically, the predicted cause, location, marital status and age at the time of death were examined. Analyses were conducted using crosstabulations and a one-way ANOVA. Furthermore, of interest was the exploration of differences between men and women on these death estimates and to compare their responses to actuarial data in order to determine the accuracy of their predictions.

*Gender, Age, Religiosity and Time-left-to-live on Overall Fear of Death*

In order to gain insight into death-related fears in this region, variables of gender, age<sup>2</sup>, religiosity<sup>3</sup> and time-left-to-live<sup>4</sup> were included in the analyses. Previous research has found these variables to be salient concerning death attitudes. An evaluation of overall death fear as measured by the MFODS was examined for the four variables to determine whether they predicted an overall fear of death (see Table 2). The overall model for gender, age, religiosity and time-left-to-live predicting fear of death was significant (see Table 2), but no effects involving the independent variables reached accepted levels of significance.

*Gender, Age, Religiosity and Time-left-to-live on Subscale 1: Fear of the Dying Process*

In terms of fear of the dying process, the overall model was not significant (see Table 3). No effect involving gender, age, religiosity and time-left-to-live on fear of the dying process reached significance.

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<sup>2</sup> Median age was used to divide the participants into two groups, younger and older.

<sup>3</sup> Religiosity is a subjective self-measure of participants' degree of religious conviction, ranging from not religious to somewhat religious to very religious.

<sup>4</sup> Time-left-to-live was obtained by subtracting participants' current age from their predicted age of death.

Table 2

*Source Table for Main Effects and Interactions by Gender, Age, Religiosity and Time-left-to-live for Predicting Overall Fear of Death Score on the Multidimensional Fear of Death Scale.*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	3.16*	.02	(R <sup>2</sup> = .10)
Gender	1	1.28	.26	0.16
Age	1	2.29	.13	0.03
Religiosity	1	1.69	.19	- 0.14
Time-left-to-live (TLTL)	1	0.19	.66	0.01
Gender X Age	1	0.00	.96	- 0.00
Gender X Religiosity	1	0.31	.57	0.08
Gender X TLTL	1	3.40	.06	- 0.01
Age X Religiosity	1	0.17	.67	- 0.02
Age X TLTL	1	0.04	.82	0.00
Religiosity X TLTL	1	0.17	.67	0.00
Gender X Age X Religiosity	1	0.67	.41	0.03
Gender X Age X TLTL	1	0.00	.98	0.00
Gender X Religiosity X TLTL	1	1.53	.21	- 0.01
Age X Religiosity X TLTL	1	0.00	.92	0.00
Gender X Age X Religiosity X TLTL	1	0.00	.94	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

*Gender, Age, Religiosity and Time-left-to-live on Subscale 2: Fear of the Dead*

On the MFODS subscale 2: fear of the dead, the overall regression was significant (see Table 4). As expected, gender was a strong predictor of fear of the dead ( $F_{(1, 105)} = 14.61, b = .22, p = .01$ ) such that women were more fearful of the dead than were men. This effect was qualified by a significant three-way interaction (see Table 5) between gender age, and religiosity ( $F_{(1, 105)} = 4.09, b = .10, p = .04$ ) such that older, more

Table 3

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity Predicting Fear of the Dying Process (MFODS Subscale 1).*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	0.51	.73	( $R^2 = .02$ )
Gender	1	0.91	.34	0.22
Age	1	1.70	.19	0.03
Religiosity	1	0.93	.33	-0.08
Time-left-to-live (TLTL)	1	0.45	.50	0.01
Gender X Age	1	0.01	.89	0.01
Gender X Religiosity	1	2.81	.09	0.37
Gender X TLTL	1	3.08	.08	-0.02
Age X Religiosity	1	1.88	.17	-0.04
Age X TLTL	1	0.49	.48	0.00
Religiosity X TLTL	1	0.17	.68	0.01
Gender X Age X Religiosity	1	0.02	.88	0.01
Gender X Age X TLTL	1	0.52	.47	0.00
Gender X Religiosity X TLTL	1	1.96	.16	-0.01
Age X Religiosity X TLTL	1	0.29	.59	0.00
Gender X Age X Religiosity X TLTL	1	0.14	.70	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

religious women were less fearful of the dead than were young women and young and old men ( $b = -.39$ ,  $SE = .13$ ,  $t = -2.83$ ,  $p = .01$ ). It is worth noting that the regression coefficient for the young male participants was greater in magnitude than that for the older female participants, however it did not reach significance due to its larger standard error and subsequent lower t-value ( $b = -.54$ ,  $SE = .27$ ,  $t = -1.98$ ,  $p = .12$ ). Finally, there was a significant four-way interaction for the independent variables predicting fear of the dead ( $F_{(1, 105)} = 3.71$ ,  $p = .05$ ), however the pattern of results was not readily interpretable

due to the very small sample size ( $N = 2$ ) of young religious men. Furthermore, this four-way interaction did not replicate on any other MFODS subscale, therefore this effect will not be discussed further.

*Table 4*

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear of Dead (MFODS Subscale 2)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	8.43**	.01	( $R^2 = .23$ )
Gender	1	14.61**	.00	0.77
Age	1	3.24	.07	0.04
Religiosity	1	3.33	.07	0.28
Time-left-to-live (TLTL)	1	0.94	.33	0.00
Gender X Age	1	0.00	.96	0.00
Gender X Religiosity	1	1.10	.29	0.21
Gender X TLTL	1	0.26	.60	0.01
Age X Religiosity	1	0.16	.68	- 0.04
Age X TLTL	1	2.09	.15	0.00
Religiosity X TLTL	1	0.02	.88	0.00
Gender X Age X Religiosity	1	4.09*	.04	0.10
Gender X Age X TLTL	1	0.58	.44	0.00
Gender X Religiosity X TLTL	1	1.06	.30	- 0.01
Age X Religiosity X TLTL	1	1.47	.22	0.00
Gender X Age X Religiosity X TLTL	1	3.71*	.05	0.01

Notes: \*  $p < .05$ ; \*\*  $p < .01$

*Religiosity and Time-left-to-live on Subscale 3: Fear of Being Destroyed*

The overall model for the independent variables predicting fear of being destroyed was significant (see Table 6). In addition, religiosity was a strong predictor of fear of being destroyed ( $F_{(1, 105)} = 7.74$ ,  $b = -.47$ ,  $p = .01$ ) such that more religious

participants had greater fears about being destroyed than did participants with less religious conviction (see Table 7).

*Table 5*

*Unstandardized Regression Coefficients for Gender, Age and Religiosity predicting Fear of the Dead (MFODS Subscale 2).*

		Religiosity	
		Gender	
		Male	Female
Age	Young	-.54	-.21
	Old	-.08	-.39**

Notes: \*  $p < .05$ ; \*\*  $p < .01$

*Gender, Age, Religiosity and Time-left-to-live on Subscale 4: Fear for Significant Others*

As can be seen in Table 8, the overall regression of the independent variables on fear for significant others was significant. In addition, gender was a strong predictor of fear for significant others ( $F_{(1, 105)} = 12.16$ ,  $b = .63$ ,  $p = .01$ ) such that women were more fearful for significant others than were men. Age was also a strong predictor of fear for significant others ( $F_{(1, 105)} = 3.82$ ,  $b = .01$ ,  $p = .05$ ), such that younger participants evidenced a greater fear for significant others than their older counterparts. Furthermore, gender interacted with religiosity in such a way that for women, a strong religious conviction was also a predictor of greater fear for significant others ( $F_{(1, 105)} = 6.72$ ,  $b = .46$ ,  $p = .01$ ). Caution should be exercised however when interpreting this result. Although the interaction of gender and religiosity was significant ( $F_{(1, 105)} = 6.72$ ,  $b = .46$ ,

$p = .01$ ) an analysis of the simple regression coefficients indicated that although the coefficients were significantly different from each other, neither differed in significance from zero. Therefore, although there seems to be a trend for an opposite effect, significance was not obtained for men ( $b = .17$ ,  $SE = .15$ ,  $t = 1.15$ ,  $p = .26$ ) or women ( $b = -.13$ ,  $SE = .08$ ,  $t = -1.63$ ,  $p = .11$ ).

*Table 6*

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear of Being Destroyed (MFODS Subscale 3)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	4.45**	.01	( $R^2 = .13$ )
Gender	1	1.84	.17	- 0.37
Age	1	1.35	.24	0.01
Religiosity	1	7.74**	.01	- 0.47
Time-left-to-live (TLTL)	1	0.26	.61	0.00
Gender X Age	1	2.10	.14	- 0.09
Gender X Religiosity	1	0.48	.48	0.19
Gender X TLTL	1	0.17	.67	- 0.01
Age X Religiosity	1	1.66	.20	- 0.02
Age X TLTL	1	1.07	.30	0.00
Religiosity X TLTL	1	0.60	.43	0.00
Gender X Age X Religiosity	1	3.43	.06	0.13
Gender X Age X TLTL	1	0.54	.46	0.00
Gender X Religiosity X TLTL	1	0.05	.82	0.00
Age X Religiosity X TLTL	1	1.65	.20	0.00
Gender X Age X Religiosity X TLTL	1	1.21	.27	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

*Gender, Age, Religiosity and Time-left-to-live on Subscale 5: Fear of the Unknown*

The overall regression model for the independent variables predicting fear of the

Table 7

*Unstandardized Regression Coefficients for Gender, Age and Religiosity predicting Fear of Being Destroyed (MFODS Subscale 3).*

		Religiosity	
		Gender	
		Male	Female
Age	Young	-.75**	-.26
	Old	-.22	-.54**

Notes: \*  $p < .05$ ; \*\*  $p < .01$

unknown was significant (see Table 9). In addition, religiosity was a significant predictor of fear of the unknown, such that participants with low religious conviction were more likely to respond with a greater fear of the unknown ( $F_{(1, 105)} = 4.81$ ,  $b = .33$ ,  $p = .03$ ) relative to highly religious participants. This finding should be interpreted with caution, however, as a small curvilinear effect was also found for religiosity whereby participants expressing ambivalence about their religious convictions evidenced slightly higher fears about death than participants reporting strong and weak religious convictions. In addition, gender interacted with time-left-to-live ( $F_{(1, 105)} = 6.29$ ,  $b = -.02$ ,  $p = .01$ ) such that for men, having more time-left-to-live strongly predicted a greater fear of the unknown ( $b = -.02$ ,  $SE = .01$ ,  $t = -2.36$ ,  $p = .03$ ).

*Gender, Age, Religiosity and Time-left-to-live on Subscale 6: Fear of Conscious Death*

As can be seen in Table 10, the regression for the independent variables predicting fear of conscious death was significant. In addition, religiosity was a strong

Table 8

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear for Significant Others (MFODS Subscale 4)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	7.07**	.01	(R <sup>2</sup> = .20)
Gender	1	12.16**	.01	0.63
Age	1	3.82*	.05	0.04
Religiosity	1	0.56	.45	-0.16
Time-left-to-live (TLTL)	1	0.25	.61	0.00
Gender X Age	1	0.01	.90	0.00
Gender X Religiosity	1	6.72**	.01	0.46
Gender X TLTL	1	0.06	.80	0.00
Age X Religiosity	1	0.39	.14	-0.03
Age X TLTL	1	1.80	.18	0.00
Religiosity X TLTL	1	0.66	.41	-0.01
Gender X Age X Religiosity	1	0.01	.89	-0.01
Gender X Age X TLTL	1	0.95	.33	0.00
Gender X Religiosity X TLTL	1	0.40	.52	0.00
Age X Religiosity X TLTL	1	0.00	.93	0.00
Gender X Age X Religiosity X TLTL	1	0.39	.53	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

predictor of fear of conscious death ( $F_{(1, 105)} = 7.27$ ,  $b = -.31$ ,  $p = .01$ ) such that participants expressing greater religious conviction were significantly more fearful of a conscious death than those participants declaring themselves not religious. However, this finding should be interpreted with caution as a small curvilinear effect was found for religiosity on this subscale such that participants expressing ambivalence about their religious convictions evidenced slightly higher fears about death than participants reporting strong and weak religious convictions. Furthermore, gender interacted with



Table 9

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear of the Unknown (MFODS Subscale 5)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	4.60**	.01	(R <sup>2</sup> = .14)
Gender	1	1.58	.21	- 0.23
Age	1	1.98	.16	0.01
Religiosity	1	4.81*	.03	0.33
Time-left-to-live (TLTL)	1	2.03	.15	0.01
Gender X Age	1	0.56	.45	0.03
Gender X Religiosity	1	2.30	.13	- 0.27
Gender X TLTL	1	6.29**	.01	- 0.02
Age X Religiosity	1	0.00	.99	0.00
Age X TLTL	1	0.02	.86	0.00
Religiosity X TLTL	1	1.41	.23	0.00
Gender X Age X Religiosity	1	0.00	.99	0.00
Gender X Age X TLTL	1	1.13	.28	0.00
Gender X Religiosity X TLTL	1	1.55	.21	- 0.01
Age X Religiosity X TLTL	1	2.68	.10	0.00
Gender X Age X Religiosity X TLTL	1	0.70	.40	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

time-left-to-live ( $F_{(1, 105)} = 6.16$ ,  $b = -.03$ ,  $p = .01$ ), such that a longer time-left-to-live predicted a greater fear of conscious death for men ( $b = -.02$ ,  $SE = .01$ ,  $t = -2.65$ ,  $p = .01$ ).

*Gender, Age, Religiosity and Time-left-to-live on Subscale 7:*

*Fear for the Body After Death*

For fear for the body after death, the overall regression was not significant (see Table 11). However, there was one significant effect worth noting. Religiosity was a strong predictor of fear for the body after death ( $F = 5.46$ ,  $b = -.06$ ,  $p = .02$ ), such that

fear for the body after death was greater for the more religious participants than for the non-religious participants.

*Table 10*

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear of Conscious Death (MFODS Subscale 6)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	3.02*	.02	(R <sup>2</sup> = .09)
Gender	1	0.24	.62	- 0.12
Age	1	0.00	.98	0.01
Religiosity	1	7.27**	.01	- 0.31
Time-left-to-live (TLTL)	1	1.14	.28	0.01
Gender X Age	1	0.20	.65	- 0.03
Gender X Religiosity	1	0.02	.86	- 0.04
Gender X TLTL	1	6.16**	.01	- 0.03
Age X Religiosity	1	0.71	.39	0.00
Age X TLTL	1	0.93	.33	0.00
Religiosity X TLTL	1	0.03	.79	0.00
Gender X Age X Religiosity	1	0.03	.86	0.05
Gender X Age X TLTL	1	0.97	.32	0.00
Gender X Religiosity X TLTL	1	0.12	.72	0.00
Age X Religiosity X TLTL	1	0.05	.81	0.00
Gender X Age X Religiosity X TLTL	1	0.00	.93	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

*Gender, Age, Religiosity and Time-left-to-live on Subscale 8: Fear of Premature Death*

The overall model for the independent variables predicting fear of premature death was significant (see Table 12). In addition, age interacted with religiosity ( $F = 4.07$ ,  $b = -.02$ ,  $p = .04$ ), such that for the younger participants, having strong religious convictions predicted a greater fear of premature death ( $b = -.09$ ,  $SE = .18$ ,  $t = -0.52$ ,  $p$

.60), whereas for the older participants, having weak religious conviction led to greater fears about premature death ( $b = .05$ ,  $SE = .05$ ,  $t = .41$ ,  $p = .68$ ). Caution should be exercised however when interpreting these interactions as neither reached acceptable levels of significance.

*Table 11*

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear for the Body after Death (MFODS Subscale 7)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	2.38	.06	( $R^2 = .08$ )
Gender	1	0.27	.60	0.13
Age	1	1.06	.30	0.02
Religiosity	1	5.46*	.02	-0.06
Time-left-to-live (TLTL)	1	0.01	.92	0.01
Gender X Age	1	0.01	.92	0.01
Gender X Religiosity	1	3.24	.07	-0.42
Gender X TLTL	1	1.45	.23	-0.01
Age X Religiosity	1	0.00	.92	-0.02
Age X TLTL	1	0.70	.40	0.00
Religiosity X TLTL	1	0.59	.44	0.00
Gender X Age X Religiosity	1	0.52	.46	0.04
Gender X Age X TLTL	1	0.25	.61	0.00
Gender X Religiosity X TLT	1	2.38	.12	-0.02
Age X Religiosity X TLTL	1	0.03	.85	0.00
Gender X Age X Religiosity X TLTL	1	0.94	.33	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

### *Summary*

Overall, the results of these regression models suggest that gender, age, time-left-to-live and religiosity and some interactions have predictive value for death fear.

Consistent with previous findings, the analyses show that women report increased fears in certain specific death domains. Women report greater fears for significant others and of the dead than do their male counterparts. Women who were older and more religious however reported less fear of the dead. Whereas for men, the amount of time-left-to-live

*Table 12*

*Source Table for Main Effects and Interactions for Gender, Age, Time-left-to-live and Religiosity for Predicting Fear of Premature Death (MFODS Subscale 8)*

Source	Degrees of Freedom	F-Value	Significance (p =)	Parameter Estimate (b)
Overall Model	4, 116	2.38	.06	(R <sup>2</sup> = .08)
Gender	1	0.09	.76	-0.08
Age	1	1.87	.17	0.02
Religiosity	1	0.01	.90	-0.07
Time-left-to-live (TLTL)	1	0.31	.57	0.01
Gender X Age	1	0.76	.38	0.05
Gender X Religiosity	1	0.18	.66	0.11
Gender X TLTL	1	2.78	.09	-0.02
Age X Religiosity	1	4.07*	.04	-0.02
Age X TLTL	1	0.41	.52	0.00
Religiosity X TLTL	1	0.16	.68	0.01
Gender X Age X Religiosity	1	1.94	.16	-0.09
Gender X Age X TLTL	1	0.54	.46	0.00
Gender X Religiosity X TLTL	1	2.17	.14	-0.02
Age X Religiosity X TLTL	1	1.42	.23	0.00
Gender X Age X Religiosity X TLTL	1	1.23	.26	0.00

Notes: \*  $p < .05$ ; \*\*  $p < .01$

influenced death-related fears such that having more time-left-to-live produced higher fears of the unknown and of experiencing a conscious death.

Additionally, participants who declared themselves more religious, expressed

greater fears for the body after death and of being destroyed. Furthermore, these participants were more fearful of a conscious death than their less religious counterparts who evidenced greater fears of the unknown. In addition, the younger participants who were more religious reported greater fears of experiencing a premature death and the older, less religious participants also shared these fears.

*Participants' Predictions of Self-Mortality using the Do-It-Yourself-Death-Certificate*

To achieve the second goal of this project, understanding participants' predictions about their own deaths, analyses were conducted on responses of the DIYDC. Participants' predicted age and marital status at the time of death in addition to cause and location of death were of interest. Of further interest were gender differences on these variables and the comparison of participants' responses to actuarial data. All data comparisons were made using the 1997 Statistics Canada Shelf Tables on Causes of Death. A summary of Statistics Canada death data relevant to this study is included in Appendix J.

*Age at Death*

A one-way ANOVA<sup>5</sup> revealed no significant differences between men and women on predicted age at death ( $F_{(1, 120)} = .05, p = .82$ ). A comparison of the means revealed that men expected to die at age 71 and women expected death to occur at age 70. Interestingly, both men and women underestimated their expected age at death, by 5.3% and 13.6% respectively, when compared to actuarial data, which reported a life expectancy of 75-years for men and of 81-years for women.

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<sup>5</sup> Eleven cases were excluded from the ANOVA as it was evident that these participants did not comprehend they were to indicate their age at death on the DIYDC rather than their current age (e.g., a 21-year old participant reported she would die of old age yet indicated her age at death to be 21-years).

### *Place of Death*

Of the 80 participants responding to this item of the Do-It-Yourself-Death-Certificate, 60 (75%) were women and 20 (25%) were men (see Table 13). Taking the total sample, a hospital was the most frequently chosen place of death, having been specified by 63.8% of participants, followed death in the home (22.5%). Only two participants expected to die in a Senior Citizens Complex. It should be noted that actuarial data for death by location is reported for hospital and non-hospital deaths only, thus participants' responses were grouped, for comparison purposes, into these two categories. Taking the total sample, participants underestimated dying in a hospital (63.8% for participants versus 75.3% reported in actuarial data) whereas dying in a non-hospital location was overestimated (36.3% for participants versus 24.7% reported in actuarial data). It must be noted that caution should be exercised when interpreting total sample responses as a greater proportion of respondents were women, therefore total sample responses may be weighted to reflect their estimations. As a result, Chi-square analyses were conducted to determine overall gender differences.

Chi-square analyses did not reveal significant differences between men and women on expected place of death. However, as can be seen in Table 13, the majority of both men and women expected to die in a hospital (60% and 65%, respectively). A slightly higher proportion of women than men expected to die at home (23.3% versus 20%, respectively). Of the two participants expecting to die in a Senior Citizens Complex, both were women.

Although a majority of men and women expected death to occur in a hospital, their estimates were substantially lower than those reported in actuarial data. Whereas

60% of men chose a hospital as the most likely place of death, 76.9% of men actually did die in a hospital in 1997. For women, a hospital was also the most chosen location of death (65% for women, compared with 73.7% reported in actuarial data). Non-hospital deaths, however, were overestimated by both men (40% versus 23.1% reported in actuarial data) and women (35% versus 26.3% reported in actuarial data).

*Table 13*

*Crosstabulations for Place of Death for Men (N = 20) and Women (N = 60) on the DIYDC*

Gender	Place of Death				Total
	Hospital	Senior Citizen Complex	Home	Other*	
Percentage					
Men	60.0	0.0	20.0	20.0	25.0
Women	65.0	3.3	23.3	8.3	75.0
Overall	63.8	2.5	22.5	11.3	100.0
Count					
Men	12.0	0.0	4.0	4.0	20.0
Women	39.0	2.0	14.0	5.0	60.0
Overall	51.0	2.0	18.0	9.0	80.0

\*Includes plane, water, road, railway, outside and inside other than hospital, senior citizen complex and home

*Marital Status at the time of Death*

Of the 131 participants responding to this item of the Do-It-Yourself-Death-Certificate, 104 (79.4%) were women and 27 (20.6%) were men (see Table 14). Overall, nearly three quarters (72.5%) of participants predicted to be married at the time of death and 15.3% expected to be widowed. A greater percentage expected to have never married (9.2%) by the time of death than to have been divorced (3.1%). As predicted, these

estimates were highly inaccurate when compared to actuarial data: In 1997, less than half (43.5%) of the Canadian population was married at the time of death, compared to the predicted 72.5%, and over one-third (35.1%) was widowed. In addition, actuarial data reveal that a greater percentage of the population had never married (13.5% versus the predicted 9.2%) and a higher proportion were divorced (5.6% versus the predicted 3.1%).

Chi-square analyses did not reveal significant differences between men and women on marital status at the time of death. However, as can be seen in Table 14, three quarters of women and nearly two-thirds of men expected to be married at the time of their death (75% and 63%, respectively). Additionally, a greater proportion of men than women expected to be widowed (22.2% and 13.5%, respectively), divorced (3.7% versus 2.9%, respectively) or to have never married (11.1% and 8.7%, respectively) at the time of death. Again, participants' estimates were inaccurate when compared to actuarial data, most notably those from women. Whereas three-quarters of women in this study expected to be married at the time of death, according to actuarial data, only 28.2% of women were actually married at the time of their death. Additionally, only 13.5% of women expected to be widowed at the time of death, a figure that is one quarter the actual number. Men also overestimated being married (63% versus 57.8% reported in actuarial data) and widowed (22.2% versus 17.6 reported in actuarial data) at the time of death.

Both men and women underestimated having never been married and having been divorced at the time of death when compared to actuarial data. Specifically, the actuarial data reported that 15.5% of men would have never been married at the time of death; a figure that is 39.6% greater than predicted, and that 6.3% of men would be divorced at the time of death; a figure that is 70.3% greater than predicted. For women, the actuarial



data indicated that 11.4% had not married at the time of death whereas only 8.7% of female respondents reported to have never married. Additionally, 2.9% of women respondents reported to be divorced at the time of death; an underestimation of nearly 40% when compared to 1997 national figures.

### *Cause of Death*

Of the 117 participants responding to this item of the Do-It-Yourself-Death-Certificate, 89 (76.1%) were women and 28 (23.9%) were men. Table 15 shows percentage responses and counts for men, women and an overall total for each cause of death. Statistics Canada data on causes of death is also provided in Table 15. Taking the total sample, old age was the most commonly chosen cause of death, being specified by 37.6% of participants followed by fatal illness<sup>6</sup> (23.9%), heart attack (21.4%) and traffic accident<sup>7</sup> (13.7%). Circulatory disease<sup>8</sup> was the most prevalent condition causing death, followed by neoplasm (i.e., cancer). It is therefore interesting to note that participants underestimated death from circulatory disease by nearly 42% and death by fatal illness by nearly 56%. Furthermore, heart attack, though the most prevalent form of circulatory disease causing death, was the only form of circulatory disease identified by participants. Participants' estimates of death by heart attack were fairly accurate (21.4% for participants versus 20.2% from actuarial data). Despite old age being the most frequently chosen cause of death by participants, it should be noted that old age is not in fact a cause of death, but rather a result of an underlying condition or factor that may have occurred

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<sup>6</sup> Includes infectious, endocrine, blood, skin, musculoskeletal, mental, pregnancy-related, congenital, nervous system, respiratory, digestive, genitourinary diseases, cancer and circulatory except for heart attack.

<sup>7</sup> Includes only motor vehicle traffic accidents; not train, aircraft, recreational vehicle or non-traffic deaths.

<sup>8</sup> Statistics Canada uses circulatory disease as a generic term that includes rheumatic, hypertensive, ischaemic, pulmonary and vascular diseases (Statistics Canada, 1997).

Table 14

*Statistics Canada Marital Status Data at the Time of Death and Crosstabulations at the Time of Death for Men (N = 27) and Women (N = 104)*

	Marital Status									
	StatsCan		StatsCan	Never	StatsCan		StatsCan		StatsCan	
Gender	Married	Married	Married	Married	Widowed	Widowed	Divorced	Divorced	Total*	Total
Percentage										
Men	57.8	63.0	15.5	11.1	17.6	22.2	6.3	3.7	97.2	100.0
Women	28.2	75.0	11.4	8.7	53.9	13.5	4.8	2.9	98.3	100.0
Overall	43.5	72.5	13.5	9.2	35.1	15.3	5.6	3.1	97.7	100.0
Count										
Men	64749	17.0	17364	3.0	19750	6.0	7000	1.0	108863	27.0
Women	29193	78.0	11852	9.0	55879	14.0	5002	3.0	101926	104.0
Overall	93942	95.0	29216	12.0	75629	20.0	12002	4.0	210789	131.0
* Does not include deaths in which marital status is unknown or undeclared										

Table 15

Statistics Canada Causes of Death Data and Crosstabulations for Cause of Death for Men (N = 28) and Women (N = 89) on the DIYDC

Gender	Cause of Death											
	StatsCan Heart Attack	Heart Attack	StatsCan Old Age*	Old Age	StatsCan Fatal Illness	Fatal Illness	StatsCan Traffic Accident	Traffic Accident	StatsCan Other**	Other***	StatsCan Total	Total
Percentage												
Men	21.3	39.3	N/A	28.6	67.5	7.1	1.7	14.3	9.5	10.7	51.9	23.9
Women	19.0	15.7	N/A	40.4	73.9	29.2	0.9	13.5	6.2	1.1	48.1	76.1
Overall	20.2	21.3	N/A	37.6	70.6	23.9	1.3	13.7	7.9	3.4	100.0	100.0
Count												
Men	23824	11.0	N/A	8.0	75631	2.0	1953	4.0	10577	3.0	111985	28.0
Women	19702	14.0	N/A	36.0	76625	26.0	914	12.0	6443	1.0	103684	89.0
Overall	43526	25.0	N/A	44.0	152256	28.0	2867	16.0	17020	4.0	215669	117.0

\* Old age does not appear as a Statistics Canada cause of death.

\*\* Comprised of death resulting from all other causes not otherwise stated.

\*\*\* Comprised of death resulting from drugs and alcohol, suicide, poison, stabbing, gunshot.

or presented in old age, thus comparison to actuarial data was not possible. Again, caution should be exercised when interpreting total sample responses due to the greater proportion of female respondents.

Chi-square analyses revealed a significant difference between men and women on cause of death,  $\chi^2(4, N = 117) = 16.40, p = .01$ , however this finding should be interpreted with caution as one-third of the chi-square cells in the analysis had expected counts of less than five. An examination of the percentage responses by men and women yielded some interesting findings. For men, the leading cause of death was by heart attack (chosen by 39.3% of respondents) followed by old age (28.6%). Traffic accidents and fatal illnesses comprised the subsequent causes of death at 14.3% and 7.1%, respectively. For women, the leading cause of death was by old age (40.4%) followed by fatal illness (29.2%). Death by heart attack was mentioned by only 15.7% of women, a statistic slightly higher than the next most popular cause of death, which was by traffic accident at 13.5%.

When comparing with actuarial data, men overestimated death by heart attack by 84.5% (39.3% for men versus 21.3% reported in actuarial data). However, their estimates for dying of heart attack did mirror their actual likelihood of dying by circulatory disease, of which heart attack is the most common (39.3% for men versus 35.6% found in actuarial data). Men were not accurate however, in their predictions about dying from a fatal illness. Only 7.1% predicted fatal illness as a cause of death whereas actuarial data indicated that in 1997, 53.2% of men died from fatal illnesses. Men were also inaccurate in their estimates about death by traffic accident. Whereas over 14% predicted to die as a result of a traffic accident, in 1997 the actual figure was less than 2%. Women were

inaccurate on all estimates when compared to actuarial data. Death from fatal illness (29.2% for women versus 54.7% reported in actuarial data) and heart attack (15.7% for women versus 19% reported in actuarial data) were underestimated whereas death by traffic accident (13.5% for women versus 0.9% reported in actuarial data) was substantially overestimated.

### *Summary*

Overall, participants made inaccurate predictions related to age, location, marital status, and cause of death, when compared to actuarial data. Both men and women underestimated age at death; men by four years and women by 11-years. A hospital was the most often chosen place of death for over half the participants, followed by death in the home. Only two participants, both women, chose Senior Citizens Complex for place of death.

With respect to marital status at the time of death, men and women also made inaccurate predictions. Both men and women underestimated having never been married and having been divorced at the time of death. In addition, women underestimated being widowed at the time of death whereas men overestimated. Although old age was the most frequently predicted cause of death by women, more women died in 1997 from circulatory diseases than from any other medical condition. For men, heart attack was the most frequently predicted cause of death, although it was substantially overestimated when compared to actuarial data. Both men and women underestimated death from fatal illnesses and overestimated death from traffic accidents.

## GENERAL DISCUSSION

### Summary of Findings

The purpose of the present study was an attempt to further research and to gain insight into death-related attitudes in the Atlantic Provinces. The first objective was to determine whether levels of death fear, as measured by the Multidimensional Fear of Death Scale (MFODS), varied as a function of participants' gender, age, religious conviction and prediction of how much longer they thought they would live. Interaction effects among these variables were also examined to determine their impact on death-related fears.

The results of this investigation indicated that gender, age, religious conviction, perceived time-left-to-live, and some of the interaction effects between the variables predicted death fear. Women were more fearful on MFODS subscales Fear of the Dead and Fear for Significant Others than were men, whereas for men, the amount of time they believed they had left to live influenced their death fears, such that having more time-left-to-live produced higher death fears of the unknown and of a conscious death.

It was also found that participants expressing stronger religious convictions were significantly more fearful in a greater number of death-fear domains (e.g., Fear of Being Destroyed, Fear of Conscious Death, Fear for the Body after Death) than those expressing weak religious convictions, who evidenced a greater fear of the unknown. Prior research has supported the existence of a non-linear relationship between religiosity and fear of death (e.g., Florian & Kravitz, 1983), therefore, curvilinear analyses were conducted to determine whether a non-linear relationship existed for this sample on religiosity and fear of death. Results indicated that with the exception of a potential

curvilinear effect on MFODS subscales five and six, that is, on Fear of the Unknown and on Fear of a Conscious Death, a curvilinear relationship for religiosity was not found to exist. On subscales five and six, the curvilinear effect was small, showing only a slight elevation in death fear for those participants expressing ambivalence about their religious convictions. In addition, an interaction effect between age and time-left-to-live revealed that the more religious younger participants and the less religious older participants had higher fears of experiencing a premature death.

The second objective of this study was to explore participants' predictions about their own deaths. Specifically, participants' predicted cause and location of death and marital status and age at the time of death were examined. These findings were also compared to actuarial data to determine the accuracy of the participants' predictions. As in previous research (e.g., Lonetto, Fleming, Gorman & Best, 1975; Sabatini & Kastenbaum, 1973; Simpson, 1975), findings indicated that participants made highly inaccurate death-related predictions when compared to actuarial data. Both men and women underestimated age of death, death from fatal illness, having never been married and having been divorced at the time of death, whereas death by traffic accident was substantially overestimated.

### Implications and Limitations

#### *Gender and Fear of Death*

The findings of the present study reveal that no significant gender differences existed on the overall MFODS. The hypothesis that women express greater concerns in certain specific death fear domains was confirmed and supports previous research findings (e.g., Cicirelli, 1998; Cicirelli, 2001; Lester, 1972; Neimeyer & Moore, 1994;

Suhail & Akram, 2002). For example, Neimeyer and Moore (1994) found that women had greater fears on most MFODS subscales but were less fearful than men on Fear of the Unknown. Neimeyer, DePaola, Griffin and Young (2003) found only that older women were more fearful on the MFODS Fear of the Dead subscale and Cicirelli (2001) also found that women reported higher fears on two MFODS subscales, Fear of the Dying Process and Fear for Significant Others. The findings of the present study revealed women expressed greater fears on two MFODS subscales, Fear for Significant Others and Fear of the Dead, and therefore corroborate, at least in part, results reported by both Neimeyer et al. (2003) and Cicirelli (2001), and additionally support the general consensus that women tend to express greater fears than men do in different death domains.

It is possible that women do not actually have a higher level of death fear than do men, but are simply more willing to acknowledge negative feelings and report fears (Fortner & Neimeyer 1999; Kastenbaum, 1986). Dattel and Neimeyer (1990) however, concluded that the differences in death fear between men and women, after controlling for self-disclosure and social-desirability, were not attributable to women's greater expressiveness but to the fact that women did indeed have more elevated death fears. It could be speculated that women's elevated fear for significant others is attributable to instinctive maternal characteristics which tend to foster stronger familial bonds. Furthermore, Dattel and Neimeyer (1990) suggest that differences may also be a consequence of the fact that varying assessment devices have been employed to measure death fear.

Women in Atlantic Canada do not differ significantly from women globally in



that they expressed elevated death fears in certain specific death domains. Although Atlantic Canada has historical, religious and cultural characteristics relatively unique to the area, the fact that women from this area tend to show higher death fears in certain specific domains makes them similar to women studied in numerous other regions and countries; with findings having been reported in the United States (e.g., Neimeyer & Moore, 1994), Pakistan (e.g., Suhail & Akram, 2002), Kenya (e.g., Okafor, 1994) and China (e.g., Tang, Wu, & Yan, 2002).

An unexpected gender-related finding in this study was that men predicting to have a greater amount of time-left-to-live had greater fears of the unknown than did women, a result that lends partial support to findings reported by both Cicirelli (2001) and Neimeyer and Moore (1994). However, in both Cicirelli and Neimeyer and Moore's studies, gender was the primary predictor of the fear of the unknown, whereas in the present study, the relationship between gender and fear of the unknown was significant only when gender interacted with time-left-to-live. Increased fears of the unknown for men has been attributed to an indirect link with religiosity (Cicirelli, 1999), such that stronger religious beliefs tend to result in lower death fears and since women tend to have stronger religious convictions than men do, men have a higher fear of the unknown. Following this rationale, the present study would seem to support this supposition, as participants with weaker religious convictions were also found to have higher fears of the unknown.

### *Religiosity and Fear of Death*

The results of the present study revealed that the more religious participants had higher fears of being destroyed whereas participants with lower religious conviction were

more fearful of the unknown. It was predicted that those who were not religious would have a greater fear of death for a couple reasons. First, the Atlantic Provinces are predominantly Christian culturally. Ideas of salvation and damnation are still very much culturally entrenched, thus those without religious convictions may still be aware of both their failure to meet the expectations for salvation and its implications for damnation. The not religious, then, even if they do not fully subscribe to the tenets of Christianity, are both aware the possibility of eternal suffering and of their own inherent sinfulness, and should fear death more than those who are strong adherents to religion.

Second, for those without strong religious beliefs a life beyond the present world is uncertain. The devout are more confident in the better life to follow as promised in the Bible. Without an opportunity to, for example, see deceased love ones or to find solace from the suffering of the corporeal world in the afterlife, death threatens to be a finite terminus to the unfinished business of living.

Although I hypothesized that strongly religious people would fear death less than those with weaker religious convictions, who might be in doubt about their fate after corporeal death, the results indicated that such a relationship was not so clearly defined. Discrepant findings are a hallmark of previous research on the relationship between religiosity and death fear. For instance, religious persons tend to be more fearful of death (e.g., Feifel, 1959; Kastenbaum & Aisenberg, 1972; Florian & Har-Evan, 1983) due to a concern about what might happen in the afterlife. Conversely, weak religious commitment has been linked to greater fear of death (e.g., Feifel & Nagy, 1981) arising from difficulty accepting the idea of death or from a lack of support and comfort provided by religiosity in the face of death. There are also studies reporting no correlation

between fear of death and religiosity (e.g., Feifel & Branscomb, 1973) and studies that suggest that a curvilinear relationship exists (Florian & Kravitz, 1983).

Inconsistent findings in the present study with respect to both religious and non-religious participants expressing a fear of death may be attributable to the differing domains in which these fears surfaced (i.e., to the multidimensional nature of death fear). Specifically, curvilinear effects were found on MFODS subscales, Fear of the Unknown and Fear of Conscious Death. Those indicating religious ambivalence expressed more fear in these domains perhaps because they are uncertain of their own fate following death whereas the strongly religious and the strongly non-religious are less unsure of their destinies. It was only on these two subscales, however that the two curvilinear relationships were significant, contributing further to the inconsistencies in the findings.

One possible explanation for the more strongly religious committed participants evidencing greater fears about being destroyed is that many religions practice very specific postmortem rituals and hold the body to be sacred. For example, some Judeo-Christian groups reject the option for medical intervention because it interferes with God's will. The less religious participants' greater fears of the unknown may reflect doubts about their fate after their corporeal death.

Research regarding the relationship between gender, religiosity and fear of death has been limited (Neimeyer, Wittowski & Moser, 2004). The present study not only examined interaction effects between gender and religiosity, but considered age and time-left-to-live as well. Findings revealed interaction effects for gender, age and religiosity on fear of death such that younger participants with strong religious convictions and older participants with weak religious convictions expressed higher fears about dying

prematurely. Since the relationships between variables of gender, age and religiosity on fear of death have not been well explored, this leads to speculation as to the nature of the relationships. It might be that younger more religious participants have greater concerns about dying prematurely as they have not yet had the opportunity to accomplish the spiritual development prescribed by doctrine or it may be that these individuals fear the consequences of their current behaviours in the hereafter. Many of the participants in this study were younger university students, a demographic group noted for behaviour and secular pursuits often at odds with the tenets of established religions (e.g., recreational alcohol use, the study of evolution). A premature death would not allow for adequate time for penance, nor would it afford younger people the opportunity to fully explore the anticipated secular opportunities of youth culture. Kastenbaum and Aisenberg (1972) have also placed a fear of death in the context of a fear of the afterlife where punishment plays a role.

For older participants expressing weak religious convictions, fears about dying prematurely may reflect an insecurity about their personal ability to fulfill the doctrinal requirements for salvation before death. For those who do not subscribe to religious beliefs at all, death is most likely an absolute end thereby preventing the opportunity to experience any further personal goals for which they have been working and planning.

The findings from the present study also revealed that women with strong religious convictions expressed greater fears for significant others and older more religious women were less fearful of the dead. Again, since the exact relationship between age, religiosity and gender on fear of death is not well explored, this leads to speculation as to the nature of this relationship. It is possible that women with stronger

religious faith, while secure in their own post-mortem fate, fear for loved ones who will be left behind and who will no longer be cared for by them. One might question whether strongly religious women were more fearful for significant others because of their religion or whether an inherent fear for others has made them seek solace in religion. Because the majority of women in this study were younger, it is possible that the higher concern for significant others may be due in part to the fact that such women are more likely to have aging parents for whom they may have specific health-related concerns. It may also be attributable to a concern that their parents would have difficulty accepting the loss if they died.

A potential reason for older more religious women fearing the dead less is that older people have had longer to come to terms with the notion of their own demise and are more likely to have experienced first-hand others who have gone through the dying process. The dead, then, are more familiar and less threatening, particularly for those people with stronger religious convictions who view the dead as likely residing in a peaceful, benevolent place. For women who, according to Cicirelli (1999), tend to have greater religious faith, the dead have stronger and more familiar associations with harmlessness or benevolence. These results may simply be a reflection of the small sample size of men participating in this study.

A non-linear relationship between religiosity and fear of death has more recently been suggested wherein individuals expressing ambivalence about their religious convictions have evidenced greater fears of death than the devoutly religious or nonreligious (Neimeyer, Wittkowski & Moser, 2004). In the present research, a non-linear trend was found for only two MFODS subscales: Fear of the Unknown and Fear of

Conscious Death whereby participants expressing ambivalence about their religious convictions showed slightly elevated fears of the unknown and of experiencing a conscious death. Gaining more widespread acceptance is the notion that religiosity is multidimensional, comprised of intrinsic and extrinsic facets (e.g., Feifel, 1974) and therefore should be measured as such. In the present study, religiosity was measured in terms of strength of conviction rather than as a construct with various dimensions therefore any interpretation of results involving religiosity on fear of death must be interpreted with caution.

### *Age and Fear of Death*

Of the eight MFODS subscales, findings of the present study revealed that on only one subscale, Fear for Significant Others, was significant for age such that that younger participants expressed greater fears than did their older counterparts. This finding partially supports some of the previous studies where death fear was found to be greater for younger individuals (e.g., Kastenbaum, 1992; Neimeyer, 1988) while contradicting others that have found either no relationship or a curvilinear relationship to exist between age and level of death fear (e.g., Gesser, Wong & Reker, 1988; Kastenbaum, 2000; Lester, 1972; Templer, Ruff & Frank, 1971). Kastenbaum (2000) concluded that specific concerns about death are generally different at varying age levels with younger generations expressing concern about leaving dependents behind. This may seem a plausible explanation for the present findings however given the age range of the participants in the present study, with the younger group ranging in age from 18-21, perhaps a fitting explanation may be that these participants feared the impact of their death on their parents and families. However, generalizability of the findings is limited

due to the fact that the age range of participants in the present study was somewhat restricted, with the overall mean age of participants being 23.6 (SD = 7.4) and only two participants being over 50.

### *Time-left-to-live and Fear of Death*

The findings from the present study reveal no significant differences in death fear as a function of time-left-to-live. This is possibly due to the fact that the majority of participants were relatively young and the age range restricted. Interaction effects, however were found to exist for time-left-to-live and gender such that men having more time-left-to-live had increased fears of the unknown and of a conscious death. One can speculate that this has to do with a lower degree of religiosity for men, as discussed earlier with respect to gender and death fear. Younger men, who generally have more time-left-to-live, tend to take greater physical risks resulting in premature death. For instance men are more than twice as likely to die in motor vehicle accidents than women (Statistics Canada, 1997). This elevated risk of death may account for a greater fear of both dying without adequately preparing oneself for the afterlife, measured in fear of the unknown, and of being conscious while death occurs.

### *Interaction Effects of Gender, Religiosity, Age and Time-left-to-live on Fear of Death*

Several interaction effects were found for the variables of gender, religiosity, age, and time-left-to-live on predicting death fear. Although the vast majority of research has examined these variables in isolation with respect to their impact on death anxiety, more contemporary studies are beginning to explore the complex relationships between multiple variables and death fear. Relatively little is known however about the interactions between these variables on death fear in an Atlantic Canadian context. The

interaction effects found and previously discussed in the present study do suggest an important direction for future research.

### *Overall Accuracy of Death-Related Predictions using the DIYDC*

The findings in the current study revealed that both men and women made inaccurate predictions related to age, location, marital status and cause of death compared to actuarial data. These findings supported the study hypothesis and confirmed previous findings (e.g., Simpson, 1975) that death-related predictions are generally inaccurate when compared to current statistics. It is difficult to determine whether this inaccuracy is due to ignorance of actual death statistics or to a pessimistic outlook of one's own future. Statistics relating to average life expectancy are relatively accessible, further suggesting that people may be uninterested or unwilling to explore facts related to their likely age of death. Both Lonetto et al. (1975) and Simpson (1975) note that by avoiding conscious exploration of death statistics we create an emotional distance between our lives and our eventual death. This ignorance as Becker (1973) suggests is part of the self-preservation instinct. One might also consider whether the agencies whose function it is to inform us of such vital information are generally failing to do so.

### *Age at Death Predictions*

Both men and women made inaccurate predictions about the age they thought they would die compared to actuarial data. Men underestimated their age at death by four years and women underestimated by 11 years. In a similar study by Simpson (1975), participants made inaccurate predictions related to age at death, however unlike Simpson's findings where the participants overestimated their age at death, participants in the present research project made underestimates. A possible reason for the discrepancy



between the estimates and actuarial death ages might be due to the fact that in the present study, the mean age of the participants was rather young ( $M = 23.6$ ), thus the study group was not of an age where concerns and knowledge about death are generally prevalent. Shneidman (1972) attributed inaccurate predictions about self-mortality made by young people as a “difficulty in objectifying themselves” indicating that “they cannot see the future for their teens...only the young are immortal” (p. 267).

### *Place of Death Predictions*

Participants made inaccurate predictions about their place of death as compared to actuarial data, again supporting the study hypothesis. Although the analysis did not reveal significant differences between men and women on expected place of death, with the majority of men and women anticipating death to occur in a hospital, a greater proportion of women than men expected to die at home. Furthermore, only two participants predicted that they would die in a Senior Citizens Complex despite the commonality of such. Again this may be attributable to avoidance of what most consider an unpleasant death-related idea.

Estimates about death occurring in a hospital were substantially lower for both men and women than actuarial figures. Both men and women, however, overestimated non-hospital deaths. This may simply be a consequence of the fact that a disproportionately large number of participants predicted their death by accident and thus not in hospital. While the media frequently report on death, these deaths tend to be of a catastrophic or violent nature. Seldom is a camera in a hospital room as the patient expires, thus there may be a perception perpetuated by the media, that hospital death is a less common occurrence than actuarial data would suggest.

### *Marital Status at Death Predictions*

Further confirming the hypothesis that participants would make inaccurate death-related predictions was the finding that both men and women did not accurately predict marital status at the time of death. Men and women underestimated having never been married and having been divorced at the time of death. This is perhaps due in part to the fact that the sample group was young and thus less likely to be married at the time the questionnaire was administered. In addition, women underestimated being widowed at the time of death whereas men overestimated. Statistically, it is virtually impossible for women to outlive men by six years and not be more likely to be widowed at the time of death. The fact that women did not accurately predict their age and marital status at death may have some significant implications for their quality of life in their later years.

Although the participants who were all university students are less likely to find themselves in a low-income group, many people who are single and on fixed incomes are more likely to live below the Low Income Cut-Off (LICO) levels, therefore failing to anticipate the length of one's life on a single fixed income could have dire consequences for quality of life. In 1999 there were nearly four times as many single women over age 65 than men living below the Low Income Cut-Off level in Canada (Statistics Canada, 2005), yet in this study women greatly underestimated their age at death while overestimating their likelihood of not being single at the time of death.

### *Cause of Death Predictions*

Although old age was the most often chosen cause of death by women, more women died in 1997 from circulatory diseases than from any other medical condition. It is interesting to note that for women old age was the most often documented cause of

death yet old age is not a cause of death. Participants used the term "old age" as a cause of death though the term appears in neither the DIYDC, nor Statistics Canada actuarial data. Participants' perceptions of when old age occurs and that old age is a cause of death, do not appear to be based on any specific factual information. Perhaps their understanding of "old age" comes from other less formal agents of socialization such as family, media or peer groups. Old age may also be a convenient phrase used in place of such cumbersome terms as "acute ischaemic conditions" espoused by the medical profession and Statistics Canada. It is therefore possible that participants failed to predict their most likely causes of death because they find the science of death and its increasingly complex language too alienating.

For men, heart attack was the most often predicted cause of death, although it was substantially overestimated when compared to actuarial data. Both men and women underestimated death from fatal illnesses and overestimated death from traffic accidents. Despite the efforts of Health Canada and other disease prevention advocacy groups to try to make Canadians more aware of specific preventable health concerns such as heart disease, participants tended to under-represent those causes of death. At the same time, participants significantly overestimated the likelihood of dying by motor vehicle accident. Perhaps the emotional impact and media coverage afforded to sudden, unexpected causes of death may account for people's over-representation of accident as a cause of death. News media coverage of global catastrophic events is widely available whereas coverage of individual hospital deaths, though far more frequent, is minimal and without graphic televised images, perhaps creating the impression that catastrophic deaths are more common than actuarial data would indicate. This corroborated findings

by Simpson (1975) who reported that participants overestimated the likelihood of death by accident.

### *Limitations of the Present Study*

The present study has some limitations and therefore caution must be exercised when generalizing its findings. The results of this study are based on a convenience sample of university students with a restricted age range and a lower mean age than that of the general population, therefore, an adequate picture of death-related fears for the older person cannot be attained. Furthermore, the oldest participant in the present study was 57, therefore a truly representative sample of the population of the Atlantic Provinces was not surveyed. Although the mean age in the present study was lower than that of the general population, it was not substantially lower than that of several other studies (e.g., Lonetto, Fleming, Gorman & Best, 1975, Sabatini & Kastenbaum, 1973; Simpson, 1974) that also found inaccurate predictions using the DIDYC. Previous research has suggested a curvilinear relationship between age and death fear, with fear increasing to and peaking in middle age then declining toward old age and leveling. Without having a sample that includes an adequate number of participants in middle age and senior populations, it was impossible to determine whether death fears follow the suggested curvilinear trend.

It should also be noted that due to the sensitive nature of the topic, some participants may not have been entirely forthcoming with their responses. People also may not have reported what they actually believed.

### *Implications for the Atlantic Provinces and Directions for Future Research*

Very few studies have examined death-related attitudes and predictions from an Atlantic Canadian perspective. This study may be seen as a preliminary investigation into

the predictors of death fear in the Atlantic Region. There are certain demographic considerations for the Atlantic Provinces that make the region unique. The fact that Atlantic Canada has a population that is older than the national mean, life expectancy and income levels lower than average and certain disease rates well above national average creates a need for investigation into whether Atlantic Canadians are adequately informing and preparing themselves for these regional trends. Results, particularly those dealing with cause of death, estimated age and marital status at the time of death would indicate that people in this region are not well informed about what should be significant concerns.

Whether the participants' predictions on the DIDYC reflected a genuine ignorance of actuarial mortality rates and causes or an aversion to issues relating to death, the implications for Atlantic Canada are considerable. The leading causes of death, cancer and circulatory disease, were grossly underestimated by participants despite the fact that rates for two of the leading contributors to these diseases, smoking and obesity, are well above the national average in this region. In addition, given the fact that income levels in Atlantic Canada are lagging well behind the national average, especially for single income and elderly populations, participants in this region may be seriously under planning for an old age that is likely to be longer, poorer and of a lower quality of life than they presently perceive.

Possible directions for future research might include a study of participants in a broader age range and take into account not only strength of religious conviction but also the multidimensionality of religiosity. Future study might also include some more indirect measures of fear of death that circumvent participants not reporting what they

believe if it is socially undesirable. Sabatini and Kastenbaum (1973) found that discussion with participants after completing the DIYDC revealed that some predictions about cause of death were too threatening for participants to identify. For instance, one participant stated "I put down my number two choice so I could cheat death. I guess I was afraid that if I said cancer it would turn out to be cancer". Sabatini and Kastenbaum (1973) indicated that the DIYDC "can call up word magic mental operations [even] in well-educated adults" (p. 31).

### Conclusion

The present study was undertaken to explore the nature of death fear in Atlantic Canada and to gain insight into predictions about personal mortality and gauge the accuracy of those predictions. The present research not only supported the applicability of general trends concluded by prior research regarding the inaccuracy of death predictions, it also underscored the need for the examination of interaction effects of correlates of death fear. Because a number of significant interactions were found between the correlates of death fear, these findings emphasize the need to further examine such interactions. The present study also found that there were significant differences between men and women on predictions of self-mortality and within differing dimensions of death-fear. Significant discrepancies were found between people's perceptions of the facts surrounding their deaths and what actuarial data indicated about their likely demise. Perhaps public health officials should consider the possibility that people are underestimating the probability that they will die from circulatory diseases and cancers and craft health-related public awareness campaigns accordingly. Given the relative absence of information regarding death attitudes and fears in Atlantic Canada, the

findings of this study represent one departure point for future research in this region.

## References

- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Alexander, I.E., & Alderstein, A.M. (1958). Affective response to the concept of death in a population of children and early adolescents. *Journal of Genetic Psychology*, 93, 167-177.
- Alexander, I.E., Colley, R.S., & Alderstein, A.M. (1957). Is death a matter of indifference? *The Journal of Psychology*, 43, 277-283.
- American Psychological Association (1992). *Ethical principles of psychologists and code of conduct*. Washington DC: American Psychological Association.
- Becker, E. (1973). *The denial of death*. New York: The Free Press.
- Becker, H., & Bruner, D.K. (1931). Attitudes towards death and the dead. *Mental Hygiene*, 15, 828-837
- Black, H.C. (1968). *Black's Law Dictionary* [rev. 4th ed.]: St. Paul, Minn., West Publishing Company.
- Christ, A.E. (1961). Attitudes toward death among a group of acute geriatric psychiatric patients. *Journal of Gerontology*, 16, 56-59.
- Cicirelli, V. G. (1998). Personal meanings of death in relation to fear of death. *Death Studies*, 22, 713-733.
- Cicirelli, V.G. (1999). Personality and demographic factors in older adults' fear of death. *The Gerontologist*, 39, 569-579.
- Cicirelli, V.G. (2001). Personal meanings of death in older adults and young adults in relation to their fears of death. *Death Studies*, 25, 663-683.



- Cicirelli, V.G. (2002). Fear of death in older adults: Predictions from terror management theory. *Journal of Gerontology*, 57, 358-366.
- Collett, L., & Lester, D. (1969). The fear of death and the fear of dying. *The Journal of Psychology*, 72, 179-181.
- Conte, H.R., Plutchik, R., & Weiner, M.B. (1982). Measuring death anxiety: Conceptual, psychometric, and factor-analytic aspects. *Journal of Personality and Social Psychology*, 43, 775-785.
- Cummings, E. E. (1950). Dying is fine but death. In G. J. Firmage (Ed.), *Xaipe*. New York: Liveright Publishing Corporation
- DaSilva, A., & Schork, M.A. (1984). Gender differences in attitudes to death among a group of public health students. *Omega*, 15, 77-84.
- Dattel, A.R., & Neimeyer, R.A. (1990). Sex differences in death anxiety: Testing the emotional expressiveness hypothesis. *Death Studies*, 14, 1-11.
- DePaola, S.J., Neimeyer, R.A., Lupfer, M.B., & Fiedler, J. (1992). Death concern and attitudes toward elderly in nursing home personnel. In R.A. Neimeyer (Ed.), *Death anxiety handbook: Research, instrumentation, and application* (pp 201-216). Washington DC: Taylor & Francis.
- Dickstein, L.S. (1972). Death concern: Measurement and correlates. *Psychological Reports*, 30, 563-571.
- Diggory, J.C., & Rothman, D.Z. (1961). Values destroyed by death. *Journal of Abnormal and Social Psychology*, 63, 205-210.
- Ellard, J. (1968). Emotional reactions associated with death. *The Medical Journal of Australia*, 1, 979-983.

- Feifel, H. (Ed.). (1959). *The meaning of death*. New York: McGraw-Hill.
- Feifel, H. (1969). Attitudes toward death: A psychological perspective. *Journal of Consulting and Clinical Psychology*, 33, 292-295.
- Feifel, H. (1974). Religious convictions and fear of death among healthy and the terminally ill. *Journal for the Scientific Study of Religion*, 13, 353-360.
- Feifel, H. (1990). Psychology and death, meaningful rediscovery. *American Psychologist*, 45, 537-573.
- Feifel, H., & Branscomb, A.B. (1973). Who's afraid of death? *Journal of Abnormal Psychology*, 81, 282-288.
- Feifel, H., & Hermann, L.J. (1973). Fear of death in the mentally ill. *Psychological Reports*, 33, 931-938.
- Feifel, H., & Nagy, V. T. (1981). Another look at fear of death. *Journal of Consulting and Clinical Psychology*, 49, 278-286.
- Flint, G.A., Gayton, W.F., & Ozmon, K.L. (1983). Relationship between life satisfaction and acceptance of death by elderly persons. *Psychological Reports*, 53, 290.
- Florian, V., & Har-Even, D. (1983). Fear of personal death: The effects of sex and religious belief. *Omega*, 14, 83-91.
- Florian, V., & Kravitz, S. (1983). Fear of personal death: Attribution, structure, and relation to religious belief. *Journal of Personality and Social Psychology*, 44, 600-607.
- Florian, V., Kravetz, S., & Frankel, J. (1984). Aspects of fear of personal death, levels of awareness, and religious commitment. *Journal of research in Personality*, 18, 289-304.

- Fortner, B.V., & Neimeyer, R.A. (1999). Death anxiety in older adults: A quantitative review. *Death Studies*, 23, 387-411.
- Gesser, G., Wong, P.T.P., and Reker, G.T. (1988). Death attitudes across the life-span: The development and validation of the Death Attitude Profile. *Omega*, 18, 113-159.
- Girvan, S. (Ed.). (1999). *The Canadian Global Almanac 2000*. Toronto, CA: Macmillan.
- Golding, S. L., Atwood, G. E., & Goodman, R. A. (1966). Anxiety and two cognitive forms of resistance to the idea of death. *Psychological Reports*, 18, 359-364.
- Guralnik, D.B. (Ed.). (1994). *Webster's New World Dictionary (2nd ed.)*. NY: Macmillan.
- Harmon-Jones, E., Simon, L., Greenberg, J., Pyszczynski, T., Solomon, S., & McGregor, H. (1997). Terror management theory and self-esteem: evidence that increased self-esteem reduces mortality salience effects [electronic version]. *Journal of Personality and Social Psychology*, 72, 24-36.
- Hinton, J. (1967). *Dying*. Harmondsworth, England: Penguin Books Ltd.
- Hoelter, J.W. (1979). Multidimensional treatment of fear of death. *Journal of Consulting and Clinical Psychology*, 47, 996-999.
- Kalish, R.A. (1963). Some variables in death attitudes. *The Journal of Social Psychology*, 59, 137-145.
- Kastenbaum, R.J. (1986). *Death, society, and human experience*. (3<sup>rd</sup> Ed.) Columbus, OH: Charles E. Merrill.
- Kastenbaum, R. (1992). *The psychology of death*. (2<sup>nd</sup> Ed.). New York: Springer.
- Kastenbaum, R. (2000). *The psychology of death*. (3<sup>rd</sup> Ed.). New York: Springer.
- Kastenbaum, R., & Aisenberg, R. (1972). *The psychology of death*. New York: Springer.

- Kastenbaum, R., & Costa, P. T. (1977). Psychological perspectives on death. *Annual Review of Psychology*, 28, 225-249.
- Lester, D. (1967). Experimental and correlational studies of the fear of death. *Psychological Bulletin*, 67, 27-36.
- Lester, D. (1972). Studies in death attitudes: Part two. *Psychological Reports*, 30, 440.
- Lester, D. (1994). The Collett-Lester Fear of Death Scale. In R.A. Neimeyer (Ed.), *Death anxiety handbook: Research, instrumentation, and application* (pp 45-59). Washington DC: Taylor & Francis.
- Lester G., & Lester, D. (1970). The fear of death, the fear of dying, and threshold differences for death words and neutral words. *Omega*, 1, 175-180.
- Lifton, R.J. (1979). *The broken connection: On death and the continuity of life*. New York: Simon & Schuster.
- Linehan, E.A. (1981). Neo-Cortical tests and personal death: A reply to Robert Veatch. *Omega*, 12, 329-337.
- Littlefield, C., & Fleming, S. (1984). Measuring fear of death: A multidimensional approach. *Omega*, 15, 131-138.
- Lonetto, R., Fleming, S., Gorman, M., & Best, S. (1975). The psychology of death: A course description and some student perceptions. *The Ontario Psychologist*, 7, 9-14.
- McCarthy, J. B. (1980). *Death anxiety*. New York: Gardner Press.
- McDonald, G.W. (1976). Sex, religion, and risk-taking behavior as correlates of death anxiety. *Omega*, 7, 35-44.
- Meissner, W.W. (1958). Affective response to psychoanalytic death symbols. *Journal of Abnormal and Social Psychology*, 56, 295-299.

- Middleton, W.C. (1936). Some reactions to death among college students. *Journal of Abnormal and Social Psychology*, 31, 165-173.
- Moraczewski, A.S., & Showalter, J.S. (1982). *Determination of Death: Theological, medical, ethical, and legal issues*. St. Louis, MO: The Catholic Health Association of the United States.
- Neimeyer, R.A. (Ed.). (1994a). *Death Anxiety Handbook: Research, Instrumentation, and application*. Washington, DC: Taylor & Francis.
- Neimeyer, R.A. (1997). Special article: Death anxiety research: The state of the art. *Omega*, 36, 97-120.
- Neimeyer, R.A., DePaola, S.J., Griffin, M., & Young, J.R. (2003). Death anxiety attitudes toward the elderly among older adults: the role of gender and ethnicity. *Death Studies*, 27, 335-354.
- Neimeyer, R.A., & Moore, M.K. (1994). Validity and reliability of the Multidimensional Fear of Death Scale. In R.A. Neimeyer (Ed.), *Death anxiety handbook: Research, instrumentation, and application* (pp. 103-119). Philadelphia: Taylor & Francis.
- Neimeyer, R.A. & Van Brunt, D. (1995). Death anxiety. In H.Wass & R.A. Neimeyer (Eds.), *Dying: Facing the facts* (3<sup>rd</sup> ed., pp. 49-88). Philadelphia & London: Taylor & Francis.
- Neimeyer, R.A., Wittkowski, J., & Moser, R.P. (2004). Psychological research on death attitudes: An overview and evaluation. *Death Studies*, 28, 309-340.
- Okafor, T.R.U. (1994). Death attitudes, gender and death experience: The Nigerian Evidence. *Omega*, 30, 67-78.

Pollak, J. M. (1979). Correlates of death anxiety: A review of empirical studies. *Omega*, 10, 97-121.

President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. (1981). *Defining Death: A report on the medical, legal and ethical issues in the determination of death*. Washington, DC: U.S. Government Printing Office.

Rasmussen, C.A., & Brems, C. (1996). The relationship of death anxiety with age and psychosocial maturity. *The Journal of Psychology*, 130, 141-144.

Ray, J.J., & Najman, J. (1974). Death anxiety and death acceptance: A preliminary approach. *Omega*, 8, 19-28.

Report of the Ad Hoc Committee of the Harvard Medical School to examine the definition of brain death (1968). *Journal of the American Medical Association*, 205, 337-340.

Rhudick, P.J., & Dibner, A.S. (1961). Age, personality, and health correlates of death concerns in normal aged individuals. *Journal of Gerontology*, 16, 44-49.

Robinson, P.J., & Wood, K. (1984). The threat index: An additive approach. *Omega*, 15, 139-144.

Sabatini, P., & Kastenbaum, R. (1973). The Do-It-Yourself Death Certificate as a research technique. *Life-Threatening Behavior*, 3, 20-32.

Sarnoff, I., & Corwin, S.M. (1959). Castration anxiety and the fear of death. *Journal of Personality*, 27, 374-385.

Shneidman, E.S. (1972). Can a young person write his obituary? *Life-Threatening Behaviour*, 2, 262-267.

- Simpson, M.A. (1975). The Do-It-Yourself-Death-Certificate in evoking and estimating student attitudes toward death. *Journal of Medical Education*, 50, 475-478.
- Statistics Canada (1997). Shelf tables on causes of death.
- Statistics Canada (1999). Smoking status, by age group and sex, household population aged 12 and over, Canada, provinces. Retrieved June 18, 2005, from <http://cansim2.statcan.ca/cgi-win/CNSMCGI.EXE>
- Statistics Canada (2001). Body mass index (BMI), International standard, by sex, household population aged 20 to 64 excluding pregnant women, Canada, provinces, territories, health regions and peer groups, 2000/01. Retrieved June 18, 2005, from <http://www.statcan.ca/english/freepub/82-221-XIE/00502/tables/html/1226.htm>.
- Statistics Canada (2005, May 24). Persons in low income after tax, by number (1994-1998). Retrieved May 15, 2005, from <http://www40.statcan.ca/l01/cst01/famil19d.htm>.
- Statistics Canada (2005, June 25). Population by religion, by provinces and territories. Retrieved June 18, 2005, from <http://www40.statcan.ca/l01/cst01/demo30a.htm>.
- Stringfellow, W. (1963). *Instead of death*. New York: The Seabury Press Inc.
- Swenson, W.M. (1961). Attitudes towards death in an aged population. *Journal of Gerontology*, 16, 49-52.
- Suhail, K, & Akram, S. (2002). Correlated of death anxiety in Pakistan. *Death Studies*, 26, 39-50.
- Tang, C.S., Wu, A.M., & Yan, E.C. (2002). Psychosocial correlates of death anxiety among Chinese college students. *Death Studies*, 26, 491-499.
- Templer, D.I. (1971). The relationship between verbalized and nonverbalized death anxiety. *The Journal of Genetic Psychology*, 119, 211-214.

- Templer, D.I., & Ruff, C.F. (1971). Death anxiety scale means, standard deviations, and embedding. *Psychological Reports*, 29, 173-174.
- Templer, D.I., Ruff, C.F., & Franks, C.M. (1971). Death anxiety: age, sex, and parental resemblance in diverse populations. *Developmental Psychology*, 4, 108.
- Thompson, D. (Ed.). (1996). *The Oxford dictionary of current English* (2nd ed.). New York: Oxford University Press.
- Veatch, R.M. (1976). *Death, dying and the biological revolution*. New Haven, CT: Yale University Press.
- Walkey, F.H. (1982). The multidimensional fear of death scale: An independent analysis. *Journal of Consulting and Clinical Psychology*, 50, 466-467.
- Westman, A.S., & Brackney, B.E. (1990). Relationships between indices of neuroticism, attitudes toward and concepts of death, and religiosity. *Psychological Reports*, 66, 1039-1043.
- Wong, P. T. P., Reker, G. T., & Gesser, G. (1994). Death Attitude Profile-Revised: A multidimensional measure of attitudes toward death. In R. A. Neimeyer (Ed.). *Death anxiety handbook: Research, instrumentation and application* (pp. 121-148). Washington, DC: Taylor & Francis.



## Appendix A

### Script for Class Recruitment

*" I am a graduate student in the Psychology Department conducting some research for my thesis and would like to invite you to participate in my study. I am interested in finding out about peoples' opinions. There are three questionnaires that I would like you to complete. Completion of the measures will take less than forty-five minutes. By filling out the questionnaires you will have the opportunity to win a forty-dollar gift certificate to the Keg restaurant and you will obtain 1 psychology bonus mark. All your answers on the questionnaires will be anonymous. There will be no way of connecting answers with any individual person. If you feel you will be uncomfortable dealing with the content of these questionnaires, you will be advised not to participate. Your help would be much appreciated."*



## Appendix C

### Consent to Participate in Research

Saint Mary's University, Department of Psychology

#### *Attitudes and Perceptions Study*

Trinda L. Power

#### Consent to Participate in Research:

You are invited to participate in a study examining people's thoughts and opinions about death. Your help is very much appreciated. If you agree to participate, you will be asked to complete a number of questionnaires. Completion of these measures will take less than 45 minutes. There are no known risks or benefits from participating in this research however those recently bereaved may find it difficult. I ask that you **do not** submit these measures with your name, student number, or any other identifying information on them.

A number of precautions have been taken to ensure the protection of your confidentiality. For example, this form will be collected separately from the questionnaires and kept in a safe location and all envelopes containing questionnaires will be thoroughly mixed together so that no envelope can be associated with any individual participant. All ballots will be placed in a covered ballot box and will not be accessed until the time of the draw at the completion of the study. If you decide at any time to withdraw your consent, you may still drop your ballot in the ballot box for the random draw and you will still receive 1 psychology bonus mark.

Thank you for your participation. If you have any questions or concerns regarding

this study, please contact *Trinda Power* at 457-9192. You may also contact: *Dr. Laura Methot*, Chair of the Department of Psychology Ethics Committee at 420-5846 or *Dr. Victor Catano*, Chair of the Department of Psychology at 420-5846.

### **Consent to Participate in Research**

I have been asked to participate in a study. I understand that my participation is voluntary; I can withdraw from this study at any time and will still be permitted to enter the random draw for a forty-dollar Keg gift certificate and I will still be eligible for 1 psychology bonus mark.

I am aware that my answers on the questionnaires will be anonymous and my participation will be kept confidential: Not even the researchers will know which questionnaires are mine. I understand that this form will be kept in a separate and safe location and that only the researchers will have access to it.

I, \_\_\_\_\_ have read the description of this study provided on the previous page and voluntarily agree to participate.

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

## Appendix D

**Demographic Information**

Please answer the following questions by filling in the blank or circling the response most applicable to you.

1. Age: month:\_\_\_\_\_ year (of birth): \_\_\_\_\_
2. Gender:            Male                      Female
3. Religion:
 

a) Catholic	c) Protestant	e) None
b) Jewish	d) Other _____	
4. Would you consider yourself to be a person who is :
 

a) not religious	c) fairly religious
b) somewhat religious	d) very religious
5. How often do you attend religious ceremonies or services?
 

a) 0 times/year
b) 1 - 5 times/year
c) 6 - 12 times/year
d) 13 - 24 times/year
e) 25 - 52 times/year
f) more than 52 times/year

I would like to know a little about your personal experiences with death. Please respond to the following questions, if you feel comfortable doing so.

6. Have you experienced the death of someone with whom you were close? If no, go to question 8. If yes, how many deaths have happened? \_\_\_\_\_
7. How long ago did this/these occur? \_\_\_\_\_
8. Have you ever sought professional counselling to deal with a death?
 

a) yes	b) no
--------	-------
9. Current status as a student?
 

a) Full Time	b) Part Time
--------------	--------------
10. How many years have you completed at university? \_\_\_\_\_year(s)
11. Faculty:
 

a) Arts	b) Sciences	c) Commerce
---------	-------------	-------------

## Appendix E

**Multidimensional Fear of Death Scale**

Listed below are death-related events and circumstances that people find to be fear-evoking. Indicate the extent to which you agree or disagree with each statement by circling one number for each item. Do not skip any items if you can avoid it.

- 1 = Strongly agree  
 2 = Mildly agree  
 3 = Neither agree nor disagree  
 4 = Mildly disagree  
 5 = Strongly disagree

- |   |   |   |   |   |  |
|---|---|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | 1. I am afraid of dying very slowly.   |
| 1 | 2 | 3 | 4 | 5 | 2. I dread visiting a funeral home.  |
| 1 | 2 | 3 | 4 | 5 | 3. I would like to donate my body to science.  |
| 1 | 2 | 3 | 4 | 5 | 4. I have a fear of people in my family dying.   |
| 1 | 2 | 3 | 4 | 5 | 5. I am afraid that there is no afterlife.   |
| 1 | 2 | 3 | 4 | 5 | 6. There are probably many people pronounced dead that are really still alive.             |
| 1 | 2 | 3 | 4 | 5 | 7. I am afraid of my body being disfigured when I die.                                     |
| 1 | 2 | 3 | 4 | 5 | 8. I have a fear of not accomplishing my goals in life before dying.                       |
| 1 | 2 | 3 | 4 | 5 | 9. I am afraid of meeting my creator.  |
| 1 | 2 | 3 | 4 | 5 | 10. I am afraid of being buried alive.   |
| 1 | 2 | 3 | 4 | 5 | 11. I dread the thought of my body being embalmed some day.                                |
| 1 | 2 | 3 | 4 | 5 | 12. I am afraid I will not live long enough to enjoy my retirement.                        |
| 1 | 2 | 3 | 4 | 5 | 13. I am afraid of dying in a fire.  |
| 1 | 2 | 3 | 4 | 5 | 14. Touching a corpse would not bother me.   |
| 1 | 2 | 3 | 4 | 5 | 15. I do not want medical students using my body for practice after I die.                 |
| 1 | 2 | 3 | 4 | 5 | 16. If the people I am very close to were to die suddenly, I would suffer for a long time. |
| 1 | 2 | 3 | 4 | 5 | 17. If I were to die tomorrow, my family would be upset for a long time.                   |
| 1 | 2 | 3 | 4 | 5 | 18. I am afraid that death is the end of one's existence.                                  |
| 1 | 2 | 3 | 4 | 5 | 19. People should have autopsies to ensure that they are dead.                             |
| 1 | 2 | 3 | 4 | 5 | 20. The thought of my body being found after I die scares me.                              |
| 1 | 2 | 3 | 4 | 5 | 21. I am afraid I will not have time to experience everything I want to.                   |

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 22. I am afraid of experiencing a great deal of pain when I die.            |
| 1 | 2 | 3 | 4 | 5 | 23. Discovering a dead body would be a horrifying experience.               |
| 1 | 2 | 3 | 4 | 5 | 24. I do not like the thought of being cremated.                            |
| 1 | 2 | 3 | 4 | 5 | 25. Since everyone dies, I won't be too upset when my friends die.          |
| 1 | 2 | 3 | 4 | 5 | 26. I would be afraid to walk through a graveyard, alone, at night.         |
| 1 | 2 | 3 | 4 | 5 | 27. I am afraid of dying of cancer.   |
| 1 | 2 | 3 | 4 | 5 | 28. It doesn't matter whether I am buried in a wooden box or a steel vault. |
| 1 | 2 | 3 | 4 | 5 | 29. It scares me to think I may be conscious while lying in a morgue.       |
| 1 | 2 | 3 | 4 | 5 | 30. I am afraid that there may not be a Supreme Being.                      |
| 1 | 2 | 3 | 4 | 5 | 31. I have a fear of suffocating (including drowning).                      |
| 1 | 2 | 3 | 4 | 5 | 32. It would bother me to remove a dead animal from the road.               |
| 1 | 2 | 3 | 4 | 5 | 33. I do not want to donate my eyes after I die.                            |
| 1 | 2 | 3 | 4 | 5 | 34. I sometimes get upset when acquaintances die.                           |
| 1 | 2 | 3 | 4 | 5 | 35. The thought of being locked in a coffin after I die scares me.          |
| 1 | 2 | 3 | 4 | 5 | 36. No one can say, for sure, what will happen after death.                 |
| 1 | 2 | 3 | 4 | 5 | 37. If I die, my friends would be upset for a long time.                    |
| 1 | 2 | 3 | 4 | 5 | 38. I hope more than one doctor examines me before I am pronounced dead.    |
| 1 | 2 | 3 | 4 | 5 | 39. I am afraid of things which have died.                                  |
| 1 | 2 | 3 | 4 | 5 | 40. The thought of my body decaying after I die scares me.                  |
| 1 | 2 | 3 | 4 | 5 | 41. I am afraid I may never see my children grow up.                        |
| 1 | 2 | 3 | 4 | 5 | 42. I have a fear of dying violently.                                       |

## Appendix F

## Do-It-Yourself-Death-Certificate

Local File Number		Prov. File Number	
Deceased:	Deceased--Name		
	First		Last
	1. <b>Leave Blank</b>		<b>Leave Blank</b>
	Sex		Date of Death (Month, Day Year)
	2.		3.
	Race: White, African, Amerindian, etc. (Specific)		Age -- Last Birthday
	4.		5a. (Years)
	Under 1 year	Under 1 Day	Date of Birth (Month, Day, Year)
	Mos. Days	Hours Min.	Country of Death
	5b.	5c.	6.
	City, Town, or Location of Death		Inside City Limits (Specify Yes or No)
	7b.		7c.
	Hospital or other Institution -- Name (If not in either, give street name and number)		
	7d.		
	Province of Birth ( If not in Canada, name of Country)		Citizenship
8.		9.	
Surviving Spouse (If wife, give maiden name)		Social Insurance Number	
11.		<b>Leave Blank</b>	
Kind of Business or Industry		Usual Occupation (Give kind of work done during most of working life, even if retired)	
13b.		13a.	
City, Town, or Location		Residence -- Province	
14c.		14a.	
Inside City Limits (Yor N)		Country	
14d.		14b.	
Street and Number		<b>14e. Leave Blank</b>	
Cause:	Part I. Death was Caused by:		Approximate interval between onset and death
	15. (Enter only 1 cause per line for a, b, and c.)		
	Conditions, if any which gave rise to immediate cause (a), stating the underlying cause last		
	(a.) Due to, or as a consequence of		
	(b.) Due to, or as a consequence of		
	(c.)		
	Part II. Other Significant Conditions - Conditions Contributing to Death but not related to cause given in part 1(a)		
	Autopsy (Yes or No)	If yes were findings considered in determining cause of death	Accident, suicide, Homicide, or undetermined (specify)
	16. a	16b.	17a
	Date of Injury (mo., day, yr.)	Hour	How injury occurred (Enter nature of injury in part i or part ii, item 15)
17b.	17c.	17d.	
Injury at Work (specify Yes or No)			
17e.			
Place of Injury -- at home, farm, street, factory, office bldg., etc. (specify)		Location (Street or R.F.D. No., City, town or province)	
17f.		17g.	
Burial:	Burial, Cremation, Removal (Specify)		Cemetery or crematory -- Name
	18a.		18b.
	Location -- City, Town, Province		Date (Month, Day, Year)
	18c.		18d.
Funeral Home -- Name and Address (Street, R.F.D No., City or Town, Province, Postal Code)			

\* Do It Yourself Death Certificate (adaptation)



## Appendix G

### Debriefing

Thank you for participating in the study. It is because of your help that this research is possible. We are interested in finding out peoples' attitudes and perceptions about death and dying. A prior study about death and dying with university students was conducted over twenty years ago and the results from this study will be compared to those in the earlier study to determine whether or not attitudes and perceptions about death and dying have changed.

Thank you again for your participation. If you have any further comments or questions, please contact me.

Trinda Denny

/

### **Resources:**

Saint Mary's Counselling Services: ..... 420 - 5615

Help Line: ..... 421 - 1188

## Appendix H

Table H-17

*Percentage Responses for Men (N = 33), Women (N = 111) and Overall (N = 144) on Multidimensional Fear of Death Scale (MFODS) Questions.*

MFODS Questions	N	Response Choices				
		Strongly Agree			Strongly Disagree	
		1	2	3	4	5
1. I am afraid of dying very slowly.	33	39.4	39.4	0.0	15.2	6.1
	111	41.4	39.6	8.1	5.4	5.4
	144	41.0	39.6	6.3	7.6	5.6
2. I dread visiting a funeral home.	33	12.1	9.1	39.4	18.2	21.2
	111	23.4	27.9	22.5	18.0	8.1
	144	20.8	23.6	26.4	18.1	11.1
3. I would like to donate my body to science.	33	9.1	15.2	12.1	24.2	39.4
	111	23.4	17.1	13.5	19.8	26.1
	144	20.1	16.7	13.2	20.8	29.2
4. I have a fear of people in my family dying.	33	33.3	36.4	12.1	6.1	12.1
	111	59.5	25.2	6.3	5.4	3.6
	144	53.5	27.8	7.6	5.6	5.6
5. I am afraid that there is no afterlife.	33	12.1	24.2	21.2	15.2	27.3
	111	11.7	11.7	36.0	15.3	25.2
	144	11.8	14.6	32.6	15.3	25.7
6. There are probably many people pronounced dead that are really still alive.	33	6.1	21.2	24.2	24.2	24.2
	111	1.8	11.7	32.4	18.0	40.0
	144	2.8	13.9	30.6	19.4	33.3
7. I am afraid of my body being disfigured when I die.	33	6.1	9.1	27.3	18.2	39.4
	110	9.1	14.5	24.5	20.0	31.8
	143	8.4	13.3	25.2	19.6	33.6
8. I have a fear of not accomplishing my goals in life before dying.	32	31.3	18.8	21.9	21.9	6.3
	111	30.6	38.7	9.9	12.6	8.1
	143	30.8	34.3	12.6	14.7	7.7

9. I am afraid of meeting my creator.	33	9.1	0.0	24.2	18.2	48.5
	111	8.1	5.4	27.0	17.1	42.3
	144	8.3	4.2	26.4	17.4	43.8
10. I am afraid of being buried alive.	33	30.3	18.2	15.2	12.1	24.2
	110	34.5	18.2	14.5	5.5	27.3
	143	33.6	18.2	14.7	7.0	26.6
11. I dread the thought of my body being embalmed someday.	33	9.1	21.2	21.2	12.1	36.4
	111	12.6	17.1	28.8	19.8	21.6
	144	11.8	18.1	27.1	18.1	25.0
12. I am afraid I will not live long enough to enjoy my retirement.	33	30.3	18.2	15.2	21.2	15.2
	111	7.2	27.9	25.2	20.7	18.9
	144	12.5	25.7	22.9	20.8	18.1
13. I am afraid of dying in a fire.	33	30.3	24.2	21.2	9.1	15.2
	111	32.4	29.7	15.3	9.9	12.6
	144	31.9	28.5	16.7	9.7	13.2
14. Touching a corpse would not bother me.	32	15.6	28.1	21.9	18.8	15.6
	111	14.4	21.6	11.7	18.0	34.2
	143	14.7	23.1	14.0	18.2	30.1
15. I do not want medical students using my body for practice after I die.	33	39.4	15.2	12.1	12.1	21.2
	111	25.2	18.9	20.7	10.8	24.3
	144	28.5	18.1	18.8	11.1	23.6
16. If the people I am very close to were to die suddenly, I would suffer for a long time.	33	33.3	33.3	18.2	9.1	6.1
	110	70.9	14.5	3.6	7.3	3.6
	143	62.2	18.9	7.0	7.7	4.2
17. If I were to die tomorrow, my family would be upset for a long time.	33	48.5	27.3	12.1	6.1	6.1
	111	74.8	11.7	9.0	2.7	1.8
	144	68.8	15.3	9.7	3.5	2.8
18. I am afraid that death is the end of one's existence.	33	12.1	12.1	42.4	12.1	21.2
	110	16.4	13.6	26.4	17.3	26.4
	143	15.4	13.3	30.1	16.1	25.2
19. People should have autopsies to that they are dead.	33	3.0	21.2	6.1	18.2	51.5
	111	12.6	22.5	28.8	12.6	23.4
	144	10.4	22.2	23.6	13.9	29.9
20. The thought of my body being found after I die scares me.	33	6.1	9.1	36.4	15.2	23.3
	111	13.5	15.3	30.6	16.2	24.3
	144	11.8	13.9	31.9	16.0	26.4

21. I am afraid I will not have time to experience everything I want to.	33	21.2	42.4	15.2	15.2	6.1
	111	27.0	35.1	14.4	13.5	9.9
	144	25.7	36.8	14.6	13.9	9.0
22. I am afraid of experiencing a great deal of pain when I die.	33	18.2	39.4	27.3	6.1	9.1
	111	45.9	36.9	8.1	5.4	3.6
	144	39.6	37.5	12.5	5.6	4.9
23. Discovering a dead body would be a horrifying experience.	33	15.2	33.3	24.2	12.1	15.2
	110	60.9	22.7	8.2	5.5	2.7
	143	50.3	25.2	11.9	7.0	5.6
24. I do not like the thought of being cremated.	33	12.1	15.2	27.3	15.2	30.3
	111	24.3	18.9	17.1	13.5	26.1
	144	21.5	18.1	19.4	13.9	27.1
25. Since everyone dies, I won't be too upset when my friends die.	33	39.4	36.4	6.1	6.1	12.1
	111	79.3	11.7	3.6	1.8	3.6
	144	70.1	17.4	4.2	2.8	5.6
26. I would be afraid to walk through a graveyard, alone, at night.	33	3.0	12.1	24.2	18.2	42.4
	111	45.0	23.4	10.8	12.6	8.1
	144	35.4	20.8	13.9	13.9	16.0
27. I am afraid of dying of cancer.	33	24.2	39.4	21.2	12.1	3.0
	111	34.2	35.1	17.1	6.3	7.2
	144	31.9	36.1	18.1	7.6	6.3
28. It doesn't matter whether I am buried in a wooden box or a steel vault.	31	19.4	12.9	12.9	22.6	32.3
	107	19.6	17.8	29.0	14.0	18.7
	138	19.6	16.7	25.4	15.9	21.7
29. It scares me to think I may be conscious while lying in a morgue.	30	16.7	10.0	40.0	6.7	26.7
	107	25.2	27.1	15.9	12.1	19.6
	137	23.4	23.4	21.2	10.9	21.2
30. I am afraid that there may not be a Supreme Being.	31	9.7	16.1	29.0	12.9	32.3
	106	7.5	12.3	37.7	10.4	32.1
	137	8.0	13.1	35.8	10.9	32.1
31. I have a fear of suffocating (including drowning).	31	25.8	41.9	16.1	3.2	12.9
	107	45.8	23.4	12.1	6.5	12.1
	138	41.3	27.5	13.0	5.8	12.3
32. It would bother me to remove a dead animal from the road.	31	6.5	25.8	22.6	22.6	22.6
	107	32.7	24.3	7.5	16.8	18.7
	138	26.8	24.6	10.9	18.1	19.6

33. I do not want to donate my eyes after I die.	31	32.3	9.7	29.0	6.5	22.6
	107	21.5	10.3	19.6	14.0	34.6
	138	23.9	10.1	21.7	12.3	31.9
34. I sometimes get upset when acquaintances die.	31	25.8	45.2	22.6	3.2	3.2
	107	46.7	38.3	10.3	4.7	0.0
	138	42.0	39.9	13.0	4.3	0.7
35. The thought of being locked in a coffin after I die scares me.	31	3.2	16.1	29.0	16.1	35.5
	107	23.4	16.8	22.4	18.7	18.7
	138	18.8	16.7	23.9	18.1	22.5
36. No one can say, for sure, what will happen after death.	31	61.3	3.2	19.4	9.7	6.5
	107	56.1	19.6	15.9	2.8	5.6
	138	57.2	15.9	16.7	4.3	5.8
37. If I die, my friends would be upset for a long time.	31	29.0	41.9	12.9	6.5	9.7
	107	57.0	25.2	10.3	5.6	1.9
	138	50.7	29.0	10.9	5.8	3.6
38. I hope more than one doctor examines me before I am pronounced dead.	31	19.4	22.6	38.7	9.7	9.7
	107	30.8	27.1	25.2	8.4	8.4
	138	28.3	26.1	28.3	8.7	8.7
39. I am afraid of things which have died.	31	3.2	6.5	32.3	16.1	41.9
	106	6.6	17.9	27.4	21.7	26.4
	137	5.8	15.3	28.5	20.4	29.9
40. The thought of my body decaying after I die scares me.	30	6.7	6.7	20.0	23.3	43.3
	107	15.0	23.4	27.1	13.1	21.5
	137	13.1	19.7	25.5	15.3	26.3
41. I am afraid I may never see my children grow up.	31	45.2	19.4	12.9	12.9	9.7
	107	42.1	26.2	12.1	9.3	10.3
	138	42.8	24.6	12.3	10.1	10.1
42. I have a fear of dying violently.	31	41.9	22.6	16.1	9.7	9.7
	107	45.8	24.3	15.0	8.4	6.5
	138	44.9	23.9	15.2	8.7	7.2

## Appendix I

Table I-18

*Means, Standard Deviations and Significance Levels for Men (N = 33) and Women (N = 111) on Questions of the Multidimensional Fear of Death Scale (MFODS).*

MFODS Questions	Gender						
	Men			Women			F
	N	M	SD	N	M	SD	
1. I am afraid of dying very slowly.	33	2.09	1.26	111	1.94	1.10	0.47
2. I dread visiting a funeral home.	33	3.27	1.26	111	2.59	1.25	7.44**
3. I would like to donate my body to science.	33	2.30	1.38	111	2.92	1.54	4.27*
4. I have a fear of people in my family dying.	33	2.27	1.33	111	1.68	1.05	7.00**
5. I am afraid that there is no afterlife.	33	3.21	1.41	111	3.31	1.29	0.13
6. There are probably many people pronounced dead that are really still alive.	33	3.39	1.25	111	3.75	1.12	2.40
7. I am afraid of my body being disfigured when I die.	33	3.76	1.25	110	3.51	1.32	0.92
8. I have a fear of not accomplishing my goals in life before dying.	32	2.53	1.32	111	2.29	1.25	0.91
9. I am afraid of meeting my creator.	33	2.03	1.26	111	2.20	1.27	0.45
10. I am afraid of being buried alive.	33	2.82	1.59	110	2.72	1.63	0.08

11. I dread the thought of my body being embalmed someday.	33	3.45	1.42	111	3.21	1.31	0.88
12. I am afraid I will not live long enough to enjoy my retirement.	33	2.73	1.48	111	3.16	1.23	2.88
13. I am afraid of dying in a fire.	33	2.55	1.42	111	2.41	1.36	0.26
14. Touching a corpse would not bother me.	32	3.09	1.33	111	2.64	1.49	2.41
15. I do not want medical students using my body for practice after I die.	33	2.61	1.62	111	2.90	1.51	0.94
16. If the people I am very close to were to die suddenly, I would suffer for a long time.	33	2.21	1.19	110	1.58	1.10	8.07**
17. If I were to die tomorrow, my family would be upset for a long time.	33	1.94	1.20	111	1.45	0.90	6.38*
18. I am afraid that death is the end of one's existence.	33	3.18	1.26	110	3.24	1.41	0.04
19. People should have autopsies to that they are dead.	33	3.94	1.32	111	3.12	1.34	9.64**
20. The thought of my body being found after I die scares me.	33	3.61	1.22	111	3.23	1.34	2.14
21. I am afraid I will not have time to experience everything I want to.	33	2.42	1.17	111	2.44	1.29	0.01
22. I am afraid of experiencing a great deal of pain when I die.	33	2.48	1.15	111	1.84	1.03	9.49**
23. Discovering a dead body would be a horrifying experience.	33	2.79	1.29	110	1.66	1.03	26.92**
24. I do not like the thought of being cremated.	33	3.36	1.39	111	2.98	1.54	1.64

25. Since everyone dies, I won't be too upset when my friends die.	33	2.15	1.35	111	1.39	0.93	13.82**
26. I would be afraid to walk through a graveyard, alone, at night.	33	3.85	1.20	111	2.15	1.34	42.79**
27. I am afraid of dying of cancer.	33	2.30	1.07	111	2.17	1.18	0.33
28. It doesn't matter whether I am buried in a wooden box or a steel vault.	31	3.35	1.54	107	2.97	1.40	1.72
29. It scares me to think I may be conscious while lying in a morgue.	30	3.17	1.39	107	2.74	1.46	2.05
30. I am afraid that there may not be a Supreme Being.	31	3.42	1.36	106	3.47	1.27	0.04
31. I have a fear of suffocating (including drowning).	31	2.35	1.28	107	2.16	1.39	0.50
32. It would bother me to remove a dead animal from the road.	31	3.29	1.27	107	2.64	1.54	4.56*
33. I do not want to donate my eyes after I die.	31	2.77	1.54	107	3.30	1.56	2.75
34. I sometimes get upset when acquaintances die.	31	2.13	0.96	107	1.73	0.83	5.20*
35. The thought of being locked in a coffin after I die scares me.	31	3.65	1.23	107	2.93	1.43	6.45*
36. No one can say, for sure, what will happen after death.	31	1.97	1.35	107	1.82	1.15	0.36
37. If I die, my friends would be upset for a long time.	31	2.26	1.24	107	1.70	0.99	6.75**
38. I hope more than one doctor examines me before I am pronounced dead.	31	2.68	1.19	107	2.36	1.24	1.56
39. I am afraid of things which have died.	31	3.87	1.15	106	3.43	1.24	3.07



40. The thought of my body decaying after I die scares me.	30	3.90	1.24	107	3.03	1.36	10.04**
41. I am afraid I may never see my children grow up.	31	2.23	1.41	107	2.20	1.35	0.01
42. I have a fear of dying violently.	31	2.23	1.36	107	2.06	1.24	0.43

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Notes: \*  $p < .05$ ; \*\*  $p < .01$

Factor 1: Fear of the Dying Process is comprised of questions: 1, 13, 22, 27, 31, 42

Factor 2: Fear of the Dead is comprised of questions: 2, 14\*, 23, 26, 32, 39

Factor 3: Fear of Being Destroyed is comprised of questions: 3\*, 15, 24, 33

Factor 4: Fear for Significant Others is comprised of questions: 4, 16, 17, 25\*, 34, 37

Factor 5: Fear of the Unknown is comprised of questions: 5, 9\*, 18, 30, 36

Factor 6: Fear of Conscious Death is comprised of questions: 6, 10, 19, 29, 38

Factor 7: Fear for the Body after Death is comprised of questions: 7, 11, 20, 28\*, 35, 40

Factor 8: Fear of Premature Death is comprised of questions: 8, 12, 21, 41

Items followed by an asterisk have been reversed scored to account for response bias.

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## Appendix J

Table J-19

*Statistics Canada Causes of Death in Canada in 1997 for Men, Women and Overall*

Cause of Death	Gender		Total
	Men	Women	
Infectious/Parasitic	1457	1025	2482
Neoplasm (Cancer)	32093	27682	59775
Endocrine/Nutritional	3489	3839	7328
Blood	346	450	796
Mental	2253	3602	5855
Nervous system	2843	3714	6557
Circulatory	39838	39619	79457
Respiratory	10611	9425	20036
Digestive	3791	3839	7630
Genitourinary	1799	1821	3620
Pregnancy/Childbirth	N/A	19	19
Skin Diseases	97	143	240
Musculo-skeletal	302	730	1032
Congenital Abnormalities	536	419	955
Perinatal	495	401	896
Ill-defined	3311	2631	5942
External Injury/Accidents	8724	4325	13049
Total	111985	103684	215669

Note: Information has been extracted and condensed from the 1997 Statistics Canada Shelf Tables on Causes of Death.