FEARS ABOUT PERSONAL AGING: AGE AND GENDER VARIATIONS

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FEARS ABOUT PERSONAL AGING: AGE AND GENDER VARIATIONS

Abstract

The main purpose of this study was to determine the incidence, type, and strength of fears that people experience in regard to their aging, in relation to sex and age (20-39, 40-59, and 60+).

The frequency and intensity of individuals' fears of personal aging were assessed through a questionnaire containing 39 potential sources of concern. The questionnaire was completed by 509 participants, recruited through snow-ball sampling. Based on the hypothesis that fear of aging is a multi-dimensional construct, separate two-way analyses of variance were performed for each fear (i.e. thirty-nine 2x3 [Sex x Age] ANOVAs; adjusted significance level α= .001).

The strongest and most common fears among the sample as a whole were fears about: financial security and possible changes in government policies that may affect it; the possible deaths of close relatives; changes in physical appearance; deterioration of health and of the body's ability to function and perform. Despite literature suggesting that attitudes toward the aged are predominantly negative, it was found that fears about being judged negatively, being taken less seriously, being discriminated against, and becoming more "invisible", and fears about losing prestige and/or social power as one ages were consistently among the weakest and

least frequent concerns within all groups in this study. Statistically significant differences between women and men were found for three fears only: changes in physical appearance, lacking control over these changes, and the possible deaths of close relatives. However, numerous significant differences were found across age groups.

A secondary aim of this study was to explore the relationship between the presence of fear and the current experience of its object. In general, stronger and more common fears were associated with higher rates of reported current experiences.

The differences in fears across age groups seem congruent with biological, psychological, and social changes that have typically been related to aging. However, findings here only partially support the view that aging is differently experienced by women and men, at least with regard to aging-related fears.

To my best friend,

Don McVeigh,

with much love and gratitude

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CHAPTER I: INTRODUCTION

Aging is a process involving a series of biological, psychological and social changes in individuals. Different meanings or value judgements are attached to different stages of this process, both within and across cultures (McPherson, 1983). In general, Western society venerates and rewards youth, while aging is seen as a primarily undesirable, deteriorative process (Barrow, 1992). Among the most notable ways in which this general negative outlook on aging manifests itself are the predominantly negative attitudes toward the aged (Seccombe, Ishii-Kuntz, 1991), and the apprehension some individuals experience in regard to their own aging. While there is a large body of research on attitudes toward the aged, relatively little has been written about the nature of people's apprehension toward their own aging, despite the fact that fears of aging have been identified as being among the most common and intense fears in adults of all ages (Croake, Myers, and Singh, 1988; Croake, 1984).

Primary purpose

The main purpose of this study is to determine what is disturbing or frightening to different individuals in regard to their own aging, and to assess the incidence and strength of these fears.

Given distinct socialization practices and

social/economic realities for men and women, and that various age groups are associated with different physiological and psychological characteristics and with different social roles and statuses, it is hypothesized that fears of aging vary across these groups. Hence, in addition to identifying fears of aging and establishing their incidence and strength, this study sets out to examine if and how men and women, and individuals of different age groups vary in relation to their fears.

Much previous research has treated fear of aging as a uni-dimensional concept, using a single overall value to compare different groups (e.g., Angle, 1988; Durand, Roff, & Klemmack, 1981; Kercher, Kosloski, & Bastlin Normoyle, 1988; Klemmack, Durand, & Roff, 1980; Klemmack & Roff, 1984; Klemmack & Roff, 1983; Lester, Monfredo, & Hummel, 1979; Montepare & Lachman, 1989; Salter & Salter, 1976). In this study it is argued that fear of aging is multi-dimensional: that is, that different people may feel apprehensive about distinct aspects of their aging, and that consequently they should be compared in regard to these aspects, and not by means of an overall score of fear of aging.

While much research has focused on the social context of aging, relatively little research has examined how these conditions affect the individual's experience of aging. Studying fears of personal aging is one way of assessing how

social values and conditions influence this experience. The content of people's fears may reveal some of the more explicit aspects of the social context that individuals deem most negative or threatening. Hence, in this study, particular attention is given to fears pertaining to social condition such as, for example, fears about negative social evaluation and loss of social status.

Secondary purpose

A secondary purpose of this study is to establish the extent to which men and women, and people of different age groups, experience the objects of the fears identified in this study. This information was gathered to facilitate the examination of the relationship between fear and the occurrence of its object.

However, it is not the aim of this study to explain the nature of such relationships; thus relatively less attention has been given to this portion of the research. Comparing fears to the actual occurrence of their objects represents a logical next step to the main goal of identifying them. It seemed a shame not to gather this information while also collecting data about fears, especially in light of the fact that obtaining both aspects from the same individuals would enable the identification of current vs. anticipated fears (see definitions below).

Definitions

Fear of aging. For the purpose of this study, fear of aging is meant to refer to feelings of concern, worry, or apprehension that individuals may experience in relation to any aspect of their own aging process and/or its perceived consequences (adapted from Ontario Welfare Council, 1971).

The main criteria in identifying these fears is the presence of emotional discomfort or distress; hence, it is irrelevant to the identification of these fears if their content is true or imagined, or whether fears are experienced in regard to current or future events or situations.

(In this thesis, the term 'fear of aging', in the singular form, is used to refer to a particular aspect that concerns individuals, or in reference to studies that treat fear of aging as an uni-dimensional concept. The plural form, 'fears of aging', indicates that people are likely to experience a variety of concerns in regard to their aging).

Aging vs. Aged. The term 'aging' is meant to refer to the process that involves the progression of a being through time. The term 'aged', on the other hand, is used to refer to old people as a focal group. It is recognized that 'old' and 'aged' are relative terms, varying according to the beholder's criteria and the subject's characteristics. In this study, the main focus is on aging as a process, and the

term 'aged' is used primarily in reviewing the literature, which generally defines "the aged" as people over 60 or 65 years of age.

Object of fear. The object of a fear is the event or situation that is feared by an individual. For example, if a person is afraid of decreased stamina, 'decreased stamina' is the object of that fear.

Anticipated fear. In this study 'anticipated fear' means that a person is concerned about the occurrence of a possible event or situation, but is not currently experiencing it.

Current fear. Current fear means that an individual is concerned about an event, and is also experiencing that event - or some aspect or indication of that event - at the present time.

Current experience. The term 'current experience' is used to indicate that an individual is presently experiencing a certain object of a fear addressed in this study. However, this expression does not denote whether the individual is concerned about this event or not.

Research Questions

The research questions are ordered in accordance to the main and secondary purposes of this study.

Primary research questions

1) What worries individuals in relation to their personal aging?

2) What is the incidence, strength, and relative importance of these fears?

2a) What fears pertain to social evaluation and position, and how common and strong are they?

3) Do fears about personal aging vary across gender?

4) Do fears about personal aging vary across age groups?

5) Are there any interaction effects between sex and age groups?

Secondary research questions

1) How prevalent are current experiences across sex and age groups?

2) What is the post-hoc relationship between fear and current experience?

Significance

The study of personal fears about aging is important for several reasons:

Keller, Leventhal, and Larson (1989) assert that "successful normal aging" involves the utilization of coping

mechanisms, and that the literature on life span stresses has overlooked aging itself as a significant life stressor. Establishing the incidence and strength of worries about one's aging will give an idea of the extent and manner in which aging and its consequences may be stressful to people.

Also, fear of aging has been found to be a stronger predictor of subjective well-being than income, educational attainment, perceived health status, race (Klemmack & Roff, 1984), or perceived competence (Angle, 1988). Gaining more knowledge about fears of aging may lead to the enhancement of people's subjective well-being by indicating ways in which such fears can be relieved, either by changing the source of distress directly, or by helping individuals adapt to such events.

While much of the literature on attitudes toward the aged has been justified by the assumption that understanding and improving such attitudes would ameliorate the conditions of aging, minimal attention has been paid to asking aging individuals themselves what they find to be most troublesome. In fact, several authors have stressed the importance of studying aging from a phenomenological perspective in order to decrease the influence of negative social values on gerontological research and practice (e.g., as evidenced by the over-diagnosis of Alzheimer's disease [Gatz & Pearson, 1988] and the tendency to conceptualize aging in terms of losses [e.g., Cremin, 1992]). The study

of fears of aging involves people's subjective appraisal of their experience of aging and its consequences.

It is my contention that the use of a uni-dimensional score to represent fear of aging is an inappropriate way to assess group differences, and that treating fear of aging as a multi-dimensional phenomenon constitutes an essential step toward clarifying inconsistencies in the literature regarding age and gender differences in this fear.

Comparing concerns about aging (and related current experiences) adds detail to the existing knowledge of how aging is experienced by men and women of different ages.

Last, this study makes a contribution by attempting to identify the extent to which individuals' fears of aging are related to (perceived) social values and conditions, an issue that has been unexplored.

Limitations

Aging, like most experiences, has positive and negative aspects. One limitation of this study (and that of much gerontological research on attitudes) is its exclusive focus on negative aspects of aging. Choosing to examine the negative side of aging may in fact be an instance of how ageism affects gerontological research and practice, and how certain assumptions and attitudes are propagated and perpetuated.

On the other hand, it is also important to point out that although the focus on fears confines the content of

this research to negative aspects of aging, this choice is based on research findings that indicate that fear of aging is among the most predominant fears. In other words, fear of aging is not a phenomenon created by the particular research questions in this study. Notwithstanding, it is acknowledged that recognizing and actively utilizing the advantages of aging will ultimately prove an essential step toward the improvement of individual and social perceptions and experiences of aging.

Given that fears of aging are likely to be influenced by socio-cultural values (Seccombe & Ishii-Kuntz, 1991; Hunter, Linn, & Pratt, 1979; Chang, Chang, & Shen, 1984; Barbee, 1989), caution needs to be used when it comes to their interpretation: findings may only apply to the cultural group studied.

Other potential limitations in this study are methodological in nature, and include questions about the validity and reliability of the instruments developed, and the use of a cross-sectional design. These and related limitations will be discussed in more detail in Chapters III and V.

CHAPTER II: LITERATURE REVIEW

The following literature review consists of four major parts: First, research findings on fear, anxiety, and worry are reviewed in order to present an understanding of the way these emotional processes may relate to fears of aging. Second, some qualitative studies of the experience of aging are described in an attempt to place fear of aging within the wider experience of aging. Third, research on attitudes toward the aged is briefly reviewed in order to establish some aspects of the social context in which aging takes place. Fourth, the literature directly pertaining to fears of aging is examined.

Part I: Fear, anxiety, and worry

Historically, fear has been regarded as one of the primary emotions, together with joy, anger, and grief (Croake, 1984), and is viewed as essential to survival by effecting the behavioral response of "fight or flight" when a threat is perceived (Stavosky & Borkovec, 1988). In the Encyclopedia of Psychology (Vol. II), Croake (1984) defines fear as "the emotion of avoidance of a consciously recognized, usually external, eminent danger" (p.11).

Anxiety is closely related to fear in that it is accompanied by similar physiological states and also involves the perception of a threat (Croake, 1984). However, it differs from fear in that the perceived threat

is vague and not clearly in focus (Croake 1984). Eysenck
(1992) argues that, similar to fear, anxiety is an adaptive
emotion which facilitates the *early* detection of potential
threats.

Worry is also closely associated with fear and anxiety.
By virtue of its cognitive nature, worry is believed to be
crucially involved in the perception of, and preparation
for, potential dangers (Eysenck, 1992). In fact, several
authors suggest that worry is the cognitive companion of the
somatic states that occur during anxiety (e.g., Eysenck,
1992; Stavosky & Borkovec, 1988). For example, O'Neill
(1985, cited in Eysenck, 1992) states "Worry and anxiety are
two referents of the same thing - worry indicating only the
cognitive component, anxiety including the autonomic
component" (p.100). Empirical support for the close
relationships among worry, fear, and anxiety implied by this
view has been found and/or reviewed by numerous researchers
(e.g., Borkovec, 1994; Borkovec, Robinson, Pruzinsky, &
DePree, 1983; Eysenck, 1992; Wisocki, 1994; Tallis, Davey, &
Capuzzo, 1994).

Not surprisingly, the importance of worry as a
cognitive process and its relationship to affective states
is reflected in academic definitions of worry. An often-
cited definition of worry is the one offered by Borkovec,
Robinson, Pruznsky, and DePree (1983):

Worry is a chain of thoughts and images, negatively affect-laden and relatively uncontrollable. The worry process represents an attempt to engage in mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes. Consequently, worry relates closely to fear process. (p.9)

As a primarily cognitive function, the process of worry is essential to the identification of fears of aging: it is through the cognitive representation of the threat object that individuals become conscious of the nature or source of their fears. It is also this cognitive representation that enables people to express their fears. In fact, Borkovec, Shadick, and Hopkins (1991, cited in Borkovec, 1994) argue that the predominantly verbal-linguistic nature of worry (i.e., verbal thoughts rather than images) has its roots in the necessity to communicate anxious feelings and potential threats to others. Strictly speaking, then, it is the examination of people's worries that underlies the identification of fears of aging, since it is through worrying that people become aware of the content of their fears.

Given the relevance of worry to the identification of fear content, the remainder of this section will be devoted to an overview of this phenomenon. However, first it is important to point out that the definition of fears of aging

used (see Chap.I) pertains to all three experiences - fear, anxiety, and worry. While it is clear that these concepts refer to slightly different phenomena, they are intrinsically interrelated, and drawing their distinction is easier on a semantic than a practical level. Given this difficulty, and the fact that distinguishing among these concepts is not relevant to the aims of this study, this task has been circumvented in this thesis. The term "fear" of aging was chosen to be consistent with terminology used in the pertinent literature, which does not differentiate among these concepts.

The phenomenon of worry

Worrying is a pervasive human activity (Borkovec, 1994), occurring more or less every day, for a large percentage of the normal population (Tallis, Davey, & Capuzzo, 1994).

The process of worry is triggered by the perception of threat, that is, the indication that something unwanted or aversive is coming (Eysenck, 1992). Despite their value for survival, worries do not occur only in relation to direct life threats. Rather, most worries arise in light of "frustrative non-reward situations" (Borkovec, Metzger, & Pruzinsky, 1983), which occur when individuals experience and/or foresee a discrepancy between their goals and envisioned rewards, and reality (Stavosky & Borkovec, 1988). In other words, people tend to worry when they perceive a

threat to the achievement of desired goals.

The strength of the perceived threat strongly influences the duration and intensity of worry. Eysenck (1992) lists four factors that determine the "threat value" of an anticipated negative event:

1. Subjective probability of the aversive event occurring.

2. Subjective imminence of the event.

3. Perceived aversiveness of the event.

4. Perceived post-event coping strategies. (p.119)

In addition, Patterson and Neufel (1987, cited in Eysenck, 1992) point out that "threat value" is also heavily influenced by the perceived importance of the goal being blocked: threats to the achievement of important goals are more detrimental than threats to less significant aims.

The functions of worry. In contrast to popular beliefs, worry is not a useless mental activity, but is of adaptive value, and appears to fulfil several functions (Eysenck, 1992; Tallis, Davey, & Capuzzo, 1994, Borkovec, 1994). Tallis and Eysenck (submitted; cited in Eysenck, 1992), for example, argue that worry has at least three major functions:

1) An alarm function, introducing information about a threat into conscious awareness.

2) A prompt function, re-presenting threat-related thoughts and images into awareness.

3) A preparation function, permitting the worrier

to anticipate a future situation and so

possibly reduce its aversiveness via a process

of habituation. (p.114)

Similarly, Borkovec (1994) derived the following five categories of "worry benefits" when he asked a series of clients diagnosed with General Anxiety Disorder to describe the benefits they thought they gained from worrying: 1) superstitious avoidance of catastrophe (benefit: worrying will render the feared event less likely to occur [irrational but comforting belief]); 2) actual avoidance of catastrophe (benefit: worrying aids the development of actual preventive strategies); 3) avoidance of deeper emotional topics (benefit: worrying distracts from more disturbing issues); 4) coping preparation (benefit: rehearsal of predicted negative outcomes prepares individuals for their actual occurrence); and 5) motivation device (benefit: worry supplies the impetus necessary to accomplish necessary goals).

While Borkovec (1994) warns that these findings may only be representative of pathological worriers, similar findings in support of the functional account of worry have been reported in studies with non-clinical populations (Tallis, Davey, & Capuzzo, 1994; Davey, 1994). For example, Davey (1994) found that worrying was significantly associated with a variety of problem-focused coping

activities, such as "active cognitive coping, active behavioural coping, information seeking and problem solving" (p.39).

Worry in non-clinical populations. Despite the fact that worry can occur in relation to any number of events depending on what is valued by different individuals, it has been found repeatedly that worries about socio-evaluative situations and health are among the most endorsed worry content domains (Borkovec, 1994; Eysenck, 1992).

Based on empirical findings and logical argument, several researchers have indicated that worry is future-oriented; that is, that worry is usually triggered by possible aversive events located in the future (Borkovec, Robinson, Pruznsky, and DePree, 1983; Eysenck, 1992). However, Tallis, Davey, and Capuzzo (1994) indicate that people can and do worry about past, present, and future events, and stress the importance for future research to differentiate between proximal and distant future events in order to facilitate the detection of worries with current and ongoing content. Contrary to previous studies, these researchers found that most worry content was related to present or on-going concerns.

Further, in reviewing the findings of previous research and those of their own study on the phenomenological experience of worry, Tallis, Davey, and Capuzzo (1994) concluded that worries in non-pathological populations:

typically are of personal relevance, i.e., self-referent; increase with the imminence of the anticipated event; occur in response to real rather than imagined problems; and occur in relation to "realistic threats", i.e., events that are likely to happen. In addition, these researchers found that worries about insoluble problems are relatively rare, despite the fact that these are among the most upsetting.

Age and gender differences. Wisocki (1994) states that although the incidence of anxiety-related problems for the elderly is high, it is generally lower than that of other age groups. Similarly, Wisocki (1994) reports that prevalence and frequency rates for worrying in non-clinical populations are generally lower for elderly adults than for younger people.

In contrast, the review of research studies on sex differences suggests that women tend to worry more than men (Borkovec, 1988; Borkovec, Robinson, Pruznsky, and DePree, 1983; Wisocki, 1994).

Stavosky and Borkovec (1988) maintain that such differences are probably not due to biological reasons, but rather are related to "psycho-social" differences in "gender-role identification" (p.83). More specifically, they argue that women are more likely to worry about their actions and to fear failure, *regardless of their performance*, due to the fact that social roles for women have more ambiguous standards of success than those for men.

For example, while parental roles for fathers are primarily based on their ability to financially provide for their families, women's roles as "nurturers" are less well defined, making it difficult for women to gauge their performance. Similarly, women in the workforce are less likely than men to be rewarded for their achievements, financially or through promotions, and thus do not experience the direct link between behaviour and reward.

In addition, these researchers state that because women generally feel they have less control over their lives than men due to gender-roles and social realities, they are more likely to feel powerless, and hence worry more about potentially threatening external events.

Part II: The experience of aging and fear of aging

A common observation in studies of the experience of aging is that people perceive their aging as a positive experience, a negative experience, or both, depending on what aspects they focus on (e.g., Keller, Leventhal, and Larson, 1989; Sills Lang, 1988).

In their attempt to tap into the subjective experience of aging, Keller, Leventhal, and Larson (1989) asked 32 men and women between the ages of 50 and 85 to explain what aging has meant to them. Answers were sorted by nature of their content and classified into the following thematic categories: a) aging seen as a natural process to which

individuals pay little attention; b) aging seen from a
philosophical point of view, including responses regarding
the evaluation of one's life, the accumulation of wisdom,
and the change of perspective; c) aging associated with more
freedom and fewer demands, e.g., a time to pursue new
interests and hobbies, and an opportunity to spend more time
with family and friends; d) aging seen as a process
associated with increasing health problems and worries; and
e) aging conceptualized in terms of loss, addressing issues
such as age discrimination on the job and death of a spouse.

While individuals attributed both positive and negative
meanings to their aging, participants almost exclusively
reported the actual changes associated with their own aging,
and that of their peers, to be negative. The changes
expressed by the participants were classified into the
following categories: a) social changes (e.g., changes in
social activity, job loss, social isolation); b) physical
changes (e.g., sensory problems, appearance changes, slowing
down); c) emotional changes (e.g., apathy, loneliness,
fear/anxiety about aging); and d) cognitive changes (e.g.,
slowing cognitive capacity, senility).

Sills Lang (1988) approached the understanding of aging
in a somewhat different manner. Rather than focusing on the
meaning that individuals attribute to their experience of
aging, she was interested in understanding the process of
aging itself. Having used "When are you aware of aging?"

and "What are you aware of?" as guiding questions for her interviews with 13 middle aged women, she derived three thematic categories - "anticipation", "discovering", and "becoming" - which she described as being "essential to the structure of the experience of aging" (p.194). Further, the author noted that these categories are not fixed in nature, but rather are interdependent, and hence, to be understood in relation to each other.

"Anticipation" refers to the individual's expectations as to what time will bring, and is based on past experience as well as preconceptions of the future. Sills Lang (1988) explains:

> Anticipating [is] derived from imagining,
> fantasizing, and reminiscing as well as from
> reminders, memories, and expectations in which
> fears and hopes, gains and losses become
> fused...One has hopes that certain things will or
> will not come to pass. On the other hand, one has
> fears that the same or different things will or
> will not occur. These fears and hopes include
> body deterioration, restrictions on doing, limits
> on being, vulnerabilities to losses, and changes
> that undermine the stability of self, the sense of
> limitlessness and the fantasy of continuousness.
> As well as anticipated losses, there are expected
> gains. (p.146-147)

The "Discovering" theme involves finding or discovering something that one had not anticipated or understood before. It involves an element of surprise, and learning occurs from the violation of prior expectations. Like anticipating, discovering has positive and negative elements: "Participants expressed feelings of betrayal on one hand and of delight on the other" (p.152).

The "Becoming" dimension describes the constant emergence of change, and is the process by which a person's potential evolves. Like the preceding two themes, it can have positive as well as negative features. Sills Lang (1988) summarizes: "...Becoming: Contains sub-themes of evolving, accepting, tolerating, self and the changing nature of relationships, feeling competent and confident. One can also become resigned, lethargic and less competent, feeling only what one once was, was worthwhile." (p.174).

While generalizations based on such a small sample are problematic, Sills Lang's (1988) classification of the aging process as seen from a phenomenological perspective seems particularly helpful in providing a conceptual framework that facilitates an understanding of fear of aging, and its position within the wider experience of aging. This author places "fear of aging" within the "anticipation" category of the aging process, but stresses that anticipation cannot be divorced from "discovering" and "becoming". In other words, current fears of aging are based on past and present

experiences, and expectations of the future, which in turn
are based on a person's current, but most certainly
incomplete, knowledge of the future. Hence, concerns about
one's own aging may have roots in one's experiences as well
as arising from those which one anticipates. Whether
anticipated worries actually materialize in the future can
only be determined over time, as the individual "discovers"
and "becomes".

Clearly, fear of aging represents only one small aspect
of aging, and may never be experienced by some individuals.
However, the existence and nature of such fears (or lack
thereof) seems determined by the wider experience of aging,
and in turn is likely to have some impact on this experience
by influencing perception, by motivating individuals into
certain behaviours, and by affecting an individual's well-
being throughout the aging process.

Part III: The social context: general attitudes toward the aged

Fears or concerns about one's own aging are likely to
be mediated by the meaning individuals attribute to an
existing or anticipated personal condition, and how they
believe others will evaluate and respond to that condition.
The meaning attributed to such an experience is learned
within a given socio-cultural context, and can be acquired
actively, through the individual's direct experience within

this context, or passively, by observing others (Baron &
Byrne, 1987). In this section some of the contextual
aspects that may lead to the perception of threat in
relation to personal aging are reviewed. Barrow (1992)
states that "the structure of society, its norms and values,
dictate how a person perceives and reacts to the aging
process" (p.3).

Most attitudinal research in gerontology focuses on
attitudes toward the aged rather than on attitudes toward
people's own aging. In general, researchers agree that
attitudes toward the aged are predominantly negative (Angle,
1988; Babladelis, 1987; Collette-Pratt, 1976; Hickey,
Rakowski, Hultsch, & Fatula, 1976; Milligan, Prescott,
Powell, & Furchtgott, 1989; Pattillo, 1983; Bridenstine,
Quattrochi-Tubin, 1986; Seccombe & Ishii-Kuntz, 1991;
Underwood, Eklund, & Whisler, 1985).

In their review of such studies, Seccombe and Ishii-
Kuntz (1991) summarize that elderly people are considered to
be "weak, in poor health, and dependent; to be of lower
competence, intelligence, and attractiveness than the young;
and to be asexual and socially isolated" (p.527). They
further report that such negative judgements have been found
to be generally maintained by children, college students,
and adults, including social and health professionals.

Based on the fact that people increasingly live longer
and healthier lives, Babladelis (1987) hypothesized that

social perceptions of, and attitudes toward the elderly

might have improved since the large number of studies in the

60s and 70s. However, this author did not find any

improvement of sentiment toward the aged, nor a shift of

perception of when individuals should be considered "old".

In contrast, Gatz and Pearson (1988) criticize much of

the research finding negative attitudes toward the aged, and

argue that the extent and intensity of global ageist

attitudes are an artifact of inappropriate measurement.

Nevertheless, these authors still conclude that specific

social biases do exist, and agree with Litsky (1980, cited

in Gatz & Pearson, 1988) that while the elderly might not be

evaluated extremely negatively in absolute values, they tend

to be less highly evaluated than other groups.

Austin (1985) points out the "striking stability of

attitudes" toward "disability groups" in previous research

on preference hierarchies (i.e., the ranking of groups

according to their "likeability") (p.431). Such research

(e.g., Tringo, 1970 & Harasymiw et al., 1976, cited in

Austin, 1985) consistently found that old age was rated

between eighth and eleventh in acceptance (out of 21 groups)

when ordered from most to least liked by youths and adult

professional and lay persons. Findings showed that physical

and perceptual disabilities such as ulcers, arthritis,

asthma, blindness, and deafness were usually listed as more

"likeable" than old age, and impediments such as spinal and

brain injuries, mental retardation, alcoholism and mental illness rated less "likeable". In his study, Austin (1985) found similar preference rankings, with the exception of the perception of old age, which in his study was rank-ordered as the 5th most "likeable disability".

Relationship between general attitudes toward aging persons and aging as an experience. The large body of literature on attitudes seems to have been driven by the assumption that improving the attitudes toward the aged would ameliorate the conditions of aging and older adults (Kafer, Rakowski, Lachman, & Hickey, 1980). Unfortunately, attempts to identify the relationship between attitudes and behaviour toward the aged have failed to produce conclusive findings: similar actions can often be justified by a multitude of explanations (Kafer, Rakowski, Lachman, & Hickey, 1980). Despite the failure to predict specific behaviours by means of attitude measures, the assumption that attitudes toward the aged are important determinants of the social environment still prevails (e.g., Barrow, 1992; Butler, 1980; Chang, Chang, & Shen, 1984; Hickey, Rakowski, Hultsch, & Fatula, 1976; Kafer, Rakowski, Lachman, and Hickey 1980; McPherson, 1983; Ontario Welfare Council, 1971). Authors such as Butler (1980), Fraboni, Saltstone, and Hughes (1990) and Gatz and Pearson (1988) argue that, like racism, ageism accounts for social avoidance and seclusion, antagonistic humour, and discriminatory practices

and policies in areas such as health care, housing, employment, educational and recreational opportunities. For example, Butler (1980) estimates that 10 to 30 percent of all treatable mental disorders in the elderly are misdiagnosed as untreatable because of the common assumption that mental impairment is part of old age.

Similarly, several authors point out that the social roles and status of any group are determined by the attitudes and perception of the general population (e.g., Austin, 1985; Cremin, 1992; Hickey, Rakowski, Hultsch, & Fatula, 1976). In fact, an underlying tenant of such role theories is that the "psychological ills" in older populations arise from the loss of significant roles (Fry, 1992).

Reviewing the literature on the relationship between status and age, Baker (1985) asserts that the lower status ascribed to young children and old people in modern societies stems from changes in social values concomitant with structural changes in urbanization, technology, education and economic systems. In North America, some of the social values that may contribute toward negative attitudes toward the aged are reflected by the emphasis on personal achievement, self-reliance (Barrow, 1992), upward mobility, occupational success, activity, speed, and change (Murray, Huelskoetter, and O'Driscol (1980, cited in Pattillo, 1983).

Surprisingly, while much research has been devoted to the identification and amelioration of negative attitudes toward the aged, relatively little research has focused on identifying what issues actually concern aging individuals, as seen from their perspective. In fact, several scholars have stressed the importance of phenomenological research to the understanding of aging, and have pointed to the dearth of such work (e.g., Boellhoff Giesen, 1989; Connidis, 1989; Cremin, 1992; Seccombe & Ishii-Kuntz, 1991; Keller, Leventhal, & Larson, 1989). One of the major reasons for studying aging from the individual's point of view is the fact that what others think aging people experience, or should experience given their objective situation, does not necessarily correspond to what aging persons actually perceive and feel (Connidis, 1989). Cremin's (1992) comparison of the views held by elderly patients, their adult children, and the medical staff of an outpatient geriatric clinic illustrates this point well: all parties held different views as to what was troublesome to the elderly patients, and what should be done. Drawing the distinction between one's own understanding and that of others seems especially important in the context of amelioration: asking people "what hurts" is much more effective than setting out to tell them.

Given the subjective nature of fears, it is my contention that their study represents one way to examine

how biological and psychological changes that typically accompany aging, and the social context in which these occur, impact on people's experience of aging. Such examination will help determine what is most disturbing to the individual, and hence, may provide a clearer, and perhaps, different picture regarding changes on the individual and/or social level.

Part IV: Literature on fear of aging

In general, little work has been published about fears of aging. The existing literature can be organized into two groups: studies that discuss the fear of personal aging as a dimensional component of attitudes toward the aged; and studies that examine the fear of aging as a separate construct. The former will be discussed first, since this work seems to have supplied the basis for much of the latter work.

Findings regarding fear prevalence and intensity, and gender and age differences are discussed in relation to the literature that deals with fear of aging as an independent construct. In that section, I also argue that men and women, and people of different ages are likely to differ in their fears of aging, and consequently, that using an overall score to represent that fear is inappropriate.

Fear of aging as a dimensional component of attitudes toward the aged

During the past two decades, several authors have criticised much of the research on attitudes toward aging and the aged for failing to differentiate between different construct dimensions, and hence making inappropriate conclusions (e.g., George & Landerman, 1980; Hickey, Rakowski, & Hultsch, 1978-79; Underwood, Eklund, & Whisler, 1985). For example, in their review of assessment instruments, George and Landerman (1980) state that a major problem with attitude measures is the fact that items tend to tap into a mixture of different concepts - attitudes, perceptions, and knowledge. Kafer, Rakowski, Lachman, and Hickey (1980), and Hickey, Rakowski, and Hultsch, (1978-79) indicate that another common conceptual failure in such research is the tendency to equate the terms "aging" and "aged", the former referring to the process, the latter standing for older adults as a target group, or old age as a focal concept. Authors such as Angle (1988), Hickey, Rakowski, and Hultsch (1978-79), Kafer (1981), and Kafer, Rakowski, Lachman, and Hickey (1980) have discussed and/or demonstrated the importance of distinguishing between reference groups (i.e., self, peers, and the aged as a global group) when examining attitudes. Unfortunately, despite this criticism, such conceptual problems continue to appear in the literature (e.g., Chang, Chang, & Shen, 1984;

Ramamurti & Kullai Reddy, 1986; Pattillo, 1983).

Several studies examining the structure of attitudes toward aging and the aged consistently report findings in support of the multi-dimensionality of these attitudes. It is through such research that anxiety or fear about one's own aging has been identified as a separate factor, and begins to appear in the literature.

The development of the Opinion About People Scale (Form A) by the Ontario Welfare Council (1971) represents one of the first attempts to isolate different factors related to attitudes toward the aged and the aging process. This scale was initially constructed for the purpose of evaluating the effectiveness of training programs in reshaping attitudes. Data gathered from 1700 respondents were factor analyzed, and seven distinct attitude dimensions were obtained: 1) realistic toughness toward aging (verging on cynicism), 2) denial of the effects of aging, 3) anxiety about aging, 4) social distance from (or self-contempt of) the old, 5) family responsibility toward aged parents and relatives, 6) public responsibility for the rights and well-being of the aged versus concern for the aged as a group, and 7) unfavourable stereotypes of the old as inferior vs. acceptance of the old as equals. Factor 3, i.e., anxiety about aging, is described as "apprehension, regret, or general negativism toward the aging process and what lies ahead" (p.683, Hickey, Rakowski, Hultsch, & Fatula, 1976).

To see if the original factorial model of the Opinion About People: Form A (Ontario Welfare Council, 1971) would generalize to other populations, Hickey, Rakowski, and Hultsch (1978-79) administered this scale to subjects in Pennsylvania. The factor analytical examination of these data resulted in three distinct "higher order " dimensions (p.367). While these results did not mirror those of the Canadian sample, the anxiety toward aging dimension was duplicated (Factor B). Based on a comparison of the items comprising the three factors, the author concludes that Factor B reconfirms "the hypothesis that attitudes about personal aging and attitudes about older persons are not necessarily related" (p. 368).

Support for the relative independence of attitudes toward one's own aging and attitudes toward the aged has also been derived in experimental settings. For example, to measure the impact of a three hour training program on geriatric health care professionals, Hickey, Rakowski, Hultsch, and Fatula (1976) administered the Opinion About People Scale (Ontario Welfare Council, 1971), in a pre- and post-test design. Their findings indicate that while there was a significant improvement of attitudes on the realistic toughness scale (i.e., less cynicism), the public responsibility, and family responsibility scales, there was also a significant increase in anxiety with regard to one's own aging.

In addition, Hickey, Rakowski, and Hultsch (1978-79) appeal to common sense by pointing out that conceptually, attitudes toward personal aging do not necessarily reflect attitudes toward the elderly as illustrated by the following statement: " 'Old people are nice to visit, but I would not like to be one.' Or, conversely: 'Many old people are poor, unfortunate, and disadvantaged, but I will undoubtedly be better off when I am old' " (p.362).

While studies discussed in the previous review stress the importance of distinguishing between attitudes toward the elderly and the aging process, and between dimensions within these factors, little has been put forth to explain the relationship between them. This seems to be especially true in regard to the study of fears of personal aging and the other attitudinal dimensions. Butler's (1980) stipulation that negative attitudes toward the aged stem from the individual's own fear of aging is an exception.

Another shortcoming is that while the assessment instruments discussed above clearly identify attitudes toward personal aging as a distinct dimension within the general attitude construct, they treat fear of aging itself as a uni-dimensional factor. That is, these scales produce one composite score to indicate an individual's degree of anxiety. The potential problems associated with the use of fear of aging as a uni-dimensional factor will be discussed in the following section.

Fear of aging as an independent construct

It is hard to organize and summarize the literature on fear of personal aging given a lack of agreement as to what constitutes this fear. Some authors conceptualize it as the concern for the consequences of being old (e.g., Angle, 1988; Klemmack, Durand, & Roff, 1980; Klemmack & Roff, 1984); others refer to concern in regard to aging as an ongoing process (e.g., Montepare & Lachman, 1989; Kafer, Rakowski, Lachman, & Hickey, 1980); and still others do not explain or operationalize this concept at all (e.g., Lester, Monfredo, & Hummel, 1979). Given these conceptual discrepancies, it becomes difficult to interpret and generalize findings. Nevertheless, an attempt to summarize the existing literature on fear of aging is presented next.

Most research dealing with fear of aging as an independent construct is concerned with its relationship with other concepts or personality measures, such as: attitudes toward life (Lester, Monfredo, & Hummel, 1979), subjective age identity (Montepare & Lachman, 1989), chronological age (Croake, Myers, & Singh, 1988; Kafer, Rakowski, Lachman, & Hickey, 1980; Klemmack, Durand, & Roff, 1980; Lester, Monfredo, & Hummel, 1979); sex (Croake, Myers, & Singh, 1988; Lester, Monfredo, & Hummel, 1979), well-being (Angle, 1988; Kercher, Kosloski, & Bastlin Normoyle, 1988; Klemmack & Roff, 1984), perceived competence (Angle, 1988), perceived importance of social security plan

(Klemmack & Roff, 1983), vigilance hypothesis, i.e., the
notion that closer attention is payed to disliked rather
than liked attitude objects (Durand, Roff, & Klemmack,
1981), and fear of death (Salter & Salter, 1976). Fear of
aging in these studies is assessed by a variety of measures
consisting of from 4 to 13 items (presented in Likert
format) designed to tap into different areas of potential
concern. For example, the items in Klemmack, Durand, and
Roff's (1980) four-item index are based on a definition of
fear in relation to "being old", and are: (1) I worry that I
will be poor when I am old, (2) I feel that people will
ignore me when I am old, (3) I'm afraid my health will be
bad when I am old, and (4) I'm concerned that I will be
lonely when I am old. (p.1320) Items in Kafer, Rakowski,
Lachman, and Hickey's (1980) scale are based on a view of
aging as a process and include items such as, "The older I
become, the more anxious I am about the future", "I always
dreaded the day I would look in the mirror and find a grey
hair", "The older I get, the more I worry about money".

Common to the interpretation of these and other similar
scales is the focus on a final composite score to determine
the association between fear of aging and the other
constructs of interest. Hence, although the content of the
various measurement items may reflect several areas of
concern, no attention is given to the specific content of
these domains, or to how these tend to be endorsed by

different individuals. Hence, the main goal of this study is to identify such areas of concern, and to establish their incidence and strength across age and sex.

While the sensitivity of the measure to be used depends on the nature of the research question, I contend that treating fear of aging as a uni-dimensional construct can lead to confounded findings. For reasons explained in later sections, it appears reasonable to assume that individuals of different age and sex (and other variables) are concerned about different aspects of their aging. Using a composite score may obscure such differences, since variations in areas of concern cannot be reflected.

Studies addressing the prevalence and intensity of fears of aging

Overall, fears of aging appear to be common. Croake (1984) reported that during the college years fears about "personal relations, political items, and fears of growing old are most common for both sexes" (p.13).

Studying the subjective experience of aging of individuals 65 to 92 years of age, Connidis (1989) found that 44.1% of the women reported having "worries about growing older", compared with 28.1% of the men (total n=398). She also found that worries about aging tended to decrease with age.

Similarly, in a qualitative study of women's perceptions of aging (n=32; age range 28-63 years of age),

Boellhoff Giesen (1980) found that in general the women reported more negative than positive reactions to thoughts of growing older, and a little more than one-half of the women felt aging was "disturbing, frightening, and anxiety provoking" (p.70).

While not directly dealing with fear of aging, Barbee (1989) compared "younger" (median: 34 years of age) and "older" (median: 48 years of age), Afro-American and white women in regard to their "desire to be younger" (n=207). She found that of the Afro-American women, 70% of the younger women, and 65% of the older women wanted to be younger. Of the white women, 80% of the young participants and 58% of the older subjects wanted to be younger. While some women wished to remain their own age, only one participant desired to be older.

Only one located study addressed the relative intensity of fear of aging. Croake, Myers, and Singh (1988) compared the overall fear intensity (based on a 5-point Likert scale) of twelve different adult fears (i.e., animal, supernatural, personal, economic, safety, sickness, ecology, college, family, crime, political, aging) across age groups and sex. These researchers found fear of aging to rank first or highest among the geriatric population, third among working adults, and sixth among college students. However, the actual intensity values for this fear were not statistically different across these groups.

Age and gender differences

Although there would be individual differences in perception of aging due to mediating factors such as personal value systems, economic situation, health, coping ability, and prior life experiences, it is reasonable to expect some similarities to exist across individuals of certain groups. Members of certain groups are likely to share common learning experiences, and hence attach similar meanings to certain experiences (Pattillo, 1983). One of the hypotheses of this study is that men and women, and individuals of different ages, experience aging differently as a function of their membership in these groups.

Age and fears of aging. Findings on fear of aging among different age groups are inconclusive. Lester, Monfredo and Hummel (1979) and Kafer, Rakowski, Lachman, and Hickey (1980) found that seniors reported significantly less fear of aging than younger groups. However, Croake, Myers, and Singh (1988) found no statistically significant difference between age groups. Klemmack, Durand, and Roff (1980) also failed to find an overall effect for age, but state that their data nevertheless suggest a "nonmonotonic" relationship between age and fear of aging (p.1320). In addition to the fact that these studies are based on discrepant definitions of fear of aging, such inconsistencies are likely due to the use of a uni-dimensional score, which, as discussed earlier, is incapable

of reflecting varying concerns by age. As I argue next, there are reasons to believe that fears of aging differ across age groups.

Personal fears of aging are likely to be affected by the anticipation and experience of biological, psychological, and social changes that typically accompany aging. Increasing age is usually associated with "loss" of physical and mental health, and an increased likelihood of death (Pattillo, 1983). In addition, Barbee (1989) points out that "chronological age is symbolically linked with important rules in this society", such as when individuals may begin or retire from work, and when individuals can receive their first driver's license or their full social security retirement benefits (p.119). Hence, different ages are associated with different social roles and status. Social status and related perceptions of power and wealth, respect and influence, intellectual ability and prestige have repeatedly been found to have an inverted U shape relationship with age, the extremes being assigned the lowest status (for a review, see Graham & Baker, 1989). Individuals may be differently concerned about their aging depending on whether they see themselves as gaining, maintaining or losing status with the advancement of time.

Concomitant with such biological and social changes, people experience shifts in values, beliefs, commitments, and expectations. As a result, concerns about personal

aging are likely to change in accordance with the
significance that individuals of different ages attribute to
similar changes (Lazarus & DeLongis, 1983). For example, an
80 year old woman may be less concerned about her changing
appearance than a 40 year old woman, simply because
appearance no longer plays such a dominant role in the older
woman's life, and changing appearance may no longer indicate
a significant loss in status and social role.

    Gender and fears of aging. Findings regarding gender
differences in fear of aging are also ambiguous. Although
Connidis (1989) found that more women than men (44.1% vs.
28.1%) reported having "worries about growing older",
Croake, Myers, and Singh (1988) and Lester, Monfredo and
Hummel (1979) found no significant differences between men
and women in regard to fear of aging. As discussed in
relation to findings about age differences, such
inconsistencies are likely due to definitional variations
and the use of a uni-dimensional score. Given differential
socialization practices and biological, psychological, and
social realities for men and women, it is likely that the
experience of aging differs between the sexes, and hence,
that such differences in experience would be reflected in
their fears.

    Believing that age has different social meaning for
women and men, Sills Lang (1988) writes:

The impact of aging is different not only by

virtue of personal history and social context; it

is also differentially experienced by sex... A

woman's attractiveness and reproductive

capacities, upon which her social status is often

based, become irrelevant with age...Given our

cultural milieu women have reason to fear aging.

(p.4-5)

In fact, not only is the general social status awarded

to women on the basis of knowledge of age alone lower than

that attributed to men especially during the middle years

(Baker, 1985), but the source of prestige, value, and

recognition itself tends to be different for men and women.

While men's status largely rests on what they do and have

accomplished (Lang, 1988), women's status is based to a

great extent on attractiveness, sexuality, and reproductive

capacities (Berman, O'Nan, & Floyd, 1981; Boellhoff Giesen,

1989; Kercher, Kosloski, & Bastlin Normoyle, 1988; Lang,

1988,Boellhoff Giesen, 1980; Seccombe & Ishii-Kuntz, 1991).

In other words, as Berman, O'Nan, and Floyd (1981) point

out, women's most socially valued qualities are associated

with youth.

In addition to the fact that attractiveness and youth

appear to be dominant sources of women's social value, this

"double standard" is further magnified by the fact that

women are perceived by adults of all ages and of both sexes

to reach and surpass their "prime years" earlier than men (e.g., Boellhoff Giesen, 1989; Boellhoff Giesen, 1980; Kite, Deux, & Miele, 1991; Seccombe & Ishii-Kuntz, 1991). Such perceptions have not only been found in regard to sexual appeal, but also in regard to the judgements about the "'best age' to marry, be a parent, have the most responsibilities, and have accomplished the most" (Zepplin et al., 1987, cited in Kite, Deux, & Miele, 1991, p.20)

Overall, there seems to be a stronger cultural pressure on women to stay young. Witness to the internalization of such pressure is women's perceived need to conceal their age (Barrow, 1992; Boellhoff Giesen, 1980), and the related booming of cosmetic and body change industries (Rodeheaver & Stohs, 1991). Given this emphasis on youth and sexuality for women, it seems reasonable to expect that changing appearance may be particularly worrisome to women as they anticipate losing what is socially valuable (Lang, 1988, Boellhoff Giesen, 1989).

Related to the social pressures to "stay young", but of more immediate impact on women's lives, are the biological time constraints that women, unlike men, face if they wish to have children of their own. Apprehension about aging may result from the perceived discrepancies between career goals, wish to have children, and biological "deadlines". Although recent developments in reproductive technology have made it possible for older women to have children, such

strategies are controversial, not necessarily effective, and, most importantly, not financially possible for most women.

Additional reasons to expect different areas and intensities of worry for men and women are the facts that overall, women tend to be poorer, live longer (Gee & Kimball, 1987), suffer from lower mental health and higher depression rates (Stavosky & Borkovec, 1988), and generally tend to worry more and be more fearful than men (Liddell, Locker, & Burman, 1991; Stavosky & Borkovec, 1988).

Other demographic variables

Socioeconomic, marital, and health status. Connidis (1989) asserts that income, subjective health, and marital status are some of the factors that shape people's perceptions about aging. It seems reasonable to expect that these factors also affect the nature and intensity of people's worries about their own aging. For example, it is likely that people of low income worry more about becoming financially dependent on their children and/or the state than wealthier individuals, and that health issues may be of greater concern given the burden of or inability to deal with medical expenses. Similarly, individuals with poor health may feel restricted in their future life options, anticipate more problems in regard to physical changes, medical expenses, dependence on others, and may generally be more aware of aging than healthy individuals. In fact,

Klemmack and Roff (1984) found that individuals who perceived themselves in better health were less likely to express fear of aging (however, these researchers do not specify how fear of aging was operationalized).

Marital status may also affect fear of aging directly or indirectly. For example, it may have an indirect influence on fears about aging by nature of its relationship to socioeconomic status: unmarried women tend to be poorer and enjoy a lower living standard than married women. Marital status is also likely to have a more direct influence on concerns about aging: married people or individuals with relatively permanent partners may feel or anticipate being less lonely than their single counterparts, and by the same token, be more worried about the loss of their partners and/or the consequent possibility of having to fend for themselves.

In addition, marital status may affect the degree to which women are worried about their changing appearance. Boellhoff Giesen (1980, 1989) found differences between married and non-married women "in response to perceived cultural standards for sex-roles, values, and behaviours" (Boellhoff Giesen, 1980, p.94). Regardless of age, married women placed more importance on attractiveness and sexual appeal than unmarried women, conceived "attractiveness" to involve more physical attributes, and perceived a woman's peak in attractiveness and sexual appeal to occur earlier in

life than single women did. Overall, Boellhoff Giesen
(1980) concluded that married women were more likely to feel
that they had declined in "value" due to their aging than
were single women.

Ethnicity, religion, and sexual orientation. It is
important to point out that ethnicity or cultural
background, religion, and sexual orientation may also affect
fear of aging. However, these variables will not be
controlled for in this study, given the large numbers of
subjects that would be needed to detect any differences due
to these factors (E. Gee, personal communication, April
1994), and the difficulties that additional variables add to
the application and interpretation of the appropriate
statistics.

Summary

Fear of aging has been identified as one of the most
common and intense fears in adults of all ages. However,
little research has examined this fear, and studies that I
was able to locate focused on the relationship of this fear
to other constructs. Findings of these studies are
difficult to interpret and compare given either the failure
to define the concept, or the use of differing definitions
(i.e., concerns about being old vs. concerns in regard to
aging as an ongoing process). However, common to all is the
conceptualization of fear of aging as a uni-dimensional

construct, as evidenced by the use of a single score to represent this fear. Fear of aging in this study is understood in relation to aging as a process, and is argued to be multi-dimensional.

Given the dearth of research in this area, literature on conceptually-related domains was reviewed. Research on fear, anxiety, and worry suggests that all three processes are strongly interrelated; more specifically, worry appears to be a cognitive concomitant to the somatic states that occur with anxiety and fear. It is through the cognitive representation of the threat object in worry that people become aware of potential threats, and thus it is through worry that people identify what is threatening in relation to aging. In non-pathological populations worrying is of adaptive value and has been associated with problem focused coping activities. It most commonly occurs in relation to health and socio-evaluative issues, primarily relates to on-going or future events, increases with threat imminence, and is generally based on realistic rather than imagined problems.

Literature on the experience of aging reveals that people usually perceive their aging to have both positive and negative aspects, and that fears of personal aging may emerge with one's expectations for the future, which are largely based on one's past and present experience of aging.

Literature on attitudes toward the aged indicates that

these are predominantly negative and that the social status attributed to older people is lower than that of younger adults. It is suggested that such social values affect the experience of aging, and are likely to be perceived as threatening in relation to personal aging.

Finally, literature supporting the notion that aging is experienced differentially by gender and age is reviewed. Age differences are likely due to changes in health, social commitments and position, and personal values. Gender differences may be based on different reproductive capacities, differential psychological and economic realities, and the notion that women's social status, unlike men's, is largely dependent on youth, attractiveness, and sexuality. It is argued that fears of aging vary according to these differences, and thus, that the use of a multi-dimensional scale is necessary.

Hypotheses. Since little has been written specifically about fears of aging, it is difficult to formulate precise predictions. However, the following general hypotheses are set forth:

I) Given the negative social attitudes toward the aged, the low status attributed to this age group, and the fact that worries are often socio-evaluative in nature, it is hypothesized that fears about social evaluation and position are among the most dominant fears.

II)   Given that biological, psychological, and social changes typically accompany aging, it is hypothesized that people of different age groups will vary in their fears of aging.

III)   Given the socially detrimental consequences of aging for women suggested by the double standard, and other socio-economic, biological, and psychological differences, it is hypothesized that women and men differ in their fears, and that generally women will have stronger fears than men.

IV)   Finally, it is hypothesised that findings regarding gender and age differences will support the notion that fear of aging is multidimensional, and that treating it as a uni-dimensional concept prevents the detection of such differences.

CHAPTER III: METHODS

This study involved a five stage process. First, 16 interviews were conducted in order to determine different domains that concerned individuals in regard to their own aging. Second, a questionnaire was developed based on the thematic categories abstracted from these interviews. Third, the questionnaire was pilot-tested and subsequently some changes were made to the instrument. Fourth, the "final" questionnaire was distributed and collected, and fifth, the obtained data was analyzed. (Both, the interviews and the use of the questionnaire were approved by the Simon Fraser University Research Ethics Review Committee).

In this chapter I describe each of these stages and discuss some associated problems and limitations. I pay specific attention to sampling procedures, data collection, and methods of analysis. In addition, I incorporate the findings of the interviews and the pilot test into this section: by forming the basis to subsequent research stages, they are essential to the methodological process.

Stage I: The interviews

Purpose and rationale

The main purpose of the interviews was to gather information about the types of fears that people experience in regard to their own aging. Given that the existing

literature does not delineate these fears, asking different
individuals to describe their concerns seemed the most basic
and direct way to begin collecting information.

Sample and sampling procedure

    I conducted 16 face-to-face interviews with 10 female
and 6 male participants. Their ages ranged between 26 and
80 years of age, and they differed a great deal in their
educational background and current occupation. Two
participants had partly or fully completed elementary
school, 3 had completed 10th grade, 4 participants completed
some sort of special training after high-school, and 7
participants had at least an undergraduate university
degree. Occupationally, they included 2 receptionists, 3
full-time homemakers, 3 practising counsellors, 1 fine and
performing arts student, 1 landscaping architect, 2
teachers, 1 maintenance engineer, 1 unemployed person, and 3
retirees (a former hair dresser, department store clerk, and
radiator repairer). Overall, younger participants tended to
have more years of formal education than older individuals.
Eight of the participants were married, 4 were in common-law
relationships, 2 were divorced and currently single, 1 was
single and never married, and 1 participant was widowed.

    The main criterion for choosing potential participants
was to obtain responses from a group as diverse as possible.
Hence, participants were not selected at random, but rather
chosen for their age, and educational and occupational

backgrounds. Singleton, Straits and Straits (1993) suggest the use of "purposive sampling" is effective when the goal is to identify "key elements in various community ideologies", and not the assessment of their overall distribution (p.160).

All participants under 60 were individuals I had previously met through my work, studies, or other frequent interactions, or were friends of these people. Most of the participants over 60 were people I had met on my walks through the neighbourhood, or individuals that these people had suggested I should approach.

While all participants aged under 60 agreed to participate, several individuals over the age of 60 refused. One elderly couple declined to participate after having seen all interview materials (consent form and questions), and explained that they feared that the government might cut their pension if they somehow got hold of their answers. Three others with whom I had already made an appointment called me to cancel. In general, it seemed that older people were more suspicious about my intentions and more nervous about participating.

Data gathering

All but one interview were conducted at the participants' home or workplace. In these cases, only the participant and I were present in the room. One interview took place in a restaurant. However, the overall level of

noise made it very unlikely to be overheard by neighbouring tables, and as such provided a comfortable "cocoon" of privacy. In fact, the participant assured me that she did not feel inhibited by the "public setting" when asked.

Before commencing, all participants signed a consent form indicating that they understood the nature of the interview and the procedures it involved (See Appendix A). Interviews lasted between 15 minutes and one hour and 15 minutes. All conversations were tape recorded with the permission of the participant, and subsequently transcribed by me.

Interviews were structured openly and also included questions not directly pertaining to fears of aging, such as, questions about how individuals coped with their fears, and inquiries about the positive aspects of aging that people had experienced. In addition to my own wish to gain a more comprehensive sense about these issues, such questions were included to alleviate the overall negative tone of the interview, and so reduce the level of emotional discomfort that participants might have experienced in reaction to an exclusive focus on fears.

Questions asked during the interviews varied somewhat from participant to participant depending on the nature of their answers and my reactions to them. However, after collecting basic demographic information, all interviews began with the following question: "During the past year,

have you considered your own aging?" If necessary, participants were further prompted with: "What sort of thoughts or feelings have you had?"

Chart 3-1 shows the core questions that were addressed by all interviewees. While a host of secondary questions were asked these are not presented here or discussed later since they do not directly pertain to the research questions, and/or because they were not asked consistently.

The order of the questions was determined by the participants' initial response. That is, if participants started by describing positive experiences, I continued by asking them about these experiences. Later, if participants had not already begun to do so themselves, I inquired about concerns or worries in regard to their aging. If participants began by describing their fears, I continued by exploring those issues, and later, if necessary, asked about any positive aspects they had experienced in relation to their aging.

In addition, I observed the following "rules" during the interviews: a) Participants were repeatedly asked if there was "anything else" until they explicitly stated that they could not think of anything else; b) If participants described certain experiences without indicating if these were deemed positive or of concern, I asked them, "How do you feel about this?"

Chart 3-1: Questions addressed by all participants

- What is your age, educational background, current
  occupation, and marital status?
- During the past year, have you ever considered your own
  aging? What sort of thoughts or feelings have you had?
- What worries or concerns have you had in regard to your
  own aging?
- How strongly and how often do your worry about these
  issues?
- What are some positive aspects of aging you have
  experienced?
- Is there anything you are looking forward to in regard to
  your own aging?

Data Analysis

The goal of the interviews was to obtain a list of

people's concerns about aging. To meet this purpose, the

transcripts were analyzed in a fashion similar to the coding

in the margin procedure delineated by Merriam (1988).

First, all transcripts were read and passages referring to

any worries or fears about aging were underlined. Then, the

transcripts were read again, and the key content of all

underlined passages was summarized and written on the

margins of the transcripts. Subsequently, all margin

summaries were copied into a separate list, and grouped by

nature of their content into different thematic clusters.

The list was then narrowed by removing overlapping

statements, i.e., statements that had been repeated, or by

combining closely related items.

In most cases participants were very specific in terms

of their worries, and hence "summarizing" was fairly

straight forward. In some cases, the fears were not stated
explicitly, and a higher level of inference was necessary.
The following three examples illustrate the type of summary
statements I derived, and how they relate to the transcript
excerpt itself. Further, I chose these examples to
demonstrate the varying degrees of inference that were
necessary to develop the various summary statements. The
examples are ordered from most to least concrete or
"straight forward".

Example 1.

deteriorating health

"I worry about health. Sometimes I have problems with my joints and in my kidneys, and I think if this is the way now when I am young, I think what will it be when I am older".

Example 2.

appearance: looking old

being devalued

becoming invisible

losing (social) power

"First of all about looking older. I really have the sense that women lose a lot as they get older - in terms of the way they look. Not that they start looking so bad, but the value that is given to them. Like seeing women pass by with their children, no one looks at them; it's like they do not exist, they become transparent, I am afraid of that, and have been for some time....It's like losing power. I already notice a big difference when I dress up, or when I don't. That type, that type of thing."

Example 3.

limited by social   "I feel younger than I look outside.
expectations (re: And it's like I can't, like I have to
one's behaviour)   avoid doing things. I don't, I am not
                           as interested in going out much, like I
                           don't socialize much, 'cause I feel
being judged   like, if I want to do something people
negatively   will look and say, what is that old lady
                           doing here, or something."

Developing the list of fears involved a slightly higher

level of abstraction than creating the summary statements

given that some summary statements were subsumed into more

general statements. In many cases, however, the original

summary statements were preserved to function as individual

"units" within the overall list of fears.

The following example will illustrate the process

through which the list of fears evolved until it reached the

point at which it was used to develop the survey

questionnaire. Chart 3-2 shows a collection of summary

statements that I had clustered under the overall heading of

"negative judgements" in the first draft of the list.

Summary statements were clustered into conceptual categories

to facilitate their comparison. To clarify this

illustration, I have added an identifying number to each

statement.

Chart 3-2. Example of summary statements in the first draft
            of the list of fears.

```
    Negative judgements
(1) -being disliked by younger people
(2) -being judged negatively by own children (+ their
     friends) for being an "old" mom
(3) -not being taken seriously (work)
(4) -being disliked by younger generations (not being
     seen as "in")
(5) -being judged negatively (when doing "young" things)
(6) -being discriminated against (work, line ups)
(7) -being ignored, not noticed
(8) -being judged negatively by younger people
```

First, directly overlapping statements were taken out.
In this case, statement #4 was taken out because it was
virtually the same as #1. Second, similar or highly related
statements were replaced with a subsuming statement. In
this case statements 1,2,5, and 8 were "combined" into the
subsuming statement: "being judged negatively by younger
people". Finally, item #7 was taken out of this particular
cluster because its examination seemed more appropriate
within the realms of another domain (i.e., " becoming
invisible"). As a result, the initial version was condensed
to three summary statements or informational units. This
final version is presented in Chart 3-3.

Chart 3-3. Example of summary statements in the revised
            list of fears.

```
               Negative judgements
(1,2,4,5)      -being judged negatively by younger people
(3)            -not being taken seriously
(6)            -being discriminated against
```

To render the list of fears as comprehensive as possible, already existing scales (as presented in Durand, Roff, & Klemmack, 1981; Kafer, Rakowski, Lachman, & Hickey, 1980; Klemmack, Durand, Roff, 1980; Klemmack & Roff, 1984; Lester, Monfredo, & Hummel, 1979) were reviewed to see if these included items not yet identified through the interviews. However, this did not prove to be the case.

The final list of fears included the following categories:

- health deterioration,

- decline of the body's ability to perform/function,

- inability to keep certain levels of daily performance due to loss of stamina,

- worsening of memory,

- changes in physical appearance,

- losing social power and prestige due to changes in appearance,

- becoming less sexually attractive,

- being judged negatively by younger people,

- not being taken seriously,

- being discriminated against,

- becoming invisible,

- limitations on behaviour due to social norms about what is age appropriate,

- failure to achieve what is socially expected at a certain age,

- increasing responsibilities,

- running out of time to do things ("too late" to do
  things),

- limits on when to have children,

- loss/narrowing of opportunities,

- increasing difficulties in finding a partner/mate,

- becoming lonely (less social contact),

- being institutionalized,

- losing control over own life,

- becoming physically dependent on others,

- becoming financially dependent on others,

- own death,

- death of spouse/partner,

- deaths of close relatives,

- financial security,

- lack of control over finances (due to fluctuations of the
  economy, changes in government policies, etc.),

- lacking control over age related changes (e.g., changes in
  appearance, health, body's functioning, etc.),

- becoming more vulnerable to crime (being robbed or
  assaulted),

- falling into an increasingly monotonous/boring routine.

Problems and limitations

Several factors have to be considered as possible
threats to the validity of the interview findings.

First, while all 10 individuals between 20 and 49 years of age who were approached agreed to be interviewed, 5 out of the 11 individuals over the age of 60 refused. Thus, it is possible that older individuals who agreed to participate were systematically different from those who declined.

Although interviews were terminated only when the participant felt that there was "nothing else" to add, more time to think about the issues in question might have resulted in a richer list of fears. In fact, 3 participants contacted me after the interviews to discuss some after-thoughts. One of these participants wrote a lengthy letter which I included in the analysis as if it had been an interview transcript. Conversely, some participants might not have mentioned certain issues because they perceived them as being too personal or embarrassing to reveal.

The validity of the list of fears might be further compromised by the fact that only 16 interviews were conducted, which might not have generated an exhaustive list of concerns. However, based on the considerable overlap of "fears" across interviews, I believe that the most common fears are contained within this list.

The interview findings might have been affected by the way individuals reacted to me as an interviewer, i.e., age, gender, perceived level of trustworthiness, etc. While the interaction and conversation during most interviews seemed very open and sincere, there was one instance when I had the

feeling that a male participant was trying to impress me, and that his answers were directly influenced by the fact that I was a woman.

Another problem stems from the fact that I was the only person analyzing the data. Thus, the summary statements I derived from the transcripts are bound to be somewhat idiosyncratic. However, given that interviewees responded by describing fairly concrete or well-defined concerns, relatively little inference and/or abstraction was necessary to generate the list of fears.

While the above-stated limitations are to be regarded seriously, it is also important to keep in mind that the validity of the identified fears will be ultimately tested by the degree to which they are endorsed in the large scale survey.

Stage II: Development of the Pilot Questionnaire

Rationale

The main reason for using a questionnaire in this study was that a large number of people needed to be assessed in order to answer the research questions about fear incidence and possible group differences. A questionnaire was used for this purpose given the relative ease with which numerous people can be reached.

<u>Development and description</u>

The questionnaire was developed in three main sections.

<u>Part I</u>. The first section was designed to obtain relevant socio-demographic information. The variables chosen included the design factors, age and sex, and the control variables, subjective health, marital status, and socio-economic status (SES). The measures used to indicate SES were years of formal education and annual household income.

<u>Part II</u>. The second section of the questionnaire embodied the core of this research, and was aimed to assess the frequency and intensity of people's concerns in regard to their own aging. Most questions in this section were based on the list of fears developed previously; that is, for each fear a question was developed asking participants if they had experienced that particular fear during the past year. In some cases, it became apparent that to reduce ambiguity and to avoid double-barrelled questions, some fears had to be divided into further components, and hence formulated into more than one question.

A few questions were included because I thought they might be important. For example, younger participants had mentioned concerns about increasing responsibilities. Subsequently, it was suggested to me that the opposite might be true of older generations. Thus, a question to that effect was developed. Similarly, while fear of loss of

prestige and social power had only been mentioned in relation to changes in appearance, I was interested to see if people would respond differently if this loss was phrased in relation to aging in general. So these questions were included as well.

Intensity and frequency of worries were assessed by means of two separate 5-point Likert-scales that followed each question. The points on the scales ranged from 0 to 4 and were accompanied by the following qualitative values 'not at all', 'mildly', 'moderately', 'strongly', 'severely' [intensity], and 'never', 'rarely', 'sometimes', 'often', 'very often' [frequency].

Measures of frequency and intensity were included in this study for several reasons. First, Croake (1984) and Croake and Hinkle (1976) point out that interpreting and comparing findings on fears is rendered difficult by the common but confounding practice of only assessing the existence of certain fears, and not obtaining an indication of their intensity. The instrument used here enables participants to indicate both - whether they have or lack a certain fear, and if appropriate, the strength of their feelings. Although Croake and Hinkle (1976) do not seem to differentiate between frequency and intensity, a separate scale for frequency was included in this study based on my personal experience that these two continua do not necessarily overlap, and based on related arguments by

Lazarus and DeLongis (1983) who - in relation to the assessment of psychological stress in aging - underline the importance of assessing the impact of large events on stress, as well as the effect of those events that may be of low intensity but of high frequency, (i.e., "daily hassles").

To minimize the effect of response set, the direction of the scales was reversed for half the questions.

At the end of this section of the questionnaire, participants were invited to describe any other concerns that they might have experienced in regard to their own aging. I included this question in the hope of assembling a more comprehensive list of fears. While a statistical analysis of these items was not possible within the framework of this study, their identification (see Chap. IV) might be useful for future purposes.

Part III. The third part of this questionnaire was developed for two reasons: a) to obtain an indication of the extent to which different groups were currently experiencing the objects of the fears addressed by this study; and b) to explore the relationship between the presence of fear and the current experience of the feared event (i.e., the fear object).

Items for this section were structured in a forced choice format, and were developed based on the objects of the fears identified in the preceding section. More

specifically, each question in *Part III* asked participants to indicate whether they had experienced a certain event during the past year, the event being the object of the corresponding fear in *Part II*.

The following example is presented to illustrate. Question #18 in *Part II* reads as follows: 'During the past year, have you felt apprehensive about aging because you perceive a decrease in opportunities available to you?'. The corresponding item in *Part III* is based on the feared event expressed by this question, and is phrased accordingly: 'During the past year, have you been denied an opportunity because you were too old?'.

Stage III: The pilot test

Rationale

The questionnaire was pilot tested to uncover possible problems with any of its items or sections. Also, it was hoped the results of the pilot test would indicate that the questionnaire could be shortened, based on the possible low endorsement of certain fears and/or based on high inter-correlation coefficients indicating overlapping items.

Sample

A total of 15 women and 17 men ranging from 20 to 77 years of age completed and returned questionnaires. Participants were chosen on the basis that they happened to work on a preselected commercial street in the White Rock

area, or because they lived on a preselected street in a mobile home park. In addition, two questionnaires were given to colleagues of mine.

Analysis of Pilot study and conclusions

First, to identify potential problems with particular questions, the questionnaire was checked for irregular response patterns (i.e., low sample response to items) and for hand written comments. All questions seemed to be answered consistently and no critical feed-back was found. However, several participants had answered by only marking one of two Likert-type scales per question.

Second, the overall mean for each fear was calculated. Items with low means (i.e., less than 0.5 on both the frequency and intensity scales) were further examined by comparing means across comparison groups. To shorten the questionnaire, it had been determined that items with low means, and with no apparent difference between groups would be discarded. While 7 fears had low means, the means across age groups appeared to follow a pattern and/or were not sufficiently small to justify their elimination.

Third, inter-correlations between responses were computed. While several items were strongly correlated, no correlation was high enough to suggest the existence of identical content (i.e., $r > .80$). Hence, all questions were kept in the questionnaire.

Fourth, to see if a common fear had not been included

in the questionnaire, participants' descriptions of additional concerns were examined (last section of Part II). Most responses clearly mirrored already addressed fears. However, one slightly different concern expressed by several of the participants was the fear of changes in government policies that might destroy their financial security as they age. As I compared these sentiments to the responses given to a related survey question, a discrepancy became apparent. Most people that expressed concerns over changes in government policies, also indicated little fear of "losing control over their finances as they aged", item 13 of the questionnaire. This discrepancy indicated that people were not interpreting question 13 as I had intended, namely as encompassing all events that are out of people's control and that could potentially affect their financial state, such as changes in government policies, fluctuations in the economy, etc. In reaction to this discrepancy and to reduce future misunderstandings, question 13 was rephrased and explicitly linked to concerns over changes in government policies (see Appendix B, question 13).

Stage IV: The final survey

Description of the questionnaire

The questionnaire for the large-scale survey (Appendix B) was virtually the same as the instrument for the pilot test with the exception of a few changes: the

correction of a few editing errors, the modifications to items 13 (in Part II and Part III), and the addition of a new element, namely a question about the way participants would evaluate their own aging overall. This question was added to the final instrument to serve as a framework within which fears of aging could be placed in reference to the overall experience of aging. Creating such a point of reference seemed especially important for this study given the exclusive focus on fears, which by omitting positive aspects of aging might create the false impression that aging is a purely negative experience.

To counteract potential order effects, this question was presented before *Part II* for half of the sample, and after *Part III* for the other half.

Sampling

Potential participants were recruited from nine different areas of the general Lower Mainland metropolitan area (i.e., Burnaby, Coquitlam, Port Coquitlam, Vancouver, North Vancouver, East Vancouver, Surrey, Langley, and White Rock). Sampling was performed using a variation of the "snow ball technique", a procedure based on chain referral (Singleton, Straits, & Straits, 1993). First, potential subjects were contacted by targeting places frequented by individuals or groups of certain age groups (e.g, senior centres, mobile home parks), and/or by targeting institutions that employed individuals of a wide range of

ages, and educational as well as economic backgrounds.
Second, to increase the variability of demographic related
characteristics, and to reduce the impact of investigator
bias, initially contacted participants, as well as various
acquaintances were asked to suggest and/or possibly
distribute questionnaires to other potential subjects who
were not directly affiliated with the initial contact group.

Response rate

The exact response rate for this survey cannot be
calculated given the large number of questionnaires that
were distributed by different people through chain
referrals. While 79% of the distributed questionnaires were
returned, I do not know how many people were asked to
participate but refused to take a questionnaire. However,
the response rate for the questionnaires I personally
distributed (including the pilot test) was 191/310, that is
62%. This figure includes both the people who refused to
take a questionnaire in the first place, and the people who
returned an empty questionnaire or did not return a
questionnaire. As with the interviews, the response rate
for individuals under 60 years of age was much higher than
that of people over 60 (76% vs. 54%, respectively).

While these figures give a rough estimate of what the
overall response rate might have been, it is possible that I
obtained a slightly higher rate than some of my "assistants"
because of my personal involvement in this project.

Stage V: Data Analysis

This study differs from previous research in that it does not treat fear of aging as a uni-dimensional concept, theoretically or statistically. Rather, each fear is examined as a separate unit, and consequently most statistical procedures were conducted 39 times. While this approach may seem tedious and statistically "awkward", separate analyses are necessary to remain congruent with the notion of multi-dimensionality argued throughout this thesis.

To decrease the probability of committing type I error (i.e., rejecting the null hypothesis when true), the significance level for each analysis was set at $\alpha=.001$ in accordance with Bonferroni's correction method (i.e., overall level of significance chosen [0.05] divided by the total number of items analyzed [39] = 0.001).

The statistical procedures delineated next are ordered in accordance with the research question for which they were used. First, however, two preliminary steps will be described: the delineation of the final dependent and independent variables.

Defining the final dependent variable. Fears were measured in terms of their frequency and intensity. To learn if such a theoretical division would also make sense on a practical level, responses to both scales were compared. This examination revealed high correlations

between both scales for each fear (correlation coefficients
ranged from r= .795 to r= .977, with an overall average of
r= .891; see Appendix C for individual correlation
coefficients), and it was decided to combine both scales
into one measure of fear "strength". Scales were merged by
averaging each participant's responses on both scales for
each fear.

Defining the independent variables. Before proceeding
with statistical analysis, the socio-demographic data were
re-coded to form the various categories for each independent
variable.

Age. Individuals were divided into three age groups:
20-39, 40-59, and 60+ years of age. Groups were defined in
an attempt to obtain group levels of approximately similar
time spans, and to roughly correspond to the popular notions
of "youth", "middle age", and "old age".

Sex. Categories follow the conventional division.

Subjective health. Subjective health ratings were
divided into two levels: those individuals that rated
themselves as having 'no' or 'very mild' health problems,
and those indicating that they had 'moderate' or 'very
serious' health problems.

Marital Status. Answers to marital status were re-
coded into two categories: people who lived with a spouse
or partner, and people who lived without a spouse or
partner.

Socio-economic status. SES was assessed by years of formal education and annual family income. For some analyses these two variables were used separately, while in others, they were combined to form one measure of socio-economic status. Data on years of completed formal education were grouped into three levels: 6-12, 13-16, and 17+. Data for income were also clustered into three groups: $0 - $26000, $26001 - $66000, and $ 66001 +. A combined measure for SES was obtained by averaging the re-coded values for both the previous measures. The values resulting from these calculations were grouped into "low", "middle", and "high" socio-economic status as follows: averaged values ranging from 1.5 to 2.5 were considered to fall into "middle" SES, while values equal to 1 and 3 were assigned to "low" and "high" SES, respectively.

Questions about fear incidence and strength. To identify the strongest and most common fears, means and frequency counts were computed.

Questions about sex and age differences. Originally, the plan was to test for potential sex and age differences by conducting a five-way analysis of variance, using sex and age as the main factors, and subjective health, marital status, and SES as control variables (i.e., 2[sex] x 3[age] x 2[subj.health] x 2[marital status] x 3[SES] ANOVA).

However, initial examination of the data revealed that this plan could not be carried out: even though the number

of categories within the control variables had been kept to a minimum, several cells of the 72 cell design contained very few observations or remained empty. Thus, it became clear that to achieve a higher number of observations per cell, the total number of cells had to be reduced.

For this purpose the contribution of each control variable to the overall variance of each fear was examined. This was done by dividing the sums of squares for each control variable (subjective health, marital status, income, and education) by the total sum of squares of the respective fear. Surprisingly, marital status, education, and income explained minimal proportions of the variance of most fears (less than 2%), except for four fears, as discussed in Chapter IV. Subjective health, on the other hand, seemed to play a more relevant role, often explaining more than 3% of the overall variance. Hence, the decision was made to discard SES and marital status from the analyses, and to control for subjective health only. This could be achieved in two ways: by performing 'sex x age x subjective health ANOVAs', or by running 'sex x age ANOVAs' using the subjects of one health category only, i.e., the "healthy" subjects given that they represented the majority of the sample.

Both approaches turned out to be problematic: A) comparing data for a 'sex x age x subjective health' design, it became apparent that the observation counts for certain

cells were still so low that cell variances overall could not be assumed to be homogeneous, a condition necessary for a valid interpretation of the F statistic; B) running 'sex x age ANOVAs' for "healthy" individuals, while plausible, presented practical and conceptual drawbacks. On a practical level, the number of applicable questionnaires would be reduced by 20% which in turn would decrease the power of the analyses. On a conceptual level, it is questionable if age group comparisons for only healthy people make sense. While health problems are by no means defining characteristics of old age, it is important to acknowledge that older people as a whole tend to have more health problems than younger people. In other words, controlling the influence of health by using the answers of healthy people only threatens the validity of the comparisons being performed: older individuals being compared are not representative of the whole reality that "their group" encounters.

Given this dilemma, a final compromise was reached: First, the complete sample was analyzed for potential sex and age differences using a **two-way analysis of variance (2[sex] x 3[age] ANOVA) for each of the 39 different fears, at a significance level of .001.** Second, in order to gain an informal understanding of the way subjective health might affect potential group differences, these findings were compared to the results obtained when only "healthy"

individuals were entered into the analysis.

Assumptions underlying analysis of variance. Keppel
and Saufley (1980) state that deviations from the
assumptions of normal distribution and homogeneity of
variance "have little effect on the evaluation process" if a
completely randomized experimental design is used (p. 96).
Since this study was not experimental in nature and the
sample was not drawn at random, both these assumptions were
tested. The assumption of homogeneity of variance was
tested for each fear using Cochran's C test ($\alpha=.001$); the
assumption of normal distribution was checked by visually
inspecting the plots of observed residuals against those
expected from a normal distribution (i.e., normal Q-Q plots
of residuals) for each fear. While the inspection of the
normal plots suggested that answers to all fears were
normally distributed, the results of Cochran's C tests
($\alpha=.001$) indicated that 6 of the 39 fears had heterogeneous
cell variances (see Appendix D: results of Cochran's C test
precede the ANOVA summary tables for each fear). Gender
and age differences for these fears were examined by
calculating the proportion of the overall fear variance
explained by these factors.

Incidence of current experiences. The extent to
which participants were or were not currently experiencing
the various fear objects addressed by this study was
determined by calculating percentage values.

<u>Incidence of current fears vs. anticipated fears</u>.
To establish how many participants were worrying in
anticipation of a certain event, and how many were worrying
and currently experiencing the feared event, answers to *Part
II* and *Part III* were juxtaposed by means of cross-
tabulations. To make these cross-tabulations conceptually
plausible, all answers of *Part II* were re-coded into bipolar
categorial data. In other words, the "continuous" scale
values were collapsed into 'yes' (I have worried during the
past year) or 'no' (I have not worried during the past year)
answers. Responses were re-coded in the following manner:
values equal or larger than 1, were converted to 'yes'
answers, and values equal to 0.5 or smaller were transformed
to 'no' answers.

Next, anticipated fears were identified by cross-
tabulation combinations that indicated that the individual
expressed a certain fear, but was not currently experiencing
the object of that concern (i.e., *Part II*: yes, *Part III*:
no). Conversely, individuals with current fears were
identified by those combinations that indicated individuals
had certain fears and were presently experiencing the feared
object (i.e., *Part II*: yes, *Part III: yes*).

<u>Relationship between current experiences and fear</u>. The
relationship between current experiences and anticipated and
current fears was explored post-hoc by examining the extent
to which their incidence was correlated for the whole sample

and across comparison groups.

Overall evaluation of the experience of aging.
People's responses to the question about their overall
evaluation of their own aging were examined using
frequencies and percentages.

To see if there were sex or age differences in the way
people tended to evaluate their own aging, Chi Square
analyses were performed ($\alpha=.025$).

Problems and limitations

Sources of potential limitations in this study include
questions about the validity and reliability of the measures
used, confounding influences of individual characteristics,
and cohort effects. Some limitations of measurement and
design will be considered next; others will be addressed in
relation to the findings of this study and their discussion
(Chap. IV and Chap. V).

One of the strongest threats to the validity of the
questionnaire is that only one question per fear was
developed. Consequently, any problem with the phrasing of a
question, and hence its interpretability, is magnified by
the fact that all analyses and conclusions rest on the
weight of a sole response.

Another aspect that might influence the validity of
this measure is the participants' willingness to disclose
truthfully. Social desirability has been found to have an
effect on evaluations of the aged (Kafer, 1981), and may

also influence participants' responses in regard to their concern about their personal aging. However, given that individuals are asked to report on their own experiences, demand effects may not be as pronounced as when subjects are asked to evaluate others. On the other hand, individuals may feel embarrassed about having concerns in regard to certain aspects of their aging, such as for example, physical appearance.

Problems with reliability may result from the fact that fears of aging might not be stable over time. George and Landerman (1980) point out that there is very little research on the stability of attitudes toward the aged. The same is true for fears about aging. Keller, Leventhal, and Larson (1989) found that 69% of the subjects were not "chronically" aware of their aging but rather became aware of their aging "episodically", usually triggered by events such as health problems, emotional changes (e.g., depression), and environmental changes (e.g., moving to a retirement home). Similarly, it is likely that awareness of potential areas of concern, or perception of their intensity, may be influenced by the presence or absence of such triggers, and so compromise the validity and reliability of the findings.

Although answers would have been more accurate if participants had been asked to report their immediate fears (e.g, those experienced the day before participating),

respondents were asked to recall their worries over the past year. While recall in research is problematic due to memory distortions (Singleton, Straits, & Straits, 1993), this approach was used because fears are probably not experienced constantly, and because it is likely that different fears are experienced at different times, even though they might all be of ongoing concern to the individual. In other words, the importance of considering a wider time span seemed to outweigh the problems associated with recall error, especially since participants were presented with a list of possible fears - which, according to Singleton, Straits, and Straits (1993), enhances memory accuracy - and thus were not required to respond based on free recall.

One of the hypotheses of this study was that fears of aging vary with age. Strictly speaking, however, the fears endorsed by different age groups in this study can only be interpreted as pertaining to those particular cohorts, and cannot be used as direct evidence to show how fears vary over the life span. A truly valid picture of the changing fear process can only be obtained with longitudinal approaches. Lazarus and DeLongis (1983) state that failing to use "intra-individual" or "intra-group" longitudinal strategies will obscure what happens to individuals as they age (p.250).

CHAPTER IV: RESULTS

In this chapter the findings of this study are delineated. First, the sample is described in terms of its demographic characteristics, and compared to census information. Second, the results of the statistical procedures described in the previous chapter are presented.

Sample

A total of 547 completed questionnaires were received A questionnaire was considered complete if more than 50% of the questions were answered. Of these, 38 questionnaires were discarded because participants did not provide their income or educational level. Hence, the final number of "usable" questionnaires was 509.

Age and sex. Participants ranged in age from 20 to 87 years. Figure 4-1 shows the age distribution prior to categorization.

When classified into three age groups, the sample was as follows:

- **age group 1** (20-39 years): **40%** (n=204)
- **age group 2** (40-59 years): **30%** (n=152)
- **age group 3** (60+ years) : **30%** (n=153)

Of the 509 participants, 61% were women, and 39% were men. Figure 4-2 shows the composition of the sample by sex and age group. For age group 1, the ratio between women and

men was similar to the overall sample (i.e., 63% vs. 37%). However, the proportional difference between women and men was greater for age group 3 (i.e., 66% vs. 34%), and less for age group 2 (i.e., 53% vs. 47%).

Marital status. Of the whole sample, 64% were living with a spouse or partner (i.e., married or common law). Conversely, 36% of the participants were currently not living with a partner or spouse, and were of varying marital statuses. The ratio of persons living with a partner to those living without one was similar for all three age groups, with a slightly higher proportion of individuals living with a partner in age group 2 (i.e., age group 1: 62% vs. 38%; age group 2: 70% vs. 30%; age group 3: 60% vs. 40%). A higher percentage of men than women lived with a partner or spouse (i.e., 71% vs. 59%).

Education. Of the total sample, 37% of the participants had completed up to 12 years of formal education (i.e., high-school diploma or less), 42% had completed between 13 to 16 years of formal education (i.e., some undergraduate university, college or special training), and 21% had more than 17 years of formal education (i.e., graduate university).

Years of education were similarly distributed between men and women, with a higher percentage of women having up to 12 years of education (i.e., 40% vs. 32%), and a slightly higher proportion of men having a graduate education (i.e.,

Fig. 4-1. Overall age range and frequencies

Std. Dev = 18.01

Mean = 48.2

N = 509.00

AGE
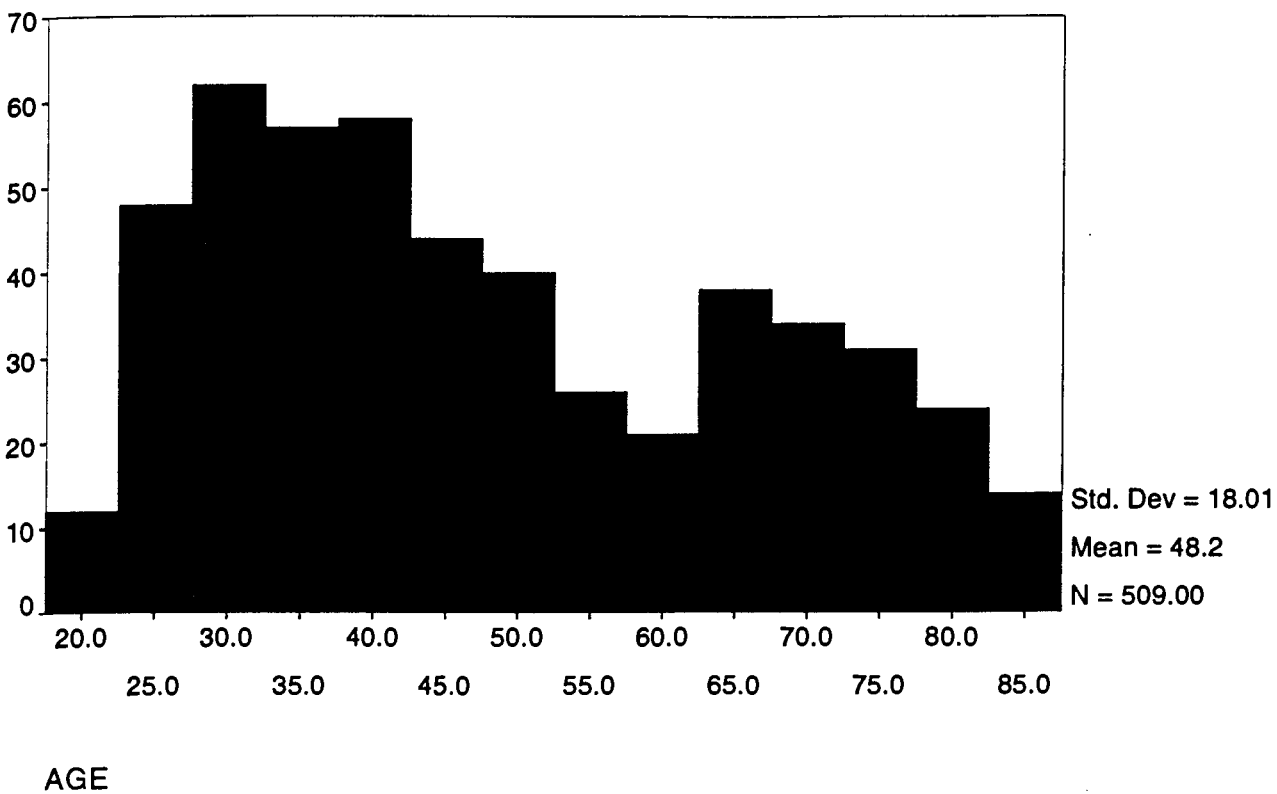
Fig. 4- 2. Composition of the sample by sex and age.
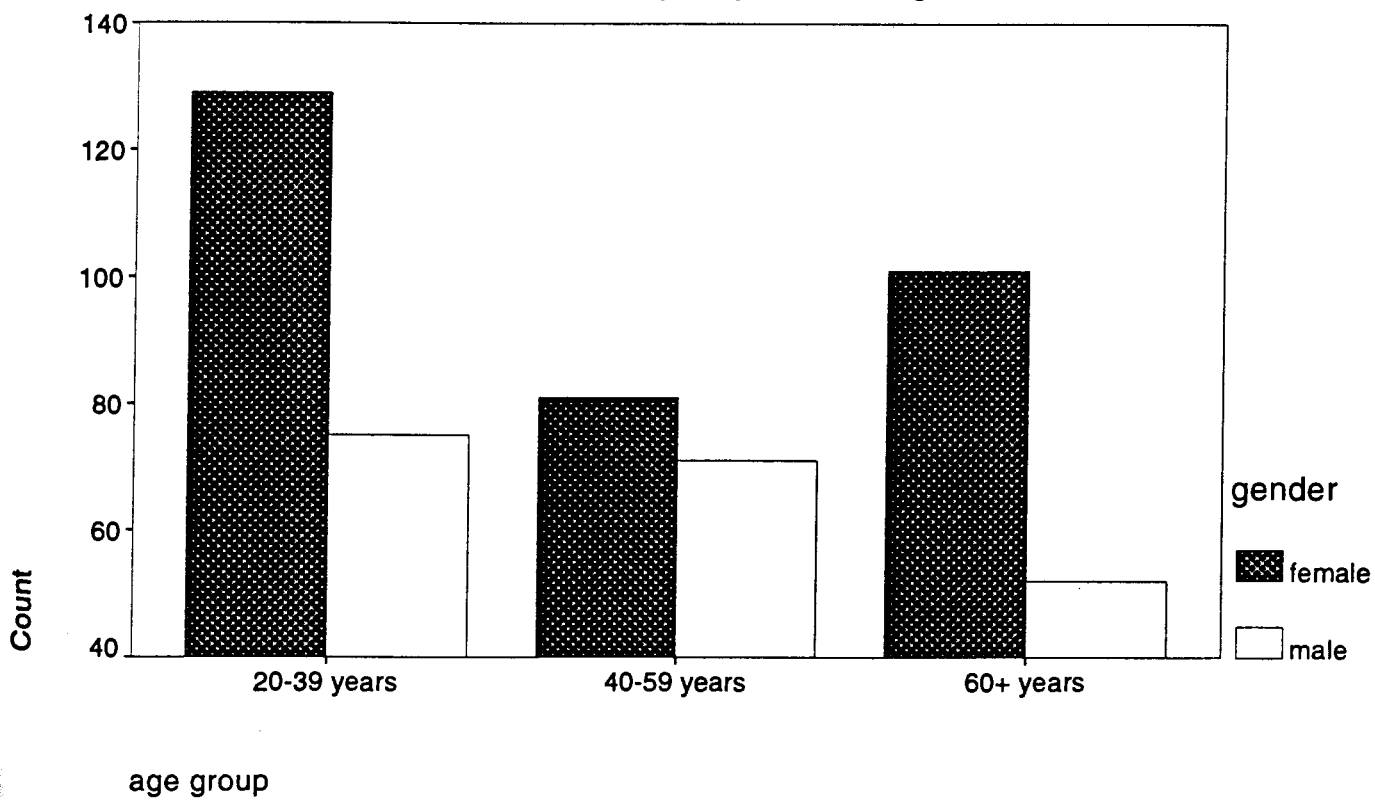
age group

26% vs. 17%).

However, levels of education differed dramatically across age groups. Overall, age group 3 had a lower level of formal education than the younger groups. Figure 4-3 shows the composition of the sample by age group and level of formal education.

Income. Overall, 28% of the sample earned less than $26,000 a year, 46% earned between $26,001 and $66,000, and 26% earned more than $66,001.

As with education, age groups differed a great deal in regard to yearly income: 58% of older people received less than $26,001 a year (income level 1), 38% had an income between $26,001 and $66,000 (income level 2), and only 4% had a yearly income of more than $66,001 (income level 3). In contrast, the income distribution for "middle-aged" people showed an almost reverse pattern: 7% of these individuals were in income level 1, 40% in income level 2, and 53% in income level 3. For young people, the income distribution was more symmetrical with most people falling within income level 2 (i.e., income level 1: 21%; income level 2: 57%; income level 3: 23%). Figure 4-4 shows the composition of the sample by age and income.

The distribution of yearly income by sex was similar to the one found for education: While more women were in income level 1 (i.e, 31% vs. 23%), more men were in the highest income bracket (i.e., 32% vs. 22%). In income

Fig. 4- 4. Composition of the sample by age and income.

general income group

$0 - $26000

$26001 - $66000

$66001 - $96001+

Count

age group
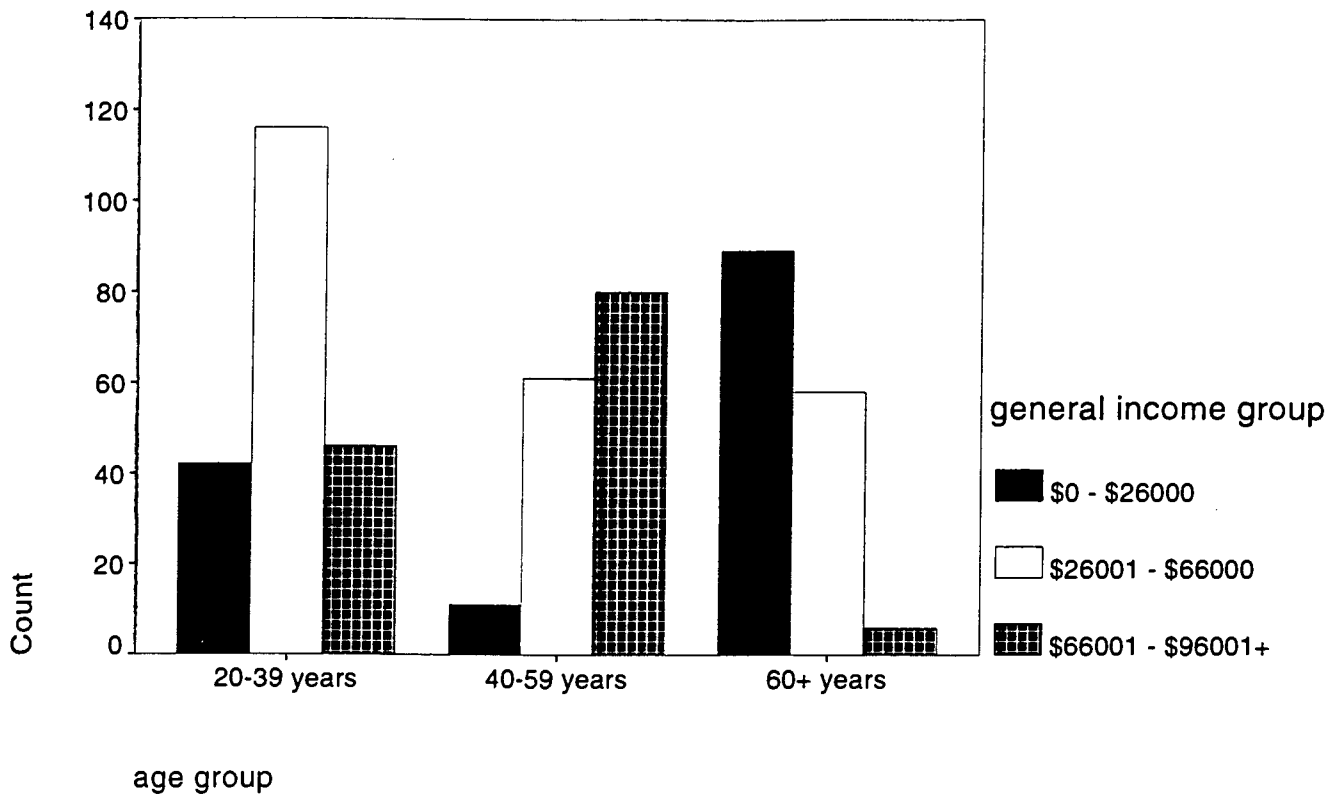
Fig. 4- 3. Composition of the sample by age and education

education

6-12 years of formal education

13-16 years of formal education

17 or more years of formal education

Count

age group
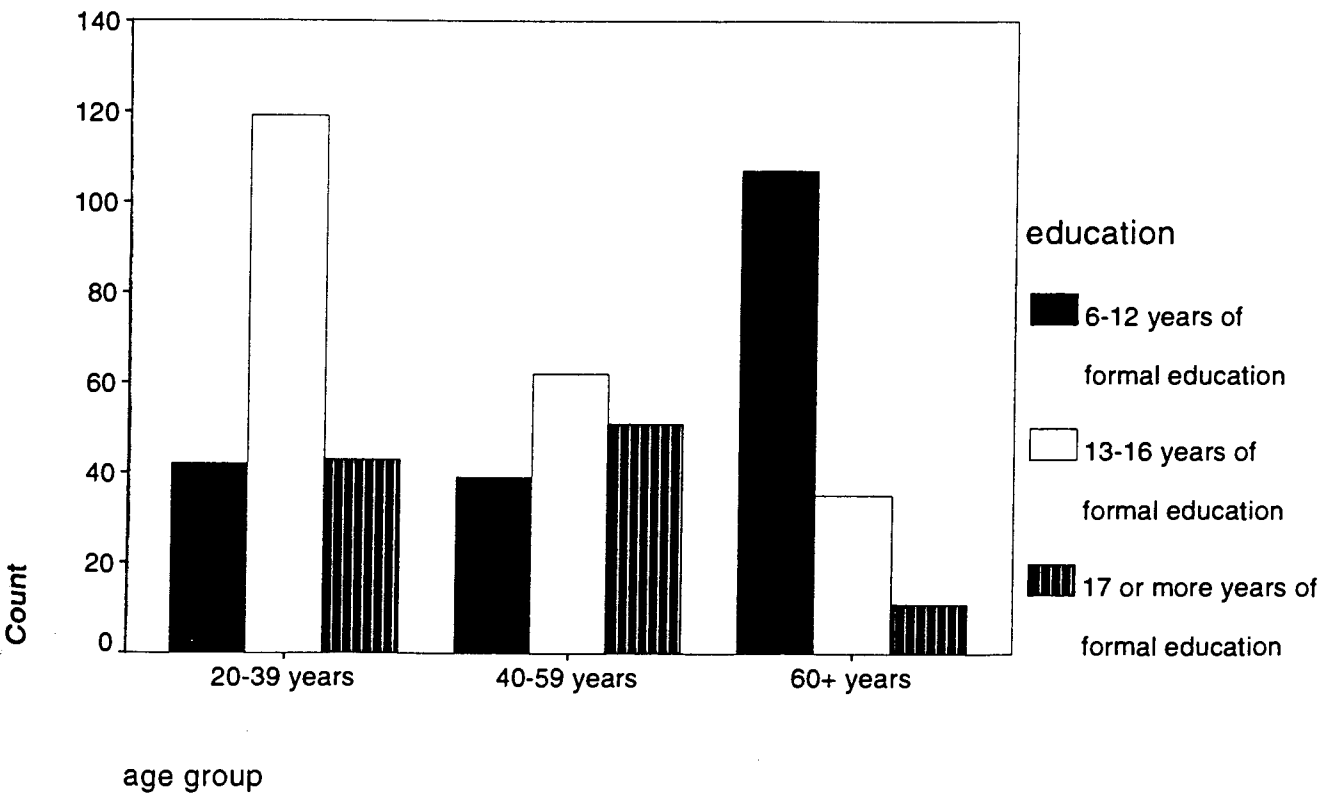
level 2, women and men were represented nearly to the same
extent (47% vs. 46%, respectively).

Subjective health status. Overall, 80% of the sample
indicated that they had no or very mild health problems.
The remaining 20% reported having moderate or very serious
health problems.

This overall ratio was also found for female and male
participants, but varied considerably across age groups:
respectively, 17% and 20% of respondents in age groups 1 and
2 indicated having moderate to serious health problems. In
contrast, 64% of people in age groups 3 said they had
moderate to serious health problems.

Sample representiveness. The sample was distributed
similarly to the population in British Columbia (Census
1991, Statistics Canada) in regard to age group[1], income[2],
and marital status[3]. The largest deviation from the
population for these variables occurred for the percentage
of people in age group 3, which was 6% higher than would
have been expected.

Notably larger differences were found in regard to
sex[4] and education[5]. Overall, women were over-represented
by 10%, and men under-represented by the same percentage.
Similarly, the educational attainment of this sample was
considerably higher than that of B.C.'s population. People
with 12 or less years of formal education were under-
represented by 14% while people with 17+ years of education

were over-represented by approximately 12% (exact comparison with census information was not possible due to differential categorization). However, the overall lower level of educational attainment found in this sample for group 3 was mirrored by census data.

In general, this sample appears to be fairly representative of the population in British Columbia[6]. Over-representation of women and persons with higher levels of education is a common occurrence in survey research, even when samples are drawn randomly (E. Gee, personal communication, April 21. 1995). Such findings suggest that the distribution of sex and educational attainment found here reflect a common response bias, and are not exclusively due to sampling biases. Further, findings here suggest that the use of snow ball sampling may be a viable alternative to various forms of probability sampling when financial resources and time are limited. A systematic study of the effectiveness of this procedure, may prove fruitful for future research.

Research findings

The findings of this study are presented in three sections. First, findings pertaining to the primary research questions are reviewed. That is, fears are listed in terms of their incidence and strength, and findings pertaining to fear differences in age and gender, and their

interaction are presented. In addition, the impact of subjective health, educational attainment, income level, and marital status on the detection of age and gender differences is discussed. Second, results pertaining to the secondary research questions, i.e., the incidence of current experiences and their relationship to the experience of fear, are delineated. Third, findings regarding people's overall evaluation of their experience of aging are described, and additional fears mentioned by some of the respondents are listed.

Definitions. To clarify and simplify the presentation of the results, the following definitions are set forth:

Fear strength, as discussed in Chapter III, refers to the combined intensity/frequency score for a given fear (both dimensions were averaged due to their high correlation). Thus, fear strength scores indicate the level of fear experienced by a person, and can range from '0' [having no fear at all] to '4' [experiencing the highest level of fear possible].

Absolute fear strength is based on fear strength scores but only refers to the level of fear experienced by individuals who actually have a certain fear (i.e., whose fear strength score was equal to or larger than 1). Thus, the average absolute fear strength for a given fear only includes responses by individuals with that fear.

Fear incidence refers to the percentage of participants

who indicated having a certain fear (i.e., fear strength score was equal to or larger than 1).

In this study, fear incidence was examined to establish the "popularity" of fears of aging. The average absolute strength was calculated to obtain an indication of how strong fears of aging tend to be for those who experience them. Average fear strength was used to determine group differences given that these values were based on the entire sample ("worriers" and "non-worriers").

Part I: Findings pertaining to the primary research questions

Fear incidence, strength, and absolute strength

Together, Tables 4-1 and 4-2 list all 39 fears, their incidence, their absolute average strength, and their average strength. The data in Table 4-1 relate to fears that were applicable to the whole sample. Conversely, fears presented in Table 4-2 applied only to a portion of the overall sample (i.e., due to "n/a" responses). For the latter table, two incidence rates are reported: the incidence among those to whom the question applied, and the incidence among the sample as a whole*.

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* Fears in this chapter are presented together with the corresponding item number on the questionnaire in order to facilitate the cross-reference of these fears with pertinent information or analyses in the appendices.

Table 4-1. Fear incidence, average absolute fear strength, and average fear strength for fears applicable to the whole sample.

item #	fear type	overall incidence of fear	average absolute fear strength	average fear strength
2	financial security	86%	1.99	1.72
13	changes in government policies that may affect finances	85%	2.10	1.79
34	health becoming worse	79%	1.74	1.38
10	decline in body's ability to perform or function	77%	1.77	1.38
17	changes in physical appearance	77%	1.77	1.38
20	less control over the way the body performs or functions	74%	1.69	1.26
27	losing control over health	73%	1.79	1.32
6	inability to maintain level of performance due to a decrease in stamina	69%	1.69	1.19
1	memory becoming worse	68%	1.61	1.11
28	lacking control over changes in appearance	66%	1.69	1.14
5	running out of time to do things	64%	1.67	1.08
33	becoming less sexually attractive	62%	1.68	1.06
7	getting stuck in a monotonous routine	60%	1.75	1.06
29	increase in responsibilities	59%	1.77	1.05

item #	fear type	overall incidence of fear	average absolute fear strength	average fear strength
9	vulnerability to crime	58%	1.76	1.03
3	becoming more lonely	58%	1.71	1.01
15	own death	54%	1.51	.83
25	becoming physically dependent on others	53%	1.53	.83
18	decrease in available opportunities	52%	1.60	.84
35	not meeting social expectations about age appropriate level of achievements	44%	1.77	.80
21	being viewed negatively by younger people	44%	1.46	.67
14	limitations of behaviour due to social expectations	41%	1.50	.64
32	becoming less useful to others	40%	1.64	.67
22	becoming financially dependent on others	40%	1.57	.65
19	losing control over important decisions in life	40%	1.42	.58
16	being discriminated against	39%	1.59	.59
8	being institutionalized	36%	1.56	.59
26	becoming "invisible" / less noticeable	33%	1.49	.51
23	not being taken as seriously	32%	1.52	.50
37	losing social power due to age related changes in appearance	28%	1.42	.40

item #	fear type	overall incidence of fear	average absolute fear strength	average fear strength
38	losing prestige due to age related changes in appearance	27%	1.41	.39
30	losing prestige due to aging	26%	1.42	.38
36	decrease in responsibilities	26%	1.34	.35
31	losing social power due to aging	25%	1.39	.35

Note. Fears are presented in descending order according to their incidence rates.

Table 4-2. Fear incidence among the whole sample, fear incidence among the applicable sample, average absolute fear strength, and average fear strength for fears applicable only to a portion of the whole sample.

item #	fear type (valid n)	whole sample: incidence of fear	applic. sample: incid. of fear	avrg. abs. fear strgth.	avrg. fear strgth.
24	death of close relatives (n=475)	80%	86%	2.03	1.76
12	death of spouse or partner (n=327)	47%	73%	1.72	1.26
11	limitations on decisions about having children (n=180)	26%	73%	2.11	1.56
4	difficulties finding partner (n=140)	16%	59%	2.04	1.20
39	having to retire due to age (n=97)	4%	23%	1.85	.45

Note. Fears are presented in descending order according to their incidence rates.

As can be seen from the preceding tables, the majority of fears were experienced by more than 50% of the sample, suggesting that people tend to share similar perceptions of what is threatening in regard to aging, and that overall, fears of aging are common. In contrast, fears of aging appear to be generally weak. The highest average absolute fear found in these tables was in regard to the limitations that aging imposes on decisions about having children (valid n=180), for which the mean was x=2.11 - that is, just above

the "moderate/sometimes" values of the intensity/frequency scales of fear strength.

Further, it was found that fear incidence, average absolute fear strength, and average fear strength were strongly correlated (i.e., incidence - absolute fear strength: $r=.86$; incidence - fear strength: $r=.99$; absolute fear strength - fear strength: $r= .85$), indicating that values on all three dimensions increase and decrease in conjunction. Such a correlation is not surprising for average incidence and average fear strength, since numerous '0' values, i.e., low incidence, would lower the overall average of fear strength. Less predictable, however, was the fact that fear incidence and absolute fear strength were also highly correlated, given that averages for absolute strength values are not mathematically affected by incidence rates. These findings indicate that events that are most commonly feared, are also most strongly feared, supporting the notion that people are similar in their perception of threat, and that as the threat value of a certain event or situation increases, more people are likely to worry.

The finding that generally people have similar fears in regard to aging and its consequences is further supported by the fact that the rank-ordering of fears for the whole sample (ordered by average fear strength) is strongly correlated with the rank-ordering of fears by sex (women: $r=.82$; men: $r=.96$) and age group (grp. 1: $r=.92$; grp. 2:

r=.97; grp. 3: r= .75), indicating that overall these groups did not prioritize their fears very differently. However, these correlations are not perfect, and a few group variations exist. These are presented next.

Sex, age, and interaction effects

Given the large number of analyses performed in this study, only those fears for which statistically significant differences were found will be presented in this chapter. However, ANOVA summary tables for all fears are presented in Appendix D, and detailed group averages and standard deviations for all fears are presented in Appendix E.

Findings for fears for which the F-statistic could not be interpreted due to the violation of underlying assumptions are also included in this chapter: in these cases the proportion of the variance explained by age, sex, and their interaction will be reported.

Sex differences. Contrary to the expectation that women and men would differ in regard to numerous fears, statistically significant differences were found for three fears only:

- **possible deaths of close relatives** (#24):
  F=13.91, df=5/487, p.<.001;
  females: x=1.90, s=1.03; males: x=1.54, s=.98

- **changes in physical appearance** (#17):
  F=12.03, df=5/503, p<.001;
  females: x=1.49, s= .97; males: x=1.22, s=.89

- **lacking control over changes in appearance** (#28):
  F=17.54, df=5/503, p<.001);
  females: x=1.28, s=1.03; males: x=.92, s=.86

As can be seen, women expressed higher levels of fear than men in all three cases.

Age differences. Age groups differed significantly for seventeen fears. These, and their respective F-values and degrees of freedom are presented in Table 4-3. In addition, Table 4-3 shows the means and standard deviations for each age group, and indicates which of these group means were found to be statistically different (as computed by Tukey's HSD post-hoc multiple range test, α=.05; see Appendix F). Age groups in this table are arranged according to their mean: groups with the weakest average fear are on the far left, while age groups with the strongest average fear are presented on the far right. Age groups that are underlined are statistically different from the other groups. For example, if all three groups are underlined, it means that all three groups are statistically different from each other. If only one group is underlined, it indicates that the remaining two are not statistically different from each other, but are different from the underlined group. A star next to a group indicates that the mean of that group is not statistically different from the means of the remaining two groups.

Table 4-3. Fears with statistically significant age
differences.

#	Fear type	age groups		
2	financial security F=11.08, df=5/503, p<.001	grp 3 x=1.40 s=1.06	grp 2 x=1.77 s= .96	grp 1 x=1.91 s= .88
13	possible changes in government policies that might affect finances F=9.75, df=5/470, p<.001	grp 1 x=1.55 s= .98	grp 2* x=1.81 s=1.03	grp 3 x=2.10 s=1.12
34	health becoming worse F=8.11, df=5/500, p<.001	grp 1 x=1.20 s= .99	grp 2* x=1.39 s= .93	grp 3 x=1.59 s= .95
10	decline in body's ability to perform and function F=8.57, df=5/502, p<.001	grp 1 x=1.16 s= .95	grp 2 x=1.53 s= .95	grp 3 x=1.54 s= .99
6	inability to maintain level of performance due to decrease in stamina F=21.78, df=5/502, p<.001	grp 1 x= .85 s= .89	grp 2 x=1.30 s= .86	grp 3 x=1.52 s= .94
1	memory becoming worse F=9.38, df=5/503, p<.001	grp 1 x=.81 s=.85	grp 2 x=1.14 s=.83	grp 3 x=1.49 s=.84
12	death of spouse or partner F=9.42, df=5/362, p<.001	grp 1 x=1.09 s=1.04	grp 2 x=1.21 s= .83	grp 3 x=1.58 s=1.00
24	death of close relatives F=7.71, df=5/487, p≤.001	grp 3 x=1.47 s=1.00	grp 2* x=1.80 s=1.02	grp 1 x=1.93 s=1.01
27	losing control over health F=13.37, df=5/502, p<.001	grp 1 x=1.12 s= .97	grp 2 x=1.30 s= .90	grp 3 x=1.62 s=1.05
20	less control over body's performance and functioning F=11.51, df=5/503, p<.001	grp 1 x=1.04 s= .89	grp 2 x=1.34 s= .86	grp 3 x=1.47 s= .92
25	becoming physically dependent on others F=25.57, df=5/502, p<.001	grp 1 x= .55 s= .77	grp 2 x= .84 s= .83	grp 3 x=1.20 s= .92

#	Fear type	age groups		
17	changes in physical appearance F=15.47. df=5/503, p<.001	grp 3 x=1.05 s= .95	grp 1 x=1.47 s= .89	grp 2 x=1.60 s= .94
35	not meeting social expectations about "age appropriate" level of achievements F=26.50, df=5/500, p<.001	grp 3 x= .38 s= .77	grp 2 x= .72 s= .94	grp 1 x=1.17 s=1.11
18	decrease in available opportunities F=10.37, df=5/503, p<.001	grp 3 x=.70 s= .97	grp 1 x= .74 s= .83	grp 2 x=1.13 s= .98
29	increase in responsibilities F=18.92, df=5/499, p<.001	grp 3 x= .68 s= .91	grp 2 x=1.01 s=1.01	grp 1 x=1.36 s=1.09
32	becoming less useful to others F=50.13, df=5/499, p<.001	grp 1 x= .35 s= .77	grp 2 x= .51 s= .71	grp 3 x=1.25 s=1.01
9	vulnerability to crime F=16.73, df=5/502, p<.001	grp 1 x= .78 s= .99	grp 2 x= .97 s=1.00	grp 3 x=1.43 s=1.05

Despite the fact that fears were not always statistically different across all three age groups, it is apparent from the means in the preceding table that these fears tend to increase or decrease with age. In other words, fears weakest for age group 1 were strongest for age group 3, and fears strongest for age group 1 were weakest for age group 3. Thus, it is not surprising that most statistically significant differences were found between age groups 1 and 3.

It was hypothesized that fears of aging would reflect the different biological, psychological, and social

realities that typically are associated with different age groups. Examination of age differences in fear strength across different fears supports this notion. For example, it is common for young people to face increasing responsibilities, and for old people to encounter more health problems. Thus, it is not surprising that fear of increasing responsibilities was stronger for age group 1, while fear about deteriorating health was stronger for age group 3.

For most of the concerns, older people expressed higher levels of fear than younger people. In fact, 11 out of the 17 fears listed above were strongest for age group 3, while only four were highest for age group 1, and only two were highest for age group 2. These will be discussed in more detail in Chapter V.

Interaction effects. The only significant sex and age interaction effect was found for the fear of becoming less sexually attractive (#33) ($F=7.98$, $df=5/494$, $p<.001$). For both women and men, the fear strength for age group 2 was slightly higher than that for age group 1. However, women in age group 3 expressed considerably less fear than younger women, while men's level of fear in age group 3 hardly differed from that in younger men (i.e., women: age group 1: $x=1.28$, age group 2: $x=1.34$, age group 3: $x=.58$; men: age group 1: $x=.94$, age group 2: $x=1.11$, age group 3: $x=1.07$). Figure 4-5 illustrates this interaction.

Fig. 4-5. Interaction effect between sex and age groups :

fear of becoming less sexually attractive
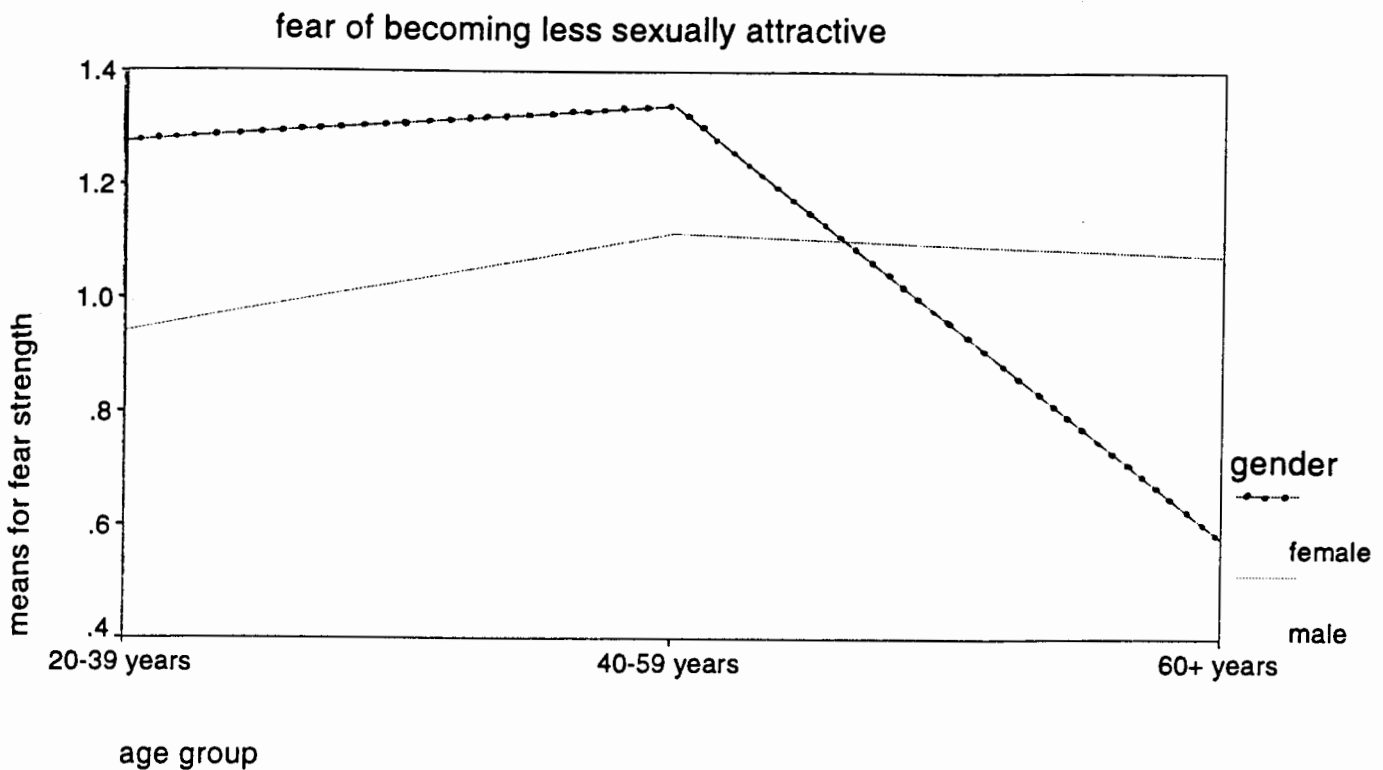
The interaction effect described above appears

consistent with the notion that women are perceived to

become less sexually attractive earlier than men.

The fact that men's level of fear was relatively consistent

across age groups, and that men in age group 3 were more

threatened by loss of sexual attractiveness than women of

that age, suggests that older men, unlike older women,

perceive loss of sexual attractiveness to be a probable,

imminent, and aversive event.

<u>Fears that failed to meet the assumption of homogeneity</u>
<u>of variance</u>. The results of Cochran's C tests ($\alpha=.001$)
indicate that 6 of the 39 fears had heterogeneous cell
variances (see Appendix D: results of Cochran's C test
precede the ANOVA summary tables for each fear). Table 4-4
lists these fears and indicates the percentage of the
overall variance explained by age, sex, their interaction,
and the model overall.

Table 4-5. Variance explained by age, sex, and their
interaction for fears with heterogeneous cell distributions.

fear type	#	Age	Sex	Age x Sex	Mo-del
losing control over important decisions in life n=508	19	3.0%	0%	.5%	4.6%
being institutionalized n=507	8	6.8%	.4%	.4%	9.0%
not being taken seriously n=507	23	6.8%	.1%	0%	7.4%
losing social power due to age related changes in appearance n=504	37	.3%	0%	.3%	.8%
decrease in responsibilities n=507	36	2.7%	.4%	.1%	3.4%
limitations on decisions about having children n=180	11	10%	.4%	3%	25%

As can be seen from table 4-5, age explains the largest proportion of the variance for all fears with heterogenous cell variances, while sex and interaction effects between age and sex explain minimal proportions of the variance. The group means and standard deviations for the fears for which age explained more than 3% of the overall variance are listed below:

- **being institutionalized:**
  age group 1: x=.35, s=.69;
  age group 2: x=.55, s=.75;
  age group 3: x=.94, s=1.05.

- **not being taken seriously:**
  age group 1: x=.28, s=.63
  age group 2: x=.48, s=.74
  age group 3: x=.80, s=.96

- **limitations on decisions about having children**
  age group 1: x=1.72, s=1.10
  age group 2: x=1.24, s=1.32
  age group 3: x=0.0, s=0.0

As can be seen, fears about being institutionalized, and not being taken seriously were highest for the oldest age group. Fears about the limitations that aging imposes on decisions about having children were strongest for the youngest age group. However, findings in regard to the latter fear (i.e., #11) have to be interpreted with care. While the question applied to 145 participants in age group 1, only 8 women and 17 men in age group 2, and 6 men and 4 women in age group 3 felt that this item applied to them. Thus, the low number of subjects in the two older age groups make it impossible to draw valid conclusions based on their

means.   However, it is clear that this fear is almost exclusively experienced by people in age group 1, and that as such, it can generally be considered to be age specific.

The influence of control variables on the detection of gender and age differences in fears of aging

The purpose of entering control variables into statistical models is to reduce the within-group deviation, which in turn facilitates the detection of possible variations between comparison groups.

As described in Chapter III, examination of the sums of squares (obtained when all control and design factors were considered together) revealed that subjective health status explained more than 3% of the variance of several fears, while marital status, education, and/or income only did so in regard to four fears. The impact of these control variables on the detection of gender and age differences in fear will be delineated next.

Subjective health. For reasons discussed in Chapter III, the impact of subjective health on the detection of age and gender differences in fear was examined by comparing the results of the analyses of variance conducted with the whole sample with those obtained when only "healthy" individuals were considered.

Results for the analyses of variance conducted on "healthy" individuals only were very similar to the findings reviewed earlier: no additional statistically significant

age or gender differences were found, and most statistically significant differences found for the sample as a whole were also obtained when only "healthy" individuals were considered.

However, significant age differences were not found in relation to six concerns - health deterioration (#34), decline in the body's ability to perform and function (#10), losing control over one's health (#27), losing control over the way the body performs and functions (#20), changes in government policies that may affect finances (#13), and the possible deaths of close relatives (#24). Also, a statistically significant difference for gender was not found for fear about the possible deaths of close relatives (#24).

Clearly, the first four fears are related to concerns about health and body functioning. Hence, the absence of statistically significant differences across age groups for these fears suggests that significant age differences in fear found for the sample as a whole were largely due to differences in subjective health across age groups. However, as discussed in Chapter III, differences in health (and hence in subjective health) are typical of different age groups. Thus, attempting to determine age differences based on "healthy" individuals would only threaten the validity of such a comparison.

More ambiguous is the lack of significant differences

for concerns about changes in government policies that may affect finances (#13), and the possible deaths of close relatives (#24). One probable reason is the lower number of subjects used for these analyses, and the consequent decrease in statistical power.

Marital status, education, and income. While marital status, educational attainment, and income level explained less than 2% of the overall variability for most fears, slightly higher contributions were found for the following: marital status explained 7.2% of the variance for fear about becoming more lonely (#3), income explained 3% of the variance for fears regarding the limitations on decisions about having children (#11), and education explained 3% of the variance for fear about difficulties finding a partner and 3.3% of the variance for fear about becoming more vulnerable to crime (#9).

To examine the extent to which these variables would influence the detection of statistically significant age and sex differences, these were included into the analyses of variance performed on the corresponding fears. For fears #3 and #9 (becoming more lonely, and increased vulnerability to crime, respectively) the appropriate control variables were found to be statistically significant. However, for simplicity's sake, these analyses have been omitted from this thesis because it was found that their inclusion did not influence the detection of age and/or sex differences

despite their significant contribution to the overall
variance.

Part II: Findings pertaining to secondary
research questions

Incidence of current experiences

Appendix G presents the percentage of women and men,
and individuals of different age groups who reported having
experienced the objects of the fears addressed in this
study.

Fears for which statistically significant age and sex
differences in strength were found, coincided with those
current experiences for which the largest differences in
incidence across comparison groups were present. That is,
increases or decreases in the reported incidence of current
experiences closely matched increases or decreases in
average fear strength across comparison groups.

Relationship between current experiences and fear

The relationship observed between group differences in
fear strength and group variations in the incidence of
current experiences was reconfirmed by the moderately high
correlation found between the incidence (r=.60), average
strength (r=.65) and average absolute strength (r=.65) of
fears, and the incidence of current experiences (as computed
for the whole sample, across all fears). The scatter-plot
in Figure 4-6 illustrates the relationship between the

incidence of fear and the incidence of current experiences for the whole sample.

Fig. 4-6. Relationship between fear incidence and incidence of 'current experiences' for the whole sample.
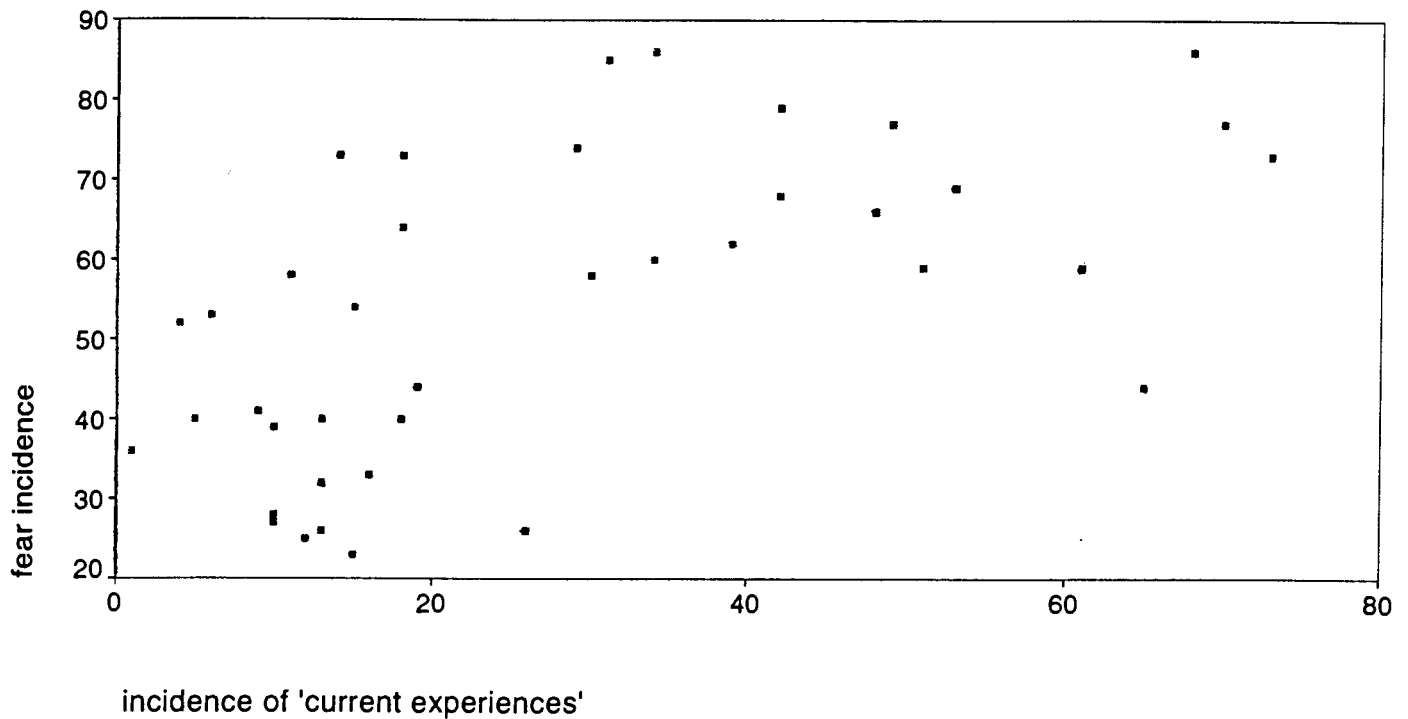
When comparing the corresponding correlation coefficients across comparison groups, an interesting trend becomes apparent. While the correlation between the incidence of fear and the incidence of current experiences for women and men was similar to the one obtained for the

whole sample (i.e., r=.67 and r=.52, respectively), the correlation between these aspects decreased with age (i.e, age group 1: r=.83, age group 2: r=.56, age group 3: r=.20; with statistically significant differences between the correlation coefficients for age groups 1 and 2 [z=2.36, p<.01], and 1 and 3 [z=3.70, p<.01]). The drop in correlation suggests that older people tend to anticipate certain events more often, and/or tend to worry less about certain current experiences than younger people. The former explanation is supported by a stronger correlation between fear incidence and anticipated fear incidence for age group 3 (i.e., r=.55 vs. r=.33 and r=.32), and the latter is supported by a somewhat weaker correlation between the incidence of current experiences and the incidence of current fears (i.e., r=.81 vs. r=.93 and r=.95).

However, in consideration of these findings, it is important to keep in mind that these correlations do not express causal relationships. While it is likely that the occurrence of an actual experience will trigger some concern, it is also reasonable to assume that the presence of fear will sensitize individuals toward certain events (e.g., selective attention). Given that reports of current experiences in this study are based on people's subjective appraisal, it is likely that both possibilities contribute to the relationships found.

Part III: The evaluation of aging and additional

fears of aging

Overall evaluation of the experience of aging

Almost one-half of the participants evaluated their
experience of aging as being "more positive than negative",
and over a third of the sample responded that it was an
"equally positive and negative experience". In contrast,
less than a tenth of the respondents expressed that for them
aging was a "more negative than positive experience". Table
4-6 summarizes these findings. (Note that the number of
respondents for this question is smaller than the overall
sample size due to the fact that this question was not
included in the pilot test questionnaire, and because some
participants failed to respond to this question altogether).

Table 4-6. Percentage endorsement of choices available to
the question about people's evaluation of their aging (i.e.,
"Generally speaking, would you say aging for you has
been..."). (valid n= 463)

a more positive than negative experience	49%
a more negative than positive experience	8%
an equally positive and negative experience	36%
"you can't say"	8%

The question about people's overall evaluation of aging
was included in this study to serve as a reference frame by
means of which fears of aging could be placed in relation to

the wider experience of aging. Although worries about aging appear to be common, findings here suggest that the experience of aging is generally perceived to be more positive than negative, or equally positive and negative. Only rarely is it seen as predominantly negative.

Age and sex differences. Two independent sample chi-square analyses were performed to determine whether men and women, and individuals of different age groups, differed in regard to the overall evaluation of their aging (see Appendix H). No statistically significant differences were found for sex (X^2 [3, n=463] = 4.11, p> .025), or age group (X^2 [6, n=463] = 10.92, p> .025).

Additional fears not addressed by this study

About one-third of the participants responded to the request to describe concerns about their aging that had not yet been addressed by the questionnaire.

In most cases, participants repeated fears already mentioned in the questionnaire or described specific instances of such fears, such as concerns about specific health issues (e.g., back problems, arthritis).

The remaining comments could be ordered into several categories:

a) fears about one's aging not yet mentioned (which will be listed later),

b) fears related to aging due to their future
orientation, but not directly pertaining to
personal aging (e.g., worries about the future of
one's children, and the future of the environment),

c) current concerns not related to personal aging
(e.g., "I worry that my daughter is not bringing up
my grandchildren right"), and

d) comments that expressed that aging had been a
positive experience and/or that people did not worry
about their aging.

In this chapter, only those fears directly pertaining
to personal aging will be presented. These fears were
about:

-having to get used to a lower standard of living;

-getting a disease in which the mind no longer works;

-not being able to decide when to finish one's own life

 (i.e., not being able to refuse medical treatment, or not

  having the option of medically assisted suicide);

-becoming a burden on close relatives;

-inability to adapt to the rapid changes in technology and

 the increase of necessary information;

-being left for a younger woman;

-not being able to drive;

-not having anybody to look after oneself;

-lack of sexual frequency and quality;

-impotence;

-becoming old and not being able to take care of one's

children, spouse, and/or parents;

-having to take care of aging parents;

-feeling young but being trapped in an old body;

-premature aging (e.g., premature greying and/or loss of

hair,looking older than one is).

Although repeated fears were excluded from this list,

it is clear that some of the concerns listed above are

closely related to fears mentioned in the questionnaire.

Despite this fact, these fears were included here because,

strictly speaking, they address slightly different aspects

of certain fears, and/or because several individuals

mentioned them. Unfortunately, the expression of such

concerns points to a problem common to many questionnaires:

it is likely that participants differed in regard to their

assumptions about what content area was "covered" by certain

questions.

Summary

The research sample had a similar distribution to the

population of British Columbia (Census 1991) in regard to

income, age, and marital status. However, the sample

contained more highly educated persons, and women of all

ages were over-represented.

While fears of aging were found to be common, the range

of average absolute strength values suggests that they are

relatively weak. The high correlation between fear incidence and average absolute fear indicates that the strongest fears are also the most common ones. Overall, fears appear to be similarly ranked by age group and sex.

Statistically significant sex differences in fear strength were found in regard to fears about the possible deaths of close relatives, changes in physical appearance, and lacking control over such changes. In addition, fear about the limitations that aging imposes on the decisions about having children appears to be stronger for women than for men but due to highly uneven cell counts, no statistical analysis was performed.

Statistically significant differences for age were found for 17 fears, and in most cases occurred between age groups 1 and 3. The stronger fears were predominantly found for age group 3. Of these, most fears related to concerns about health and body functioning, and thus may be strongly influenced by the fact that this age group also experiences more health problems.

Overall, fear incidence and strength were found to be moderately correlated to current experiences of the fear object, indicating that people generally worry in relation to current and/or ongoing events. However, this correlation was weak for people in age group 3.

Most participants evaluated their experience of aging as being more positive than negative or as equally positive

and negative. Only 8% of the sample indicated that aging to them was more negative than positive. These evaluations were not found to differ statistically by age or sex.

Notes

1.   Ratios were calculated from data provided in *Profile of Census Divisions and Subdivisions in British Columbia - A*, 1991, Statistics Canada Catalogue No. 95-384.

2.   Ratios were calculated from data (i.e. household income) provided in *Profile of Census Divisions and Subdivisions in British Columbia - B*, 1991, Statistics Canada Catalogue No. 95-385.

3.   Ratios were calculated from data provided in Tables 5 and 6 in *Age, sex, and Marital Status*, 1991, Statistics Canada Catalogue No. 93-310.

4.   Ratios were calculated from data provided in *Profile of Census Divisions and Subdivisions in British Columbia - A*, 1991, Statistics Canada Catalogue No. 95-384.

5.   Ratios were estimated from data provided in Tables 1 and 6 in *Educational Attainment and School Attendance*, 1991, Statistics Canada Catalogue No. 93-328.

6. However, the ethnicity and cultural background of the sample were not assessed. It is likely that Canadian-born individuals were over-represented due to sampling and response biases.

CHAPTER V: DISCUSSION

In this chapter, I consider the findings of this study in relation to the research questions posed in Chapter I. In addition, I discuss the importance of a multi-dimensional approach to the assessment of group differences, and address some theoretical and practical implications of the findings in general.

Primary research questions

1) What worries individuals in relation to their personal aging?

Fears of personal aging occur when individuals feel that changes they associate with aging threaten valued current conditions or desired future goals.

In this study, individuals expressed a wide variety of concerns, which I have classified into five dimensions in order to focus this discussion: health, appearance, finances, social, and miscellaneous. The health dimension includes fears such as health becoming worse, decline in the body's ability to perform and function, and becoming physically dependent on others. The appearance dimension involves fears about changes in appearance, becoming less sexually attractive, and lacking control over such changes. The financial dimension includes fears such as becoming financially dependent on others, and changes in government policies that may affect finances. The social dimension is

wide, and entails fears about loss of relatives and social interactions, fears about social norms and changes in responsibilities, and fears about loss of social status. The miscellaneous category contains fears that were difficult to classify elsewhere, such as fear about running out of time to do things, and getting stuck in a monotonous routine. Chart 5-1 lists all fears that were addressed in this study and presents them in terms of the dimensions above.

Although, as I discuss later, gender and age differences were found, participants ranked their fears similarly, indicating that people generally share similar perceptions of what is threatening in relation to aging. Overall, financial and health concerns were the strongest, followed by fears about changing appearance. "Social" fears were generally among the weakest, with exception of fears about the possible deaths of close relatives and spouse/partner, which were among the strongest fears.

In this study, individual fears were treated as independent factors based on the argument that fear of aging is a multi-dimensional phenomenon. The fact that individuals expressed such a wide range of fears, and that several of these fears were endorsed differentially across comparison groups, supports this view. While I discuss the implications of such findings in more detail later, it is important to point out that many of the items examined here were closely related not only by their connection to personal

aging but also by virtue of their fear object (e.g., 'decline in body's ability to perform and function' and 'inability to maintain level of performance due to drop in stamina').

Thus, it is likely that several of these fears do not represent independent factors but rather tap into the same fear dimension. In future, it will be necessary to formally establish the domains of fear of aging by means of factor analysis. The results of such an analysis would clarify the interconnection between the different fears addressed here, and thus, confirm or challenge conceptually established domains, and simplify statistical procedures in subsequent research by condensing the number of independent factors.

For example, an informal examination of correlation coefficients among questionnaire items revealed that fear items such as 'losing prestige due to changes in physical appearance' and 'losing social power due to changes in physical appearance' were highly correlated ($r=.84$). This suggests that, overall, participants did not differentiate between these constructs, and that these items do not represent independent fears. Conversely, the correlation between concerns about one's financial security, and fear about possible changes in government policies that may affect one's finances was low ($r=.25$), suggesting that both items represent independent fears, despite their conceptual similarities.

Chart 5-1. Fears of aging addressed by present study

HEALTH FEARS

- health becoming worse (#34)
- decline in body's ability to perform and function (#10)
- inability to maintain level of performance due to drop in stamina (#6)
- memory becoming worse (#1)
- being institutionalized (#8)
- becoming physically dependent on others (#25)
- own death (#15)
- losing control over health (#27)
- less control over body's performance/functioning (#20)
- limitations on decisions about having children (#11)

APPEARANCE FEARS

- changes in physical appearance (#17)
- becoming less sexually attractive (#33)
- lacking control over changes in appearance (#28)

FINANCIAL FEARS

- financial security (#2)
- changes in government policies that may affect finances (#13)
- becoming financially dependent on others (#22)

Chart 5-1. Fears of aging addressed by the present study
(cont.)

SOCIAL FEARS

Fears based on changes in social interaction
- death of spouse or partner (#12)
- death of close relatives (#24)
- becoming more lonely (#3)
- difficulties finding partner (#4)

Fears based on changes in responsibilities
- increase in responsibilities (#29)
- decrease in responsibilities (#36)
- becoming less useful to others (#32)
- having to retire due to age (#39)

Fears based on loss of social status
- being viewed negatively by younger people (#21)
- being discriminated against (#16)
- not being taken as seriously (#23)
- becoming "invisible" / less noticeable (#26)
- losing prestige due to aging (#30)
- losing social power due to aging (#31)
- losing social power due to age related changes in
  appearance (#37)
- losing prestige due to age related changes in appearance
  (#38)

Fears based on age-related social norms
- not meeting social expectations about age appropriate
  levels of achievements (#35)
- limitations of behaviour due to social expectations (#14)
- decrease in available opportunities (#18)

MISCELLANEOUS FEARS

- running out of time to do things (#5)
- becoming more vulnerable to crime (#9)
- getting stuck in monotonous routine (#7)
- losing control over important decisions in life (#19)

2) <u>What is the incidence and strength of these fears</u>?

The findings of this study confirm previous reports that worries about aging are common: overall, 20 of the 39 fears were experienced by more than 50% of the participants, and the least common fear of those applicable to the whole sample was endorsed by a minimum of 25% of the sample, that is, by every fourth participant.

In contrast, fears of aging appear to be fairly weak. The majority of absolute fear averages (i.e., fear strength for those who worried) fell between the scale categories of "mild" and "moderate" for the intensity scale, and "rarely" and "sometimes" for the frequency index. Thus, while Croake, Myers, and Singh (1988) found that relative to other adult fears, fear of aging ranks among the most intense, absolute values here indicate that the actual strength of these fears is not very high.

However, it is important to stress that these findings are based on average values, which distort individual realities. In fact, in relation to all fears, there were individuals who expressed the highest level of worry possible (i.e., "severely/very often").

2a) <u>What fears pertain to social evaluation and position, and</u>
<u>how common and strong are they</u>?

Fears most clearly related to "social aging" could be
categorized into four groups: fears about changes in social
interaction (e.g., death of spouse/partner, becoming more
lonely), fears about changes in responsibilities (e.g.,
increase/decrease in responsibilities, having to retire),
fears about age-related social norms (e.g., not meeting
social expectations about age appropriate levels of
achievement), and fears about loss of social status (e.g.,
losing prestige). Although, these categories are no doubt
interrelated, the latter is of specific interest, as it
reveals the extent to which people internalize and fear age-
related changes in social evaluation and position. These
fears were:

- being viewed negatively by younger people (#21)

- being discriminated against (#16)

- becoming "invisible" / less noticeable (#26)

- not being taken as seriously (#23)

- losing social power due to age related changes in
  appearance (#37)

- losing prestige due to age related changes in appearance
  (#38)

- losing prestige due to aging (#30)

- losing social power due to aging (#31)

In light of the fact that attitudes toward the aged have been found to be predominantly negative (e.g, Seccombe, Ishii-Kuntz, 1991), that a lower status is generally ascribed to older adults (Baker, 1985), and that worries about social evaluation have been found among the most endorsed (e.g., Borkovec, 1994), it is contrary to predictions that the socio-evaluative fears in this study were ranked among the weakest and least frequent fears by all groups. Of the 34 fears that applied to the whole sample the fears listed above occupied the following rank positions (respectively): 21st, 26th, 28th, 29th, 30th, 31st, 32nd, and 34th (for more detail see Table 4-1, Chapter IV).

There could be several reasons for these findings. On a methodological level it could be that some of these questions were phrased too abstractly to be recognized as areas of concern, and/or that people were reluctant to admit to these fears. On a theoretical level it may be that people are generally not aware of negative attitudes and discriminatory practices in their lives, and/or that they may not feel threatened by these conditions. However, social evaluation is generally important to people as evidenced by the fact that worries in general often involve socio-evaluative situations, and thus these findings may support Gatz and Pearson's (1988) argument that the literature has exaggerated the prevalence and intensity of ageist attitudes (see Chapter II). In other words, that the weak threat perceived in

relation to these attitudes may indicate a discrepancy between the literature and "what is".

3) <u>Do fears about personal aging vary by gender</u>?

It was hypothesized that women and men experience aging differently, and that such differences would be reflected in their fears.

Statistically significant gender differences were found for fears about changes in appearance, lacking control over these changes, and the possible deaths of close relatives.

Given the social value placed on youth and attractiveness for women in this society, it is not surprising that women of all ages expressed higher levels of fear in regard to changing appearance and lacking control over such changes. The finding that women between the ages of 40 and 59 were most concerned about these changes makes sense too. They are most "obviously" faced with physical changes that indicate their transition between "youth" and "old age", and thus are most immediately threatened by the loss of a socially valued characteristic of women.

According to the "double standard" discussed in the literature review, women lose social status and become "invisible" as they age. Interestingly, although fears about changing appearance were among the strongest for women, fears about becoming more invisible, losing social power and prestige due to age-related changes in appearance and aging,

being viewed negatively by younger people, and being discriminated against, were among the weakest. Similarly, while fear about changing appearance was found to vary by gender, no gender differences were found in regard to these socio-evaluative fears. Hence, it appears that on a subjective level, the majority of women do not experience fears of changing appearance as being related to social devaluation.

Women also expressed significantly higher fears about the death of close relatives than men. Since men and women presumably have the same number of close relatives, especially during the younger and middle aged years, these findings suggest that women overall are more closely involved with and/or emotionally attached to family members than men.

Another area in which younger women appear to have stronger fears than younger men is in relation to the limitations that aging imposes on decisions about having children. Although conducting analysis of variance (ANOVA) was not possible for this fear, it is apparent from group means that this fear was considerably higher for women than for men (age group 1). In fact, the average absolute fear strength value for this item was the highest among all fears for women. Although for women this fear is strongly linked to biological time limitations, it can be speculated that the perceived threat of such time restrictions has increased over the past decades as more career opportunities have become

available to women, likely triggering an increased sense of conflict between the wish to have children, and the pursuit of career goals and/or becoming financially independent. Although most men are biologically able to have children in all three age groups, it is apparent from the relatively high absolute fear means, that men also experience some pressure about when it is appropriate to have children.

Given the notion that aging is more socially detrimental to women than men, and the fact that women have generally been found to worry more, be poorer, report more health problems, and to live longer, it is surprising that so few differences were found - especially in view of the large array of fears compared - and that in most cases, such differences were relatively small. For example, although more women than men indicated worrying about changing appearance (81% vs. 73%), and on average expressed higher levels of absolute fear strength (x=1.85 vs. x=1.64), these differences were relatively small, especially for men and women in the "young" and "old" age groups. Hence, while concerns about appearance are typically considered to be female, this study indicates that a large proportion of men are also concerned about changes in appearance and to a similar, even though lower, extent than women.

Hence, these findings together with the fact that men and women did not differ significantly in their overall evaluation of their personal aging, only partially support

the view that aging is more threatening to women than to men.

4)   Do fears about personal aging vary across age groups?

It was hypothesized that people of different age groups experience aging differently, and that such differences would be apparent in their fears of personal aging. In this study statistically significant differences were found in regard to 17 fears. Although no predictions about specific age differences had been formulated, variations in fear strength appear to be congruent with biological, psychological, and socio-economical changes typically associated with different age groups, which had been expected. That is, the strongest levels of fear were expressed by the age groups with the highest likelihood of experiencing certain events or situations (as suggested by the literature, and as reflected by higher incidence of reported current experiences).

In general, fears that were found to be statistically different across age groups increased or decreased with age, with most significant differences occurring between groups 1 and 3. To facilitate the examination of such differences here, fears will be discussed in relation to the group that expressed the highest level of concern, regardless of the fact that in some cases fear strength for these groups was not statistically different from the adjacent age group. (For more detail see Table 4-3, Chapter IV.)

Fears for which the youngest age group expressed higher levels of fear were:

- increase in responsibilities (#29)
- not meeting social expectations regarding age appropriate level of achievement (#14)
- possible deaths of close relatives (#24)
- financial security (#2)

In retrospect, these fears are easily attributed to conditions typical of young adults: individuals in this age group are usually most heavily burdened with increasing responsibilities, e.g., family and work; they are "starting out", and thus, still struggling to become financially independent and viable; they (and individuals in age group 2) are most immediately faced with the possibility and reality of close relatives dying; and they have been found to be most preoccupied with matching the "social clock", i.e., monitoring the appropriateness of their actions and achievements in relation to age-related social norms (Helson, Michell, & Moane, 1984). In addition - although not mentioned above because no statistical analysis was performed - fear about limitations on decisions about having children was found to be almost exclusively endorsed by this age group, which fits the biological time limitations for women, and social conventions about the appropriate time to rear children.

Similarly, given the increased health complications that people tend to experience as they age, it is not surprising that most fears found to be highest for age group 3 were

linked to health issues. These fears were:

- health becoming worse (#34)
- losing control over health (#27)
- decline in body's ability to perform and function (#10)
- inability to maintain level of performance due to a decrease in stamina (#6)
- less control over body's performance/functioning (#20)
- memory becoming worse (#1)
- becoming physically dependent on others (#25)

The other fears found to be highest for older individuals can also be attributed to psychological and social-economic conditions commonly linked to old age:

- death of spouse or partner (#12)
- becoming less useful to others (32)
- vulnerability to crime (#9)
- changes in government policies that may affect finances (#13)

Similarly, higher means were found for fears about being institutionalized and not being taken seriously, for which no analyses of variance were performed due to heterogenous cell variances.

Only in two cases were fears found to be strongest for age group 2 - fear about changes in physical appearance (#17), and fear about a decrease in available opportunities (#18). Higher levels of fear for these can also be explained by situations unique to middle age: although changes in appearance occur throughout all ages, this group is most

immediately faced with those physical changes that signify the passage from youth to old age. Similarly, people in this age group may feel caught between the opportunities generally open to younger individuals (e.g., education, career change, etc.) and the fact that they are not yet familiar with the opportunities that older age may bring.

Findings here support the hypothesis that people of different age groups differ in regard to several fears. It is possible that age differences for some fears are more pronounced than was found here. The considerably lower participation rate for the interviews and the questionnaires by individuals of the oldest age group indicates the existence of a response bias. Based on the observations I made during the interview phase of this research (see Chap. III), it may be that most fearful individuals in this age group actually declined to participate, and thus, that the age differences found for this sample were smaller than those one would obtain if all the older individuals, who had been approached, had participated.

Further, findings here suggest that differences in fear strength are mediated by the imminence and probability of certain events occurring, as was also found by Eysenck (1992) and Tallis, Davey, and Capuzzo (1994) in relation to worry. However, some exceptions to this conclusion exist. For example, no statistically significant difference was found for fear about one's own death, although death is most

immediate to the experience of older people. Listed below
are the fears that were found to be equally strong across all
age groups. Overall these ranked among the weakest and least
common of all fears, with the exception of the first four
fears which were experienced by more than 50% of the whole
sample.

- * getting stuck in monotonous routine (#7)
- * running out of time to do things (#5)
- * becoming more lonely (#3)
- * own death (#15)
- being viewed negatively by younger people (#21)
- limitations of behaviour due to social expectations (#14)
- losing control over important decisions in life (#19)
- becoming financially dependent on others (#22)
- being discriminated against (#16)
- becoming "invisible" / less noticeable (#26)
- losing social power due to age related changes in
   appearance (#37)
- losing prestige due to age related changes in appearance
   (#38)
- losing prestige due to aging (#30)
- decrease in responsibilities (#36)
- losing social power due to aging (#31)
- difficulties finding partner (#4)
- having to retire due to age (#39)

5) <u>Are there any interaction effects between gender and age groups</u>?

One statistically significant interaction effect was found, regarding the fear of becoming less sexually attractive. As discussed in Chapter IV, this interaction effect is consistent with the notion that women are perceived to become less sexually attractive earlier than men: While women in age group 1 and 2 expressed more fear than men, the level of fear for women in age group 3 was considerably lower, compared to both younger women and men of the same age.

Eysenck (1992; see Chapter II) states that the degree to which an individual is threatened by certain events or situations is mediated by the subjective probability and imminence of that event occurring, its perceived aversiveness, and the perceived efficacy of one's post-event coping strategies. The low level of fear expressed by older women suggests a shift in these perceptions. Given that women generally are considered to complete their "prime years" earlier than men, it is likely that they - unlike men of their age - no longer perceive becoming less sexually attractive as a probable and imminent danger. In addition, the decrease in fear is probably also due to a changed appraisal of how aversive this event is. Lazarus and DeLongis (1983) ascertain that attributing different meaning to unwanted events constitutes an important coping strategy:

One of the major modes of coping, one presumably

employed also in aging, is to renounce or relegate to

the periphery of importance those roles and commitments

that are no longer serviceable and to invest in others

more in tune with current conditions of living (cf.

Pearlin, 1980b). Changes in commitment are often

products of major efforts over an extended time period

to cope with loss or threat of loss. (p.251)

Secondary research questions

1) How prevalent are the current experiences (of the fear

objects addressed in this study) across sex and age groups?

and

2) What is the post hoc relationship between fear and

current experience?

The incidence of current experiences across age and

gender, and for the sample overall, are presented in

Appendix G.

In general, stronger and more common fears were

associated with higher rates of reported current experiences.

This relationship lends formal support to the post-hoc

observation that age differences in fear of aging are

congruent with situations typical of certain age groups. It

also supports research findings indicating that worry

intensity increases with the imminence of an threatening

event (Eysenck, 1992; Tallis, Davey, & Capuzzo, 1994), and that it generally occurs in response to real rather than imagined problems (Tallis, Davey, & Capuzzo, 1994).

However, these conclusions have to be interpreted with care. Reports of current experiences are not objective but reflect people's perceptions of certain occurrences. Thus, just as the occurrence of certain events appears to influence the experience of fear, it is likely that fear will affect the perception of current experiences. In addition, there are a few instances in which current experiences do not directly match the corresponding fear object. This is most obviously seen with fear of dying, for which people were asked if during the past year, they *thought* that they may die soon.

The most salient exceptions to the observed relationship between fear and current experiences were in relation to fears about being institutionalized (#8), losing control over important decisions in life (#19), becoming physically dependent on others (#25), and changes in government policies that may affect finances (#13). For all these cases, older individuals reported a higher degree of fear than younger people, despite the fact that the number of actual experiences across age groups did not vary accordingly. In these cases, it appears that older individuals anticipate and worry about these events more readily than younger people, most likely due to an increased sense of probability and

imminence.

Conversely, although more older people reported having less prestige and social power now than ten years ago in relation to aging and age related changes in appearance, no statistically significant differences were found for the corresponding fears, suggesting that older individuals do not feel specially threatened by these events.

Theoretical implications and directions

In support of a multi-dimensional view of fear of aging

The fact that fears were endorsed differently by gender and age groups strongly supports the idea that fear of aging is multi-dimensional, and therefore, that the use of a uni-dimensional score to assess group differences is inappropriate.

The use of a uni-dimensional score assumes that the relative fear intensity expressed by a given group remains constant across different domains of fear; thus, comparing groups by their averages will indicate their relative position to each other. The problems associated with this assumption are most obvious when fear of aging is defined in relation to aging as a process, as this definition includes domains relevant to all ages. As found here, fears are strongest in regard to issues that are most immediate to the experience of certain age groups. Thus, it follows that averaging responses across all fear domains could prevent the

detection of specific group differences.

A similar problem arises when fear of aging is defined in relation to "being old". Even though the range of domains addressed by such scales is more contained, the use of a unidimensional score cannot account for the fact that men and women of different ages may be threatened differently by the various domains within the same scale; that is, that they may attribute different values to distinct changes associated with old age. For example, findings in this study suggest that younger people are more concerned about changes in appearance than older people, and that older people are more worried about their health than younger people. If both these items were in a scale and phrased in relation to being old, the average might indicate no difference between both age groups despite the fact that these groups might have expressed different levels of fear in regard to these items.

Even though items in this study will have to be factor analyzed to properly establish their dimensionality, it is clear from the findings here that a multi-dimensional approach is essential for the identification of group differences.

Is aging a significant life stressor?

Keller, Leventhal, and Larson (1989) state that "normal successful aging" has been overlooked as a significant life stressor involving the utilization of several coping mechanisms. The relatively low absolute strength averages,

and the fact that worries about different aspects of aging were common, suggests that aging is commonly perceived as having threatening -thus, arguably stressful- aspects, but that such distress is generally not severe.

Keller, Leventhal, and Larson (1989) found that people used a variety of coping strategies to adapt to aging related changes. Among the most common were the alteration of meaning attributed to the stressful situation, and active problem-focused strategies, which most notably included the use of maintenance and compensation responses (responses aimed at preventing and counter-balancing loss).

In future, it might be interesting to consider fear of aging in relation to coping mechanisms. As delineated in Chapter II, worry is considered to be adaptive in nature, and has been associated with various functions and problem-solving activities. For example, in addition to alerting individuals about potential threats, Tallis and Eysenck (submitted; cited in Eysenck, 1992) and Borkovec (1994) point to its "preparation" function which permits individuals to anticipate and thus, rehearse, and/or prepare for the occurrence of negative events. Similarly, Borkovec (1994) indicates that worry serves as a motivational process, serving as a catalyst for action.

Thus, it is possible that experiencing fear in relation to aging may aid individuals to adapt to aging-related changes, by helping people to identify threats, rehearse

aversive situations, and supply the motivation to prepare for
such events in active (e.g., maintenance/compensation
actions) or passive ways (i.e., changing meaning).

Additional suggestions for future research

The finding that men and women do not differ a great
deal in regard to their fears of aging, and that people
express little aging-related concerns about negative social
evaluations, were contradictory to what was expected based on
the literature reviewed. Given the significant body of
literature devoted to attitudes toward the aged and the
"double standard" of aging, closer examination of the
discrepancies between what is suggested by this literature,
and what appears to be experienced by individuals is needed.
Assuming that the findings of this study are not exclusively
due to the particular approach and instrumentation used, the
following questions warrant more attention: 1) Has the
literature exaggerated the prevalence and intensity of
negative attitudes toward the aged?; 2) Has the literature
exaggerated gender differences with regard to aging?; 3) If
none - or "not much" - of the above, what factors or
mechanisms contribute to the fact that people do not
experience/express significant concerns about negative social
evaluations in regard to their aging?; 4) What factors or
mechanisms contribute to the fact that women and men do not
experience/express more pronounced differences in aging-
related fears?

Practical implications: The development of therapeutic interventions

In the introductory chapter I argued that gaining more knowledge about fears of aging and clearly identifying common threats may indicate ways in which such fears can be resolved, either by changing the source of distress directly, or by helping individuals to adapt to it.

While most common threats were linked to changes on an individual or familial level (e.g., health issues, death of spouse/relatives), one powerful exception on the social level was the fear of changes in government policies that may affect one's financial security. This fear was the strongest (fear strength) for the whole sample, and was the item for which individuals in the oldest age group expressed the highest level of absolute fear (x=2.35) found across all comparison groups. While it is not in the realm of this thesis to make specific recommendations regarding government policies, it is essential to point out the impact that government action has on the individual's well being, on both objective and subjective levels. Given that a democratic government theoretically represents the needs of the people, it is remarkable that the strongest fear about aging was expressed in relation to uncertainties about government rulings.

Although overall fears of aging were not very strong, some individuals experienced high levels of fear. In fact,

the largest proportion of the variability found for each fear was not accounted for by the research factors or the control variables but rather by individual differences. Further examination of possible sources of variability may prove useful in future: identifying differences between people with high and low aging-related fears may reveal ways in which individuals with severe fear may be helped to adapt (of special interest may be the examination of differences in cognitive appraisal).

Successful therapeutic interventions will most likely centre around coping strategies described above, e.g., reframing the situation to trigger shifts in meaning, active problem-solving approaches: gathering information, maintenance and compensation responses, etc..

After filling out the questionnaire several participants expressed their surprise about "how well they were doing". After further prompting it became apparent that these individuals had initially felt generally negative about their aging, but that after having considered their feelings in regard to so many potential concerns, they realized that their fear was only linked to a few such aspects, and that overall, they were "doing fine". Thus, it is apparent that stressing the multi-dimensionality of fear of aging is useful in precluding people from generalizing their negative feelings in one area - or a few - to their aging in general. Conversely, stressing the multi-dimensionality of the

experience of aging will prove invaluable in helping people
to divert their negative focus on aging to include positive
aspects. The most commonly mentioned positive consequences
of aging expressed during the initial interviews were related
to self-growth, and included: increased sense of self,
becoming more confident and assertive, being less restrained
by social expectations and judgement, feeling less constraint
in regard to spiritual and emotional issues, intellectual
growth, and increased contentment with simple pleasures.

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APPENDIX A:

Information and consent letter for the interviews

LETTER OF INFORMATION

Sofia Stein, M.A. candidate
Dept. of Counselling Psychology
Faculaty of Education, Grad. Studies
Simon Fraser University
Burnaby, B.C.   V5A 1S6

Dear Participant:
    My name is Sofia Stein.   I am a graduate student in Counselling
Psychology in the Faculty of Education at Simon Fraser University.   I
am conducting a research study about the worries people may have in
regard to aging.   For this purpose, I would like to ask you a few
questions about your own feelings in this area.   Your answerers and
those of other volunteers will be used as a basis for the development
of a survey questionnaire that will be administered to a lager number
of people at a later date.   While some people may feel a bit upset
thinking about their concerns, your participation would be greatly
appreciated, and would contribute to our understanding of aging, and
how its is experienced by different individuals.
    The interview will last approximately forty minutes, and can
take place either at your home or at some other pre-arranged
location.   Our conversation will be tape-recorded and transcribed.
All cassettes and transcripts will be kept under lock during the time
of research, and will be completely destroyed once this study is
concluded.   Some aspects of your interview may be used in future
research publications.   However, your responses will remain anonymous
at all times, and your name will not be associated with any recorded
or printed information.
Participation in this study is voluntary.   If you do agree to take
part, you can refuse to answer any of the questions, and are free to
stop the interview at any time you choose.
    If you agree to participate, please read and sign the section
below.   A copy of this form will be yours to keep.   If you have any
questions or comments, feel free to call me at (604) 531-3445.   If
you wish to register a complaint about any of the procedures involved
in this study, please contact Dr. Robin Barrow, Dean, Faculty of
Education, Simon Fraser University, Burnaby, B.C. V5A-1S6, tel.:
(604) 291-3148.   Once this study is completed, a summary of the
research findings will be provided upon request.
    Thank you for your time, and for considering my request.
                    Sincerely yours,

CONSENT TO INTERVIEW
    I have read and understand the information given above.   I
voluntarily agree to be interviewed by Sofia Stein.   I permit this
researcher to use the information I may provide with the full
understanding that all interviews will remain anonymous and
confidential, and that all tapes and transcripts will be destroyed
once the study has been concluded.   In addition, I understand that I
may withdraw my participation at any given time.

signed: _____

date: _____

APPENDIX B:

The questionnaire package

SIMON FRASER UNIVERSITY

FACULTY OF EDUCATION

BURNABY, BRITISH COLUMBIA V5A 1S6
Telephone: (604) 291-3395

Sofia Stein, M.A. candidate
Dept. of Counselling Psychology
Faculty of Education, Grad. Studies
Simon Fraser University
Burnaby, B.C. V5A 1S6

Dear Research Participant:

My name is *Sofia Stein*. I am a graduate student in Counselling Psychology in the Faculty of Education at Simon Fraser University. The following questionnaire is part of my M.A. research on people's feelings about their own aging, and will take approximately 15-20 minutes to complete.

Your participation in this study is <u>voluntary</u>. You may discontinue your participation at any time, and you are under no obligation to answer every question. However, your full cooperation would be greatly appreciated, and would contribute to our understanding of aging, and how it is experienced by different individuals.

All information will be <u>confidential</u> and your <u>anonymity</u> is assured. You are <u>NOT</u> required to put your name on any of the forms, and all questionnaires will be destroyed once the answers have been entered into a large data set.

Instructions for completing this questionnaire precede each section. Once you have completed the questionnaire, please return it to the designated drop-off box, or to the person circulating this form at your location. Please do this as soon as possible.

A summary of the results of this study will be posted at your drop-off site early next year, or will be available from the person that gave you this questionnaire. If you have any question or concern about this study, please contact Dr. Robin Barrow, Dean, Faculty of Education, Simon Fraser University, Burnaby, B.C. V5A-1S6, tel.: (604) 291-3148).

You can keep this letter of information for your own records. The completion of this questionnaire will be taken as your consent to participate under the conditions outlined above.

Thank you very much for your time and cooperation.

Sincerely yours,

Sofia Stein

WORRIES AND FEARS ABOUT AGING QUESTIONNAIRE

Part I

For this study we need some general information about all our participants. In this first section, we would like to ask you some general questions about yourself.
PLEASE INDICATE OR CIRCLE THE CORRECT ANSWER. THERE ARE QUESTIONS ON BOTH SIDES OF EACH SHEET.

1. What is your age as of your last birthday? _____ years

2. Which sex are you?   (1) Male   (2) Female

3. Which statement describes your current health best?

    (a) no health problems
    (b) very mild health problems
    (c) moderate health problems
    (d) very serious health problems

4. What is your current marital status?

    (a) married
    (b) common law
    (c) single and never married
    (d) separated
    (e) divorced
    (f) widowed

5. What is the <u>highest</u> level of formal education that you have <u>completed</u>?
(CHECK ONE CATEGORY AND CIRCLE THE NUMBER OF YEARS OF FORMAL EDUCATION COMPLETED)

____ a) Elementary (1, 2, 3, 4, 5, 6, 7)
____ b) High school (8, 9, 10, 11, 12)
____ c) Undergraduate university, college or special training (13, 14, 15, 16)
____ d) Graduate university (17, 18, 19+)

6. What is your total household income per year (before deductions)?

(a) $16000 or less   (f) $56001 to $66000
(b) $16001 to $26000   (h) $66001 to $76000
(c) $26001 to $36000   (i) $76001 to $86000
(d) $36001 to $46000   (j) $86001 to $96000
(e) $46001 to $56000   (k) $96001 or more

PART II

Some people experience concerns or fears about aging. In the following section, we would like to find out if you have experienced any of the following concerns, worries, or fears at <u>any time during the past year</u>. Please note, that for the sake of this questionnaire, it does not matter if the concerns you might have are due to something that affects you at the present time, or if they are due to something that you fear may happen in the future.

PLEASE TAKE SOME TIME TO THINK ABOUT EACH QUESTION AND CIRCLE THE NUMBER THAT BEST DESCRIBES <u>HOW OFTEN</u> AND <u>HOW STRONGLY</u> YOU HAVE WORRIED ABOUT THE FOLLOWING THINGS.

> SOMETIMES, THE ORDER OF THE SCALES WILL CHANGE. FOR EXAMPLE, WHILE SOME ITEMS MAY SAY: 'NEVER – RARELY – SOMETIMES – OFTEN – VERY OFTEN', THE ORDER WILL BE REVERSED FOR OTHER ITEMS, WHICH WILL SAY: 'VERY OFTEN – OFTEN – SOMETIMES – RARELY – NEVER'. PLEASE LOOK OUT FOR THESE SWITCHES: UNFORTUNATELY THEY ARE NECESSARY FOR THE ACCURACY OF THIS STUDY. THANK YOU.

1. During the past year, have you been concerned about your memory becoming worse as you age?

HOW OFTEN:
0----------1----------2----------3----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY:
0----------1----------2----------3----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

2. During the past year, have you worried about your financial security as you age?

HOW OFTEN:
0----------1----------2----------3----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY:
0----------1----------2----------3----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

3. During the past year, have you been concerned about becoming more lonely as you age?

HOW OFTEN:
0----------1----------2----------3----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY:
0----------1----------2----------3----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

4. During the past year, have you been concerned that it may be more difficult to find a partner or mate as you age? (IF THIS QUESTION DOES NOT APPLY TO YOU, PLEASE CIRCLE 'N/A').

N/A

HOW OFTEN:
```
4-----------3-----------2-----------1-----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER
```

HOW STRONGLY:
```
4-----------3-----------2-----------1-----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL
```

5. During the past year, have you felt anxious about running out of time to do things because of your aging?

HOW OFTEN:
```
4-----------3-----------2-----------1-----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER
```

HOW STRONGLY:
```
4-----------3-----------2-----------1-----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL
```

6. During the past year, have you worried about not being able to keep up the same level of performance in your daily activities due to an age related drop in stamina?

HOW OFTEN:
```
0-----------1-----------2-----------3-----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN
```

HOW STRONGLY:
```
0-----------1-----------2-----------3-----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY
```

7. During the past year, have you been concerned about getting stuck in a monotonous routine as you get older?

HOW OFTEN:
```
0-----------1-----------2-----------3-----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN
```

HOW STRONGLY:
```
0-----------1-----------2-----------3-----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY
```

8. During the past year, have you worried that you might be institutionalized one day because of your age?

HOW OFTEN:
```
4-----------3-----------2-----------1-----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER
```

HOW STRONGLY:
```
4-----------3-----------2-----------1-----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL
```

9. During the past year, have you worried about becoming more vulnerable to robbery, physical assault, or other forms of crime as you age?

HOW OFTEN:
```
0-----------1-----------2-----------3-----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN
```

HOW STRONGLY:
```
0-----------1-----------2-----------3-----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY
```

10. During the past year, have you worried about a decline in the way your body performs or functions (due to aging rather than illness)?

HOW OFTEN: 4----------3----------2----------1----------0
            VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY: 4----------3----------2----------1----------0
               SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

11. During the past year, have you felt anxious about the time limits that aging imposes on your decisions about having children? (IF YOU CANNOT HAVE OR DO NOT WANT ANY CHILDREN (OR MORE CHILDREN), PLEASE CIRCLE 'N/A').

HOW OFTEN: 4----------3----------2----------1----------0
            VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

N/A

HOW STRONGLY: 4----------3----------2----------1----------0
               SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

12. During the past year, have you been concerned, that as you age, your spouse or partner may possibly die? (IF YOU DO NOT HAVE A SPOUSE OR A PARTNER, PLEASE CIRCLE 'N/A').

HOW OFTEN: 0----------1----------2----------3----------4
            NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

N/A

HOW STRONGLY: 0----------1----------2----------3----------4
               NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

13. During the past year, have you worried about possible changes in government policies that may affect your financial security as you age?

HOW OFTEN: 0----------1----------2----------3----------4
            NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY: 0----------1----------2----------3----------4
               NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

14. During the past year, have you worried about doing things because they do not fit with what is expected of you at your age?

HOW OFTEN: 4----------3----------2----------1----------0
            VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY: 4----------3----------2----------1----------0
               SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

15. During the past year, have you worried about dying when thinking about your own aging?

HOW OFTEN: 4----------3----------2----------1----------0
            VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY: 4----------3----------2----------1----------0
               SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

16. During the past year, have you been concerned that other people may discriminate against you as you age?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

17. During the past year, have you worried about changes in physical appearance due to aging?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

18. During the past year, have you felt apprehensive about aging because you perceive a decrease in opportunities available to you?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

19. During the past year, have you worried that as you age you may lose control over important decisions in your life?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

20. During the past year, have you felt concerned that as you age you may have less control over the way your body is able to function or perform?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

21. During the past year, have you been concerned that younger people may view you more negatively as you age?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

22. During the past year, have you worried about becoming financially dependent on others as you age?

HOW OFTEN:

```
0----------1----------2----------3----------4
NEVER     RARELY    SOMETIMES  OFTEN   VERY OFTEN
```

HOW STRONGLY:

```
0----------1----------2----------3----------4
NOT AT ALL  MILDLY  MODERATELY STRONGLY SEVERELY
```

23. During the past year, have you worried that as you age you may not be taken as seriously by others?

HOW OFTEN:
4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:
4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

24. During the past year, have you been concerned, that as you age, your close relatives may possibly die? (IF YOU DO NOT HAVE CLOSE RELATIVES, PLEASE CIRCLE 'N/A').

HOW OFTEN:
4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

N/A

HOW STRONGLY:
4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

25. During the past year, have you worried about becoming physically dependent on others as you age?

HOW OFTEN:
4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:
4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

26. During the past year, have you worried about becoming less noticeable (or more "invisible") to others as you age?

HOW OFTEN:
0----------1----------2----------3----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY:
0----------1----------2----------3----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

27. During the past year, have you felt concerned that as you age you may have less control over your health?

HOW OFTEN:
4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:
4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

28. During the past year, have you felt apprehensive about not having control over age related changes in the way you look?

HOW OFTEN:
4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:
4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

29. During the past year, have you felt apprehensive about having to take on more and more responsibilities as you get older?

HOW OFTEN:

4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:

4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

30. During the past year, have you felt apprehensive about losing prestige due to your aging?

HOW OFTEN:

0----------1----------2----------3----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY:

0----------1----------2----------3----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

31. During the past year, have you felt apprehensive about losing social power due to your aging?

HOW OFTEN:

0----------1----------2----------3----------4
NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY:

0----------1----------2----------3----------4
NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

32. During the past year, have you been concerned about becoming less useful to others as you age?

HOW OFTEN:

4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:

4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

33. During the past year, have you been afraid of becoming less sexually attractive as you age?

HOW OFTEN:

4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:

4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

34. During the past year, have you worried about your health becoming worse due to aging?

HOW OFTEN:

4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:

4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

35. During the past year, have you worried about not meeting the expectations that people have about what you should have done by your age?

HOW OFTEN:

4----------3----------2----------1----------0
VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY:

4----------3----------2----------1----------0
SEVERELY   STRONGLY   MODERATELY   MILDLY   NOT AT ALL

36. During the past year, have you felt apprehensive about having fewer and fewer responsibilities as you age?

HOW OFTEN: 4----------3----------2----------1----------0
              VERY OFTEN   OFTEN   SOMETIMES   RARELY   NEVER

HOW STRONGLY: 4----------3----------2----------1----------0
                 SEVERELY STRONGLY MODERATELY MILDLY NOT AT ALL

37. During the past year, have you feared losing social power due to age related changes in appearance?

HOW OFTEN: 0----------1----------2----------3----------4
              NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY: 0----------1----------2----------3----------4
                 NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

38. During the past year, have you feared losing prestige due to age related changes in appearance?

HOW OFTEN: 0----------1----------2----------3----------4
              NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY: 0----------1----------2----------3----------4
                 NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

39. During the past year, have you worried about having to retire due to your age? (IF YOU DO NOT YET KNOW THE ANSWER TO THIS QUESTION, OR IF IT DOES NOT APPLY TO YOU, PLEASE CIRCLE 'N/A').

N/A

HOW OFTEN: 0----------1----------2----------3----------4
              NEVER   RARELY   SOMETIMES   OFTEN   VERY OFTEN

HOW STRONGLY: 0----------1----------2----------3----------4
                 NOT AT ALL   MILDLY   MODERATELY   STRONGLY   SEVERELY

PLEASE TAKE SOME TIME TO CONSIDER IF YOU HAVE EXPERIENCED ANY OTHER CONCERNS OR FEARS ABOUT YOUR OWN AGING. IF YOU HAVE, PLEASE USE THE SPACE BELOW TO DESCRIBE THEM BRIEFLY. (Please, do not worry about repeating something mentioned earlier. It is better to have it twice than to miss something!)

1)_____

_____

2)_____

_____

3)_____

_____

PART III

In this last section, we are interested to know if you have had any of these experiences during the past year.
PLEASE INDICATE IF YOU HAVE HAD THE FOLLOWING EXPERIENCES BY CIRCLING THE CORRECT ANSWER. (IF THE QUESTION DOES NOT APPLY TO YOU PLEASE CIRCLE 'n/a').

1. During the past year, have you noticed a decrease in your memory?   yes   no

2. During the past year, have you experienced financial difficulties?   yes   no

3. During the past year, have you felt fairly lonely?   yes   no

4. During the past year, have you experienced difficulties meeting a person that might be the right partner or mate for you?   yes   no   n/a

5. During the past year, have you not done something because you felt that it was "too late" (due to your age)?   yes   no

6. During the past year, have you become aware of a drop in stamina regarding any of your usual activities?   yes   no

7. During this past year, have you felt trapped in a boring routine?   yes   no

8. During the past year have you lived in an institution of some sort?   yes   no

9. During this past year, have you been robbed, physically assaulted, or the victim of another crime?   yes   no

10. During the past year, have you been aware of a   yes   no
decline in the way your body performs or functions
that you would attribute to age rather than illness?

11. During the past year, have you been trying to make   yes   no   n/a
decisions about having children (or more children)?

    If YES, has your age been a factor in your   yes   no
    decision process?

12. During the past year, have you thought that your   yes   no   n/a
spouse or partner may not live much longer?

13. During the past year, have your finances been   yes   no
negatively affected by changes in government policies?

14. During the past year, have you restricted any of   yes   no
your actions because of what people expect of you at
your age?

15. During the past year, have you thought that you   yes   no
may die soon?

16. During the past year, do you feel that someone has   yes   no
discriminated against you because of your age?

17. During the past year, have you noticed any age   yes   no
related changes in appearance?

18. During the past year, have you been denied an   yes   no
opportunity because you were too old?

19. During the past year, have other people made a lot   yes   no
of decisions about your life for you?

20. During the past year, have you felt that you no   yes   no
longer have the control over the way your body
performs or functions that you once had?

21. During the past year, have you felt that younger people sometimes view you negatively because of your age?　　yes　　no

22. During the past year, have you been financially dependent on other people? (IF YOU ARE A FULL-TIME HOMEMAKER AND NOT ON SOCIAL ASSISTANCE, PLEASE CIRCLE 'N/A')　　yes　　no　　n/a

23. During the past year, do you think you have not been taken seriously by someone because you are older?　　yes　　no

24. During the past year, have you thought that any of your close relatives may die soon?　　yes　　no　　n/a

25. During the past year, have you been physically dependent on others?　　yes　　no

26. During the past year, have you sometimes felt as if you were "invisible" to others?　　yes　　no

27. During the past year, have you felt that no matter what you do, you seem to have health problem(s)?　　yes　　no

28. During the past year, have you felt that no matter what you do, you can not stop age related changes in appearance?　　yes　　no

29. Do you have more responsibilities now than ten years ago?　　yes　　no

30. Would you say, your prestige is lower now than ten years ago because you are older?　　yes　　no

31. Would you say, your social power is lower now than ten years ago because you are older?　　yes　　no

32. Do you think you are less useful to others now than ten years ago?　　yes　　no

33. Do you feel that people find you less sexually attractive now than ten years ago?　　yes　　no

34. Is your health worse now than ten years ago?　　yes　　no

35. Would you say you have met the expectations that people have about what you should have done by your age?　　yes　　no

36. Do you have less responsibilities now than ten years ago?　　yes　　no

37. Would you say, your social power is lower now than ten years ago because you look older?　　yes　　no

38. Would you say, your prestige is lower now than ten years ago because you look older?　　yes　　no

39. Will you be forced to retire because of your age?　　yes　　no　　n/a

DON'T KNOW

Aging has positive and negative aspects. With the question below we would like to get an idea of how you would rate your own aging in general.

<u>Generally speaking</u>, would you say aging for you has been...

　　　　1) a more positive than negative experience
　　　　2) a more negative than positive experience
　　　　3) an equally positive and negative experience
　　　　4) you can't say

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION!

APPENDIX C:

Correlation between the frequency and intensity scales for
each questionnaire item (fear)

CORRELATION BETWEEN THE FREQUENCY AND INTENSITY SCALES FOR EACH QUESTIONNAIRE ITEM (FEAR)

#1) r= .832	#14) r= .905	#27) r= .873
#2) r= .795	#15) r= .801	#28) r= .882
#3) r= .874	#16) r= .890	#29) r= .924
#4) r= .923	#17) r= .841	#30) r= .929
#5) r= .905	#18) r= .909	#31) r= .933
#6) r= .850	#19) r= .898	#32) r= .916
#7) r= .906	#20) r= .833	#33) r= .890
#8) r= .869	#21) r= .867	#34) r= .868
#9) r= .921	#22) r= .886	#35) r= .919
#10) r= .870	#23) r= .908	#36) r= .940
#11) r= .916	#24) r= .863	#37) r= .942
#12) r= .977	#25) r= .869	#38) r= .917
#13) r= .860	#26) r= .890	#39) r= .942

average correlation= .891

APPENDIX D:

Homogeneity of variance tests and ANOVA summary tables

#1 MEMORY BECOMING WORSE

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .18430, P = 1.000 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #1 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	345.30	503	.69		
AGE	30.47	2	15.23	22.19	.000
SEX	6.44	1	6.44	9.38	.002
AGE * SEX	7.17	2	3.58	5.22	.006
(Model)	52.73	5	10.55	15.36	.000
(Total)	398.03	508	.78		

R-Squared =   .132
Adjusted R-Squared =   .124

- -

#2 FINANCIAL SECURITY

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .21731, P = .122 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #2 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	469.40	503	.93		
AGE	20.69	2	10.34	11.08	.000
SEX	.02	1	.02	.02	.874
AGE * SEX	.21	2	.11	.11	.893
(Model)	24.29	5	4.86	5.21	.000
(Total)	493.69	508	.97		

R-Squared =   .049
Adjusted R-Squared =   .040

#3   BECOMING MORE LONELY

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .21284, P =   .181 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #3 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	501.14	502	1.00		
AGE	1.92	2	.96	.96	.383
SEX	9.06	1	9.06	9.07	.003
AGE * SEX	6.10	2	3.05	3.06	.048
(Model)	19.09	5	3.82	3.82	.002
(Total)	520.23	507	1.03		

R-Squared =   .037
Adjusted R-Squared = .027

- -

#4   DIFFICULTIES FINDING PARTNER
Univariate Homogeneity of Variance Tests
Cochrans C(35,6) = .20407, P =   .909 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #4 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	282.90	212	1.33		
AGE	4.59	2	2.30	1.72	.181
SEX	11.40	1	11.40	8.55	.004
AGE * SEX	4.47	2	2.23	1.67	.190
(Model)	30.76	5	6.15	4.61	.001
(Total)	313.67	217	1.45		

R-Squared =   .098
Adjusted R-Squared = .077

#5   RUNNING OUT OF TIME TO DO THINGS

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .19792, P =   .580 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #5 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	476.47	500	.95		
AGE	.64	2	.32	.34	.715
SEX	.10	1	.10	.10	.752
AGE * SEX	.25	2	.12	.13	.878
(Model)	1.20	5	.24	.25	.939
(Total)	477.67	505	.95		

R-Squared =   .003
Adjusted R-Squared = .000

- -

#6   INABILITY TO MAINTAIN LEVEL OF PERF. ($\downarrow$ STAMINA)

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) =.21618, P =   .135 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #6 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	402.97	502	.80		
AGE	34.97	2	17.49	21.78	.000
SEX	.02	1	.02	.02	.876
AGE * SEX	5.41	2	2.70	3.37	.035
(Model)	47.26	5	9.45	11.77	.000
(Total)	450.23	507	.89		

R-Squared =   .105
Adjusted R-Squared = .096

#7   GETTING STUCK IN MONOTONOUS ROUTINE

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) =.17996, P = 1.000 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #7 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	525.92	500	1.05		
AGE	10.19	2	5.09	4.84	.008
SEX	1.27	1	1.27	1.21	.272
AGE * SEX	2.17	2	1.09	1.03	.357
(Model)	12.61	5	2.52	2.40	.036
(Total)	538.53	505	1.07		

R-Squared =   .023
Adjusted R-Squared = .014

#8   BEING INSTITUTIONALIZED

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .25954, P = .001 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #8 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	343.24	501	.69		
AGE	25.80	2	12.90	(18.83)	(.000)
SEX	1.52	1	1.52	(2.22)	(.137)
AGE * SEX	2.26	2	1.13	(1.65)	(.194)
(Model)	33.78	5	6.76	(9.86)	(.000)
(Total)	377.02	506	.75		

R-Squared =   .090
Adjusted R-Squared = .081

#9   VULNERABILITY TO CRIME

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .19352, P =   .768 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #9 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	513.33	502	1.02		
AGE	34.22	2	17.11	16.73	.000
SEX	3.87	1	3.87	3.79	.052
AGE * SEX	.34	2	.17	.17	.845
(Model)	41.89	5	8.38	8.19	.000
(Total)	555.21	507	1.10		

R-Squared =   .075
Adjusted R-Squared = .066

- -

#10   DECLINE IN BODY'S ABILITY TO PERFORM/FUNCTION

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .17862, P = 1.000 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #10 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	464.28	502	.92		
AGE	15.86	2	7.93	8.57	.000
SEX	1.02	1	1.02	1.11	.293
AGE * SEX	2.42	2	1.21	1.31	.271
(Model)	20.50	5	4.10	4.43	.001
(Total)	484.78	507	.96		

R-Squared =   .042
Adjusted R-Squared = .033

#11   LIMITATIONS ON DECISIONS ABOUT HAVING CHILDREN

Univariate Homogeneity of Variance Tests
Cochrans C(29,6) = .36039, P =   .000 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #11 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	185.55	174	1.07		
AGE	25.15	2	12.58	(11.79)	(.000)
SEX	.97	1	.97	(.91)	(.341)
AGE * SEX	7.34	2	3.67	(3.44)	(.034)
(Model)	61.89	5	12.38	(11.61)	(.000)
(Total)	247.44	179	1.38		

R-Squared =   .250
Adjusted R-Squared = .229

- -

#12   DEATH OF SPOUSE OR PARTNER

Univariate Homogeneity of Variance Tests
Cochrans C(60,6) = .23086, P =   .092 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #12 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	327.49	362	.90		
AGE	17.05	2	8.52	9.42	.000
SEX	7.87	1	7.87	8.70	.003
AGE * SEX	2.96	2	1.48	1.64	.196
(Model)	27.46	5	5.49	6.07	.000
(Total)	354.94	367	.97		

R-Squared =   .077
Adjusted R-Squared = .065

#13 CHANGES IN GOVERNMENT POLICIES THAT MAY AFFECT FINANCES

Univariate Homogeneity of Variance Tests
Cochrans C(78,6) = .19219, P = .886 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #13 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	512.55	470	1.09		
AGE	21.26	2	10.63	9.75	.000
SEX	.11	1	.11	.10	.753
AGE * SEX	1.54	2	.77	.71	.493
(Model)	26.78	5	5.36	4.91	.000
(Total)	539.32	475	1.14		

R-Squared = .050
Adjusted R-Squared = .040

- -

#14 LIMITATIONS OF BEHAVIOUR DUE TO SOCIAL EXPECTATIONS

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .20307, P = .395 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #14 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	338.45	503	.67		
AGE	.64	2	.32	.48	.621
SEX	.05	1	.05	.07	.785
AGE * SEX	2.96	2	1.48	2.20	.112
(Model)	3.42	5	.68	1.02	.407
(Total)	341.87	508	.67		

R-Squared = .010
Adjusted R-Squared = .000

#15 OWN DEATH

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .20879, P = .253 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #15 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	377.95	503	.75		
AGE	9.76	2	4.88	6.49	.002
SEX	.73	1	.73	.97	.325
AGE * SEX	.86	2	.43	.57	.565
(Model)	10.35	5	2.07	2.76	.018
(Total)	388.31	508	.76		

R-Squared =   .027
Adjusted R-Squared = .017

- -

#16 BEING DISCRIMINATED AGAINST

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .22118, P = .086 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #16 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	341.31	502	.68		
AGE	7.62	2	3.81	5.60	.004
SEX	.00	1	.00	.01	.937
AGE * SEX	4.28	2	2.14	3.15	.044
(Model)	10.85	5	2.17	3.19	.008
(Total)	352.15	507	.69		

R-Squared =   .031
Adjusted R-Squared = .021

#17   CHANGES IN PHYSICAL APPEARANCE

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .19356, P = .767 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #17 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	417.44	503	.83		
AGE	25.68	2	12.84	15.47	.000
SEX	12.03	1	12.03	14.50	.000
AGE * SEX	2.69	2	1.35	1.62	.198
(Model)	40.86	5	8.17	9.85	.000
(Total)	458.29	508	.90		

R-Squared =   .089
Adjusted R-Squared = .080

- -

#18   DECREASE IN AVAILABLE OPPORTUNITIES

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .19728, P = .599 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #18 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	426.12	503	.85		
AGE	17.57	2	8.79	10.37	.000
SEX	.79	1	.79	.93	.335
AGE * SEX	2.52	2	1.26	1.49	.227
(Model)	20.80	5	4.16	4.91	.000
(Total)	446.93	508	.88		

R-Squared =   .047
Adjusted R-Squared = .037

#19 LOSING CONTROL OVER IMPORTANT DECISIONS IN LIFE

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .27664, P = .000 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #19 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	301.11	503	.60		
AGE	12.42	2	6.21	(10.38)	(.000)
SEX	1.25	1	1.25	(2.08)	(.150)
AGE * SEX	1.74	2	.87	(1.45)	(.235)
(Model)	18.25	5	3.65	(6.10)	(.000)
(Total)	319.37	508	.63		

R-Squared =   .057
Adjusted R-Squared = .048

- -

#20 LESS CONTROL OVER BODY'S PERFORMANCE/FUNCTIONING

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .19585, P = .660 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #20 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	401.42	503	.80		
AGE	18.38	2	9.19	11.51	.000
SEX	.00	1	.00	.00	.954
AGE * SEX	1.69	2	.84	1.06	.349
(Model)	19.36	5	3.87	4.85	.000
(Total)	420.78	508	.83		

R-Squared =   .046
Adjusted R-Squared = .037

#21   BEING VIEWED NEGATIVELY BY YOUNGER PEOPLE

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .25541, P =   .002 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #21 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	351.63	502	.70		
AGE	1.80	2	.90	1.28	.278
SEX	.03	1	.03	.04	.834
AGE * SEX	.17	2	.08	.12	.887
(Model)	2.06	5	.41	.59	.709
(Total)	353.69	507	.70		

R-Squared =   .006
Adjusted R-Squared = .000

- -

#22   BECOMING FINANCIALLY DEPENDENT ON OTHERS

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .22009, P =   .095 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #22 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	404.80	503	.80		
AGE	1.72	2	.86	1.07	.344
SEX	.15	1	.15	.19	.661
AGE * SEX	1.16	2	.58	.72	.486
(Model)	2.55	5	.51	.63	.675
(Total)	407.35	508	.80		

R-Squared =   .006
Adjusted R-Squared = .000

#23 NOT BEING TAKEN AS SERIOUSLY

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .25818, P = .001 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #23 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	299.59	502	.60		
AGE	22.06	2	11.03	(18.48)	(.000)
SEX	.19	1	.19	(.31)	(.576)
AGE * SEX	.07	2	.04	(.06)	(.942)
(Model)	23.91	5	4.78	(8.01)	(.000)
(Total)	323.50	507	.64		

R-Squared =   .074
Adjusted R-Squared = .065

- -

#24 DEATH OF CLOSE RELATIVES

Univariate Homogeneity of Variance Tests
Cochrans C(81,6) = .17283, P = 1.000 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #24 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	482.03	487	.99		
AGE	15.26	2	7.63	7.71	.001
SEX	13.91	1	13.91	14.05	.000
AGE * SEX	1.56	2	.78	.79	.456
(Model)	35.76	5	7.15	7.23	.000
(Total)	517.79	492	1.05		

R-Squared =   .069
Adjusted R-Squared = .060

#25 BECOMING PHYSICALLY DEPENDENT ON OTHERS

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .22396, P = .066 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #25 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	350.67	502	.70		
AGE	35.73	2	17.86	25.57	.000
SEX	1.00	1	1.00	1.43	.233
AGE * SEX	1.88	2	.94	1.35	.261
(Model)	40.03	5	8.01	11.46	.000
(Total)	390.69	507	.77		

R-Squared =   .102
Adjusted R-Squared = .094

- -

#26 BECOMING "INVISIBLE" / LESS NOTICEABLE

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .19072, P = .916 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #26 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	320.67	503	.64		
AGE	.22	2	.11	.17	.842
SEX	.69	1	.69	1.08	.299
AGE * SEX	1.65	2	.82	1.29	.276
(Model)	2.78	5	.56	.87	.500
(Total)	323.45	508	.64		

R-Squared =   .009
Adjusted R-Squared = .000

#27 LOSING CONTROL OVER HEALTH
Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .21327, P = .174 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #27 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	471.95	502	.94		
AGE	25.15	2	12.57	13.37	.000
SEX	1.58	1	1.58	1.69	.195
AGE * SEX	6.32	2	3.16	3.36	.036
(Model)	30.11	5	6.02	6.40	.000
(Total)	502.06	507	.99		

R-Squared =   .060
Adjusted R-Squared = .051

- -

#28 LACKING CONTROL OVER CHANGES IN APPEARANCE

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .25014, P = .004 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #28 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	463.20	503	.92		
AGE	9.52	2	4.76	5.17	.006
SEX	17.54	1	17.54	19.05	.000
AGE * SEX	.39	2	.20	.21	.808
(Model)	26.68	5	5.34	5.79	.000
(Total)	489.87	508	.96		

R-Squared =   .054
Adjusted R-Squared = .045

#29   INCREASE IN RESPONSIBILITIES

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .21007, P = .233 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #29 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	514.62	499	1.03		
AGE	39.02	2	19.51	18.92	.000
SEX	1.33	1	1.33	1.29	.257
AGE * SEX	2.29	2	1.15	1.11	.330
(Model)	43.43	5	8.69	8.42	.000
(Total)	558.06	504	1.11		

R-Squared =   .078
Adjusted R-Squared = .069

- -

#30   LOSING PRESTIGE DUE TO AGING

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .24023, P = .013 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #30 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	240.30	498	.48		
AGE	4.36	2	2.18	4.52	.011
SEX	.38	1	.38	.79	.375
AGE * SEX	.70	2	.35	.73	.484
(Model)	5.16	5	1.03	2.14	.060
(Total)	245.46	503	.49		

R-Squared =   .021
Adjusted R-Squared = .011

#31 LOSING SOCIAL POWER DUE TO AGING

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .23435, P = .024 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #31 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	225.37	496	.45		
AGE	1.96	2	.98	2.16	.117
SEX	.11	1	.11	.25	.620
AGE * SEX	.00	2	.00	.00	.995
(Model)	2.22	5	.44	.98	.431
(Total)	227.59	501	.45		

R-Squared =   .010
Adjusted R-Squared = .000

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#32 BECOMING LESS USEFUL TO OTHERS

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .24020, P = .013 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #32 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	346.45	499	.69		
AGE	69.61	2	34.81	50.13	.000
SEX	.18	1	.18	.26	.610
AGE * SEX	.60	2	.30	.43	.651
(Model)	75.66	5	15.13	21.80	.000
(Total)	422.11	504	.84		

R-Squared =   .179
Adjusted R-Squared = .171

#33 BECOMING LESS SEXUALLY ATTRACTIVE

Univariate Homogeneity of Variance Tests
Cochrans C(82,6) = .20072, P =   .484 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #33 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	448.13	494	.91		
AGE	11.56	2	5.78	6.37	.002
SEX	.05	1	.05	.05	.816
AGE * SEX	14.49	2	7.24	7.98	.000
(Model)	36.50	5	7.30	8.05	.000
(Total)	484.63	499	.97		

R-Squared =   .075
Adjusted R-Squared = .066

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#34 HEALTH BECOMING WORSE

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .20358, P =   .387 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #34 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	459.81	500	.92		
AGE	14.92	2	7.46	8.11	.000
SEX	.07	1	.07	.08	.781
AGE * SEX	3.30	2	1.65	1.80	.167
(Model)	16.59	5	3.32	3.61	.003
(Total)	476.40	505	.94		

R-Squared =   .035
Adjusted R-Squared = .025

#35 NOT MEETING SOCIAL EXPECTATIONS RE: ACHIEVEMENTS

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .25419, P = .002 (approx.)

* * * * * * A n a l y s i s o f V a r i a n c e -- design

Tests of Significance for #35 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	470.37	500	.94		
AGE	49.85	2	24.93	26.50	.000
SEX	.18	1	.18	.20	.659
AGE * SEX	1.09	2	.54	.58	.561
(Model)	57.07	5	11.41	12.13	.000
(Total)	527.44	505	1.04		

R-Squared =   .108
Adjusted R-Squared = .099

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#36 DECREASE IN RESPONSIBILITIES

Univariate Homogeneity of Variance Tests
Cochrans C(84,6) = .25913, P = .001 (approx.)

* * * * * * A n a l y s i s o f V a r i a n c e -- design

Tests of Significance for #36 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	211.63	502	.42		
AGE	6.00	2	3.00	(7.11)	(.001)
SEX	.98	1	..98	(2.32)	(.128)
AGE * SEX	.22	2	.11	(.26)	(.771)
(Model)	8.09	5	1.62	(3.84)	(.002)
(Total)	219.72	507	.43		

R-Squared =   .037
Adjusted R-Squared = .027

#37   LOSING SOCIAL POWER DUE TO AGE RELATED CHANGES: APP.

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .25817, P = .001 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #37 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	278.13	499	.56		
AGE	.91	2	.46	(.82)	(.442)
SEX	.05	1	.05	(.09)	(.764)
AGE * SEX	.88	2	.44	(.79)	(.453)
(Model)	2.37	5	.47	(.85)	(.516)
(Total)	280.50	504	.56		

R-Squared =   .008
Adjusted R-Squared = .000

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#38   LOSING PRESTIGE DUE TO AGE RELATED CHANGES: APPEARA.

Univariate Homogeneity of Variance Tests
Cochrans C(83,6) = .22878, P = .042 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #38 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	266.95	500	.53		
AGE	.07	2	.03	.06	.938
SEX	.03	1	.03	.06	.803
AGE * SEX	.45	2	.23	.42	.656
(Model)	.58	5	.12	.22	.956
(Total)	267.52	505	.53		

R-Squared =   .002
Adjusted R-Squared = .000

#39   HAVING TO RETIRE DUE TO AGE

Univariate Homogeneity of Variance Tests
Cochrans C(23,6) = .29302, P =   .038 (approx.)

* * * * * * A n a l y s i s   o f   V a r i a n c e -- design

Tests of Significance for #39 using UNIQUE sums of squares

Source of Variation	SS	DF	MS	F	Sig of F
WITHIN+RESIDUAL	109.51	137	.80		
AGE	3.61	2	1.81	2.26	.108
SEX	.09	1	.09	.12	.732
AGE * SEX	1.06	2	.53	.66	.517
(Model)	4.34	5	.87	1.09	.371
(Total)	113.86	142	.80		

R-Squared =   .038
Adjusted R-Squared =   .003

APPENDIX E:

Means (fear strength & absolute fear strength) and standard
deviations for all fears by comparison group.

Fear strength means and standard deviations: whole sample

Item #	Mean	Std Dev	Valid N	Label
#1	1.11	.89	509	memory becoming worse
#2	1.72	.99	509	financial security
#3	1.01	1.01	508	becoming more lonely
#4	1.20	1.20	218	difficulties finding partner
#5	1.08	.97	506	running out of time to do things
#6	1.19	.94	508	inability to maint. level perf.
#7	1.06	1.03	506	getting stuck in monotonous rout.
#8	.59	.86	507	being institutionalized
#9	1.03	1.05	508	vulnerability to crime
#10	1.38	.98	508	decline: body's ability to perf.
#11	1.56	1.18	180	limitations re.: having children
#12	1.26	.98	368	death of spouse or partner
#13	1.79	1.07	476	changes in government policies
#14	.6	.82	509	limit. on behav.: social exp.
#15	.83	.87	509	own death
#16	.59	.83	508	discrimination
#17	1.38	.95	509	changes in physical appearance
#18	.84	.94	509	decrease in avail. opportunities
#19	.58	.79	509	losing control: imp. decisions
#20	1.26	.91	509	less control: body's perf./func.
#21	.67	.84	508	being viewed negatively by others
#22	.65	.90	509	becoming financially dependent
#23	.50	.80	508	not being taken as seriously
#24	1.76	1.03	493	death of close relatives
#25	.83	.88	508	becoming physically dependent
#26	.51	.80	509	becoming "invisible"
#27	1.32	1.00	508	losing control over health
#28	1.14	.98	509	lacking control: appearance
#29	1.05	1.05	505	increase in responsibilities
#30	.38	.70	504	losing prestige due to aging
#31	.35	.67	502	losing social power due to aging
#32	.67	.92	505	becoming less useful to others
#33	1.06	.99	500	becoming less sexually attractive
#34	1.38	.97	506	health becoming worse
#35	.80	1.02	506	not meeting expect.: achievements
#36	.35	.66	508	decrease in responsibilities
#37	.40	.75	505	loss social power (appearance)
#38	.39	.73	506	loss prestige due (appearance)
#39	.45	.90	143	having to retire due to age

Fear strength means and standard deviations: age group 1

Item #	Mean	Std Dev	Valid N	Label
#1	.81	.85	204	memory becoming worse
#2	1.91	.88	204	financial security
#3	1.04	1.06	204	becoming more lonely
#4	1.35	1.25	107	difficulties finding partner
#5	1.10	.98	204	running out of time to do things
#6	.85	.89	204	inability to maint. level perf.
#7	1.20	1.03	204	getting stuck in monotonous rout.
#8	.35	.69	204	being institutionalized
#9	.78	.99	204	vulnerability to crime
#10	1.16	.95	204	decline: body's ability to perf.
#11	1.72	1.10	145	limitations re.: having children
#12	1.09	.04	151	death of spouse or partner
#13	1.55	.98	198	changes in government policies
#14	.67	.80	204	limit. on behav.: social exp.
#15	.72	.88	204	own death
#16	.47	.75	204	discrimination
#17	1.47	.89	204	changes in physical appearance
#18	.74	.83	204	decrease in avail. opportunities
#19	.40	.66	204	losing control: imp. decisions
#20	1.04	.89	204	less control: body's perf./func.
#21	.60	.76	204	being viewed negatively by others
#22	.60	.82	204	becoming financially dependent
#23	.28	.63	203	not being taken as seriously
#24	1.93	1.01	201	death of close relatives
#25	.55	.77	204	becoming physically dependent
#26	.53	.83	204	becoming "invisible"
#27	1.12	.97	204	losing control over health
#28	1.23	.96	204	lacking control: appearance
#29	1.36	1.09	204	increase in responsibilities
#30	.27	.61	203	losing prestige due to aging
#31	.27	.63	204	losing social power due to aging
#32	.35	.77	203	becoming less useful to others
#33	1.15	1.00	204	becoming less sexually attractive
#34	1.20	.99	203	health becoming worse
#35	1.17	1.11	203	not meeting expect.: achievements
#36	.23	.55	204	decrease in responsibilities
#37	.46	.85	203	loss social power (appearance)
#38	.41	.79	203	loss prestige due (appearance)
#39	.28	.74	49	having to retire due to age

Fear strength means and standard deviations: age group 2

Item #	Mean	Std Dev	Valid N	Label
#1	1.14	.83	152	memory becoming worse
#2	1.77	.96	152	financial security
#3	.91	.93	152	becoming more lonely
#4	1.23	1.12	62	difficulties finding partner
#5	1.12	.91	152	running out of time to do things
#6	1.30	.86	152	inability to maint. level perf.
#7	1.04	1.00	152	getting stuck in monotonous rout.
#8	.55	.75	152	being institutionalized
#9	.97	1.00	152	vulnerability to crime
#10	1.53	.95	152	decline: body's ability to perf.
#11	1.24	1.32	25	limitations re.: having children
#12	1.21	.83	116	death of spouse or partner
#13	1.81	1.03	143	changes in government policies
#14	.60	.79	152	limit. on behav.: social exp.
#15	.79	.74	152	own death
#16	.75	.83	152	discrimination
#17	1.60	.94	152	changes in physical appearance
#18	1.13	.98	152	decrease in avail. opportunities
#19	.59	.75	152	losing control: imp. decisions
#20	1.34	.86	152	less control: body's perf./func.
#21	.74	.80	152	being viewed negatively by others
#22	.66	.87	152	becoming financially dependent
#23	.48	.74	152	not being taken as seriously
#24	1.80	1.02	149	death of close relatives
#25	.84	.83	151	becoming physically dependent
#26	.48	.73	152	becoming "invisible"
#27	1.30	.90	152	losing control over health
#28	1.22	.91	152	lacking control: appearance
#29	1.01	1.01	151	increase in responsibilities
#30	.46	.66	151	losing prestige due to aging
#31	.40	.65	150	losing social power due to aging
#32	.51	.71	151	becoming less useful to others
#33	1.24	.94	151	becoming less sexually attractive
#34	1.39	.93	151	health becoming worse
#35	.72	.94	151	not meeting expect.: achievements
#36	.38	.61	152	decrease in responsibilities
#37	.37	.59	152	loss social power (appearance)
#38	.38	.62	152	loss prestige due (appearance)
#39	.49	.92	75	having to retire due to age

Fear strength means and standard deviations: age group 3

Item #	Mean	Std Dev	Valid N	Label
#1	1.49	.84	153	memory becoming worse
#2	1.40	1.06	153	financial security
#3	1.05	1.03	152	becoming more lonely
#4	.86	1.15	49	difficulties finding partner
#5	1.02	1.02	150	running out of time to do things
#6	1.52	.94	152	inability to maint. level perf.
#7	.88	1.04	150	getting stuck in monotonous rout.
#8	.94	1.05	151	being institutionalized
#9	1.43	1.05	152	vulnerability to crime
#10	1.54	.99	152	decline: body's ability to perf.
#11	.00	.00	10	limitations re.: having children
#12	1.58	1.00	101	death of spouse or partner
#13	2.10	1.12	144	changes in government policies
#14	.63	.88	153	limit. on behav.: social exp.
#15	1.03	.95	153	own death
#16	.60	.92	152	discrimination
#17	1.05	.95	153	changes in physical appearance
#18	.70	.97	153	decrease in avail. opportunities
#19	.82	.92	153	losing control: imp. decisions
#20	1.47	.92	153	less control: body's perf./func.
#21	.69	.96	152	being viewed negatively by others
#22	.71	1.01	153	becoming financially dependent
#23	.80	.96	153	not being taken as seriously
#24	1.47	1.00	143	death of close relatives
#25	1.20	.92	153	becoming physically dependent
#26	.51	.82	153	becoming "invisible"
#27	1.62	1.05	152	losing control over health
#28	.94	1.05	153	lacking control: appearance
#29	.68	.91	150	increase in responsibilities
#30	.46	.82	150	losing prestige due to aging
#31	.41	.76	148	losing social power due to aging
#32	1.25	1.01	151	becoming less useful to others
#33	.74	.95	145	becoming less sexually attractive
#34	1.59	.95	152	health becoming worse
#35	.38	.77	152	not meeting expect.: achievements
#36	.50	.80	152	decrease in responsibilities
#37	.34	.74	150	loss social power (appearance)
#38	.38	.74	151	loss prestige due (appearance)
#39	.71	1.08	19	having to retire due to age

Fear strength means and standard deviations: women

Item #	Mean	Std Dev	Valid N	Label
#1	1.20	.92	311	memory becoming worse
#2	1.72	1.00	311	financial security
#3	1.13	1.06	310	becoming more lonely
#4	1.42	1.25	136	difficulties finding partner
#5	1.09	1.00	308	running out of time to do things
#6	1.18	.96	310	inability to maint. level perf.
#7	1.01	1.03	308	getting stuck in monotonous rout.
#8	.63	.86	309	being institutionalized
#9	1.11	1.06	310	vulnerability to crime
#10	1.34	.96	311	decline: body's ability to perf.
#11	1.93	1.18	100	limitations re.: having children
#12	1.40	1.01	218	death of spouse or partner
#13	1.78	1.04	296	changes in government policies
#14	.63	.83	311	limit. on behav.: social exp.
#15	.81	.84	311	own death
#16	.59	.82	311	discrimination
#17	1.49	.97	311	changes in physical appearance
#18	.80	.94	311	decrease in avail. opportunities
#19	.62	.83	311	losing control: imp. decisions
#20	1.26	.94	311	less control: body's perf./func.
#21	.67	.85	311	being viewed negatively by others
#22	.67	.91	311	becoming financially dependent
#23	.52	.80	310	not being taken as seriously
#24	1.90	1.03	300	death of close relatives
#25	.87	.89	311	becoming physically dependent
#26	.55	.83	311	becoming "invisible"
#27	1.38	1.02	311	losing control over health
#28	1.28	1.03	311	lacking control: appearance
#29	1.09	1.09	310	increase in responsibilities
#30	.36	.68	308	losing prestige due to aging
#31	.34	.69	309	losing social power due to aging
#32	.70	.92	309	becoming less useful to others
#33	1.07	.98	308	becoming less sexually attractive
#34	1.39	1.01	311	health becoming worse
#35	.81	1.07	311	not meeting expect.: achievements
#36	.32	.65	311	decrease in responsibilities
#37	.41	.80	310	loss social power (appearance)
#38	.40	.78	311	loss prestige due (appearance)
#39	.47	.93	77	having to retire due to age

Fear strength means and standard deviations: men

Item #	Mean	Std Dev	Valid N	Label
#1	.98	.82	198	memory becoming worse
#2	1.71	.96	198	financial security
#3	.82	.91	198	becoming more lonely
#4	.84	1.03	82	difficulties finding partner
#5	1.06	.92	198	running out of time to do things
#6	1.19	.92	198	inability to maint. level perf.
#7	1.13	1.03	198	getting stuck in monotonous rout.
#8	.52	.86	198	being institutionalized
#9	.91	1.02	198	vulnerability to crime
#10	1.45	1.00	197	decline: body's ability to perf.
#11	1.09	1.00	80	limitations re.: having children
#12	1.07	.91	150	death of spouse or partner
#13	1.81	1.10	180	changes in government policies
#14	.64	.81	198	limit. on behav.: social exp.
#15	.87	.92	198	own death
#16	.59	.85	197	discrimination
#17	1.22	.89	198	changes in physical appearance
#18	.91	.93	198	decrease in avail. opportunities
#19	.53	.74	198	losing control: imp. decisions
#20	1.26	.87	198	less control: body's perf./func.
#21	.66	.81	197	being viewed negatively by others
#22	.62	.87	198	becoming financially dependent
#23	.46	.80	198	not being taken as seriously
#24	1.54	.98	193	death of close relatives
#25	.77	.85	197	becoming physically dependent
#26	.45	.74	198	becoming "invisible"
#27	1.23	.95	197	losing control over health
#28	.92	.86	198	lacking control: appearance
#29	1.00	.99	195	increase in responsibilities
#30	.42	.72	196	losing prestige due to aging
#31	.37	.65	193	losing social power due to aging
#32	.62	.90	196	becoming less useful to others
#33	1.04	1.00	192	becoming less sexually attractive
#34	1.35	.91	195	health becoming worse
#35	.77	.95	195	not meeting expect.: achievements
#36	.41	.67	197	decrease in responsibilities
#37	.38	.65	195	loss social power (appearance)
#38	.38	.64	195	loss prestige due (appearance)
#39	.42	.86	66	having to retire due to age

Fear strength means and standard deviations: women in age group 1

Item #	Mean	Std Dev	Valid N	Label
#1	.78	.87	129	memory becoming worse
#2	1.93	.87	129	financial security
#3	1.22	1.11	129	becoming more lonely
#4	1.63	1.24	71	difficulties finding partner
#5	1.11	1.01	129	running out of time to do things
#6	.77	.82	129	inability to maint. level perf.
#7	1.09	1.02	129	getting stuck in monotonous rout.
#8	.34	.60	129	being institutionalized
#9	.88	1.04	129	vulnerability to crime
#10	1.10	.92	129	decline: body's ability to perf.
#11	2.09	1.08	88	limitations re.: having children
#12	1.29	1.10	95	death of spouse or partner
#13	1.49	.92	122	changes in government policies
#14	.66	.80	129	limit. on behav.: social exp.
#15	.71	.82	129	own death
#16	.53	.74	129	discrimination
#17	1.55	.89	129	changes in physical appearance
#18	.78	.85	129	decrease in avail. opportunities
#19	.38	.62	129	losing control: imp. decisions
#20	1.05	.92	129	less control: body's perf./func.
#21	.60	.74	129	being viewed negatively by others
#22	.65	.83	129	becoming financially dependent
#23	.30	.63	128	not being taken as seriously
#24	2.11	1.01	127	death of close relatives
#25	.58	.76	129	becoming physically dependent
#26	.59	.84	129	becoming "invisible"
#27	1.21	1.00	129	losing control over health
#28	1.35	.93	129	lacking control: appearance
#29	1.34	1.09	129	increase in responsibilities
#30	.27	.56	128	losing prestige due to aging
#31	.26	.61	129	losing social power due to aging
#32	.36	.73	128	becoming less useful to others
#33	1.28	.94	129	becoming less sexually attractive
#34	1.24	1.01	129	health becoming worse
#35	1.22	1.16	129	not meeting expect.: achievements
#36	.19	.53	129	decrease in responsibilities
#37	.51	.89	128	loss social power (appearance)
#38	.43	.80	129	loss prestige due (appearance)
#39	.39	.89	32	having to retire due to age

Fear strength means and standard deviations:
women in age group 2

Item #	Mean	Std Dev	Valid N	Label
#1	1.36	.85	81	memory becoming worse
#2	1.78	1.04	81	financial security
#3	1.10	.98	81	becoming more lonely
#4	1.52	1.15	32	difficulties finding partner
#5	1.15	.94	81	running out of time to do things
#6	1.43	.85	81	inability to maint. level perf.
#7	1.02	1.01	81	getting stuck in monotonous rout.
#8	.68	.82	81	being institutionalized
#9	1.02	1.01	81	vulnerability to crime
#10	1.58	.93	81	decline: body's ability to perf.
#11	1.13	1.43	8	limitations re.: having children
#12	1.33	.82	61	death of spouse or partner
#13	1.87	1.02	76	changes in government policies
#14	.69	.82	81	limit. on behav.: social exp.
#15	.79	.70	81	own death
#16	.79	.83	81	discrimination
#17	1.85	.96	81	changes in physical appearance
#18	1.03	.97	81	decrease in avail. opportunities
#19	.70	.78	81	losing control: imp. decisions
#20	1.40	.88	81	less control: body's perf./func.
#21	.72	.78	81	being viewed negatively by others
#22	.69	.95	81	becoming financially dependent
#23	.51	.74	81	not being taken as seriously
#24	1.98	1.01	81	death of close relatives
#25	.96	.86	81	becoming physically dependent
#26	.56	.82	81	becoming "invisible"
#27	1.46	.94	81	losing control over health
#28	1.44	.98	81	lacking control: appearance
#29	1.14	1.12	81	increase in responsibilities
#30	.47	.69	81	losing prestige due to aging
#31	.39	.65	81	losing social power due to aging
#32	.57	.78	81	becoming less useful to others
#33	1.34	.94	81	becoming less sexually attractive
#34	1.49	1.05	81	health becoming worse
#35	.68	.95	81	not meeting expect.: achievements
#36	.31	.52	81	decrease in responsibilities
#37	.33	.61	81	loss social power (appearance)
#38	.35	.67	81	loss prestige due (appearance)
#39	.51	.91	36	having to retire due to age

Fear strength means and standard deviations: women in age group 3

Item #	Mean	Std Dev	Valid N	Label
#1	1.60	.81	101	memory becoming worse
#2	1.38	1.04	101	financial security
#3	1.04	1.06	100	becoming more lonely
#4	.88	1.22	33	difficulties finding partner
#5	1.01	1.05	98	running out of time to do things
#6	1.52	1.02	100	inability to maint. level perf.
#7	.89	1.06	98	getting stuck in monotonous rout.
#8	.97	1.05	99	being institutionalized
#9	1.49	1.03	100	vulnerability to crime
#10	1.46	.98	101	decline: body's ability to perf.
#11	.00	.00	4	limitations re.: having children
#12	1.62	1.03	62	death of spouse or partner
#13	2.08	1.12	98	changes in government policies
#14	.56	.86	101	limit. on behav.: social exp.
#15	.96	.95	101	own death
#16	.50	.89	101	discrimination
#17	1.12	.98	101	changes in physical appearance
#18	.65	1.00	101	decrease in avail. opportunities
#19	.87	1.00	101	losing control: imp. decisions
#20	1.41	.96	101	less control: body's perf./func.
#21	.71	1.03	101	being viewed negatively by others
#22	.68	.99	101	becoming financially dependent
#23	.80	.95	101	not being taken as seriously
#24	1.53	1.00	92	death of close relatives
#25	1.18	.97	101	becoming physically dependent
#26	.48	.84	101	becoming "invisible"
#27	1.54	1.08	101	losing control over health
#28	1.06	1.15	101	lacking control: appearance
#29	.72	.98	100	increase in responsibilities
#30	.40	.80	99	losing prestige due to aging
#31	.40	.80	99	losing social power due to aging
#32	1.24	1.01	100	becoming less useful to others
#33	.58	.87	98	becoming less sexually attractive
#34	1.52	.95	101	health becoming worse
#35	.41	.83	101	not meeting expect.: achievements
#36	.49	.82	101	decrease in responsibilities
#37	.35	.81	101	loss social power (appearance)
#38	.40	.83	101	loss prestige due (appearance)
#39	.61	1.22	9	having to retire due to age

Fear strength means and standard deviations: men in age group 1

Item #	Mean	Std Dev	Valid N	Label
#1	.87	.83	75	memory becoming worse
#2	1.87	.89	75	financial security
#3	.75	.89	75	becoming more lonely
#4	.79	1.07	36	difficulties finding partner
#5	1.07	.94	75	running out of time to do things
#6	.99	.99	75	inability to maint. level perf.
#7	1.38	1.05	75	getting stuck in monotonous rout.
#8	.38	.82	75	being institutionalized
#9	.63	.89	75	vulnerability to crime
#10	1.25	1.00	75	decline: body's ability to perf.
#11	1.14	.88	57	limitations re.: having children
#12	.75	.83	56	death of spouse or partner
#13	1.65	1.09	67	changes in government policies
#14	.69	.79	75	limit. on behav.: social exp.
#15	.74	.98	75	own death
#16	.37	.75	75	discrimination
#17	1.34	.89	75	changes in physical appearance
#18	.67	.81	75	decrease in avail. opportunities
#19	.43	.73	75	losing control: imp. decisions
#20	1.01	.85	75	less control: body's perf./func.
#21	.59	.79	75	being viewed negatively by others
#22	.51	.81	75	becoming financially dependent
#23	.25	.62	75	not being taken as seriously
#24	1.64	.95	74	death of close relatives
#25	.51	.79	75	becoming physically dependent
#26	.43	.81	75	becoming "invisible"
#27	.98	.93	75	losing control over health
#28	1.01	.97	75	lacking control: appearance
#29	1.39	1.09	75	increase in responsibilities
#30	.29	.69	75	losing prestige due to aging
#31	.29	.65	75	losing social power due to aging
#32	.34	.84	75	becoming less useful to others
#33	.94	1.06	75	becoming less sexually attractive
#34	1.15	.95	74	health becoming worse
#35	1.09	1.03	74	not meeting expect.: achievements
#36	.28	.57	75	decrease in responsibilities
#37	.38	.77	75	loss social power (appearance)
#38	.36	.78	74	loss prestige due (appearance)
#39	.06	.24	17	having to retire due to age

Fear strength means and standard deviations: men in age group 2

Item #	Mean	Std Dev	Valid N	Label
#1	.89	.74	71	memory becoming worse
#2	1.76	.88	71	financial security
#3	.69	.83	71	becoming more lonely
#4	.92	1.01	30	difficulties finding partner
#5	1.07	.89	71	running out of time to do things
#6	1.15	.86	71	inability to maint. level perf.
#7	1.06	1.00	71	getting stuck in monotonous rout.
#8	.39	.64	71	being institutionalized
#9	.90	1.00	71	vulnerability to crime
#10	1.47	.97	71	decline: body's ability to perf.
#11	1.29	1.31	17	limitations re.: having children
#12	1.07	.82	55	death of spouse or partner
#13	1.75	1.05	67	changes in government policies
#14	.50	.76	71	limit. on behav.: social exp.
#15	.79	.79	71	own death
#16	.70	.83	71	discrimination
#17	1.32	.84	71	changes in physical appearance
#18	1.24	.99	71	decrease in avail. opportunities
#19	.46	.71	71	losing control: imp. decisions
#20	1.27	.84	71	less control: body's perf./func.
#21	.75	.83	71	being viewed negatively by others
#22	.62	.78	71	becoming financially dependent
#23	.45	.74	71	not being taken as seriously
#24	1.59	1.01	68	death of close relatives
#25	.70	.78	70	becoming physically dependent
#26	.39	.61	71	becoming "invisible"
#27	1.11	.81	71	losing control over health
#28	.97	.77	71	lacking control: appearance
#29	.86	.86	70	increase in responsibilities
#30	.45	.64	70	losing prestige due to aging
#31	.41	.65	69	losing social power due to aging
#32	.44	.61	70	becoming less useful to others
#33	1.11	.93	70	becoming less sexually attractive
#34	1.29	.77	70	health becoming worse
#35	.77	.93	70	not meeting expect.: achievements
#36	.46	.70	71	decrease in responsibilities
#37	.41	.58	71	loss social power (appearance)
#38	.42	.56	71	loss prestige due (appearance)
#39	.47	.95	39	having to retire due to age

Fear strength means and standard deviations: men in age group 3

Item #	Mean	Std Dev	Valid N	Label
#1	1.28	.86	52	memory becoming worse
#2	1.42	1.12	52	financial security
#3	1.09	.99	52	becoming more lonely
#4	.81	1.03	16	difficulties finding partner
#5	1.04	.96	52	running out of time to do things
#6	1.54	.79	52	inability to maint. level perf.
#7	.88	1.00	52	getting stuck in monotonous rout.
#8	.87	1.06	52	being institutionalized
#9	1.32	1.09	52	vulnerability to crime
#10	1.70	.99	51	decline: body's ability to perf.
#11	.00	.00	6	limitations re.: having children
#12	1.51	.96	39	death of spouse or partner
#13	2.14	1.14	46	changes in government policies
#14	.78	.91	52	limit. on behav.: social exp.
#15	1.16	.96	52	own death
#16	.78	.97	51	discrimination
#17	.90	.88	52	changes in physical appearance
#18	.80	.90	52	decrease in avail. opportunities
#19	.74	.76	52	losing control: imp. decisions
#20	1.59	.84	52	less control: body's perf./func.
#21	.65	.81	51	being viewed negatively by others
#22	.78	1.04	52	becoming financially dependent
#23	.80	.98	52	not being taken as seriously
#24	1.34	.98	51	death of close relatives
#25	1.24	.84	52	becoming physically dependent
#26	.58	.78	52	becoming "invisible"
#27	1.76	.97	51	losing control over health
#28	.70	.78	52	lacking control: appearance
#29	.62	.78	50	increase in responsibilities
#30	.57	.85	51	losing prestige due to aging
#31	.44	.67	49	losing social power due to aging
#32	1.27	1.01	51	becoming less useful to others
#33	1.07	1.02	47	becoming less sexually attractive
#34	1.74	.93	51	health becoming worse
#35	.32	.64	51	not meeting expect.: achievements
#36	.53	.75	51	decrease in responsibilities
#37	.34	.57	49	loss social power (appearance)
#38	.34	.53	50	loss prestige due (appearance)
#39	.80	1.01	10	having to retire due to age

Absolute fear strength means and standard deviations: whole sample

Item #	Mean	Std Dev	Valid N	Label
#1	1.61	.61	345	memory becoming worse
#2	1.99	.77	438	financial security
#3	1.71	.77	293	becoming more lonely
#4	2.04	.86	128	difficulties finding partner
#5	1.67	.72	322	running out of time to do things
#6	1.69	.67	350	inability to maint. level perf.
#7	1.75	.78	302	getting stuck in monotonous rout.
#8	1.56	.74	184	being institutionalized
#9	1.76	.79	293	vulnerability to crime
#10	1.77	.75	392	decline: body's ability to perf.
#11	2.11	.85	132	limitations re.: having children
#12	1.72	.76	267	death of spouse or partner
#13	2.10	.83	405	changes in government policies
#14	1.50	.60	209	limit. on behav.: social exp.
#15	1.51	.64	274	own death
#16	1.51	.66	195	discrimination
#17	1.77	.70	394	changes in physical appearance
#18	1.60	.69	264	decrease in avail. opportunities
#19	1.42	.62	203	losing control: imp. decisions
#20	1.69	.64	375	less control: body's perf./func.
#21	1.46	.65	225	being viewed negatively by others
#22	1.57	.72	207	becoming financially dependent
#23	1.52	.68	160	not being taken as seriously
#24	2.03	.82	424	death of close relatives
#25	1.53	.62	272	becoming physically dependent
#26	1.49	.68	169	becoming "invisible"
#27	1.79	.72	371	losing control over health
#28	1.69	.73	338	lacking control: appearance
#29	1.77	.79	297	increase in responsibilities
#30	1.42	.62	131	losing prestige due to aging
#31	1.39	.62	124	losing social power due to aging
#32	1.64	.71	201	becoming less useful to others
#33	1.68	.72	312	becoming less sexually attractive
#34	1.74	.76	399	health becoming worse
#35	1.77	.80	225	not meeting expect.: achievements
#36	1.34	.58	133	decrease in responsibilities
#37	1.42	.74	140	loss social power (appearance)
#38	1.41	.71	137	loss prestige due (appearance)
#39	1.85	.94	33	having to retire due to age

Absolute fear strength means and standard deviations: age group 1

Item #	Mean	Std Dev	Valid N	Label
#1	1.53	.56	105	memory becoming worse
#2	2.05	.73	190	financial security
#3	1.79	.80	116	becoming more lonely
#4	2.12	.90	68	difficulties finding partner
#5	1.71	.70	129	running out of time to do things
#6	1.53	.67	111	inability to maint. level perf.
#7	1.75	.80	138	getting stuck in monotonous rout.
#8	1.45	.67	47	being institutionalized
#9	1.71	.78	91	vulnerability to crime
#10	1.68	.70	138	decline: body's ability to perf.
#11	2.08	.86	119	limitations re.: having children
#12	1.70	.84	95	death of spouse or partner
#13	1.90	.73	153	changes in government policies
#14	1.47	.52	89	limit. on behav.: social exp.
#15	1.57	.66	90	own death
#16	1.42	.65	65	discrimination
#17	1.78	.66	167	changes in physical appearance
#18	1.48	.57	99	decrease in avail. opportunities
#19	1.34	.52	58	losing control: imp. decisions
#20	1.60	.60	130	less control: body's perf./func.
#21	1.36	.58	85	being viewed negatively by others
#22	1.51	.60	80	becoming financially dependent
#23	1.41	.66	39	not being taken as seriously
#24	2.13	.84	182	death of close relatives
#25	1.42	.57	77	becoming physically dependent
#26	1.54	.72	68	becoming "invisible"
#27	1.74	.68	129	losing control over health
#28	1.70	.70	145	lacking control: appearance
#29	1.90	.81	145	increase in responsibilities
#30	1.43	.60	37	losing prestige due to aging
#31	1.39	.67	40	losing social power due to aging
#32	1.63	.86	43	becoming less useful to others
#33	1.74	.71	134	becoming less sexually attractive
#34	1.68	.76	144	health becoming worse
#35	1.93	.79	121	not meeting expect.: achievements
#36	1.36	.53	33	decrease in responsibilities
#37	1.59	.84	58	loss social power (appearance)
#38	1.59	.82	50	loss prestige due (appearance)
#39	1.69	1.03	8	having to retire due to age

Absolute fear strength means and standard deviations: age group 2

Item #	Mean	Std Dev	Valid N	Label
#1	1.57	.55	109	memory becoming worse
#2	1.97	.81	136	financial security
#3	1.61	.68	84	becoming more lonely
#4	1.89	.82	40	difficulties finding partner
#5	1.60	.67	105	running out of time to do things
#6	1.67	.61	116	inability to maint. level perf.
#7	1.71	.76	90	getting stuck in monotonous rout.
#8	1.38	.61	57	being institutionalized
#9	1.66	.79	87	vulnerability to crime
#10	1.80	.76	129	decline: body's ability to perf.
#11	2.38	.74	13	limitations re.: having children
#12	1.54	.61	90	death of spouse or partner
#13	2.07	.82	125	changes in government policies
#14	1.48	.55	59	limit. on behav.: social exp.
#15	1.32	.50	88	own death
#16	1.47	.55	76	discrimination
#17	1.86	.75	130	changes in physical appearance
#18	1.68	.72	101	decrease in avail. opportunities
#19	1.35	.54	65	losing control: imp. decisions
#20	1.67	.63	120	less control: body's perf./func.
#21	1.42	.56	76	being viewed negatively by others
#22	1.50	.72	65	becoming financially dependent
#23	1.40	.60	50	not being taken as seriously
#24	2.07	.82	128	death of close relatives
#25	1.46	.58	85	becoming physically dependent
#26	1.38	.62	50	becoming "invisible"
#27	1.67	.65	118	losing control over health
#28	1.64	.68	112	lacking control: appearance
#29	1.73	.74	86	increase in responsibilities
#30	1.28	.47	52	losing prestige due to aging
#31	1.28	.51	45	losing social power due to aging
#32	1.34	.51	55	becoming less useful to others
#33	1.64	.72	113	becoming less sexually attractive
#34	1.71	.73	123	health becoming worse
#35	1.60	.76	67	not meeting expect.: achievements
#36	1.20	.45	48	decrease in responsibilities
#37	1.20	.40	46	loss social power (appearance)
#38	1.22	.45	48	loss prestige due (appearance)
#39	1.82	.99	19	having to retire due to age

Absolute fear strength means and standard deviations: age group 3

Item #	Mean	Std Dev	Valid N	Label
#1	1.72	.67	131	memory becoming worse
#2	1.89	.79	112	financial security
#3	1.70	.81	93	becoming more lonely
#4	2.08	.85	20	difficulties finding partner
#5	1.70	.79	88	running out of time to do things
#6	1.87	.69	123	inability to maint. level perf.
#7	1.78	.76	74	getting stuck in monotonous rout.
#8	1.75	.82	80	being institutionalized
#9	1.88	.78	115	vulnerability to crime
#10	1.86	.78	125	decline: body's ability to perf.
#11	Variable	is missing		limitations re.: having children
#12	1.92	.77	82	death of spouse or partner
#13	2.37	.89	127	changes in government policies
#14	1.54	.75	61	limit. on behav.: social exp.
#15	1.62	.70	96	own death
#16	1.67	.78	54	discrimination
#17	1.63	.69	97	changes in physical appearance
#18	1.66	.80	64	decrease in avail. opportunities
#19	1.54	.72	80	losing control: imp. decisions
#20	1.79	.68	125	less control: body's perf./func.
#21	1.63	.81	64	being viewed negatively by others
#22	1.74	.84	62	becoming financially dependent
#23	1.68	.72	71	not being taken as seriously
#24	1.83	.75	114	death of close relatives
#25	1.66	.66	110	becoming physically dependent
#26	1.53	.67	51	becoming "invisible"
#27	1.98	.81	124	losing control over health
#28	1.74	.84	81	lacking control: appearance
#29	1.55	.75	66	increase in responsibilities
#30	1.60	.77	42	losing prestige due to aging
#31	1.53	.68	39	losing social power due to aging
#32	1.81	.69	103	becoming less useful to others
#33	1.63	.74	65	becoming less sexually attractive
#34	1.83	.77	132	health becoming worse
#35	1.53	.82	37	not meeting expect.: achievements
#36	1.45	.69	52	decrease in responsibilities
#37	1.43	.85	36	loss social power (appearance)
#38	1.42	.79	39	loss prestige due (appearance)
#39	2.17	.68	6	having to retire due to age

Absolute fear strength means and standard deviations: women

Item #	Mean	Std Dev	Valid N	Label
#1	1.67	.64	220	memory becoming worse
#2	2.00	.78	266	financial security
#3	1.76	.82	196	becoming more lonely
#4	2.14	.90	90	difficulties finding partner
#5	1.72	.75	191	running out of time to do things
#6	1.71	.68	211	inability to maint. level perf.
#7	1.72	.80	177	getting stuck in monotonous rout.
#8	1.54	.70	123	being institutionalized
#9	1.81	.77	188	vulnerability to crime
#10	1.74	.72	238	decline: body's ability to perf.
#11	2.30	.90	84	limitations re.: having children
#12	1.79	.80	168	death of spouse or partner
#13	2.06	.84	255	changes in government policies
#14	1.52	.62	123	limit. on behav.: social exp.
#15	1.48	.60	166	own death
#16	1.48	.64	121	discrimination
#17	1.85	.73	249	changes in physical appearance
#18	1.62	.71	152	decrease in avail. opportunities
#19	1.46	.66	128	losing control: imp. decisions
#20	1.71	.66	226	less control: body's perf./func.
#21	1.48	.69	136	being viewed negatively by others
#22	1.58	.76	129	becoming financially dependent
#23	1.52	.64	103	not being taken as seriously
#24	2.12	.86	267	death of close relatives
#25	1.55	.63	173	becoming physically dependent
#26	1.56	.70	105	becoming "invisible"
#27	1.84	.74	232	losing control over health
#28	1.77	.78	224	lacking control: appearance
#29	1.84	.82	181	increase in responsibilities
#30	1.43	.62	75	losing prestige due to aging
#31	1.47	.66	69	losing social power due to aging
#32	1.66	.69	127	becoming less useful to others
#33	1.68	.71	194	becoming less sexually attractive
#34	1.78	.79	242	health becoming worse
#35	1.81	.88	137	not meeting expect.: achievements
#36	1.35	.63	73	decrease in responsibilities
#37	1.52	.83	83	loss social power (appearance)
#38	1.53	.80	79	loss prestige due (appearance)
#39	1.89	1.02	18	having to retire due to age

Absolute fear strength means and standard deviations: men

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Item #	Mean	Std Dev	Valid N	Label
#1	1.51	.54	125	memory becoming worse
#2	1.97	.77	172	financial security
#3	1.60	.65	97	becoming more lonely
#4	1.80	.74	38	difficulties finding partner
#5	1.59	.67	131	running out of time to do things
#6	1.67	.65	139	inability to maint. level perf.
#7	1.78	.75	125	getting stuck in monotonous rout.
#8	1.60	.81	61	being institutionalized
#9	1.68	.81	105	vulnerability to crime
#10	1.82	.79	154	decline: body's ability to perf.
#11	1.78	.65	48	limitations re.: having children
#12	1.59	.66	99	death of spouse or partner
#13	2.17	.82	150	changes in government policies
#14	1.46	.58	86	limit. on behav.: social exp.
#15	1.56	.70	108	own death
#16	1.55	.68	74	discrimination
#17	1.64	.63	145	changes in physical appearance
#18	1.59	.67	112	decrease in avail. opportunities
#19	1.36	.54	75	losing control: imp. decisions
#20	1.65	.62	149	less control: body's perf./func.
#21	1.43	.59	89	being viewed negatively by others
#22	1.56	.66	78	becoming financially dependent
#23	1.54	.74	57	not being taken as seriously
#24	1.89	.73	157	death of close relatives
#25	1.49	.60	99	becoming physically dependent
#26	1.38	.64	64	becoming "invisible"
#27	1.72	.68	139	losing control over health
#28	1.54	.59	114	lacking control: appearance
#29	1.67	.73	116	increase in responsibilities
#30	1.42	.64	56	losing prestige due to aging
#31	1.29	.56	55	losing social power due to aging
#32	1.61	.75	74	becoming less useful to others
#33	1.68	.73	118	becoming less sexually attractive
#34	1.68	.70	157	health becoming worse
#35	1.69	.67	88	not meeting expect.: achievements
#36	1.33	.52	60	decrease in responsibilities
#37	1.27	.57	57	loss social power (appearance)
#38	1.25	.55	58	loss prestige due (appearance)
#39	1.80	.86	15	having to retire due to age

Absolute fear strength means and standard deviations: women in age group 1

Item #	Mean	Std Dev	Valid N	Label
#1	1.55	.58	64	memory becoming worse
#2	2.08	.72	120	financial security
#3	1.86	.83	84	becoming more lonely
#4	2.19	.92	53	difficulties finding partner
#5	1.75	.73	80	running out of time to do things
#6	1.42	.61	68	inability to maint. level perf.
#7	1.68	.80	82	getting stuck in monotonous rout.
#8	1.30	.42	32	being institutionalized
#9	1.79	.78	62	vulnerability to crime
#10	1.64	.64	86	decline: body's ability to perf.
#11	2.30	.89	80	limitations re.: having children
#12	1.81	.88	67	death of spouse or partner
#13	1.82	.66	99	changes in government policies
#14	1.50	.53	54	limit. on behav.: social exp.
#15	1.49	.56	59	own death
#16	1.40	.54	47	discrimination
#17	1.84	.65	108	changes in physical appearance
#18	1.52	.57	64	decrease in avail. opportunities
#19	1.27	.45	37	losing control: imp. decisions
#20	1.64	.61	82	less control: body's perf./func.
#21	1.35	.55	54	being viewed negatively by others
#22	1.47	.61	56	becoming financially dependent
#23	1.44	.55	26	not being taken as seriously
#24	2.26	.86	118	death of close relatives
#25	1.39	.52	53	becoming physically dependent
#26	1.55	.66	47	becoming "invisible"
#27	1.78	.68	86	losing control over health
#28	1.71	.70	102	lacking control: appearance
#29	1.90	.81	90	increase in responsibilities
#30	1.30	.50	25	losing prestige due to aging
#31	1.42	.62	24	losing social power due to aging
#32	1.52	.74	30	becoming less useful to others
#33	1.72	.68	94	becoming less sexually attractive
#34	1.73	.77	91	health becoming worse
#35	2.00	.84	77	not meeting expect.: achievements
#36	1.44	.58	17	decrease in responsibilities
#37	1.65	.84	39	loss social power (appearance)
#38	1.57	.81	34	loss prestige due (appearance)
#39	1.79	1.07	7	having to retire due to age

Absolute fear strength means and standard deviations: women in age group 2

Item #	Mean	Std Dev	Valid N	Label
#1	1.68	.60	65	memory becoming worse
#2	2.03	.86	71	financial security
#3	1.66	.74	53	becoming more lonely
#4	2.02	.84	24	difficulties finding partner
#5	1.61	.73	57	running out of time to do things
#6	1.78	.56	64	inability to maint. level perf.
#7	1.70	.80	47	getting stuck in monotonous rout.
#8	1.44	.65	36	being institutionalized
#9	1.72	.76	47	vulnerability to crime
#10	1.78	.79	72	decline: body's ability to perf.
#11	2.25	1.19	4	limitations re.: having children
#12	1.59	.62	51	death of spouse or partner
#13	2.09	.84	68	changes in government policies
#14	1.50	.57	35	limit. on behav.: social exp.
#15	1.30	.45	47	own death
#16	1.44	.57	44	discrimination
#17	2.00	.83	75	changes in physical appearance
#18	1.63	.71	51	decrease in avail. opportunities
#19	1.38	.55	40	losing control: imp. decisions
#20	1.73	.65	64	less control: body's perf./func.
#21	1.38	.55	41	being viewed negatively by others
#22	1.64	.82	33	becoming financially dependent
#23	1.35	.57	30	not being taken as seriously
#24	2.16	.87	73	death of close relatives
#25	1.52	.60	50	becoming physically dependent
#26	1.52	.70	28	becoming "invisible"
#27	1.76	.72	67	losing control over health
#28	1.78	.76	65	lacking control: appearance
#29	1.89	.83	48	increase in responsibilities
#30	1.35	.46	27	losing prestige due to aging
#31	1.32	.55	22	losing social power due to aging
#32	1.45	.61	30	becoming less useful to others
#33	1.66	.76	65	becoming less sexually attractive
#34	1.85	.84	65	health becoming worse
#35	1.54	.88	35	not meeting expect.: achievements
#36	1.09	.29	23	decrease in responsibilities
#37	1.23	.51	22	loss social power (appearance)
#38	1.36	.59	21	loss prestige due (appearance)
#39	1.78	1.06	9	having to retire due to age

Absolute fear strength means and standard deviations: women in age group 3

Item #	Mean	Std Dev	Valid N	Label
#1	1.75	.69	91	memory becoming worse
#2	1.85	.78	75	financial security
#3	1.72	.86	59	becoming more lonely
#4	2.19	.95	13	difficulties finding partner
#5	1.79	.79	54	running out of time to do things
#6	1.91	.74	79	inability to maint. level perf.
#7	1.81	.79	48	getting stuck in monotonous rout.
#8	1.74	.81	55	being institutionalized
#9	1.88	.78	79	vulnerability to crime
#10	1.82	.74	80	decline: body's ability to perf.
#11	Variable is missing			limitations re.: having children
#12	1.97	.81	50	death of spouse or partner
#13	2.31	.95	88	changes in government policies
#14	1.57	.79	34	limit. on behav.: social exp.
#15	1.60	.71	60	own death
#16	1.67	.84	30	discrimination
#17	1.69	.71	66	changes in physical appearance
#18	1.76	.89	37	decrease in avail. opportunities
#19	1.67	.80	51	losing control: imp. decisions
#20	1.78	.72	80	less control: body's perf./func.
#21	1.74	.91	41	being viewed negatively by others
#22	1.69	.89	40	becoming financially dependent
#23	1.67	.70	47	not being taken as seriously
#24	1.85	.80	76	death of close relatives
#25	1.69	.70	70	becoming physically dependent
#26	1.60	.77	30	becoming "invisible"
#27	1.97	.82	79	losing control over health
#28	1.86	.93	57	lacking control: appearance
#29	1.65	.81	43	increase in responsibilities
#30	1.65	.83	23	losing prestige due to aging
#31	1.67	.78	23	losing social power due to aging
#32	1.82	.68	67	becoming less useful to others
#33	1.59	.72	35	becoming less sexually attractive
#34	1.78	.77	86	health becoming worse
#35	1.62	.90	25	not meeting expect.: achievements
#36	1.48	.77	33	decrease in responsibilities
#37	1.59	1.02	22	loss social power (appearance)
#38	1.62	.94	24	loss prestige due (appearance)
#39	2.75	.35	2	having to retire due to age

Absolute fear strength means and standard deviations: men in age group 1

Item #	Mean	Std Dev	Valid N	Label
#1	1.51	.54	41	memory becoming worse
#2	2.01	.76	70	financial security
#3	1.63	.67	32	becoming more lonely
#4	1.90	.78	15	difficulties finding partner
#5	1.63	.66	49	running out of time to do things
#6	1.70	.72	43	inability to maint. level perf.
#7	1.84	.79	56	getting stuck in monotonous rout.
#8	1.77	.96	15	being institutionalized
#9	1.55	.77	29	vulnerability to crime
#10	1.74	.80	52	decline: body's ability to perf.
#11	1.63	.58	39	limitations re.: having children
#12	1.43	.65	28	death of spouse or partner
#13	2.05	.81	54	changes in government policies
#14	1.43	.52	35	limit. on behav.: social exp.
#15	1.71	.81	31	own death
#16	1.44	.91	18	discrimination
#17	1.68	.68	59	changes in physical appearance
#18	1.41	.58	35	decrease in avail. opportunities
#19	1.45	.63	21	losing control: imp. decisions
#20	1.54	.58	48	less control: body's perf./func.
#21	1.37	.65	31	being viewed negatively by others
#22	1.58	.58	24	becoming financially dependent
#23	1.35	.85	13	not being taken as seriously
#24	1.88	.76	64	death of close relatives
#25	1.50	.69	24	becoming physically dependent
#26	1.50	.87	21	becoming "invisible"
#27	1.64	.67	43	losing control over health
#28	1.70	.72	43	lacking control: appearance
#29	1.89	.83	55	increase in responsibilities
#30	1.71	.72	12	losing prestige due to aging
#31	1.34	.77	16	losing social power due to aging
#32	1.88	1.08	13	becoming less useful to others
#33	1.76	.79	40	becoming less sexually attractive
#34	1.59	.75	53	health becoming worse
#35	1.81	.69	44	not meeting expect.: achievements
#36	1.28	.48	16	decrease in responsibilities
#37	1.47	.86	19	loss social power (appearance)
#38	1.62	.87	16	loss prestige due (appearance)
#39	1.00	.	1	having to retire due to age

Absolute fear strength means and standard deviations: men in age group 2

Item #	Mean	Std Dev	Valid N	Label
#1	1.40	.43	44	memory becoming worse
#2	1.92	.74	65	financial security
#3	1.52	.56	31	becoming more lonely
#4	1.69	.77	16	difficulties finding partner
#5	1.57	.61	48	running out of time to do things
#6	1.54	.65	52	inability to maint. level perf.
#7	1.72	.73	43	getting stuck in monotonous rout.
#8	1.26	.52	21	being institutionalized
#9	1.59	.82	40	vulnerability to crime
#10	1.82	.73	57	decline: body's ability to perf.
#11	2.44	.53	9	limitations re.: having children
#12	1.49	.59	39	death of spouse or partner
#13	2.05	.82	57	changes in government policies
#14	1.46	.53	24	limit. on behav.: social exp.
#15	1.35	.56	41	own death
#16	1.52	.52	32	discrimination
#17	1.67	.58	55	changes in physical appearance
#18	1.74	.72	50	decrease in avail. opportunities
#19	1.32	.54	25	losing control: imp. decisions
#20	1.60	.61	56	less control: body's perf./func.
#21	1.47	.58	35	being viewed negatively by others
#22	1.36	.57	32	becoming financially dependent
#23	1.48	.64	20	not being taken as seriously
#24	1.95	.74	55	death of close relatives
#25	1.37	.55	35	becoming physically dependent
#26	1.20	.45	22	becoming "invisible"
#27	1.54	.51	51	losing control over health
#28	1.44	.48	47	lacking control: appearance
#29	1.54	.56	38	increase in responsibilities
#30	1.20	.48	25	losing prestige due to aging
#31	1.24	.47	23	losing social power due to aging
#32	1.20	.32	25	becoming less useful to others
#33	1.61	.66	48	becoming less sexually attractive
#34	1.55	.55	58	health becoming worse
#35	1.67	.62	32	not meeting expect.: achievements
#36	1.30	.54	25	decrease in responsibilities
#37	1.17	.28	24	loss social power (appearance)
#38	1.11	.25	27	loss prestige due (appearance)
#39	1.85	.97	10	having to retire due to age

Absolute fear strength means and standard deviations: men in age group 3

Item #	Mean	Std Dev	Valid N	Label
#1	1.64	.62	40	memory becoming worse
#2	1.97	.82	37	financial security
#3	1.66	.73	34	becoming more lonely
#4	1.86	.63	7	difficulties finding partner
#5	1.56	.79	34	running out of time to do things
#6	1.78	.57	44	inability to maint. level perf.
#7	1.73	.72	26	getting stuck in monotonous rout.
#8	1.78	.85	25	being institutionalized
#9	1.89	.79	36	vulnerability to crime
#10	1.91	.84	45	decline: body's ability to perf.
#11	Variable is missing			limitations re.: having children
#12	1.84	.70	32	death of spouse or partner
#13	2.53	.73	49	changes in government policies
#14	1.50	.71	27	limit. on behav.: social exp.
#15	1.67	.70	36	own death
#16	1.67	.70	24	discrimination
#17	1.50	.63	31	changes in physical appearance
#18	1.54	.65	27	decrease in avail. opportunities
#19	1.33	.49	29	losing control: imp. decisions
#20	1.82	.63	45	less control: body's perf./func.
#21	1.43	.55	23	being viewed negatively by others
#22	1.84	.76	22	becoming financially dependent
#23	1.69	.76	24	not being taken as seriously
#24	1.80	.67	38	death of close relatives
#25	1.60	.58	40	becoming physically dependent
#26	1.43	.51	21	becoming "invisible"
#27	1.99	.79	45	losing control over health
#28	1.46	.46	24	lacking control: appearance
#29	1.35	.57	23	increase in responsibilities
#30	1.53	.70	19	losing prestige due to aging
#31	1.31	.44	16	losing social power due to aging
#32	1.79	.72	36	becoming less useful to others
#33	1.68	.77	30	becoming less sexually attractive
#34	1.92	.77	46	health becoming worse
#35	1.33	.62	12	not meeting expect.: achievements
#36	1.39	.54	19	decrease in responsibilities
#37	1.18	.37	14	loss social power (appearance)
#38	1.10	.28	15	loss prestige due (appearance)
#39	1.88	.63	4	having to retire due to age

APPENDIX F:

Tukey's HSD post-hoc multiple range tests
(for statistically significant age differences)

Tukey's HSD multiple range tests
(For statistically significant age differences)

#1   MEMORY BECOMING WORSE

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .5944 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                          G G G
                          r r r
                          p p p

                          1 2 3
          Mean      AGE

           .8113     Grp 1
          1.1447     Grp 2         *
          1.4902     Grp 3         *   *
```

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#2   FINANCIAL SECURITY

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .6812 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

 *) Indicates significant differences which are shown in the
lower triangle

```
                          G G G
                          r r r
                          p p p

                          3 2 1
          Mean      AGE

          1.3954     Grp 3
          1.7730     Grp 2         *
          1.9118     Grp 1         *
```

#6   INABILITY TO MAINTAIN LEVEL OF PERFORMANCE DUE TO A DROP IN

Multiple Range Tests: Tukey-HSD test with significance level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .6359 * RANGE * SQRT(1/N(I) + 1/N(J))
With the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the lower triangle

```
                                G G G
                                r r r
                                p p p

                                1 2 3
         Mean        AGE

          .8529      Grp 1
         1.2993      Grp 2        *
         1.5230      Grp 3        *
```

#9   VULNERABILITY TO CRIME

Multiple Range Tests: Tukey-HSD test with significance level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .7161 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the lower triangle

```
                                G G G
                                r r r
                                p p p

                                1 2 3
         Mean        AGE

          .7843      Grp 1
          .9671      Grp 2
         1.4309      Grp 3        * *
```

#10 DECLINE IN BODY'S ABILITY TO PERF./FUNCTION

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .6805 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                          G G G
                          r r r
                          p p p

                          1 2 3
         Mean     AGE

         1.1593   Grp 1
         1.5296   Grp 2     *
         1.5362   Grp 3     *
```

#12 DEATH OF SPOUSE OR PARTNER

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .6826 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                          G G G
                          r r r
                          p p p

                          1 2 3
         Mean     AGE

         1.0927   Grp 1
         1.2069   Grp 2
         1.5792   Grp 3     * *
```

#13   CHANGES IN GOVERNMENT POLICIES THAT MAY AFFECT FINANCES

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I)   >=   7373 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34.

(*) Indicates significant differences which are shown in the
lower triangle

```
                              G G G
                              r r r
                              p p p

                              1 2 3
           Mean        AGE

           1.5476      Grp 1
           1.8112      Grp 2
           2.1007      Grp 3        *
```

#17   CHANGES IN PHYSICAL APPEARANCE

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I)   >=   .6533 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                              G G G
                              r r r
                              p p p

                              3 1 2
           Mean        AGE

           1.0458      Grp 3
           1.4730      Grp 1        *
           1.6020      Grp 2        *
```

#18   DECREASE IN AVAILABLE OPPORTUNITIES

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I)   >= .6512 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                                    G G G
                                    r r r
                                    p p p

                                    3 1 2
            Mean        AGE

             .6993      Grp 3
             .7377      Grp 1
            1.1283      Grp 2       * *
```

#20   LESS CONTROL OVER BODY'S PERFORMANCE/FUNCTIONING

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I)   >= .6311 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                                    G G G
                                    r r r
                                    p p p

                                    1 2 3
            Mean        AGE

            1.0392      Grp 1
            1.3388      Grp 2       *
            1.4706      Grp 3       *
```

#24 DEATH OF CLOSE RELATIVES

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .7137 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                           G  G  G
                           r  r  r
                           p  p  p

                           3  2  1
          Mean      AGE

          1.4650    Grp 3
          1.7987    Grp 2      *
          1.9328    Grp 1      *
```

- -

#25 BECOMING PHYSICALLY DEPENDENT ON OTHERS

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .5917 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                           G  G  G
                           r  r  r
                           p  p  p

                           1  2  3
          Mean      AGE

           .5515    Grp 1
           .8411    Grp 2      *
          1.2026    Grp 3      *  *
```

#27   LOSING CONTROL OVER HEALTH

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I)   >= .6897 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                              G G G
                              r r r
                              p p p

                              1 2 3
         Mean       AGE

         1.1225     Grp 1
         1.2961     Grp 2
         1.6184     Grp 3       * *
```

#29   INCREASE IN RESPONSIBILITIES

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I)   >= .7183 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                              G G G
                              r r r
                              p p p

                              3 2 1
         Mean       AGE

          .6833     Grp 3
         1.0066     Grp 2       *
         1.3603     Grp 1       * *
```

#32 BECOMING LESS USEFUL TO OTHERS

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .5881 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                                 G G G
                                 r r r
                                 p p p

                                 1 2 3
            Mean       AGE

            .3522      Grp 1
            .5099      Grp 2
           1.2483      Grp 3       * *
```

#34 HEALTH BECOMING WORSE

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .6786 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                                 G G G
                                 r r r
                                 p p p

                                 1 2 3
            Mean       AGE

           1.2044      Grp 1
           1.3940      Grp 2
           1.5921      Grp 3       *
```

#35 NOT MEETING SOCIAL EXPECTATIONS RE: ACHIEVEMENTS

Multiple Range Tests: Tukey-HSD test with significance
level .050

The difference between two means is significant if
MEAN(J)-MEAN(I) >= .6848 * RANGE * SQRT(1/N(I) + 1/N(J))
with the following value(s) for RANGE: 3.34

(*) Indicates significant differences which are shown in the
lower triangle

```
                              G G G
                              r r r
                              p p p

                              3 2 1

         Mean      AGE

          .3783     Grp 3
          .7219     Grp 2      *
         1.1700     Grp 1      *  *
```

APPENDIX G:

Percentage endorsement of current experiences (i.e. 'yes' responses) for the whole sample, and by gender and age group

PERCENTAGE ENDORSEMENT OF CURRENT EXPERIENCES (I.E. 'YES' RESPONSES) FOR THE WHOLE SAMPLE AND BY GENDER

current experience	overall % yes	n	women % yes	n	men % yes	n
1. noticed decrease in memory	42%	501	47%	303	34%	198
2. experienced financial difficulties	34%	503	36%	307	30%	196
3. felt fairly lonely	30%	503	26%	306	21%	197
4. experienced difficulties meeting right partner/mate	51%	160	56%	101	41%	59
5. not done s.thing because felt it was "too late"	18%	504	18%	307	18%	197
6. become aware of a drop in stamina re: usual activities	53%	504	53%	308	53%	196
7. felt trapped in a boring routine	34%	503	34%	307	34%	196
8. lived in an institution of some sort	1%	506	1%	308	2%	198
9. been robbed, physically assaulted, or victim of another crime	11%	506	11%	308	10%	198
10. aware of a decline in way body performs or functions	49%	503	46%	306	53%	197
11(b) aging has been a consideration in trying to make decisions re.: children	73%	109	84%	63	59%	46
12. thought that spouse or partner may not live much longer	14%	346	16%	208	9%	138
13. finances been negatively affected by changes in government policies	31%	497	31%	303	30%	194
14. restricted actions because of what people expect of you at your age	9%	506	10%	309	7%	197

current experience	overall % yes	n	women % yes	n	men % yes	n
15. thought that s/he may die soon	15%	506	16%	306	12%	194
16. felt discriminated against because of age	10%	505	11%	309	10%	196
17. noticed age related changes in appearance	70%	501	76%	308	62%	193
18. been denied an opportunity because too old	4%	506	4%	309	5%	197
19. others have made a lot of decisions about your life for you	5%	504	6%	309	3%	195
20. felt that no longer has the control over way body performs or functions	29%	503	30%	308	26%	195
21. sometimes felt viewed negatively by younger people	19%	499	19%	305	19%	194
22. has been financially dependent on others	13%	401	15%	299	9%	172
23. think that has not been taken seriously	13%	501	14%	306	10%	195
24. thought that a close relative may die soon	68%	478	73%	293	62%	185
25. been physically dependent on others	6%	502	8%	308	5%	194
26. felt as if "invisible" to others	16%	501	18%	307	13%	194
27. felt that no matter what you do, you seem to have health problems	18%	500	20%	308	15%	192
28. felt that no matter what you do, you can't stop age related changes in appearance	48%	500	50%	307	44%	193

current experience	overall % yes	n	women % yes	n	men % yes	n
29. has more responsibilities now than ten years ago	61%	500	61%	306	61%	194
30. would say prestige lower now than ten years ago because you are older	13%	501	11%	306	15%	195
31. social power lower now than ten years ago because you are older	12%	500	12%	307	12%	193
32. thinks that is less useful now than ten years ago	18%	500	18%	306	17%	194
33. feel that people find you less sexually attractive now than 10 years ago	39%	480	41%	292	36%	188
34. feels health is worse now than ten y.a.	42%	499	42%	306	41%	193
35. would say has met social expectations re: what you have done by your age	65%	476	69%	289	61%	187
36. has less responsibilities now that 10 y.a.	26%	499	26%	305	27%	194
37. would say that has lower social power now than 10 y.a. due to looking older	10%	496	10%	303	11%	193
38. would say prestige is lower now than 10 y.a. because looks older	10%	495	9%	302	10%	193
39. will be forced to retire because of age	15%	197	18%	112	12%	85

PERCENTAGE ENDORSEMENT (I.E. 'YES' RESPONSES) OF CURRENT EXPERIENCES BY AGE GROUP

current experience	age 1 % yes	n	age 2 % yes	n	age 3 % yes	n
1. noticed decrease in memory	26%	202	38%	152	67%	147
2. experienced financial difficulties	49%	201	26%	152	21%	150
3. felt fairly lonely	29%	200	33%	151	18%	152
4. experienced difficulties meeting right partner/mate	54%	91	45%	40	48%	29
5. not done s.thing because felt it was "too late"	13%	202	17%	152	24%	150
6. become aware of a drop in stamina re: usual activities	36%	201	54%	152	74%	151
7. felt trapped in a boring routine	43%	202	35%	151	20%	150
8. lived in an institution of some sort	1%	202	1%	152	1%	152
9. been robbed, physically assaulted, or victim of another crime	15%	202	7%	152	8%	152
10. aware of a decline in way body performs or functions	34%	202	58%	151	61%	150
11(b) aging has been a consideration in trying to make decisions re.: children	91%	77	(58%	12)	(50%	6)
12. thought that spouse or partner may not live much longer	9%	137	8%	119	29%	90
13. finances been negatively affected by changes in government policies	29%	202	35%	150	30%	145
14. restricted actions because of what people expect of you at your age	12%	203	5%	151	9%	152

current experience	age 1 % yes	n	age 2 % yes	n	age 3 % yes	n
15. thought that s/he may die soon	16%	203	10%	150	18%	147
16. felt discriminated against because of age	12%	203	10%	151	8%	151
17. noticed age related changes in appearance	65%	202	77%	151	67%	148
18. been denied an opportunity because too old	3%	203	6%	151	5%	152
19. others have made a lot of decisions about your life for you	5%	203	3%	151	6%	150
20. felt that no longer has the control over way body performs or functions	16%	203	31%	150	43%	150
21. sometimes felt viewed negatively by younger people	15%	202	21%	149	22%	148
22. has been financially dependent on others	18%	190	10%	129	5%	82
23. think that has not been taken seriously	10%	203	9%	150	20%	148
24. thought that a close relative may die soon	75%	200	80%	147	45%	131
25. been physically dependent on others	5%	203	3%	150	11	150
26. felt as if "invisible" to others	19%	203	15%	148	14%	148
27. felt that no matter what you do, you seem to have health problems	19%	202	12%	150	22%	148
28. felt that no matter what you do, you can't stop age related changes in appearance	38%	202	55%	150	53%	148

current experience	age 1 % yes	n	age 2 % yes	n	age 3 % yes	n
29. has more responsibilities now than ten years ago	93%	202	60%	149	18%	148
30. would say prestige lower now than ten years ago because you are older	6%	203	9%	150	25%	148
31. social power lower now than ten years ago because you are older	3%	203	9%	149	30%	148
32. thinks that is less useful now than ten years ago	3%	203	8%	150	48%	147
33. feel that people find you less sexually attractive now than 10 years ago	22%	203	53%	147	49%	130
34. feels health is worse now than ten y.a.	34%	203	35%	147	59%	149
35. would say has met social expectations re: what you have done by your age	55%	195	68%	142	77%	139
36. has less responsibilities now that 10 y.a.	1%	203	20%	149	69%	147
37. would say that has lower social power now than 10 y.a. due to looking older	3%	203	6%	148	26%	145
38. would say prestige is lower now than 10 y.a. because looks older	3%	203	7%	148	22%	144
39. will be forced to retire because of age	9%	90	22%	82	16%	25

APPENDIX H:

Independent sample chi-square analyses and cross-tabulations for the evaluation of the overall experience of aging by age group and gender

Evaluation of the overall experience of aging by age group: Cross-tabulation and chi-square analysis

Count Exp Val Row Pct Col Pct Tot Pct	OVERALL more + 1	more - 2	equally 3	can't sa y 4	Row Total
AGE					
1.00 20-39 years	98 90.3 53.0% 43.4% 21.2%	10 14.0 5.4% 28.6% 2.2%	61 66.7 33.0% 36.5% 13.2%	16 14.0 8.6% 45.7% 3.5%	185 40.0%
2.00 40-59 years	70 69.3 49.3% 31.0% 15.1%	10 10.7 7.0% 28.6% 2.2%	57 51.2 40.1% 34.1% 12.3%	5 10.7 3.5% 14.3% 1.1%	142 30.7%
3.00 60+ years	58 66.4 42.6% 25.7% 12.5%	15 10.3 11.0% 42.9% 3.2%	49 49.1 36.0% 29.3% 10.6%	14 10.3 10.3% 40.0% 3.0%	136 29.4%
Column Total	226 48.8%	35 7.6%	167 36.1%	35 7.6%	463 100.0%

Chi-Square	Value	DF	Significance
Pearson	10.91751	6	.09096
Likelihood Ratio	11.40903	6	.07653
Mantel-Haenszel test for linear association	1.73884	1	.18729

Minimum Expected Frequency -   10.281

Number of Missing Observations: 46

Evaluation of the overall experience of aging by gender:
Cross-tabulation and chi-square analysis

	Count Exp Val Row Pct Col Pct Tot Pct	OVERALL more + 1	more - 2	equally 3	can't sa y 4	Row Total
SEX						
female	0	142 142.0 48.8% 62.8% 30.7%	17 22.0 5.8% 48.6% 3.7%	111 105.0 38.1% 66.5% 24.0%	21 22.0 7.2% 60.0% 4.5%	291 62.9%
male	1	84 84.0 48.8% 37.2% 18.1%	18 13.0 10.5% 51.4% 3.9%	56 62.0 32.6% 33.5% 12.1%	14 13.0 8.1% 40.0% 3.0%	172 37.1%
	Column Total	226 48.8%	35 7.6%	167 36.1%	35 7.6%	463 100.0%

Chi-Square	Value	DF	Significance
Pearson	4.11374	3	.24944
Likelihood Ratio	4.01591	3	.25975
Mantel-Haenszel test for linear association	.13396	1	.71436

Minimum Expected Frequency -   13.002

Number of Missing Observations: 46