NOTE TO USERS

University of Alberta

Beliefs about Aging and Alzheimer Disease

by

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ABSTRACT

The study developed an instrument to measure beliefs about aging and Alzheimer disease (AD) in the cognitive, physical, and social domains; assessed beliefs about aging and AD held by undergraduate students and staff caregivers of persons with AD using the newly developed instrument; assessed knowledge about aging and AD; and determined what the correlates of beliefs about aging and AD are. For both groups, beliefs about aging were most negative in the physical domain, less negative in the cognitive domain, and the least negative in the social domain. Cognitive beliefs about AD were most negative, social beliefs were somewhat less negative and physical beliefs were least negative (even positive for students). Overall, knowledge levels about aging and AD were low. Caregivers were more knowledgeable than students about AD. These groups did not differ on knowledge about aging. Predictors of beliefs about aging and AD in the three domains are discussed.

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INTRODUCTION

Stereotypes are rigid and oversimplified beliefs that are applied to all members of a group or category of people. Numerous stereotypes regarding aging exist in our society. The most prevalent aging stereotypes are negative and link aging with disease, disability, dependence, incompetence and demise (Kwong See et al. 2001; Levin, & Levin, 1980; Rowe, & Kahn, 1998; Ryan, & Kwong See, 1993). Positive stereotypes of older adults (e.g., older adults are honest, kind, wise, affluent, powerful, dependable, and happy) also exist in our society (Kwong See et al., 2001; Palmore, 1990). However, it is the negative stereotypes and attitudes (feelings about a target/object) of aging that predominate (Kite, & Johnson, 1988; Stones, & Stones, 1997).

Havighurst (1961) defined successful aging as adding life to the years and getting satisfaction from life. Independence and autonomy are often identified as important for aging successfully. Negative aging stereotypes, however, can affect the ability of older adults to age successfully by decreasing independence and autonomy. Independence and autonomy are important not only for well elderly, but also for those who are institutionalized. Seminal work by Baltes has shown that the behaviours of staff of long term care (LTC) facilities (Baltes, Burgess, & Stewart, 1980; Baltes, Honn, Barton, Orzech, & Lago, 1983; Baltes, Kindermann, Reisenzein, & Schmid-Furstoss, 1987; Barton, Baltes, & Orzech, 1980; Lester, & Baltes, 1978) and family caregivers (Baltes, & Wahl, 1992) can encourage dependent behaviours of those for whom they care, thereby creating barriers to independence. Baltes and Wahl (1992) suggest that negative aging stereotypes contribute to dependence-supportive behaviour by staff. The social creation of dependency, which is created by the social environment and not the result of physical

or cognitive dysfunction, has been studied with cognitively intact older adults and not with persons with Alzheimer disease (AD). It is not known what staff caregivers of persons with AD or the general public believe about the disease.

Although there are many measures of beliefs about aging and tests of knowledge about aging and AD, a review of the literature revealed no instrument to measure beliefs about social, cognitive and physical aspects of AD. Throughout this thesis beliefs about aging is synonymous with beliefs about older adults.

The specific objectives of this study were to:

1) Develop an instrument to measure beliefs about aging and AD in cognitive, social, and physical domains.
2) Assess caregivers' and undergraduate students' beliefs about aging and AD using the newly developed instrument.
3) Assess knowledge about aging and AD.
4) Determine whether predictors of attitudes toward aging identified in the literature, are also predictors of beliefs about aging and AD.

LITERATURE REVIEW

Ageism and Stereotyping

The term ageism was coined by Butler in 1969 to describe the process of systematic stereotyping and discrimination based on age that permeates our society. Today, ageism is more broadly defined as prejudice or discrimination in favour of or against an age group (Palmore, 1990). Ageism has three components, a cognitive component that consists of beliefs and stereotypes, an affective component that consists of attitudes and feelings, and a behavioural component that consists of actions.

Stereotypes are rigid and oversimplified beliefs that are applied to all members of a group or category of people. By representing the typical characteristics of a group or category of people, stereotypes allow one to understand new individuals in terms of old beliefs, thus providing a great deal of information with a minimum amount of cognitive effort. These sets of beliefs provide insight into how others are likely to behave and how we ourselves should behave in social encounters. The difficulty is that these sets of beliefs are often over generalized. These overgeneralizations allow individuals to cope with the complexity of day-to-day life, but may also result in behaviours that are not appropriate in certain situations where the stereotypic beliefs do not fit the situation.

Attitudes, the affective component of ageism, are positive or negative evaluations of people that often predispose one to feel and behave positively or negatively toward them. In a meta-analysis of the literature through 1985, Kite and Johnson (1988) found that attitudes toward older people were more negative than attitudes toward young adults. Negative attitudes can lead to discrimination, that is, behaviour directed at people

because of their membership in a group (e.g., Kwong See, & Heller, 2005; Kwong See, & Heller, 2004; Kwong See, Hoffman, & Wood, 2001; Kwong See, & Ryan, 1999).

Numerous stereotypes regarding aging exist, with the most prevalent being negative, linking aging with disease, disability, dependence, incompetence and demise (Kwong See et al. 2001; Levin, & Levin, 1980; Rowe, & Kahn, 1998; Ryan, & Kwong See, 1993). Positive stereotypes of older adults (e.g., older adults are honest, kind, wise, affluent, powerful, dependable, and happy) also exist in our society (Kwong See et al., 2001; Palmore, 1990). However, it is the negative stereotypes of aging that predominate (Kite, & Johnson, 1988; Stones, & Stones, 1997).

Examining stereotypes about older people's language competence, Ryan, Kwong See, Meneer and Trovato (1992) found that both younger and older adults expected 25 year olds to experience fewer problems with both expressive and receptive language than 75 year olds, except for sincerity when talking and telling enjoyable stories, here 75 year olds were expected to be better performers than their younger counterparts. Negative expectations about the ability of older adults to communicate can be a barrier to successful communication (Caporael, 1981; Kwong See & Heller, 2004; Kwong See & Ryan, 1999). Likewise, positive expectations can enhance communication.

The negative stereotypes and beliefs about older adults by society in general and health care professionals in particular may have detrimental consequences on the ability of older adults to age successfully. People can be influenced by negative implicit age stereotypes regardless of their explicit views of aging (Kwong See et al., 2001; Levy, Hausdorff, Hencke, & Wei, 2000). This means that individuals, unaware that a negative stereotype has been triggered, may attribute their ageist behaviours to other factors to

protect their self-images. This is implicit ageism, when one's beliefs, attitudes, and behaviours toward older adults operate without conscious awareness or control. Therefore, understanding the stereotypes of aging and disease that people hold is of great importance.

Negative Aging Stereotypes are a Barrier to Healthy Aging

Negative aging stereotypes have an effect on the health of older adults through both personal and professional encounters. When family members of older adults accept negative aging stereotypes as truths they lower their expectations of what the older person can contribute to family life (Scheel Gavan, 2003). These reduced expectations result in fewer opportunities for the older adult to contribute and may result in a loss of personal autonomy.

It has been suggested that healthcare professionals are particularly susceptible to ageist stereotyping because they regularly interact with unhealthy and frail elderly. When health professionals accept these stereotypes, staff behaviour may be influenced (Donahue, & Allegood, 1995). Scheel Gavan (2003) has suggested that providers who hold these stereotypic beliefs may attribute the real, potentially treatable symptoms of an older adult to the 'inevitable' results of aging, and overlook physical and psychiatric problems that exist (Herrick, Pearcey, & Ross, 1997). Although changes in physiology are a part of aging, there is evidence to support that the effects of some age related disease processes (e.g., blood pressure, diabetes, respiratory functioning) can be minimized through diet and exercise (Rowe, & Kahn, 1987; Rowe, & Kahn, 1998). If it is believed that decline is inevitable, opportunities for intervention will be missed.

The belief that old age, disease and disability go hand in hand leads to therapeutic nihilism. For example, in a sample of depressed seniors, only 10% were receiving treatment, even though treatment has proven to be effective in this age group (Wrightson, 1997). Uncapher and Arean (2000) suggest that physicians' willingness to treat depression is affected by beliefs that depression and suicidal thoughts are a normal part of aging (which they are not). Similarly, incontinence, despite its psychosocial costs, is sometimes not treated because it is seen as a normal part of aging (Chiverton, Wells, Brink, & Mayer, 1996; Palmer, 1994).

Predictors of Attitudes towards Older Adults

Respondent Age. In the majority of studies on age stereotypes, researchers have looked at young adults' attitudes toward older adults. Studies with a focus on older adults' attitudes towards older adults have shown more positive attitudes (e.g., Erber, Szuchman, & Rothberg, 1990; O'Hanlon, Camp, & Osofsky, 1993). For example, in a study of 18-85 year old college students, O'Hanlon et al. (1993) found that middle aged and older students held more positive attitudes about older adults than young students. Similarly, Rothbaum (1983, study 3) found that older participants rated characteristics associated with elderly people more positively than did younger participants. It is possible that older age is associated with more opportunities for learning about different kinds of older people, thus providing more opportunity for stereotype disconfirmation (Hummert, Garstka, Shaner, & Strahm, 1995).

Knowledge and education about aging. Research on the relationship between knowledge about aging and beliefs about aging has produced a pattern of mixed results. Brooks (1993) found a negative relationship between knowledge about aging and

attitudes towards aging, such that the more knowledgeable participants, the more negative their attitudes. However, Harris and Dollinger (2001) provided evidence for the benefits of formal education on knowledge of and attitudes toward older adults by demonstrating that students in an undergraduate level course on aging displayed greater knowledge and more positive attitudes on the Aging Semantic Differential (Rosencranz, & McNevin, 1969) than students who had not taken a course on aging. Similarly, Harrison and Novak (1988) reported that an 8 hour gerontological continuing education program contributed to positive increases in both knowledge and attitude among nurses.

Contact with grandparents. Findings on the relationship between contact with grandparents and attitudes towards older adults have been mixed. Some studies have found that positive attitudes are related to positive contact with grandparents (Knox, Gekoski, & Johnson, 1986; Silverstein, & Parrott, 1997), whereas others have found no association between contact with grandparents and attitudes (Caspi, 1984).

Contact with older adults. As with contact with grandparents, findings on the relationship between contact with older adults in general and attitudes towards older adults have been mixed. Knox, Gekowski, and Johnson (1986) and Schwartz and Simmons (2001) suggest that the mixed findings may be the result of measuring the quantity of contact rather than quality of contact. In fact, these researchers have found that quality of the contact is a better predictor of attitudes than is quantity (Knox, Gekoski, & Johnson, 1986; Schwartz and Simmons 2001). Nevertheless, positive relationships have been found between quantity of experience with older persons and more positive attitudes (Hawkins, 1996).

Exposure to frail and unhealthy older adults. It is sometimes assumed that health care personnel have negative attitudes towards older adults because they are regularly exposed to older adults who are frail and ill, and for this reason health care personnel may be particularly susceptible to negative attitudes, more so than those who do not work in the industry (Kearney, Miller, Paul, & Smith, 2000; Palmore, 1998; Stevens, & Crouch, 1995). This assumption needs to be explored.

Results of many studies have shown that health care personnel have negative attitudes towards older adults. For example, this has been the case for medical, nursing and radiology staff at a cancer centre (Kearney, Miller, Paul, & Smith, 2000), rehabilitation professionals (Kvitek, Shaver, Blood, & Shepard, 1986; Roberto, & Carmichael-Schwab, 1995), nursing students and staff (Campbell, 1971; Slevin, 1991; Lookinland, & Anson, 1995), medical students (Carmel, 1998), and staff in contact with residents at a long term care facility (Huber, Reno, & McKenney, 1992). However, the attitudes of health care personnel towards persons with AD are unknown. The question of whether their attitudes differ from those who are not in the health care field also remains unanswered.

Dimensions on which attitudes are assessed. Most researchers assess attitudes on a global level, rather than on multiple dimensions. In their meta analysis of 43 studies, Kite and Johnson (1988), found that differences in attitudes toward younger and older adults were minimized when the studies focused on personality, as opposed to competency, indicating that attitudes can be more or less negative, depending on the dimension being assessed.

How Stereotypes Might Affect Social Interactions

Golub, Filipowicz, and Langer (2002) suggest that self-induced dependence, characterized by the following cycle, promotes stereotype confirmation. Stereotypic labels, unnecessary helping, and doubts about one's abilities because of situational factors result in decrements in performance which results in greater dependency. Avorn and Langer (1982) provide evidence that over-helping can facilitate dependency. In a randomized, controlled trial, nursing home residents who were encouraged to do a jigsaw puzzle on their own were more capable than those who were given help with this task. Not only did residents who received help perform more poorly, they were also less confident in their ability to complete a similar puzzle, and rated the task as more difficult than did residents who were encouraged and did the puzzle on their own.

Results of many studies have indicated that one person's expectations for the behaviour of another person can actually affect that other person's behaviour through the operation of covert communication processes. In a randomized controlled trial, Learman, Avorn, Everitt, & Rosenthal (1990) found that depression among nursing home residents can be reduced by raising the expectations that caregivers had for the residents, demonstrating that caregivers' expectations can have consequences for the health of the residents for whom they care.

The Communication Predicament of Aging Model (CPAM; Ryan, Giles, Bartolucci, & Henwood, 1986) explains how aging stereotypes can affect social interactions. This socio ecological approach emphasizes the complex transactions between persons, groups, and their environments. It operates on the tenets of reciprocal determinism. The social and physical environment sets limits on the behaviours that can

occur within it. Therefore, changing aspects of the environment results in the modification of behaviour. CPAM provides a framework for research on the occurrence and impact of negative social interactions. It suggests that age stereotype schemas, which affect one's perception of the older person and one's interactions with that person, are elicited when one perceives cues that are associated with old age (e.g., cane, grey hair) (Ryan, Hummert, & Boich, 1995). These schemas of frailty and dependence result in patronizing speech (e.g., exaggerated tone, pitch, non-words and simplified structure, Ryan, Hamilton, & Kwong See, 1994) and actions that support dependence (Caporeal, 1981; Kemper, 1990). The modified speech and actions then constrain opportunities for satisfying communication, and reinforce age-stereotyped behaviours (Baltes, Neumann, & Zank, 1994; Whitbourne, & Wills, 1993). Persons who are frequently exposed to this type of environment may withdraw from activities and experience loss of control and self esteem, resulting in behaviours and characteristics consistent with the stereotypes (e.g., dependency). This sequence represents a negative feedback loop (Kemper, Vandeputte, Rice, Cheung, & Gubarchuk, 1995; O'Connor, & Rigby, 1996), and with the age stereotypes being validated by older adults' behaviours, becomes a self-fulfilling prophecy.

Maintenance and Maximization of Competence and Independence in AD

It is estimated that 316,500 Canadians have AD or another related form of dementia. Projections are that by 2031, the number of persons affected by these diseases will more than double as the population ages (Canadian Study of Health and Aging Working Group, 1994). Half of those with dementia live in the community; while the remainder live in institutions (Alzheimer Society of Canada, 2002). For older people

moving from the community to an institution, loss of independence is a concern and a fear. Recognizing this, maintaining and maximizing individual levels of competence and independence are key topics for research.

AD is characterized by progressive memory loss and other symptoms of AD may include coordination problems, loss of cognition (person, place, time), impairment of judgment, behaviour changes, personality changes, physical changes and the inability to perform normal activities of daily living. Whereas the progression of the disease is generally gradual, the rate and nature of symptom development can vary tremendously from one individual to another. Symptoms may occur at different times in different individuals and not everyone will experience every symptom. Because of this variability it has been recognized that an individualized approach to care is necessary to allow individuals to maintain their remaining abilities and dignity as the disease progresses (Rader, 1995). In the absence of a cure, effective care of individuals with AD is of utmost importance.

Attitudes towards persons with AD have been explored in one study. Kahana et al. (1996) compared the attitudes of nursing home employees toward three targets including well elderly, physically ill elderly and persons with AD. They used a sample of items from Rosencranz and McNevin's semantic differential scale (1969) as a measure of attitudes. These items included: good, optimistic, warm, pleasant, wise, generous, friendly, cooperative, acceptable, and profit from help. Results indicated that the overall evaluations of the three groups were most positive for the well elderly, more negative for the physically ill elderly, and most negative for the persons with AD. This pattern was observed for all of the items except for optimistic.

The cognitive and behavioural aspects of AD are noted by the media and such information is available on the Alzheimer Society website (Alzheimer Society of Canada, 2005). However, physical and social aspects of the disease are not emphasized. It is not known what beliefs and stereotypes about AD people in our society hold, nor is it known what the predictors of these beliefs are, or whether their beliefs reflect actual changes. It is also not known if these beliefs differ depending on the degree of exposure to persons with Alzheimer disease.

Study Objectives

The specific objectives of this study were to:

1) Develop an instrument to measure beliefs about aging and AD in cognitive, social, and physical domains.
2) Assess caregivers' and undergraduate students' beliefs about aging and AD using the newly developed instrument.
3) Assess knowledge about aging and AD.
4) Determine whether predictors of attitudes toward aging identified in the literature, are also predictors of beliefs about aging and AD.

Ethical Issues

This study was reviewed and approved by the Arts, Science and Law Research Ethics Board (ASLREB) at the University of Alberta on January 7, 2005 (ng 04-10).

Design

A procedure modified from Ryan et al. (1992) was used to develop an instrument to document beliefs about aging and AD in cognitive, social and physical domains. Once

developed, this instrument was administered to caregivers of persons with AD who work at Alzheimer care centres and to undergraduate students.

Participants rated their perceptions of the cognitive, physical and social/emotional performance of themselves as a benchmark and then of typical 25 year olds, typical 75 year olds, and typical institutionalized persons with AD in counterbalanced order. By looking at the differences in ratings between the typical 25 year olds and the typical 75 year olds one can determine the participants' beliefs about *aging*. By looking at the differences in ratings between the typical 75 year olds and typical institutionalized persons with AD, one can determine participants' beliefs about persons with *AD*, over and above what is expected just by aging. Participants also completed an aging knowledge test (Palmore, 1998) and an AD knowledge test (Dieckmann, Zarit, Zarit, & Gatz, 1988).

Predictions

Prediction 1. Beliefs about the 25 year olds will be the most positive, with beliefs about 75 year olds being more negative on items addressing beliefs in the *cognitive* domain that are not associated with positive aging stereotypes (i.e., wisdom), and beliefs about persons with AD being the most negative because AD is characterized by progressive memory loss and loss of cognition. Whether caregivers and students differ in the degree to which their beliefs about aging and AD in the cognitive domain are positive is an empirical question to be tested. Caregivers may hold more negative beliefs about aging than undergraduates because caregivers are regularly exposed to older adults who are institutionalized and have AD, or their beliefs may be more positive than those of

undergraduates because caregivers are likely older than the undergraduates and greater age has been found to be associated with more positive beliefs about aging.

Prediction 2. Beliefs about the 25 year olds will be the most positive, with beliefs about 75 year olds being more negative, and beliefs about persons with AD being the most negative on items addressing beliefs in the *social* domain that are not associated with positive aging stereotypes (i.e, storytelling and benevolence). Whether caregivers and students differ in the degree to which their beliefs about aging and AD in the social domain are positive is an empirical question to be tested.

Prediction 3. Stereotypes of aging link aging with a decline in sensory functioning and physical ability and there are actual declines in physical functioning. Beliefs about the 25 year olds will be the most positive, with beliefs about 75 year olds and persons with AD being more negative on items addressing beliefs in the *physical* domain. Whether caregivers and students differ in the degree to which their beliefs about aging and AD in the physical domain are positive is an empirical question to be tested.

Prediction 4. Because many negative stereotypes about older adults and aging are cognitive and physical in nature, the older adults were expected to be viewed more negatively in these domains than in the social domain.

Prediction 5. Caregivers will have more knowledge about aging and AD than will students because they work with older adults and persons with AD and have likely had education/in-service training about these topics.

Prediction 6. Because age, quality and quantity of contact with older adults and grandparents, level of knowledge about aging, and employment related contact with

ill/frail older adults have been found to correlate with attitudes towards aging, it was expected that these variables will be associated with beliefs about aging and AD.

INSTRUMENT DEVELOPMENT

The first objective of this study was to develop a questionnaire to measure individual's perceptions of cognitive, physical and social/emotional performance of older adults and persons with AD.

Beliefs about aging can be studied in many ways. For example, beliefs can been measured directly using open ended one-on-one interviews, however such a procedure makes it difficult to quantitatively compare different respondent groups on the degree to which their beliefs are positive or negative and would be time consuming. One could use between subjects designs to assess beliefs which would allow one to determine and compare the beliefs of groups of participants, however, such a design would not allow for the examination of individuals' beliefs. The within subjects method of having each participant rate all target groups was selected for this study because each participant's beliefs about aging and AD are of interest and will allow this instrument to be used to identify persons with more or less positive beliefs, as opposed to the beliefs of the overall group. Also, within subject designs increase power and reduce the number of participants required to obtain a statistically significant result. Because the total population of caregivers available was small, this was an important factor.

The first step in instrument development was item selection. Items in the cognitive, social and physical domains were created or modified from existing sources. The items addressed documented beliefs about aging in areas that were hypothesized may be beliefs about AD. The next step was data reduction. Principal components analysis (PCA) was conducted on the items so that the items could be reduced into constructs to make interpretation more manageable. PCA was selected over other methods because it is

the most frequently used and the differences between the solutions obtained by PCA and principal factor analysis are trivial (Harman, 1976). The next step was to calculate the internal consistency estimates (Cronbach's alpha) of each of the constructs and each of the domains. Items were eliminated if their removal increased the internal consistency of the construct. The final step was a rough test of measurement equivalence across targets. Items that did not load on a factor for at least 3 of the four target groups were eliminated from the questionnaire. It is important that there is measurement equivalence across target groups so that the differences between ratings on the various constructs between targets could be interpreted with some confidence (Hertzog, & Dixon, 1996). The questionnaire was developed with three refinements.

The development of this questionnaire was modelled after the development of the Language in Adulthood (LIA) Questionnaire (Ryan et al., 1992) which assesses perceptions and beliefs about the language abilities of young and old adults. The format of the LIA is used in this questionnaire, as are some questions from the LIA. Other items were added so that perceptions of items from the three domains of interest (cognitive, physical and social/emotional) were included. Items categorized into cognitive, physical and social domains were selected to allow determination of whether beliefs differ in the pattern of positivity/negativity between these categories and because these are the categories identified by Slotterback and Saarnio (1996) as the major categories of attributes in an examination of several studies.

Items were guided by beliefs and stereotypes about aging identified in the literature and items that were hypothesised to be beliefs about AD (Kwong See et al. 2001; Levin, & Levin, 1980; Palmore, 1990; Rowe, & Kahn, 1998; Ryan, & Kwong See,

1993; Ryan et al., 1992). For example a study on expressive and receptive communication ability demonstrated that older adults are perceived as being better storytellers than young adults so items about storytelling were selected for the questionnaire. Similarly, other studies have demonstrated that older adults are seen as more benevolent than younger adults so items like "are kind people" and "are friendly people" were selected.

The original version of the questionnaire had 136 items for each of the four target groups (self, 25 year olds, 75 year olds, and AD). Table 1 contains all of the items in the first version of the questionnaire and the constructs that they were predicted to be associated with. Table 1 presents items as they would have been encountered when completing the questions for oneself (e.g., I am a good story teller). For evaluations of 25 year olds, 75 year olds, and institutionalized persons with AD, the items were presented to participants in plural form (e.g., are good story tellers).

Table 1

Items in the First Version of the Questionnaire, Grouped by the Construct and Domain of Association

Domain	Construct	Questionnaire Items
Social	Storytelling	I more and more find that people enjoy my storytelling I am a good story teller
Social	Happiness	I feel happy a lot of the time I feel sad a lot of the time I enjoy life
Social	Social interaction	I prefer to be with other people I avoid social interaction I find that I often feel lonely* I seek social interaction I am interested in what other people have to say*
Social	Empathy/ Interpersonal	I am good at knowing what other people are feeling* I am empathetic* I have good interpersonal skills*

Domain	Construct	Questionnaire Items
Social	Benevolence	I am sincere
		I am a dishonest person
		I am a kind person
		I am a tolerant person*
		I go out of my way to help others*
		I am a friendly person
		I am overly friendly*
Social	Moody	I am moody*
Social	Frugal	I am a frugal person*
Social	Cantankerous	I am argumentative
		I am a stubborn person
		I am not easily upset
		I am rarely irritable*
		I am physically aggressive*
		I am easily frustrated*
		I am a grumpy person*
		I am not good company*
		I easily grow impatient
		I more and more find that I am set in my ways and unable to change
		I like to try new things*
Social	Homogeneity	I am very much like other people my age*
Social	Suspicious	I do not trust other people
		I am sometimes paranoid
		I am suspicious of other people
Cognitive	Wisdom/ Intelligence	I am a smart person
		I am a wise person
		I am a foolish person*
		I am an intelligent person
		I am a good problem solver
		I find it difficult to solve problems*
		I give poor advice*
		I am a knowledgeable person
		I have lots of life experience*
		I would have difficulty planning the menu for a meal*
		I find that I recognize the meanings of more and more words*
Cognitive	Communication	I find that I use fewer difficult words when talking than I used to
		I find it easier to understand when spoken to slowly
		I find it easier to understand a message when simple words are used
		I find that people use long sentences that are hard to follow*

Domain	Construct	Questionnaire Items
		I would find patronizing speech (babytalk) offensive (e.g., being called sweetie or dear)*
		I find I often have difficulty saying the word that is right on the tip of my tongue*
		I talk too much*
		I am good at keeping my facts straight when telling a story*
Cognitive	Memory	I have good memory for events from my childhood
		I have trouble remembering my date of birth
		I have good memory
		I easily remember phone numbers that I just looked up*
		I have good memory for events that happened to me long ago
		I sometimes have trouble finding my way around*
		I find that I sometimes forget to turn off the stove*
		I sometimes forget to comb my hair*
		I sometimes forget important appointments*
		I find that I walk into a room and forget what I went into the room for *
		I forget what I ate at my last meal*
		I have poor memory for names of people I have just met
		I would have difficulty memorizing a list of 10 items
		I have good memory for events that happened recently
Cognitive	Learning	I can learn new things*
		I have difficulty learning new things*
Cognitive	Competence	I am able to follow instructions easily*
		I find it easy to manage my money*
		I have trouble making toast*
		I usually display good judgment*
		I can easily follow the steps in a recipe*
		I know when I need help*
		I would have difficulty planning a birthday party*
Cognitive	Creativity	I have creative ideas*
Cognitive	Confusion	I am easily confused*
Cognitive	Speed	I am a slow thinker*
		I find that other people talk too fast*
		I find that I often have trouble saying what I want when pressed for time*
Cognitive	Distraction	I am easily distracted by random thoughts
		I find that my mind wanders to random thoughts
		I have a tendency to ramble on about random topics
		I often find myself asking other people to repeat what they have just said*
		I find that I often lose track of what I was talking about*

Domain	Construct	Questionnaire Items
		I find that I often lose track of the topic of conversation*
		I find that noisy situations make it difficult to understand what others are saying*
		I find it easy to concentrate on one thought
Physical	Active	I am a physically strong person
		I am a physically active person
		I have a lot of energy
Physical	Speed	I move quickly*
		I can quickly change into my pyjamas*
		It takes me a long time to butter a piece of bread*
Physical	Injury risk	I may drop a boiling pot of water
		I may hurt myself while chopping onions
		I am at risk for slipping in the bathtub*
		I should not be lifting a full pot off of the stove*
		I would spill while pouring hot coffee
Physical	Help	I need help to function in everyday life*
		I would be accepting of help
		I am able to help the people around me*
		I resist help
		I would appreciate help
Physical	Dependency	I am physically dependent*
		I am an independent person*
		I am unable to perform household chores independently*
		I am dependent on others*
		I can easily prepare a meal*
Physical	Hearing	I find that people speak too softly to hear
		I find it easy to hear faint sounds
		I find that my hearing is not as good as it used to be*
		I can hear sounds well
		I find it easy to hear high pitched sounds*
Physical	Coordination	I have good hand-eye coordination*
		I am at risk of falling on a slippery sidewalk*
Physical	Pain	I rarely experience physical pain*
Physical	Strength/ Frailty	I would have difficulty holding a toothbrush*
		I am a frail person*
		I tire easily*
		I have limited mobility*
		I can easily tie up my shoelaces*
		I can exercise without hurting myself*

Domain	Construct	Questionnaire Items
Physical	Sight	I have difficulty seeing small print
		I can see well in dim light*
		I have good eyesight*
		I need bright light to see well*
		I can easily tell colours apart*
		I find newspaper print too small to read
Physical	Taste	I enjoy a tasty meal*
		I do not experience tastes strongly
Physical	Smell	I have a poor sense of smell
		I can easily tell different smells apart

Note. Items later eliminated from this version are marked with an *.

Data Reduction: Round 1

Participants. The original sample consisted of 102 undergraduate students. Participants who indicated that they were not native speakers of English rated their proficiency in English on a 7-point scale ranging from 1 (poor) to 7 (excellent). Those who rated their proficiency less than 6 were eliminated from the sample because high proficiency in English was deemed important for understanding the items and completing the questionnaire. The remaining sample consisted of 95 students (65 female) who ranged in age from 18 to 40 years ($M = 20.20$, $SD = 2.53$). Participants received course credit in their introductory psychology course for participation.

Method. Participants were presented with an experimental booklet that contained five sections. Participants were asked to indicate their degree of agreement with each statement on a 7-point Likert scale ranging from 1 for strong disagreement to 7 for strong agreement for each statement. In the first section of the booklet participants indicated the degree to which they agreed that the statements pertained to themselves. In the second, third and fourth sections they indicated the degree to which the statements pertained to

typical 25 year olds, 75 year olds, and persons with AD in counterbalanced order. In the fifth section they provided demographic information.

Results. Questionnaire items were recoded so that higher scores (7) always represented more positive beliefs on each item and lower scores (1) always represented more negative beliefs. For example, Strongly Agree (7) on the item "are friendly people" would indicate a positive belief so this item would not need to be recoded. Alternatively, Strongly Agree (7) on the item "are stubborn people" would indicate a negative belief so the participants' responses on this item would be recoded such that 7 would be recoded to 1, and 6 to 2 etc. This way a 7 would now indicate a positive belief. This recoding was done for all of the revisions. A principal components analysis with a Varimax rotation was conducted for each of the four targets. Items loading together in predicted ways for at least 3 out of the 4 target groups were retained, those that did not were discarded, 81 items were dropped from the questionnaire, these items are marked with an * in Table 1.

Data Reduction: Round 2

In the first refinement it was found that many items did not measure what they were predicted to, so in round 2 additional items were created. The following items were added to the questionnaire for the second refinement: I do not tell good stories; I prefer to be by myself rather than to be with other people; I am a caring person; I tell the truth; and I am not easily irritated. This version consisted of 61 items (see Table 2) and participants were provided with the same instructions as for the previous refinement.

Participants. The second sample consisted of 102 undergraduate students. Participants who indicated that they were not native speakers of English rated their proficiency in English on a 7-point scale ranging from 1 (poor) to 7 (excellent). Those

who rated their proficiency less than 6 were eliminated from the sample. The remaining sample consisted of 91 students (68 female) who ranged in age from 18 to 31 years (M = 19.96, SD = 1.76).

Results. A principal components analysis with a Varimax rotation was conducted for each of the four targets separately. Any items that did not load together onto constructs as predicted for at least three of the four target groups were dropped from the questionnaire. Based on this, 10 items were eliminated from the questionnaire. Items that were eliminated from the questionnaire are marked with an * in Table 2.

Table 2

Items in the Second Version of the Questionnaire, Grouped by the Factors (Constructs) on which they Loaded

Domain	Construct	Questionnaire Items
Social	Storytelling	I more and more find that people enjoy my storytelling
		I am a good story teller
		I do not tell good stories
Social	Happiness	I feel happy a lot of the time
		I feel sad a lot of the time*
		I enjoy life
Social	Social interaction	I prefer to be with other people
		I avoid social interaction
		I prefer to be by myself rather than to be with other people
		I seek social interaction
Social	Benevolence	I am a caring person
		I am sincere*
		I am a dishonest person
		I tell the truth
		I am a kind person
		I am a friendly person
Social	Cantankerous	I am argumentative
		I am a stubborn person
		I am not easily irritated
		I am not easily upset
		I easily grow impatient
		I more and more find that I am set in my ways and unable to change*

Domain	Construct	Questionnaire Items
Social	Suspicious	I do not trust other people
		I am sometimes paranoid
		I am suspicious of other people
Cognitive	Wisdom/ Intelligence	I am a smart person
		I am a wise person
		I am an intelligent person
		I am a good problem solver
		I am a knowledgeable person
Cognitive	Communication	I find that I use fewer difficult words when talking than I used to*
		I find it easier to understand when spoken to slowly
		I find it easier to understand a message when simple words are used
Cognitive	Long Term Memory	I have good memory for events from my childhood
		I have trouble remembering my date of birth*
		I have good memory
		I have good memory for events that happened to me long ago
		I have poor memory for names of people I have just met*
		I would have difficulty memorizing a list of 10 items*
Cognitive	Recent Memory	I have good memory for events that happened recently
Cognitive	Distraction	I am easily distracted by random thoughts
		I find that my mind wanders to random thoughts
		I have a tendency to ramble on about random topics
		I find it easy to concentrate on one thought*
Physical	Active	I am a physically strong person
		I am a physically active person
		I have a lot of energy
Physical	Injury risk	I may drop a boiling pot of water
		I may hurt myself while chopping onions
		I would spill while pouring hot coffee
Physical	Help	I would be accepting of help
		I resist help
		I would appreciate help
Physical	Hearing	I find that people speak too softly to hear
		I find it easy to hear faint sounds
		I can hear sounds well*
Physical	Sight	I have difficulty seeing small print
		I find newspaper print too small to read

Domain	Construct	Questionnaire Items
Physical	Taste/ Smell	I do not experience tastes strongly
		I have a poor sense of smell
		I can easily tell different smells apart *

Note. Items eliminated from this version are marked with an *.

Data Reduction: Round 3

The third and final version of the questionnaire (Appendix A) consisted of 51 items. 140 undergraduate students completed this version and their data were combined with the 102 participants who completed the 61 item version. Only the 51 items in the third version of the questionnaire were included in the analysis. These groups were combined to increase the sample size for the factor analysis.

Participants. Once again, participants who indicated that they were not native speakers of English rated their proficiency in English on a 7-point scale ranging from 1 (poor) to 7 (excellent). Those who rated their proficiency less than 6 were eliminated from the sample. The remaining sample consisted of 208 students (149 female) who ranged in age from 17 to 43 years ($M = 19.92$, $SD = 2.61$). Participants received course credit in their introductory psychology course for participation.

Results. First, a principal components analysis with a Varimax rotation was conducted for each of the four targets separately. Items with factor loadings of less than .7 and items that did not load on the factor for at least three of the four targets are marked with * in Table 3.

Second, reliability estimates (Cronbach's alpha) for constructs were calculated for all targets. Reliability estimates were calculated for constructs with more than one item (estimates for constructs composed of only one item are marked "N/A"). Items marked with * in Table 3 were not included in the calculation of the reliability estimates.

Cronbach's alpha for each construct was calculated for evaluations of each target: self, typical 25 year olds (young), typical 75 year olds (old), and typical institutionalized persons with AD (AD), and are presented in Table 3.

Third, reliability estimates were calculated for each of the four targets (self, young, old, and AD) in each of the three domains (Social, Cognitive, and Physical). All items comprising each domain (except those items marked with * in Table 3) were included in the calculation of the reliability estimates. The Cronbach's alphas for each of the domains are presented in Table 4.

Table 3

Final Questionnaire Subscales and Reliability Estimates

Domain	Construct	Self	Young	Old	AD	Questionnaire Items
Social	Storytelling	.87	.74	.73	.81	I more and more find that people enjoy my storytelling I am a good story teller I do not tell good stories
Social	Happiness	.82	.73	.74	.70	I feel happy a lot of the time I enjoy life
Social	Social interaction	.80	.74	.79	.82	I prefer to be with other people I seek social interaction I avoid social interaction I prefer to be by myself rather than to be with other people
Social	Benevolence	.80	.90	.86	.85	I am a caring person I tell the truth* I am a kind person I am a friendly person I am a dishonest person*
Social	Cantankerous	.72	.68	.64	.75	I am argumentative I am a stubborn person I am not easily irritated I am not easily upset I easily grow impatient
Social	Suspicious	.64	.79	.71	.64	I do not trust other people I am sometimes paranoid* I am suspicious of other people

Domain	Construct	Self	Young	Old	AD	Questionnaire Items
Social	Help	.88	.79	.87	.84	I would be accepting of help I resist help I would appreciate help
Cognitive	Wisdom/ Intelligence	.80	.79	.81	.83	I am a smart person I am a wise person I am an intelligent person I am a good problem solver* I am a knowledgeable person
Cognitive	Communication	.56	.83	.80	.80	I find it easier to understand when spoken to slowly I find it easier to understand a message when simple words are used
Cognitive	Memory	.84	.76	.78	.76	I have good memory for events from my childhood I have good memory I have good memory for events that happened to me long ago
Cognitive	Recent memory	N/A	N/A	N/A	N/A	I have good memory for events that happened recently
Cognitive	Distraction	.86	.64	.68	.75	I am easily distracted by random thoughts I find that my mind wanders to random thoughts I have a tendency to ramble on about random topics *
Physical	Active	.74	.82	.72	.71	I am a physically strong person I am a physically active person I have a lot of energy
Physical	Injury risk	.79	.85	.80	.82	I may drop a boiling a pot of water I may hurt myself while chopping onions I would spill while pouring hot coffee
Physical	Sight 1	N/A	N/A	N/A	N/A	I have difficulty seeing small print
Physical	Sight 2	N/A	N/A	N/A	N/A	I find newspaper print too small to read
Physical	Smell	N/A	N/A	N/A	N/A	I have a poor sense of smell
Physical	Taste	N/A	N/A	N/A	N/A	I do not experience tastes strongly

Domain	Construct	Self	Young	Old	AD	Questionnaire Items
Physical	Hear 1	N/A	N/A	N/A	N/A	I find that people speak too softly to hear
Physical	Hear 2	N/A	N/A	N/A	N/A	I find it easy to hear faint sounds

Table 4

Reliability Estimates for the Cognitive, Social, and Physical Domains for each Target

	Target			
Domain	Self	Young	Old	AD
Cognitive	.67	.73	.72	.67
Social	.76	.75	.79	.83
Physical	.64	.83	.81	.83

The first objective of this study was to develop an instrument to measure beliefs about AD. An instrument with good reliability has been developed. So this objective has been met, and it is now possible to address the remaining study objectives.

The remainder of this paper will assess caregivers' and undergraduate students' beliefs about aging and AD using the newly developed instrument, assess knowledge about aging and AD, and determine whether predictors of attitudes toward aging identified in the literature are also predictors of beliefs about aging and AD.

METHODOLOGY

Participant Selection

The original sample consisted of 60 caregivers and 140 undergraduate students. Participants who indicated that they were not native speakers of English rated their proficiency in English on a 7-point scale ranging from 1 (poor) to 7 (excellent). Those who rated their proficiency less than 5 were eliminated from the sample. This is a slightly more lenient criterion than used in the questionnaire development phase, to allow for a greater number of caregivers to be included in the analysis. Next, any participants who did not complete all sections of the questionnaire were eliminated from the sample. Following this, 53 caregivers remained in the sample and 53 undergraduate students were matched to the caregivers based on gender.

Participants

Fifty-three caregivers (52 female) and 53 undergraduate students (52 female) volunteered to participate in the study. Caregivers were Resident Companions recruited from three Alzheimer Care Centres in Edmonton and surrounding area. Caregivers were given a $25 honorarium for their participation. Caregivers had worked with people with AD anywhere from half a year to 28 years ($M = 6.60$, $SD = 5.84$), and had worked with seniors anywhere from half a year to 30 years (M = 9.29, SD = 7.78). Caregivers ranged in age from 19 to 64 years ($M = 44.60$, $SD = 10.16$). Undergraduate students received course credit in their introductory psychology course for participation. Undergraduate students ranged in age from 18 to 43 years ($M = 20.60$, $SD = 4.45$). Caregivers were older than the students $t(104) = 15.76$, $p<.001$. Caregivers had an average of 13.62 years of

formal education (SD = 1.96). All participants gave consent prior to beginning the study (see Appendix A).

Materials

The questionnaire developed for this study (see Appendix B) is designed to measure perceptions of cognitive, physical and social/emotional performance for four targets: self, typical 25 year olds, typical 75 year olds, and typical institutionalized persons with AD. It consists of 51 statements about cognitive (e.g., Have good memory for events that happened to them long ago), physical (e.g., Are physically active people) and social/emotional (e.g., Are kind people) abilities. Participants were asked to indicate their degree of agreement with each statement on a 7-point Likert scale ranging from 1 for strong disagreement to 7 for strong agreement. Participants were also asked to indicate their age, gender, education level, and rate on a 7-point scale ranging from 1 "not at all" to 7 "very much" their level of contact with grandparents, seniors in general and persons with AD and the degree to which that contact is positive. A reliability analysis was conducted based on the previously established construct structure. Reliability estimates for the questionnaire with this sample are provided in Tables 5 and 6. The last column in table 5 displays the questionnaire items as presented for evaluations of the self (e.g., I am a good story teller). For evaluations of 25 year olds, 75 year olds, and institutionalized persons with AD, the items were presented to participants in plural form (e.g., are good story tellers). Cronbach's alpha for each construct was conducted for evaluations of each target: self, typical 25 year olds (young), typical 75 year olds (old), and typical institutionalized persons with AD (AD).

Table 5

Reliability Estimates for all Constructs for each Target for the Study Sample

Domain	Construct	Self	Young	Old	AD	Questionnaire Items
Social	Storytelling	.81	.57	.68	.79	I am a good story teller I more and more find that people enjoy my storytelling I do not tell good stories
	Happiness	.85	.72	.71	.76	I feel happy a lot of the time I enjoy life
	Social Interaction	.73	.78	.81	.76	I prefer to be with other people I avoid social interaction I prefer to be by myself rather than to be with other people I seek social interaction
	Benevolence	.89	.93	.87	.80	I am a caring person I am a kind person I am a friendly person
	Cantankerous	.81	.75	.66	.75	I am argumentative I am a stubborn person I am not easily irritated I am not easily upset I easily grow impatient
	Suspicious	.75	.61	.63	.56	I do not trust other people I am suspicious of other people
	Help	.60	.71	.63	.68	I would be accepting of help I would appreciate help I resist help
Cognitive	Intelligence/ Wisdom	.78	.82	.84	.87	I am a smart person I am a wise person I am an intelligent person I am a knowledgeable person
	Communication	.70	.82	.76	.77	I find it easier to understand when spoken to slowly I find it easier to understand a message when simple words are used
	Memory	.78	.80	.74	.75	I have good memory for events from my childhood I have good memory I have good memory for events that happened to me long ago

Domain	Construct	Self	Young	Old	AD	Questionnaire Items
	Recent Memory	N/A	N/A	N/A	N/A	I have good memory for events that happened recently
	Distraction	.86	.73	.61	.66	I am easily distracted by random thoughts I find that my mind wanders to random thoughts
Physical	Active	.74	.87	.84	.82	I am a physically strong person I am a physically active person I have a lot of energy
Physical	Injury Risk	.77	.80	.87	.82	I may drop a boiling a pot of water I may hurt myself while chopping onions I would spill while pouring hot coffee
Physical	These items treated separately in the analysis					I have difficulty seeing small print
Physical						I find newspaper print too small to read
Physical						I have a poor sense of smell
Physical						I do not experience tastes strongly
Physical						I find that people speak too softly to hear
Physical						I find it easy to hear faint sounds

Table 6

Reliability Estimates for the Cognitive, Social, and Physical Domains for each Target for the Study Sample

	Target			
Domain	Self	Young	Old	AD
Cognitive	.70	.78	.79	.68
Social	.80	.87	.85	.85
Physical	.63	.77	.86	.83

The multiple-choice format of Palmore's Facts on Aging Quiz 1 (FAQ1; Palmore, 1998) was used as a measure of knowledge about aging. This quiz was modified so that it

would be appropriate for a Canadian sample. Question 19 was changed to ask about the proportion of the Canadian population now age 65 or over rather than the U.S. population, and the response option for question 20 that referred to having Medicaid was changed to being low income seniors. See Appendix C for the updated version of the FAQ1. More than 150 studies with various populations have used the Palmore Facts on Aging Quizzes prior to 1997 (Palmore, 1998). The FAQ1 has 25 multiple-choice questions, each with one correct answer and three distracters. A "Don't Know" option is included to reduce guessing. This allows one to distinguish between misconceptions and ignorance. Although this test's internal consistency estimates are low (.15; Harris, Changas, & Palmore, 1996), its validity has been supported by evidence that groups expected to have more knowledge (i.e., those with gerontology training) score better on the test (Palmore, 1998). Consistent with the reliability estimates reported in the literature, estimates with this sample were also low (.46).

A number of AD knowledge tests were examined (Brown, Mutran, Sloane, & Long, 1998; Dieckmann, Zarit, Zarit, & Gatz, 1988; Gilleard and Groom, 1994; Graham, Ballard, & Sham, 1997a, b; Karlin, & Dalley, 1998). Dieckmann et al.'s (1988) Alzheimer Disease Knowledge Test (ADKT) was selected for this study because of its known psychometric properties. The original 20-item version of the ADKT has good internal consistency, moderate test-retest reliability, and its construct validity has been demonstrated (Dieckmann et al., 1988).

The ADKT was updated and made relevant for Canadian participants for this study. The updated ADKT had 18 multiple-choice questions about AD (e.g., prevalence, diagnosis, symptoms). Item 1 was modified to reflect current estimates of AD in Canada,

item 2 was changed to ask for the prevalence of AD in Canada, the response options for item 6 were modified such that "Prompt treatment of Alzheimer's disease may prevent worsening of symptoms" was changed to "Prompt treatment of Alzheimer's disease may slow the progression of symptoms, option "B" was omitted and replaced with option "C" and the option "A and B" was added, item 11 was deleted because lecithin is no longer used to treat AD (Higgins, & Flicker, 1999), in item 18 "Alzheimer Disease and Related Disorders Association" was replaced with "Alzheimer Society", and item 19 was deleted because the American and Canadian insurance systems differ. See Appendix D for the updated version of the ADKT. The internal consistency estimate (Cronbach's alpha) for the revised ADKT with this sample was .70.

Procedure

Caregivers completed the questionnaire in small group sessions at each of the Alzheimer Care Centres. Sessions were held before and after shifts or whenever was convenient for participants. Students completed the questionnaire in groups of up to 30 participants. Each participant completed the beliefs questions for all four target groups (i.e., self, 25 year olds, 75 year olds, and institutionalized persons with AD) in counterbalanced order, the FAQ1, the ADKT, and demographic questions. Demographic questions included age, language ability, place of birth, amount of contact with grandparents, amount of contact with seniors, amount of contact with persons with AD, degree to which contact with grandparents is positive, degree to which contact with seniors is positive, degree to which contact with persons with AD is positive. Caregivers also reported how long they had been working with seniors and with persons with AD, if they had any training in aging or AD, and if they had taken a personal care aid course. It

took caregivers between 25 and 75 minutes to complete the questionnaire and undergraduate students between 25 and 60 minutes to complete the questionnaire.

RESULTS

Analysis Strategy

To assess caregivers' and undergraduate students' beliefs about aging and AD using the newly developed instrument (objective 2), the main analyses conducted were repeated measures multivariate analyses of variance. The Wilks' Lambda criterion was used for multivariate tests. Then univariate statistics and planned comparisons were conducted to understand the multivariate effects. Planned comparisons compared perceptions of the 25 year olds to perceptions of the 75 year olds to assess beliefs about aging, and also compared perceptions of 75 year olds to perceptions of the institutionalized persons with AD to assess beliefs about AD over and above what is expected by aging. Reported effect sizes are partial eta squared (η^2). Results of social perceptions are presented first, followed by self-perceptions.

To assess knowledge about aging and AD (objective 3), percentage correct was calculated for each test and respondent group, and independent samples t-tests were performed to determine whether the groups differed in level of knowledge of aging and AD. Stepwise multiple regression was used to determine what the predictors of knowledge were.

To determine whether predictors of attitudes toward aging identified in the literature, are also predictors of beliefs about aging and AD (objective 4), stepwise multiple regression was used.

All analyses were performed with SPSS 13.0 software. The criterion for significance was set at an alpha level of .05.

Social Perceptions: Beliefs about Aging and AD in the Cognitive Domain

Composite scores for each construct were created by averaging the responses on the items comprising each construct (e.g., communication) for each target (i.e., self, young, old, and AD) separately. A multivariate analysis of variance was conducted for cognitive constructs of the beliefs questionnaire. This yielded a significant multivariate effect for Target $F(10,95) = 70.5, p < .001, \eta^2 = .88$, Respondent Group $F(5,100) = 13.7$, $p < .001, \eta^2 = .41$, and Target X Respondent Group interaction $F(10,95) = 3.0, p < .01$, $\eta^2 = .24$. Means, standard deviations, and the univariate simple contrasts to compare beliefs about aging (old vs young), and AD (old vs AD) are presented in Table 7 for caregivers and in Table 8 for students.

Table 7

Caregivers' Beliefs about Aging and AD in the Cognitive Domain

Constructs	Target			F values for target (2,104)	Old vs Young F values (1,52)	Old vs AD F values (1,52)
	Young *M* (*SD*)	Old *M* (*SD*)	AD *M* (*SD*)			
Wisdom/ Intelligence	5.70 (0.66)	5.98 (0.62)	5.43 (0.97)	37.8**	13.9**	31.7**
Communication	4.05 (1.70)	2.87 (1.33)	1.78 (0.90)	46.2**	25.5**	29.7**
Long term memory	5.92 (0.76)	5.23 (1.06)	4.35 (1.16)	37.8**	13.9**	31.7**
Distraction	4.16 (1.40)	3.61 (1.15)	2.26 (0.87)	48.8**	6.9*	55.8**
Memory for recent events	6.17 (0.87)	4.75 (1.57)	2.25 (1.45)	140.8**	36.6**	114.7**
Overall	5.20	4.49	3.21			

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

Table 8

Students' Beliefs about Aging and AD in the Cognitive Domain

Constructs	Target			F values for target (2,104)	Old vs Young F values (1,52)	Old vs AD F values (1,52)
	Young *M* (*SD*)	Old *M* (*SD*)	AD *M* (*SD*)			
Wisdom/ Intelligence	4.99 (0.68)	5.62 (0.69)	4.80 (0.72)	55.28**	39.36**	101.1**
Communication	4.38 (1.15)	3.30 (1.23)	2.93 (1.23)	23.4**	26.2**	6.5*
Long term memory	5.08 (0.81)	4.71 (1.11)	3.05 (1.46)	41.3**	5.0*	60.75**
Distraction	3.92 (1.03)	3.40 (1.06)	2.45 (0.97)	23.4**	9.1*	23.4**
Memory for recent events	5.51 (0.91)	4.15 (1.32)	2.34 (1.40)	91.4**	39.1**	67.4**
Overall	4.78	4.24	3.11			

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

The pattern of beliefs was similar for both caregivers and students. 25 year olds were rated most positively, 75 year olds less positively and persons with AD least positively on all constructs except for wisdom/intelligence. For wisdom/intelligence the 75 year olds were rated more positively than the 25 year olds, and the persons with AD were rated more negatively than the 75 year olds. It was not clear whether the persons with AD were rated more negatively than the 25 year olds on wisdom/intelligence, so to further explore this, simple comparisons were done to determine whether caregivers' and students' beliefs about the wisdom/intelligence of 25 year olds and persons with AD differed. Caregivers believe persons with AD to be less wise/intelligent than 25 year olds $F(1,52) = 4.18, p < .05$. In contrast to the beliefs of caregivers, no difference was found between students' beliefs about the wisdom/intelligence of these targets $F(1,52) = 3.55, p > .05$.

Observing the pattern indicates that students and caregivers do not differ much in the overall degree of negativity of beliefs about aging and AD. To examine this, overall cognitive belief scores for each participant were formed by calculating the mean of the composite scores for constructs in the cognitive domain. T tests were conducted to determine whether the two respondent groups differed in their degree of negativity. When looking at belief scores formed by subtracting beliefs about 25 year olds from beliefs about 75 year olds, caregivers beliefs (M = -0.71, SD = 0.97) about aging in the cognitive domain did not differ from students' (M = -0.54, SD = .72), $t(104) = -1.03, p > .05$. Similarly, when looking at belief scores formed by subtracting beliefs about 75 year olds from beliefs about persons with AD, caregivers beliefs (M = -1.27, SD = .85) about AD in the cognitive domain did not differ from students' (M = -1.12, SD = .63), $t(104) = -0.74, p > .05$.

Social Perceptions: Beliefs about Aging and AD in the Social Domain

Composite scores for the constructs in the social domain were calculated in the same way as composite scores in the cognitive domain. A multivariate analysis of variance was conducted for social items of the beliefs questionnaire. This yielded a significant multivariate effect for Target $F(14,91) = 25.1, p < .001, \eta^2 = .79$, Respondent Group $F(7,98) = 4.5, p < .001, \eta^2 = .24$, and Target X Respondent Group interaction $F(14,91) = 4.37, p < .001, \eta^2 = .40$. Univariate contrasts were done to determine the nature of the interaction. Means, standard deviations, and the univariate simple contrasts to compare beliefs about aging (old vs young) and AD (old vs AD) are presented in Table 9 for caregivers and in Table 10 for students.

Table 9
Caregivers' Beliefs about Aging and AD in the Social Domain

Constructs	Target			F values for target (2,104)	Old vs Young F values (1,52)	Old vs AD F values (1,52)
	Young *M* (*SD*)	Old *M* (*SD*)	AD *M* (*SD*)			
Storytelling	4.98 (0.81)	5.48 (0.84)	4.69 (1.22)	14.4**	13.0**	42.7**
Happiness	6.08 (0.62)	5.30 (0.97)	4.52 (1.34)	45.1**	33.3*	24.6*
Social Interaction	5.92 (0.67)	5.00 (1.06)	4.74 (1.06)	31.0**	2.1*	*ns*
Benevolence	5.75 (1.06)	5.94 (0.68)	5.75 (0.82)	*ns*		
Cantankerous	4.26 (1.06)	3.88 (0.98)	3.09 (0.86)	33.4**	5.5*	40.0**
Suspicious	4.71 (1.32)	4.02 (1.30)	2.90 (1.00)	49.0**	10.5*	47.7**
Help	5.03 (0.99)	5.09 (0.86)	4.73 (0.99)	3.4*	*ns*	6.9*
Overall	5.25	4.96	4.35			

Table 10
Students' Beliefs about Aging and AD in the Social Domain

Constructs	Target			F values for target (2,104)	Old vs Young F values (1,52)	Old vs AD F values (1,52)
	Young *M* (*SD*)	Old *M* (*SD*)	AD *M* (*SD*)			
Storytelling	4.59 (0.78)	5.29 (0.87)	4.17 (1.00)	27.8**	21.6**	64.4**
Happiness	5.42 (0.83)	4.96 (0.94)	3.82 (1.05)	45.1**	33.3**	24.6**
Social Interaction	5.47 (0.85)	4.99 (0.89)	4.33 (0.83)	32.4**	10.4*	26.7**
Benevolence	4.99 (0.76)	5.47 (0.91)	5.13 (0.80)	13.5**	25.6**	15.3**
Cantankerous	3.59 (0.59)	3.80 (0.73)	3.43 (0.78)	3.97*	*ns*	8.7*
Suspicious	4.55 (0.94)	3.94 (1.06)	3.50 (1.04)	15.8**	11.6**	7.1*
Help	4.46 (0.81)	4.77 (1.00)	4.42 (0.94)	3.7*	4.2*	7.3*
Overall	4.72	4.75	4.11			

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

Caregivers and students displayed a similar pattern of results for Suspiciousness, and Happiness. For these constructs young were rated more positively than old and old were rated more positively than AD. For Storytelling, both caregivers and students rated the old more positively than young and AD. The pattern of results for the other constructs differed between caregivers and students. For Social Interaction, caregivers and students both had more negative beliefs about old than young, but they differed in that the caregivers saw no difference between old an AD on this construct whereas the students had more negative beliefs about AD than about old. For Benevolence, caregivers' beliefs did not vary by target, this is in contrast to the students who see old as more benevolent than young and AD as less benevolent than old. For Cantankerous, caregivers and students both had more negative beliefs about AD than old, but caregivers' and students' ratings differed in that caregivers rated old as more cantankerous than young whereas students' ratings did not differ for old and young. For Help, both caregivers and students rated AD as less amenable to help than old, but caregivers and students differed in that students rated old as more amenable to help than young, whereas caregivers' ratings did not differ for old and young.

When looking at belief scores formed by subtracting beliefs about 25 year olds from beliefs about 75 year olds, caregivers' beliefs (M = -0.29, SD = 0.57) about aging in the social domain were more negative than students' (M = -0.02, SD = .51), $t(104) = -2.94$, $p < .01$.

When looking at belief scores formed by subtracting beliefs about 75 year olds from beliefs about persons with AD, caregivers' beliefs (M = -0.62, SD = .51) about AD in the social domain did not differ from students' (M = -0.63, SD = .42), $t(104) = 0.16$, $p > .05$.

Social Perceptions: Beliefs about Aging and AD in the Physical Domain

Composite scores for the constructs in the physical domain were calculated in the same way as composite scores in the cognitive and social domains. A multivariate analysis of variance was conducted for physical items of the beliefs questionnaire. This yielded a significant multivariate effect for Target $F(16,89) = 41.3, p < .001, \eta^2 = .88$, Respondent Group $F(8,97) = 5.2, p < .001, \eta^2 = .30$, and Target X Respondent Group interaction $F(16,89) = 3.3, p < .001, \eta^2 = .37$. Univariate contrasts were done to determine the nature of the interaction. Means, standard deviations, and the univariate simple contrasts to compare beliefs about aging (old vs young) and AD (old vs AD) are presented in Table 11 for caregivers and in Table 12 for students.

Table 11

Caregivers' Beliefs about Aging and AD in the Physical Domain

Constructs	Target			F values for target (2,104)	Old vs Young F values (1,52)	Old vs AD F values (1,52)
	Young *M* (*SD*)	Old *M* (*SD*)	AD *M* (*SD*)			
Active	6.25 (0.68)	4.12 (1.38)	4.09 (1.45)	84.6**	103.4**	*ns*
Injury Risk	5.04 (1.31)	3.50 (1.56)	2.44 (1.04)	70.3**	43.8**	30.5**
Have difficulty seeing small print	5.72 (1.32)	2.47 (1.36)	2.21 (0.93)	138.1**	181.6**	*ns*
Find newspaper print too small to read	5.79 (1.26)	2.36 (1.02)	2.49 (1.17)	152.6**	192.3**	*ns*
Find that people speak too softly to hear	5.08 (1.44)	2.89 (1.25)	2.81 (1.39)	65.7**	78.5**	*ns*
Have a poor sense of smell	5.40 (1.50)	3.92 (1.58)	3.50 (1.34)	27.7**	22.9**	*ns*
Find it easy to hear faint sounds	5.06 (1.85)	3.38 (1.63)	3.19 (1.72)	19.6**	24.5**	*ns*
Do not experience tastes strongly	5.49 (1.35)	3.43 (1.47)	3.15 (1.43)	51.1**	72.5**	*ns*
Overall	5.48	3.26	2.99			

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

Table 12

Students' Beliefs about Aging and AD in the Physical Domain

Constructs	Target			F values for target (2,104)	Old vs Young F values (1,52)	Old vs AD F values (1,52)
	Young *M* (*SD*)	Old *M* (*SD*)	AD *M* (*SD*)			
Active	5.38 (0.85)	3.22 (0.86)	3.56 (0.76)	125.0**	173.5**	6.7*
Injury Risk	4.78 (1.20)	3.18 (1.04)	3.18 (1.08)	44.3**	54.4**	*ns*
Have difficulty seeing small print	5.51 (0.89)	2.45 (1.05)	3.60 (1.31)	101.5**	177.8**	33.0**
Find newspaper print too small to read	5.55 (1.19)	2.30 (0.91)	3.75 (1.47)	95.1**	227.1**	40.6**
Find that people speak too softly to hear	5.06 (1.08)	2.60 (1.15)	3.66 (1.32)	61.0**	111.2**	21.0**
Have a poor sense of smell	5.15 (1.06)	3.57 (1.20)	4.19 (1.29)	32.0**	58.24**	12.4*
Find it easy to hear faint sounds	4.85 (1.22)	2.62 (1.15)	3.49 (1.12)	46.6**	64.6**	21.0**
Do not experience tastes strongly	4.94 (1.13)	3.62 (1.11)	3.83 (1.00)	25.8**	36.0**	*ns*
Overall	5.15	2.95	3.66			

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

The pattern of beliefs about aging was the same for students and caregivers. They both rated old more negatively than young on all constructs in the physical domain. Caregivers and students differed markedly in their beliefs about AD. Caregivers rated AD as being at more risk for injury than old, whereas students' ratings of old and AD did not differ for this construct. On all other constructs students had more positive beliefs about AD than old, whereas caregivers' ratings for AD and old did not differ.

When looking at belief scores formed by subtracting beliefs about 25 year olds from beliefs about 75 year olds, caregivers' beliefs (M = -2.22, SD = 1.18) about aging in

the physical domain did not differ from students' (M = -2.20, SD = 1.14), $t(104)$ = -0.05, $p > .05$.

When looking at belief scores formed by subtracting beliefs about 75 year olds from beliefs about persons with AD, caregivers hold more negative beliefs (M = -0.27, SD = .86) about AD in the physical domain than do students (M = 0.71, SD = .86), $t(104)$ = -5.90, $p < .001$.

Social Perceptions: Comparisons of Beliefs about Aging and AD in the Cognitive, Social and Physical Domains

Because many negative stereotypes about older adults and aging are cognitive and physical in nature, the older adults were expected to be viewed more negatively than younger adults in these domains than in the social domain. A 3(Domain) X 2(Participant type) analysis of variance indicated an effect of Domain $F(2, 208) = 261.6$, $p < .001$, which indicates that the magnitude of the difference scores between old and young differed by domain. The effect of Participant Type $F(1, 104) = 1.5$, $p > .05$ and the Domain x Participant type interaction $F(2, 208) = 1.2$, $p > .05$, were not significant. Therefore, caregiver and student data were combined for the follow up analyses which revealed that the difference scores between old and young were greater in the physical domain than in the cognitive domain $t(105) = 17.1$, $p < 0.001$ and greater in the cognitive domain than in the social domain $t(105) = 6.1$, $p < 0.001$.

A 3(Domain) X 2(Participant type) analysis of variance was conducted to determine whether persons with AD were viewed more negatively than older adults in some domains more than others. An effect of Domain $F(2, 208) = 148.9$, $p < .001$, Participant type $F(1, 104) = 14.2$, $p < .001$ and a Domain x Participant type interaction

$F(2, 208) = 21.0$, $p < .001$ were found. Follow up analyses for students revealed that the difference scores between old and AD were greater in the cognitive domain than in the social domain $t(52) = 5.6$, $p < 0.001$ and greater in the social domain than in the physical domain $t(52) = 9.1$, $p < 0.001$. Similarly, follow up analyses for caregivers revealed that the difference scores between old and AD were greater in the cognitive domain than in the social domain $t(52) = 6.5$, $p < 0.001$ and greater in the social domain than in the physical domain $t(52) = 3.0$, $p < 0.005$. The difference between students and caregivers that gave rise to the Domain x Participant type interaction was that caregivers hold more negative beliefs ($M = -0.27$, $SD = .86$) about AD in the physical domain than do students ($M = 0.71$, $SD = .86$), $t(104) = -5.90$, $p < .001$.

Self-Perceptions: Effects of Participant Group

A multivariate analysis of variance, with participant group as the between factor, was conducted for each of the cognitive, social and physical domains.

Cognitive domain self-perceptions. The participant group comparison yielded a significant multivariate effect, $F(5,100) = 8.5$, $p < .001$, $\eta^2 = .30$. Means, standard deviations and the univariate statistics are presented in Table 13. Differences in cognitive self-perceptions between caregivers and students were significant for 4 of the 5 cognitive constructs. The only construct on which caregivers did not perceive themselves more positively than students was communication. Overall, caregivers perceived themselves more positively in the cognitive domain than did students.

Table 13

Participants' Self-perceptions in the Cognitive Domain

Constructs	Participant Group		F values
	Students *M*(*SD*)	Caregivers *M*(*SD*)	(1,104)
Wisdom/Intelligence	5.57(0.61)	5.92(0.47)	11.2*
Communication	3.98(1.12)	3.64(1.59)	*ns*
Long term memory	5.25(1.16)	5.69(0.96)	4.52*
Distraction	3.08(1.43)	4.61(1.29)	33.4**
Memory for recent events	5.60(1.25)	6.08(0.65)	6.0*
Total	4.70	5.20	

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

Social domain self-perceptions. The participant type comparison yielded a significant multivariate effect, $F(7,98) = 11.9$, $p < .001$, $\eta^2 = .46$. Overall, caregivers had more positive self perceptions than students. Means, standard deviations and the univariate statistics are presented in Table 14. Differences in social self-perceptions between caregivers and students were significant for 4 of the 7 social constructs. Caregivers perceived themselves as happier, more benevolent, less cantankerous, and more amenable to receiving help.

Table 14

Participants' Self-perceptions in the Social Domain

Constructs	Participant group		F values
	Students *M*(*SD*)	Caregivers *M*(*SD*)	(1,104)
Storytelling	4.30(1.24)	4.70(1.25)	*ns*
Happiness	5.79(0.91)	6.32(0.53)	7.4**
Social interaction	5.35(1.00)	5.26(0.88)	*ns*
Benevolence	5.92(0.64)	6.53(0.54)	27.7**
Cantankerous	3.70(1.00)	5.10(0.94)	55.5**
Suspicious	4.50(1.18)	4.96(1.29)	*ns*
Help	5.04(0.98)	5.38(0.77)	4.1*
Total	4.94	5.46	

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

Physical domain self-perceptions. The participant group comparison yielded a significant multivariate effect, $F(8,97) = 7.1$, $p < .001$, $\eta^2 = .37$. Overall, students had slightly more positive self perceptions than caregivers. Means, standard deviations and the univariate statistics are presented in Table 15. Differences in physical self-perceptions between caregivers and students were significant for 2 of the 8 physical constructs/items. Caregivers reported that they were more active and that they had more difficulty seeing small print than did students.

Table 15

Participants' Self-perceptions in the Physical Domain

Constructs	Participant group		F values
	Students *M*(*SD*)	Caregivers *M*(*SD*)	(1,104)
Active	4.89(0.98)	5.90(0.81)	33.5**
Injury Risk	5.27(1.35)	5.42(1.37)	*ns*
Have difficulty seeing small print	5.74(1.32)	4.34(1.82)	20.5**
Find newspaper print too small to read	5.94(1.25)	5.40(1.62)	*ns*
Find that people speak too softly to hear	4.98(1.37)	4.62(1.39)	*ns*
Have a poor sense of smell	5.72(0.89)	6.08(1.17)	*ns*
Find it easy to hear faint sounds	4.85(1.46)	5.12(1.52)	*ns*
Do not experience tastes strongly	5.38(1.16)	5.51(1.34)	*ns*
Total	4.35	4.30	

*p<.05; **p<.001. Higher scores indicate more positive beliefs for each construct.

Knowledge about Aging

Caregivers answered an average of 40.0% of questions ($M = 10.04$, $SD = 3.05$) correctly on the FAQ1. Students answered an average of 38.57% of questions ($M = 9.64$, $SD = 2.90$) correctly on the FAQ1. This difference was not significant $t(104) = 0.68$, $p > .05$.

Items on which more than 50% of caregivers were incorrect include 5 (happiness), 7 (% in long term care), 8 (driving accident rate), 9 (effective workers), 10 (% able to perform normal activities), 11 (adaptability to change), 13 (frequency of depression), 16 (boredom), 18 (work-related accident rate), 19 (% of population >65 years), 20 (priority given to older adults by medical personnel), 21 (poverty rate), 23 (religiosity), 24 (anger and grouchiness). Items on which more than 50% of students were incorrect include 2, 7, 8, 9, 10, 11, 13, 16, 18, 19, 20, 21, 23, 25. Many of these

misconceptions represent negative stereotypes, as opposed to positive or neutral views for both groups.

Table 16

Caregiver and Student Responses on the FAQ1

FAQ1 Questions	Caregivers (%)	Students (%)
1) The proportion of people over 65 who are senile (have impaired memory, disorientation, or dementia) is		
A) About 1 in 100	34.0	30.2
B) About 1 in 10*	39.6	56.6
C) About 1 in 2	1.9	0.0
D) The majority	9.4	0.0
Don't know	15.1	13.2
2) The senses that tend to weaken in old age are		
A) Sight and hearing	28.3	66.0
B) Taste and smell	1.9	1.9
C) Sight hearing and touch	0.0	1.9
D) All five senses*	69.8	30.2
Don't know	0.0	0.0
3) The majority of old couples		
A) Have little or no interest in sex	26.4	26.4
B) Are not able to have sexual relations	1.9	9.4
C) Continue to enjoy sexual relations*	62.3	37.7
D) Think sex is only for the young	7.5	5.7
Don't know	1.9	20.8
4) Lung vital capacity in old age		
A) Tends to decline*	52.8	56.6
B) Stays the same among nonsmokers	7.5	15.1
C) Tends to increase among healthy old people	1.9	0.0
D) Is unrelated to age	28.3	20.8
Don't know	9.4	7.5
5) Happiness among old people is		
A) Rare	1.9	0.0
B) Less common than among younger people	41.5	18.9
C) About as common as among younger people*	45.3	58.5
D) More common than among younger people	9.4	20.8
Don't know	1.9	1.9
6) Physical strength		
A) Tends to decline with age*	81.1	75.5
B) Tends to remain the same among healthy old people	9.4	13.2
C) Tends to increase among healthy old people	0.0	0.0
D) Is unrelated to age	7.5	11.3
Don't know	1.9	0.0

FAQ1 Questions	Caregivers (%)	Students (%)
7) The percentage of people over 65 in long-stay institutions (such as nursing homes, mental hospitals, and homes for the aged) is about		
A) 5%*	1.9	0.0
B) 10%	20.8	15.1
C) 25%	35.8	39.6
D) 50%	26.4	18.9
Don't know	15.1	26.4
8) The accident rate per driver over age 65 is		
A) Higher than for those under 65	34.0	30.2
B) About the same as for those under 65	24.5	20.8
C) Lower than for those under 65*	5.7	24.5
D) Unknown	28.3	3.8
Don't know	7.5	20.8
9) Most workers over 65		
A) Work less effectively than younger workers	39.6	50.9
B) Work as effectively as younger workers*	47.2	26.4
C) Work more effectively than younger workers	3.8	7.5
D) Are preferred by most employers	7.5	1.9
Don't know	1.9	13.2
10) The proportion of people over 65 who are able to do their normal activities is		
A) One tenth	9.4	3.8
B) One quarter	13.2	13.2
C) One half	32.1	41.5
D) More than three fourths*	26.4	28.3
Don't know	18.9	13.2
11) Adaptability to change among people over 65 is		
A) Rare	30.2	28.3
B) Present among about half	32.1	39.6
C) Present among most*	20.8	17.0
D) More common than among younger people	9.4	1.9
Don't know	7.5	13.2
12) As for old people learning new things		
A) Most are unable to learn at any speed	5.7	0.0
B) Most are able to learn, but at a slower speed*	62.3	73.6
C) Most are able to learn as fast as younger people	3.8	5.7
D) Learning speed is unrelated to age	28.3	15.1
Don't know	0.0	5.7
13) Depression is more frequent among		
A) People over 65	41.5	30.2
B) Adults under 65*	43.4	26.4
C) Young people	11.3	26.4
D) Children	0.0	0.0
Don't know	3.8	17.0

FAQ1 Questions	Caregivers (%)	Students (%)
14) Old people tend to react		
A) Slower than younger people*	50.9	58.5
B) At about the same speed as younger people	0.0	3.8
C) Faster than younger people	3.8	0.0
D) Slower or faster than others, depending on the type of test	45.3	32.1
Don't know	0.0	5.7
15) Old people tend to be		
A) More alike than younger people	13.2	7.5
B) As alike as younger people	5.7	20.8
C) Less alike than younger people	9.4	5.7
D) More alike in some respects and less alike in others*	69.8	56.6
Don't know	1.9	9.4
16) Most old people say		
A) They are seldom bored*	37.7	37.7
B) They are usually bored	24.5	7.5
C) They are often bored	20.8	28.3
D) Life is monotonous	15.1	15.1
Don't know	1.9	11.3
17) The proportion of old people who are socially isolated is		
A) Almost all	7.5	0.0
B) About half	34.0	45.3
C) Less than a fourth*	37.7	41.5
D) Almost none	5.7	1.9
Don't know	15.1	11.3
18) The accident rate among workers over 65 tends to be		
A) Higher than among younger workers	13.2	20.8
B) About the same as among younger workers	17.0	18.9
C) Lower than among younger workers*	13.2	17.0
D) Unknown because there are so few workers over 65	45.3	17.0
Don't know	11.3	26.4
19) The proportion of the Canadian population now age 65 or over is		
A) 3%	0.0	0.0
B) 13%*	3.8	11.3
C) 23%	39.6	35.8
D) 33%	39.6	35.8
Don't know	17.0	17.0
20) Medical practitioners tend to give older patients:		
A) Lower priority than younger patients*	17.0	15.1
B) The same priority as younger patients	54.7	41.5
C) Higher priority than younger patients	22.6	26.4
D) Higher priority if they are low income seniors	0.0	3.8
Don't know	5.7	13.2

FAQ1 Questions	Caregivers (%)	Students (%)
21) The poverty rate (as defined by the federal government) among old people is		
A) Higher than among children under age 18	13.2	5.7
B) Higher than among all persons under 65	28.3	35.8
C) About the same as among persons under 65	28.3	18.9
D) Lower than among persons under 65*	5.7	17.0
Don't know	24.5	22.6
22) Most old people are		
A) Still employed	3.8	0.0
B) Employed or would like to be employed	1.9	1.9
C) Employed, do housework or volunteer work, or would like to do some kind of work*	83.0	81.1
D) Not interested in any work	11.3	7.5
Don't know	0.0	9.4
23) Religiosity tends to		
A) Increase in old age	22.6	26.4
B) Decrease in old age	1.9	0.0
C) Be greater in the older generation than in the younger*	32.1	41.5
D) Be unrelated to age	43.4	24.5
Don't know	0.0	7.5
24) Most old people say they		
A) Are seldom angry*	43.4	52.8
B) Are often angry	1.9	1.9
C) Are often grouchy	39.6	28.3
D) Often lose their tempers	9.4	1.9
Don't know	5.7	15.1
25) The health and economic status of old people (compared with younger people) in the year 2010		
A) Will be higher than now*	50.9	22.6
B) Be about the same as now	18.9	28.3
C) Be lower than now	15.1	28.3
D) Show no consistent trend	9.4	3.8
Don't know	5.7	17.0

Note. *denotes correct response.

The FAQ1 can be used as an indirect measure of age bias. Net bias scores were calculated by dividing the number of negative bias options selected by the total number of negative bias options and then subtracting this value from the value obtained by dividing the number of positive bias options selected by the total number of positive bias options. On average both caregivers (M = -.19, SD= .27) and students (M = -.14, SD =

.24) had negative net bias scores. Caregivers and students did not differ in level of net bias $t(104) = .973, p > .05$.

To determine what proportion of the variance in students' FAQ1 scores (knowledge about aging) is accounted for by participants' age, contact with grandparents, contact with seniors in general, and contact with persons with AD, these variables were entered into a stepwise regression. For students, age and amount of contact with grandparents accounted for 25.7% of the variance in the FAQ1 scores $F(2,50) = 8.65, p < .01$. Greater age and less contact with grandparents were related to better FAQ1 scores.

To determine what proportion of the variance in caregivers' FAQ1 scores is accounted for by caregivers' age, education, contact with grandparents, contact with seniors in general, and contact with persons with AD, number of years working with seniors, number of years working with people with AD, whether or not they took a personal care aid course, and whether or not they took dementia care education, these variables were entered into a stepwise regression. Amount of contact with seniors in general accounted for 8.0% of the variance in FAQ1 scores $F(1,47) = 4.07, p < .05$. Greater contact with seniors is related to poorer FAQ1 scores.

Knowledge about AD

Caregivers answered an average of 58.3% ($M = 10.49$, $SD = 3.15$) of questions correctly on the ADKT. Scores ranged from 22.2% to 88.9%. Students' scores ranged from 0.0% to 72.2% ($M = 7.55/41.9\%$, $SD = 2.84$). Students answered fewer questions correctly than did caregivers $t(104) = 5.05, p < .001$.

Table 17

Caregiver and Student Responses on the ADKT

ADKT questions	Caregivers (%)	Students (%)
1) The percentage of people over 65 who have dementia caused by Alzheimer's disease or a related disorder is estimated to be		
A) Less than 2%	1.9	5.7
B) 5-8%*	7.5	13.2
C) About 15%	18.9	7.5
D) 20-25%	26.4	3.8
E) I don't know	45.3	69.8
2) The number of people with Alzheimer's disease in the general population of Canada is expected to		
A) Decrease slightly	0.0	3.8
B) Remain approximately the same	1.9	9.4
C) Increase in proportion to the number of people over 65*	54.7	35.8
D) Nearly triple by the year 2020	9.4	3.8
E) I don't know	34.0	47.2
3) The cause of Alzheimer's disease is		
A) Old age	5.7	1.9
B) Hardening of the arteries	0.0	3.8
C) Senility	5.7	1.9
D) Unknown*	73.6	56.6
E) I don't know	15.1	35.8
4) Preliminary research concerning the role of heredity in Alzheimer's disease suggests that		
A) Persons with a close relative with Alzheimer's disease have an increased risk of becoming afflicted*	64.2	54.7
B) Alzheimer's disease is always transmitted genetically	5.7	1.9
C) Alzheimer's disease is only inherited if both parents are carriers of the disease	1.9	3.8
D) Alzheimer's disease is never inherited	9.4	0.0
E) I don't know	18.9	39.6
5) Larger than normal amounts of aluminum have been found in the brains of some people with Alzheimer's disease. Studies investigating the role of Aluminum in causing Alzheimer's disease		
A) Have determined that it is the major cause	0.0	1.9
B) Have established that it plays a role in the onset of the disease	37.7	32.1
C) Are inconclusive*	26.4	18.9
D) Have proven that it is not a cause	1.9	1.9
E) I don't know	34.0	45.3

ADKT questions	Caregivers (%)	Students (%)
6) A person suspected of having Alzheimer's disease should be evaluated as soon as possible because		
A) Prompt treatment of Alzheimer's disease may slow the progression of symptoms	26.4	17.0
B) It is important to rule out and treat reversible disorders	1.9	11.3
C) It is best to institutionalize an Alzheimer's disease patient early in the course of the disease	1.9	0.0
D) Both A and B*	64.2	60.4
E) I don't know	5.7	11.3
7) Which of the following procedures is required to confirm that symptoms are due to Alzheimer's disease?		
A) Mental status testing	64.2	28.3
B) Autopsy*	20.8	1.9
C) CT scan	7.5	24.5
D) Blood test	1.9	0.0
E) I don't know	5.7	45.3
8) Which of the following conditions sometimes resembles Alzheimer's disease?		
A) Depression	17.0	7.5
B) Delirium	7.5	24.5
C) Stroke	15.1	5.7
D) All of the above*	43.4	43.4
E) I don't know	17.0	18.9
9) Which of the following is always present in Alzheimer's disease?		
A) Loss of memory*	75.5	58.5
B) Loss of memory, incontinence	13.2	11.3
C) Loss of memory, incontinence, hallucinations	11.3	13.2
D) None of the above	0.0	5.7
E) I don't know	0.0	11.3
10) Although the rate of progression of Alzheimer's disease is variable, the average life expectancy after onset is		
A) 6 months-1 year	1.9	1.9
B) 1-5 years	15.1	17.0
C) 8-12 years*	49.1	30.2
D) 15-20 years	13.2	0.0
E) I don't know	20.8	50.9

ADKT questions	Caregivers (%)	Students (%)
11) Which of the following statements describes a reaction Alzheimer's disease patients may have to their illness?		
A) They are unaware of their symptoms	3.8	15.1
B) They are depressed	3.8	5.7
C) They deny their symptoms	3.8	17.0
D) All of the above*	88.7	47.2
E) I don't know	0.0	15.1
12) Sometimes Alzheimer's disease patients wander away from home. Caregivers can best manage this problem by		
A) Reasoning with the patient about the potential dangers of wandering	5.7	11.3
B) Sharing feelings of concern with the patient in a calm and reassuring manner	15.1	18.9
C) Making use of practical solutions such as locked doors*	71.7	52.8
D) Remaining with the patient at all times to prevent the behaviour	5.7	5.7
E) I don't know	1.9	11.3
13) Which statement is true concerning treatment of Alzheimer's disease patients who are depressed?		
A) It is usually useless to treat them for depression because feelings of sadness and inadequacy are part of the disease process	3.8	3.8
B) Treatments for depression may be effective in alleviating depressive symptoms*	39.6	39.6
C) Anti-depressant medication should not be prescribed	0.0	3.8
D) Proper medication may alleviate symptoms of depression and prevent further intellectual decline	50.9	13.2
E) I don't know	5.7	39.6
14) What is the role of nutrition in Alzheimer's disease?		
A) Proper nutrition can prevent Alzheimer's disease	7.5	15.1
B) Proper nutrition can reverse the symptoms of Alzheimer's disease	0.0	0.0
C) Poor nutrition can make the symptoms of Alzheimer's disease worse*	49.1	22.6
D) Nutrition plays no role in Alzheimer's disease	28.3	24.5
E) I don't know	15.1	37.7
15) What is the effect of orienting information (i.e., reminders of the date and the place) on Alzheimer's disease patients?		
A) It produces permanent gains in memory	7.5	7.5
B) It will slow the course of the disease	13.2	20.8
C) It increases confusion in approximately 50% of patients	17.0	1.9
D) It has no lasting effect on the memory of patients*	54.7	28.3
E) I don't know	7.5	41.5

ADKT questions	Caregivers (%)	Students (%)
16) People sometimes write notes to themselves as reminders. How effective is this technique for Alzheimer's disease patients?		
A) It can never be used because reading and comprehension are too severely impaired	1.9	1.9
B) It may be useful for the mildly demented patient*	92.5	69.8
C) It is a crutch which may contribute to further decline	0.0	0.0
D) It may produce permanent gains in memory	3.8	7.5
E) I don't know	1.9	20.8
17) When an Alzheimer's disease patient begins to have difficulty performing self-care activities, many mental health professionals recommend that the caregiver		
A) Allow the patient to perform the activities regardless of the outcome	1.9	0.0
B) Assist with the activities so that the patient can remain as independent as possible*	96.2	86.8
C) Take over the activities right away to prevent accidents	0.0	0.0
D) Make plans to have the patient moved to a nursing home	1.9	5.7
E) I don't know	0.0	7.5
18) Which of the following is a primary function of the Alzheimer Society?		
A) Conducting research	24.5	28.3
B) Providing medical advice	5.7	1.9
C) Family support and education*	66.0	39.6
D) Providing day care for Alzheimer's disease patients	1.9	3.8
E) I don't know	1.9	26.4

Note. * denotes correct response.

To determine what proportion of the variance in students' ADKT scores is accounted for by participants' age, self reported knowledge about AD, contact with grandparents, contact with seniors in general, and contact with persons with AD, these variables were entered into a stepwise regression. For students, age accounted for 11.5% of the variance in the ADKT scores $F(1,51) = 6.60$, $p < .05$. Greater age was related to better ADKT scores.

To determine what proportion of the variance in caregivers' ADKT scores is accounted for by participants' age, education, self reported knowledge about AD, contact

with grandparents, contact with seniors in general, and contact with persons with AD, number of years working with seniors, number of years working with people with AD, whether or not they took a personal care aid course, and whether or not they took dementia care education, these variables were entered into a stepwise regression. Amount of contact with grandparents accounted for 8.2% of the variance in ADKT scores $F(1,48) = 4.28, p < .05$. Greater contact with grandparents is related to greater ADKT scores.

Students demonstrated more ignorance and fewer misconceptions than did caregivers, that is, students used the "don't know" option more frequently than caregivers on both the FAQ1 and the ADKT. This tendency was most pronounced for the ADKT. There was a small positive linear relationship between FAQ1 scores and ADKT scores for students ($r = .39, p < .01$) and for caregivers ($r = .30, p < .05$).

Predictors of Beliefs in the Cognitive, Physical and Social Domains

The fourth study objective was to determine whether predictors of attitudes toward aging reported in the literature are also predictors of beliefs about aging and AD. Stepwise multiple regression was used to determine whether the variables that have been found to predict attitudes toward aging in the literature also predict beliefs in the three domains of interest, and whether they predict beliefs about AD. The variables in Table 16, as well as a respondent group dummy code (caregivers =0 and students=1) were regressed onto the belief scores in each of the three domains separately. Belief scores in each domain were derived by first creating composite scores for each construct, and then calculating the mean of all of the constructs in each domain. Responses on the items comprising each construct (e.g. communication) were averaged for each target (i.e, self,

young, old, and AD) separately. The mean obtained for each construct for the young target was subtracted from the mean obtained for the old target (e.g., mean for young-communication was subtracted from the mean for old-communication). If the difference score obtained for a particular construct is negative, this indicates that for that construct, that respondent holds more negative beliefs about older adults than about young adults in general, likewise, if the difference score is positive it would indicate that respondent holds more positive beliefs about older adults than about younger adults for that construct. For example, if a participant's mean for the communication construct was 6 for the young target and 5 for the old target, one would subtract 6 from 5 and obtain a score of –1. This score of –1 indicates relatively more negative beliefs about the communication ability of old adults as compared to young adults.

The AD belief scores were calculated in the same manner, only instead of subtracting the mean obtained for each construct for the young target from the mean obtained for the old target, the mean obtained for each construct for the old target was subtracted from the mean obtained for the AD target. Table 19 shows the zero order correlations between the variables.

Table 18

Age, Contact with Grandparents, Seniors, and People with AD

	Caregivers					Students				
	N	Min	Max	M	SD	N	Min	Max	M	SD
Age	53	19	64	44.60	10.16	53	18	43	20.60	4.45
Amount of contact with grandparents	53	0	7	4.49	2.63	53	0	7	5.50	1.36
If contact, how positive?	43	3	7	6.07	1.08	52	2	7	5.40	1.55
Contact with seniors in general	53	0	7	5.91	1.68	53	0	7	3.85	2.19
If contact, how positive?	50	4	7	6.40	0.81	44	4	7	5.75	1.06
Contact with AD	53	0	7	6.13	1.74	53	0	7	1.21	1.95
If contact, how positive?	53	4	7	6.30	0.97	17	1	6	4.06	1.60
Self rated level of knowledge about AD	53	3	7	5.49	0.89	53	1	7	3.68	1.35
FAQ1 score	53	4	17	10.04	3.05	53	3	17	9.64	2.90
ADKT score	53	4	16	10.49	3.15	53	0	13	7.55	2.84
Net bias score (from FAQ1)	53	-.78	.45	-.19	.270	53	-.65	.33	-.14	.236
Years working with seniors	53	.50	28.00	6.60	5.84	N/A	N/A	N/A	N/A	N/A
Years working with AD	53	.50	30.00	9.29	7.78	N/A	N/A	N/A	N/A	N/A

Table 19

Zero Order Correlations Among Predictor Variables

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Aging beliefs cognitive	1.00																	
2	Aging beliefs social	.35**	1.00																
3	Aging beliefs physical	.58**	.31**	1.00															
4	AD beliefs cognitive	-.41**	-.06	-.03	1.00														
5	AD beliefs social	-.03	-.16	.24*	.42**	1.00													
6	AD beliefs physical	-.25**	.08	-.36**	.41**	.03	1.00												
7	Age	-.05	-.25**	.07	-.13	.01	-.45**	1.00											
8	Amount of contact with grandparents	.01	.02	-.05	-.03	-.08	.03	-.24*	1.00										
9	If contact, how positive?	.14	.17	.22*	.14	.16	.19	-.12	.58**	1.00									
10	Contact with seniors in general	-.02	-.14	-.01	-.19*	-.02	-.35**	.43**	.12	-.03	1.00								
11	If contact, how positive?	.13	-.01	.07	-.27**	-.14	-.29**	.38**	.10	.12	.62**	1.00							
12	Contact with AD	-.05	-.32**	-.04	-.20*	.00	-.51**	.71**	-.00	.05	.56**	.41**	1.00						
13	If contact, how positive?	-.14	-.20	-.01	-.16	-.05	-.43**	.54**	-.03	.01	.57**	.57**	.78**	1.00					
14	Self rated level of knowledge about AD	-.06	-.24*	-.07	-.10	-.02	-.36**	.54**	-.02	-.01	.41**	.47**	.66**	.51**	1.00				
15	FAQ1 score	-.00	.03	-.11	-.09	-.11	.03	.20*	-.07	.02	-.15	.10	.02	.15	.00	1.00			
16	ADKT score	-.08	-.30**	-.20*	-.20*	-.06	-.26**	.44**	-.01	-.11	.15	.07	.39**	.31*	.39**	.34**	1.00		
17	Caregiver(0)/ Student(1)	.10	.28**	.01	.11	-.02	.50**	-.84**	.21*	.14	-.47**	-.33**	-.80	-.65**	-.62**	-.07	-.44**	1.00	
18	FAQ1 net bias score	.22*	.20*	.30**	-.14	-.14	.043	.00	-.09	.05	.07	.13	-.11	.16	-.10	.10	-.15	.10	1.00

Predictors of beliefs about aging. None of the variables predicted beliefs about aging in the cognitive domain. The only predictor of beliefs about aging in the social domain was quantity of contact with persons with AD (β= -.100, $p < .05$; quantity of contact with persons with AD is related to more negative beliefs about aging in the social domain). Quantity of contact with persons with AD accounted for 9.4 % of the variance in beliefs about aging in the social domain. Predictors of beliefs about aging in the physical domain included Palmore's net-bias score obtained from the FAQ1 (β= 1.948, $p < .001$; more positive net bias scores are related to more positive beliefs about aging in the physical domain) and scores on the FAQ1 (β= -.103, $p < .05$; greater knowledge about aging is related to more negative beliefs about aging in the physical domain). The net bias scores and scores on the FAQ1 together accounted for 24.4% of the variance in beliefs about aging in the physical domain.

Predictors of beliefs about AD. Quantity of contact with persons with AD accounted for 7.2% of the variance in beliefs about AD in the cognitive domain (β= -.121, $p < .05$; greater quantity of contact with persons with AD is related to more negative beliefs about AD in the cognitive domain). 10.5% of the variance in beliefs about AD in the social domain was accounted for by FAQ1 scores (β= -.051, $p < .05$; greater knowledge about aging is related to slightly more negative beliefs about AD in the social domain). Predictors of beliefs about AD in the physical domain were quantity of contact with seniors (β= -2.42, $p < .05$; more contact with seniors is related to more negative beliefs about AD in the physical domain) and the degree to which contact with persons with AD is positive (β= -2.06, $p < .01$; more positive contact with persons with AD is related to more negative beliefs about AD in the physical domain). The degree to

which contact with persons with AD is positive and the quantity of contact with seniors together accounted for 35.9% of the variance in beliefs about AD in the physical domain.

DISCUSSION

The objectives of this study were to develop an instrument to measure beliefs about AD in the cognitive, social and physical domains; assess caregivers' and undergraduate students' beliefs about aging and AD using the newly developed instrument; assess knowledge about aging and AD in these two groups; and determine whether predictors of attitudes toward aging identified in the literature, are also predictors of beliefs about aging and AD.

Objective 1: Instrument Development

The first study objective was to develop an instrument to measure beliefs about aging and AD in the cognitive, social, and physical domains. Although there are many measures of beliefs about aging and tests of knowledge about aging and AD, no instrument to measure beliefs about social, cognitive and physical aspects of AD was found. This study contributes to the literature by producing such an instrument. The instrument developed is similar in structure to the Language in Adulthood Questionnaire (Ryan et al., 1992) that assesses perceptions and beliefs about the language abilities of young and old adults. This instrument is a reliable instrument that assesses beliefs in the cognitive, social and physical domains.

Objective 2: Assessment of Beliefs about Aging and AD

The second study objective was to assess caregivers' and undergraduate students' beliefs about aging and AD in the cognitive, social, and physical domains using the newly developed instrument. Whether caregivers and students differed in the degree to which their beliefs about aging and AD in each of the three domains were positive was an empirical question to be tested. Caregivers may hold more negative beliefs about aging

than undergraduates because they are regularly exposed to older adults who are institutionalized and have AD (Kearney, Miller, Paul, & Smith, 2000; Palmore, 1998; Stevens, & Crouch, 1995), or their beliefs may be more positive than those of undergraduates because they are likely older than the undergraduates and greater age has been found to be associated with more positive beliefs about aging (Erber, Szuchman, & Rothberg, 1990; O'Hanlon, Camp, & Osofsky, 1993, Rothbaum, 1983).

Social Perceptions in the Cognitive Domain. It was predicted that beliefs about the 25 year olds would be the most positive, with beliefs about 75 year olds being more negative on items addressing beliefs in the *cognitive* domain that are not associated with positive aging stereotypes (i.e., wisdom) (Palmore, 1990), and beliefs about persons with AD being the most negative because AD is characterized by progressive memory loss and loss of cognition. As predicted, for both respondent groups beliefs about the 25 year olds were more positive than beliefs about 75 year olds on items in the cognitive domain that are not associated with positive aging stereotypes, and beliefs about persons with AD were more negative than beliefs about 75 year olds. Interestingly, caregivers' beliefs about aging were not more negative than the students'. Patterns of response on all cognitive constructs were the same for students and caregivers, suggesting that they see age changes in cognition in the same way (decline, except for Wisdom/Intelligence). Overall, both students and caregivers expected decline in cognitive abilities due to aging. This finding is consistent with the findings of Ryan (1992), Ryan et al. (1992), and Ryan and Kwong See (2003). The same pattern was observed for caregivers and students in terms of the differences between 75 year olds and persons with AD, except that wisdom/intelligence was also found to decline. This indicates that AD is seen very

differently from normal aging in the cognitive domain, and that working with people with AD does not affect beliefs about aging and AD in the cognitive domain. What has been found that is unique from other studies about beliefs about cognition is what the beliefs about AD are in the cognitive domain. It has been documented that in AD cognitive declines are believed to be larger than the declines expected in normal aging. Also, it has been documented that caregivers and students have similar beliefs about the cognitive aspects of aging and AD.

Social Perceptions in the Social Domain. It was predicted that beliefs about the 25 year olds would be the most positive, with beliefs about 75 year olds being more negative, and beliefs about persons with AD being the most negative on items addressing beliefs in the *social* domain that are not associated with positive aging stereotypes (i.e., storytelling and benevolence; Ryan et al., 1992). In assessing perceptions in the social domain, somewhat different patterns in responses to 25 year olds and 75 year olds emerged for caregivers and students, such that caregivers appear to have less pleasant beliefs about the social aspects of aging than do students. In terms of the positive social stereotypes of aging, caregivers and students indicated that 75 year olds were better storytellers, however, unlike students, caregivers did not indicate that 75 year olds were more benevolent. A documented negative stereotype of aging is that old adults are seen as cantankerous (Palmore, 1990). Students, unlike caregivers, did not indicate that 75 year olds were more cantankerous than 25 year olds. Overall, caregivers' beliefs about aging in the social domain were more negative than were students', suggesting that working with people with AD may affect one's beliefs about aging in the social domain. Both caregivers and students indicated that older adults were less likely than young adults

to want social interaction. This belief is in line with the controversial theory of aging, proposed by Cumming and Henry (1961), which holds that aging is characterized by mutual withdrawal between the older person and society (disengagement theory). Such a belief can lead to less meaningful social interaction with older adults.

Beliefs about persons with AD in the social domain were overall more negative than beliefs about 75 year olds for both students and caregivers. This result is consistent with Kahana et al. (1996) who compared the attitudes of nursing home employees toward well elderly and persons with AD. The items they used (good, optimistic, warm, pleasant, wise, generous, friendly, cooperative, acceptable, and profit from help) were mostly social in nature. They found that the overall evaluations were more negative for the persons with AD than the well elderly for all of the items except for optimistic.

The degree to which student and caregiver beliefs about AD in the social domain were negative did not differ, however, the pattern of beliefs did. Students displayed more negative beliefs for all social constructs for AD, whereas caregivers indicated that persons with AD did not differ from 75 year olds in terms of benevolence (no main effect of target for benevolence for caregivers) or social interaction. This suggests that working with people with AD leads to the belief that people with AD are favourable to social interaction whereas those who do not work with people with AD believe that people with AD withdraw.

Even though caregivers believe that persons with AD are favourable to social interaction, according to the communication predicament in aging model both students' and caregivers' negative beliefs about AD in the social domain could result in reduced opportunities for *meaningful* social interaction in their encounters with persons with AD

(Ryan, Giles, Bartolucci, & Henwood, 1986). This then could result in reduced stimulation for the persons with AD.

Social Perceptions in the Physical Domain. Because stereotypes of aging link aging with a decline in sensory functioning and physical ability and there are actual declines in physical functioning, it was predicted that beliefs about the 25 year olds would be the most positive, with beliefs about 75 year olds and persons with AD being more negative on items addressing beliefs in the *physical* domain. In the physical domain, caregivers' and students' beliefs about 75 year olds were overall more negative than beliefs about 25 year olds. The degree to which student and caregiver beliefs about aging in the physical domain were negative did not differ, nor did the pattern of beliefs. Both groups associated aging with decreased activity level, increased injury risk and decreased sensory functioning.

Overall beliefs about AD in the physical domain differed markedly between caregivers and students. Caregivers' beliefs were more negative for persons with AD than for 75 year olds, whereas student's beliefs were more positive for persons with AD than for 75 year olds. The pattern of beliefs also differed greatly between caregivers and students in that caregivers didn't see any difference in physical abilities between 75 year olds and persons with AD except that persons with AD were at greater risk for physical injury. Students, on the other hand, believed that persons with AD had a higher level of activity and better sensory functioning than 75 year olds (except for taste, in which they believe there is no difference). Students also believed that persons with AD were no more likely than 75 year olds to be at risk for injury. It is possible that students' positive view of the physical aspects of AD is the result of the belief that AD is solely a disease of the

mind, or perhaps they have been exposed to information about the wandering registry or news stories where persons with AD have wandered away from home and have been found at a previous residence. Such information could lead one to believe that persons with AD are very physically capable. It is also possible that this difference is the result of the belief that typical institutionalized persons with AD are younger than 75 years old and are therefore in better physical health than typical 75 year olds. This difference could also be the result of a more realistic view on the part of caregivers who have more exposure to persons with AD. Whereas there is a great deal in the literature on sensory functioning and strength in aging, there has not been an emphasis in the literature on these areas in AD. Therefore, it is difficult to say how the beliefs of caregivers and students are linked to reality.

Students' beliefs that persons with AD are very physically capable and not cognitively capable could lead to fear of persons with AD. This could lead people to avoid interactions with persons with AD and could give some insight into where some of the reservations about working with older adults and persons with AD originate (Giardina-Roche & Black, 1990).

In recent years there has been an effort to reduce the use of physical and chemical restraint in long term care (Bradley, Siddique, & Dufton, 1995; Evans, Strumpf, Allen-Taylor, Capezuti, Maislin, & Jacobsen, 1997; Phillips, Hawes, & Fries, 1993) because restraints represent a significant infringement of residents' rights to autonomy and self-determination and because restraints are associated with significant morbidity and mortality (Strumpf, Robinson, Wagner, & Evans, 1998; Miles & Irvine, 1992; Parker & Miles, 1997). Caregivers' beliefs about decline in the cognitive domain and only slight

decline in physical abilities as compared to typical older people, could lead to the use of physical and chemical restraint.

Caregivers' belief that persons with AD are a little less physically capable than typical 75 year olds could lead to the creation and reinforcement of dependency (Golub, Filipowicz, & Langer, 2002; Ryan, Giles, Bartolucci, & Henwood, 1986). When there is a belief that a person is less capable, residents may not be encouraged to do as much as they can for themselves.

Social Perceptions: Comparison of Beliefs in the Three Domains. Most studies have focused on attitudes and beliefs in the global sense. This study assessed beliefs in three dimensions: cognitive, social, and physical. Because many negative stereotypes about older adults are cognitive and physical in nature, it was expected that older adults would be viewed more negatively than young people in these domains than in the social domain. The results are consistent with this hypothesis, with physical beliefs being most negative, cognitive beliefs less negative, and social beliefs the least negative. These findings are also consistent with the findings of Kite and Johnson (1988), who in a meta analysis found that the differences in attitudes toward younger and older adults were lessened when the studies focused on personality, as opposed to competency. This study provides further evidence indicating that beliefs can be more or less negative, depending on the domain being assessed.

Persons with AD were viewed most negatively in comparison to older adults in the cognitive domain, a little less negatively in the social domain and least negatively (even positively by students) in the physical domain. This pattern differs from the beliefs about aging and makes sense because comparing ratings of typical institutionalized

persons with AD to typical 75 year olds is tapping into participants' beliefs about AD, over and above what is expected just by aging. AD is characterized by a decline in cognitive abilities. For example, AD is defined as "a degenerative disease of the central nervous system characterized especially by premature senile mental deterioration" in the Miriam Webster online dictionary. This definition does not make direct reference to social or physical effects of the disease. It appears as though students, who have much less contact with persons with AD than do caregivers, and whose self-rated knowledge of AD was much lower than caregivers, may have formed the belief that AD is mainly a disease of the mind that has no effect on the body. All caregivers and all but 17% of students indicated that loss of memory is always present in AD, and only 25% of caregivers and students indicated that incontinence is always present in AD, again indicating that fewer losses are expected in the physical domain than in the cognitive domain.

Self Perceptions. In the cognitive domain, caregivers perceived themselves more positively than did students, which could be the result of working with people with cognitive impairment. Caregivers may be comparing themselves to the residents for whom they care and are therefore rating their cognitive abilities more positively. In the social domain caregivers perceived themselves as happier, more benevolent, less cantankerous, and more amenable to help than did students. Caregivers' higher ratings for happiness are consistent with the findings of Horley and Lavery (1995), who found that middle-aged people indicated that they were happier than did younger adults. Caregivers' high self-ratings for benevolence fit with their choice of profession. In the physical domain, caregivers' self perceptions of activity level were greater than for students,

which fits with their jobs where they spend most of the day on their feet. These groups also differed in their self-rated ability to see small print. This is likely the result of the age difference between the groups (Fozard & Gordon-Salant, 2001). The beliefs that caregivers have about the changes that occur with aging are not part of their self perceptions yet, even though they are on average middle aged.

Objective 3: Knowledge about Aging and AD

The third study objective was to assess knowledge about aging and AD in caregivers and undergraduate students. This study also examined correlates of students' and caregivers' knowledge about aging and AD. The empirical analyses suggest several important conclusions. First, overall low levels of knowledge of aging and AD were found for both students and caregivers. Performance on the FAQ1 and the ADKT indicates that students and caregivers know little about aging and AD, and are ignorant of the facts and have many misconceptions. This low level of knowledge is consistent with the level reported by Harris, Changas, and Palmore (1996). Harris et al. administered the multiple choice version of the FAQ1 to college sociology students. Their mean score was 41%. This low level of knowledge could have implications for service delivery and interaction with older adults. Also consistent with previous findings were the misconceptions about aging. The most common misconceptions identified in studies using the FAQ1 are items 7, 11, 16, 19, 21, 23 and 24 (Palmore, 1998). These were items on which the majority of this sample did not get the correct answer.

The items on which caregivers performed very well (>70% of caregivers correct) on the ADKT involve information that can be learned through experience with persons with AD. These items included knowing that memory loss is always present in AD, how

to manage wandering, the effectiveness of reminder notes for persons with mild AD, that it is recommended that caregivers assist residents with activities when they have difficulty performing them so that the resident can remain as independent as possible, the reaction of persons with AD to their illness and that the cause of AD is unknown. The items on which the majority of caregivers performed poorly (< 50% of caregivers correct) reflect knowledge that is not likely to be gained through contact with people with AD. These items included prevalence of dementia in persons 65 years of age and older, the role of aluminum in AD, that autopsy is the only procedure to confirm a diagnosis of AD, the conditions that resemble AD, average life expectancy after onset of AD, effects of treatment of depression in AD, and the role of nutrition in AD. This demonstrated lack of knowledge in most of these areas is not likely to affect resident care, for example, more than half of caregivers indicated that medication for depression may alleviate symptoms of depression and prevent further intellectual decline. This belief that depression medication can prevent declines in intellectual functioning could actually benefit residents by providing more reason for staff to watch for indicators of depression among residents and advocate for intervention. On the ADKT, 25% of caregivers displayed the misconception that incontinence is always present in AD. This is surprising because fewer than 40% of the residents at one of the three AD centres from which caregivers were sampled were incontinent (N. Mitchell, personal communication, March 31, 2005). However, some of those who are not incontinent have occasional accidents and require prompting/reminders. Nevertheless, such a belief has implications for care of persons with AD with regard to promoting continence.

Caregivers performed better than students on the ADKT. Because caregivers have a little more knowledge about AD, this may translate into better knowledge about AD in the physical domain and this could explain some of the differences in beliefs that these two groups have about AD in the physical domain.

For students, age accounted for 11.5% of the variance in the ADKT scores. The older the students were the more knowledge they had about AD. This is not surprising, for the older one is, the more general knowledge one accumulates. For caregivers, amount of contact with grandparents accounted for 8.2% of the variance in ADKT scores. Better knowledge about AD was related to greater quantity of contact with grandparents. It is possible that caregivers who have more contact with their grandparents find information about AD to be more salient because it may affect their grandparents. Perhaps their grandparents may have AD.

Many caregivers mentioned that they were eager to learn more about aging and AD and requested that they be provided with the correct answers to the two tests. Encouragingly, the majority of studies that have used the FAQ1 to measure learning in a variety of settings, types of educational experiences, and types of students have found a significant increase in scores (Palmore, 1998), suggesting that facts about aging can be easily learned.

The first item on both knowledge tests addressed the prevalence/percentage of people over 65 years of age who have dementia. A comparison of participants' responses to these questions revealed that on the FAQ1 the majority of misconceptions were in the direction of underestimating the proportion whereas on the ADKT the majority of the misconceptions were in the direction of overestimating the proportion. This discrepancy

is likely due to the nature of the response options provided and has implications for the bias score calculated from the FAQ1, and suggests that revisions to those questions may be necessary.

Objective 4: Predictors of Beliefs about Aging and AD

The fourth and final study objective was to determine whether predictors of attitudes toward aging identified in the literature are also predictors of beliefs about aging and AD. Measures taken included age, knowledge about aging (FAQ1 scores), knowledge about AD (ADKT scores), quantity of contact with grandparents, degree to which contact with grandparents is positive, quantity of contact with seniors, degree to which contact with seniors is positive, net-bias scores obtained from the FAQ1, and participants were coded as students or caregivers. These variables were measured because they have been linked to attitudes toward aging in the literature. Studies have provided evidence that greater age is associated with more positive attitudes towards aging (Erber, Szuchman, & Rothberg, 1990; O'Hanlon, Camp, & Osofsky, 1993). Research on the relationship between knowledge about aging and beliefs about aging has produced a pattern of mixed results. Brooks (1993) found a negative relationship between knowledge about aging and attitudes towards aging, such that the more knowledge participants had the more negative their attitudes were, whereas Harris and Dollinger (2001), Rosencranz, and McNevin (1969) and Harrison and Novak (1988) have reported that gerontological education is related to increases in positive attitudes. Findings on the relationship between contact with grandparents and attitudes towards older adults have been mixed. Some studies have found that positive attitudes are related to positive contact with grandparents (Knox, Gekoski, & Johnson, 1986; Silverstein, & Parrott, 1997),

whereas others have found no association between contact with grandparents and attitudes (Caspi, 1984). No studies have shown a negative relationship between contact with grandparents and attitudes towards aging. As with contact with grandparents, findings on the relationship between contact with older adults in general and attitudes towards older adults have been mixed. Knox, Gekowski, and Johnson (1986) and Schwartz and Simmons (2001) suggest that the mixed findings may be the result of measuring the quantity of contact rather than the quality of contact. Their research has demonstrated that the quality of the contact is a better predictor of attitudes than is quantity. Nevertheless, positive relationships have been found between quantity of experience with older persons and more positive attitudes (Hawkins, 1996). Respondent type was dummy coded and entered into the regression because it is sometimes implied or held as common knowledge that health care personnel have negative attitudes towards older adults because they are regularly exposed to older adults who are frail and ill, and therefore may be particularly susceptible to negative attitudes, more so than those who do not work in the industry (Kearney, Miller, Paul, & Smith, 2000; Palmore, 1998; Stevens, & Crouch, 1995).

The dimensions in which attitudes are assessed have been found to have an effect on attitudes towards aging (Kite & Johnson, 1988). Therefore the previously mentioned variables were regressed onto belief scores in each of the three domains. First the predictors of beliefs about aging will be discussed, and then the predictors of beliefs about AD in each of the three domains will be discussed.

Predictors of beliefs about aging. Results of the stepwise multiple regression indicate that none of the hypothesized variables was a significant predictor of beliefs

about aging in the cognitive domain. The only predictor of beliefs about aging in the social domain was quantity of contact with persons with AD, which accounted for one tenth of the variance. Quantity of contact with persons with AD was related to more negative beliefs about aging in the social domain. This suggests that interactions with people with AD negatively affects one's views of the social aspects of aging. Caregivers indicated that they had much more contact with persons with AD than did students, but interestingly, it is the amount of contact that one has with persons with AD rather than being a caregiver, that is associated with more negative beliefs about aging in the social domain. It is possible that spending more time with people with AD leads one to believe that all seniors are socially like people with AD.

Predictors of beliefs about aging in the physical domain included Palmore's net-bias score obtained from the FAQ1 (more positive net bias scores are related to more positive beliefs about aging in the physical domain) and scores on the FAQ1 (greater knowledge about aging is related to more negative beliefs about aging in the physical domain). These variables account for almost a quarter of the variance in beliefs about aging in the physical domain. The FAQ1 age bias was positively correlated with belief scores in all three domains, but was only a predictor of belief scores in the physical domain. This suggests that the measure of age bias obtained from the FAQ1 is getting at bias in the physical domain. Scanning the items in the FAQ1, it is evident that much of the test is biased towards the physical facts about aging (e.g., physical strength, lung capacity, sensation, need for institutionalization, ability to do normal activities, speed, and accident rate).

Predictors of beliefs about AD. Quantity of contact with persons with AD accounted for around seven percent of the variance in beliefs about AD in the cognitive domain (greater quantity of contact with persons with AD is related to more negative beliefs about AD in the cognitive domain). Perhaps having more contact with persons with AD makes the cognitive declines associated with AD more salient, or results in more accurate beliefs.

More than one tenth of the variance in beliefs about AD in the social domain was accounted for by FAQ1 scores (greater knowledge about aging is related to slightly more negative beliefs about AD in the social domain). This may be the result of a contrast effect. For those who have more accurate knowledge of aging, in contrast to how old adults are socially, the social situation of persons with AD appears to be really bad

Predictors of beliefs about AD in the physical domain were quantity of contact with seniors (more contact with seniors is related to more negative beliefs about AD in the physical domain) and the degree to which contact with persons with AD is positive (more positive contact with persons with AD is related to more negative beliefs about AD in the physical domain). Quantity of contact with seniors and the degree to which contact with persons with AD is positive together accounted for more than one third of the variance in beliefs about AD in the physical domain. This may indicate that the worse off physically one believes persons with AD to be, the more positive one's contact with them is because they give validity to the caregiver role. Caregivers could view their interactions with persons with AD more positively when they perceive that persons with AD are more physically dependent because they require more of the caregiver's assistance and allows the caregiver to be more 'useful' to them.

Implications

Results suggest the need for education about aging and AD. The beliefs questionnaire and the knowledge questionnaires have identified areas in which caregivers and students lack veridical information about aging and AD. Families of residents with AD look to caregivers for answers to questions about the disease, but the results indicate that caregivers only know slightly more about AD than do students and presumably also the general public. Also, many husbands and wives and friends of the residents are older adults themselves. Therefore it is imperative that in order to provide the best customer service to them and communicate most effectively with them, caregivers' knowledge of aging be improved.

It is important to study beliefs because beliefs are modifiable (Guo, Erber, & Szuchman, 1999). There is evidence that one person's expectations for the behaviour of another person can actually affect that other person's behaviour through the operation of covert communication processes. Learman, Avorn, Everitt, & Rosenthal (1990), in a randomized controlled trial, found that depression among nursing home residents can be reduced by raising the expectations that caregivers had for the residents, demonstrating that caregivers' expectations can have consequences for the health of the residents for whom they care. Therefore, altering people's beliefs and expectations of older adults and persons with AD could have significant effects on the wellbeing of these groups.

The finding that more positive contact with persons with AD predicts more negative beliefs about AD in the physical domain has implications for the creation of dependency. The association of more negative beliefs about the physical aspects of AD with more positive contact with persons with AD indicates that caregivers prefer to work

with residents who require more physical assistance. This could be because the role of the caregiver can be fulfilled better when the recipient of care actually requires more care.

Limitations and Future Directions

Baltes has shown that the behaviours of caregivers in long term care facilities (Baltes, Burgess, & Stewart, 1980; Baltes, Honn, Barton, Orzech, & Lago, 1983; Baltes, Kindermann, Reisenzein, & Schmid-Furstoss, 1987; Barton, Baltes, & Orzech, 1980; Lester, & Baltes, 1978) can encourage dependent behaviours of cognitively intact residents thereby creating barriers to independence and creating dependency. Baltes and Wahl (1992) suggest that it is negative aging stereotypes that contribute to a disposition of staff toward such dependence-supportive behaviour. This study has shown that more negative beliefs about AD in the physical domain are predicted by more positive contact with persons with AD, which can lead to excess disability. Now that a measure of beliefs about AD has been developed and caregiver beliefs about AD have been documented, it is possible to determine which caregivers have relatively more positive beliefs and relatively more negative beliefs so the social creation of dependency can now be studied with persons with AD.

A lack of basic information about sensory functioning and strength in AD makes it difficult to determine whether beliefs about AD in the physical domain are linked to reality. Future research should address sensory functioning such as hearing and taste and also physical strength in AD.

The limitations of this study also provide directions for future research in this area. First, the scale used to measure beliefs about aging and AD had good internal consistency but although the factor structure has been established for the undergraduate

group, a larger sample size is required to determine whether the factor structure is the same for caregivers. Because the sample size was not large enough to test for measurement equivalence of the instrument for caregivers and students, comparisons between these two groups must be made with caution. Also, no examinations of test-retest reliability or construct validity have been conducted. Further examination of this measure is required. Validity could be explored, possibly by determining the extent to which scores correlate with specific caregiver behaviours.

Difference scores were used for the purposes of addressing the research questions in an expedient manner. Using group means for each target rather than difference scores would have allowed for a more detailed analysis with more information (e.g., baseline differences, interactions, and comparisons). Further analyses using group means for each target, rather than difference scores, could be conducted in order to obtain more information.

In addition, comparing the caregivers to the undergraduate students to determine whether beliefs are different between those who work with people with AD and those who do not, although convenient, is not ideal. These groups differ in age and possibly also socioeconomic status. Further studies could compare the beliefs of people who work with people with AD to those who are not in the health care field that are of a similar age and perhaps to people who work with healthy older adults in the community.

Furthermore, the generalizability of the findings is likely limited by the sample used in the study. Only 60 of the 95 possible caregivers agreed to participate, therefore, the sample may not be representative of all of the caregivers.

Finally, results in the physical domain may represent actual differences in beliefs about AD between caregivers and students, or, students may see the typical institutionalized person with AD as younger tthan 75 years old. Future studies could ask participants how old they believe typical institutionalized person with AD to be, or one could ask them to rate the typical 75 year old institutionalized person with AD.

Health Promotion Implications and Future Directions

According to the World Health Organization (1986) health promotion is the process of enabling people to increase control over, and to improve, their health. Beliefs can guide behaviour and can cause people to act in ways that we do not enable others. Scheel Gavan (2003) has suggested that health care providers who hold stereotypic beliefs about older adults may attribute the real, potentially treatable symptoms of an older adult to the 'inevitable' results of aging, and overlook physical and psychiatric problems that exist (Herrick, Pearcey, & Ross, 1997). Changes in physiology are a part of aging. However, there is evidence to support (take out to support) that the effects of some age related disease processes (e.g., blood pressure, diabetes, respiratory functioning) can be minimized through diet and exercise (Rowe, & Kahn, 1987; Rowe, & Kahn, 1998). If it is believed that decline is inevitable, opportunities for intervention can be missed.

The social environment and health services are the determinants of health (Public Health Agency of Canada, 2003) that are relevant to this thesis. In order to address these determinants of health one can use some of the strategies described in the Ottawa Charter for Health Promotion (World Health Organization, 1986), in this case, creating supportive environments for health and reorienting health services towards health

promotion. A supportive social environment would be one where people interact with older adults and persons with AD based on their individual abilities, rather than on the stereotypical beliefs one has about them. Health services could be reoriented such that excess disability of older adults and persons with AD would be avoided.

Focusing on beliefs and stereotyping of persons with AD as a barrier to maintaining independence is important because beliefs and stereotypes are modifiable. By identifying caregivers' overgeneralized beliefs about AD, and determining how these beliefs may affect the independence and maximal functioning of persons with AD, these beliefs can be targeted for intervention.

Intervention at the individual, institutional, and community levels would be useful to increase knowledge about older adults and people with AD and to combat the misconceptions that exist. People's expectations for the behaviour of others can actually affect the behaviour of others through the operation of covert communication processes. (e.g., Learman, Avorn, Everitt, & Rosenthal, 1990) and can have consequences for the health of those persons. Future research is required to determine how best to focus messaging so that the general public and caregivers have the information necessary to develop supportive environments that allow older adults and people with AD to live healthy lives, limit excess disability, and encourage independence.

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APPENDIX A

Caregiver Information and Consent Form

Project: TRASK 183

Investigators: Dr. Sheree Kwong See — University of Alberta
Tiana Rust — University of Alberta

You are invited to participate in research project TRASK 183. This study is investigating caregivers' perceptions of themselves and of others.

If you agree to participate, you will receive an experimental booklet that contains five sections. You will be asked to indicate your degree of agreement with a number of statements. In the first section of the booklet you will be asked to indicate the degree to which you agree that the statements pertain to you. In the second, third and fourth sections you will be asked to indicate the degree to which you agree that the statements pertain to others. In the fifth section you will be asked to provide some demographic information and answer some general knowledge questions.

All of your responses will remain confidential and all of the experimental booklets will be stored in a secure place. No names or other identifying information will be used in any reporting of our study. Your participation in this study is completely voluntary and you are free to withdraw at any time without penalty. If there are any questions you do not wish to answer, you need not.

You will receive $25 for your participation in the project. If you wish to continue with this project, please read and sign below.

I (print name) _____ voluntarily agree to participate in this study. I understand that I will be asked to read and respond to information in an experimental booklet and that I will make my responses using a pen and paper. I am aware that I am free to withdraw from this study at any time without penalty, even after signing this form.

_____ _____

Signature Date

Student Information and Consent Form

Project: **TRASK 183**

Investigators: Dr. Sheree Kwong See
University of Alberta

Tiana Rust
University of Alberta

You are invited to participate in research project TRASK 183. This study is investigating people's perceptions of themselves and of others.

If you agree to participate, you will receive an experimental booklet that contains five sections. You will be asked to indicate your degree of agreement with a number of statements. In the first section of the booklet you will be asked to indicate the degree to which you agree that the statements pertain to you. In the second, third and fourth sections you will be asked to indicate the degree to which you agree that the statements pertain to others. In the fifth section you will be asked to provide some demographic information and answer some general knowledge questions.

All of your responses will remain confidential and all of the experimental booklets will be stored in a secure place. No names or other identifying information will be used in any reporting of our study. Your participation in this study is completely voluntary and you are free to withdraw at any time without penalty. If there are any questions you do not wish to answer, you need not.

You will receive one research credit for your participation in the project. If you wish to continue with this project, please read and sign below.

I (print name) _____ voluntarily agree to participate in this study. I am aware that I am free to withdraw from this study at any time without penalty (I will still receive my research credit), even after signing this form.

_____ _____

Signature Date

APPENDIX B

Experimental Booklet

TRASK 183

We are interested in your opinions. There are no right or wrong answers to these questions. Please take your time and answer each of these questions to the best of your ability.

Each statement is followed by seven choices. Draw a circle around the number corresponding to the number that best represents how you feel about the statement. Circle only one number for each statement.

There are five parts to this questionnaire. Instructions for the next four parts will be given later. The questions in the first part ask for your opinion about your own experiences; for example:

I am a responsible person

1	2	3	4	5	6	7
Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neither Agree Nor Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**

In this example you could choose any one of the answers. If you agree with this statement that you are a responsible person, you would circle 5, 6 or 7 depending on how strongly you agree. On the other hand, if you disagree with this statement you would circle 1, 2 or 3 depending on how strongly you disagree. Please circle 4 if you neither agree nor disagree with the statement.

Please turn to the next page to begin...

For the following statements, please indicate your degree of agreement or disagreement using the scale provided:

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree Nor Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree

1	I am an intelligent person	1	2	3	4	5	6	7
2	I have a tendency to ramble on about random topics	1	2	3	4	5	6	7
3	I have a lot of energy	1	2	3	4	5	6	7
4	I have good memory for events from my childhood	1	2	3	4	5	6	7
5	I enjoy life	1	2	3	4	5	6	7
6	I am suspicious of other people	1	2	3	4	5	6	7
7	I am easily distracted by random thoughts	1	2	3	4	5	6	7
8	I am a dishonest person	1	2	3	4	5	6	7
9	I find it easier to understand a message when simple words are used	1	2	3	4	5	6	7
10	I do not tell good stories	1	2	3	4	5	6	7
11	I have good memory for events that happened to me long ago	1	2	3	4	5	6	7
12	I feel happy a lot of the time	1	2	3	4	5	6	7
13	I seek social interaction	1	2	3	4	5	6	7
14	I find it easier to understand when spoken to slowly	1	2	3	4	5	6	7
15	I am a good problem solver	1	2	3	4	5	6	7
16	I am a physically strong person	1	2	3	4	5	6	7
17	I find that people speak too softly to hear	1	2	3	4	5	6	7
18	I may hurt myself while chopping onions	1	2	3	4	5	6	7
19	I would appreciate help	1	2	3	4	5	6	7
20	I am a physically active person	1	2	3	4	5	6	7
21	I prefer to be with other people	1	2	3	4	5	6	7
22	I tell the truth	1	2	3	4	5	6	7
23	I have a poor sense of smell	1	2	3	4	5	6	7
24	I have good memory	1	2	3	4	5	6	7
25	I prefer to be by myself rather than to be with other people	1	2	3	4	5	6	7
26	I do not trust other people	1	2	3	4	5	6	7
27	I easily grow impatient	1	2	3	4	5	6	7
28	I am a wise person	1	2	3	4	5	6	7

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree Nor Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree

29	I am sometimes paranoid	1	2	3	4	5	6	7
30	I would be accepting of help	1	2	3	4	5	6	7
31	I am a good story teller	1	2	3	4	5	6	7
32	I am a stubborn person	1	2	3	4	5	6	7
33	I avoid social interaction	1	2	3	4	5	6	7
34	I find newspaper print too small to read	1	2	3	4	5	6	7
35	I am a knowledgeable person	1	2	3	4	5	6	7
36	I am not easily upset	1	2	3	4	5	6	7
37	I have good memory for events that happened recently	1	2	3	4	5	6	7
38	I am a smart person	1	2	3	4	5	6	7
39	I am a caring person	1	2	3	4	5	6	7
40	I am not easily irritated	1	2	3	4	5	6	7
41	I find that my mind wanders to random thoughts	1	2	3	4	5	6	7
42	I may drop a boiling pot of water	1	2	3	4	5	6	7
43	I am a kind person	1	2	3	4	5	6	7
44	I find it easy to hear faint sounds	1	2	3	4	5	6	7
45	I do not experience tastes strongly	1	2	3	4	5	6	7
46	I am argumentative	1	2	3	4	5	6	7
47	I am a friendly person	1	2	3	4	5	6	7
48	I have difficulty seeing small print	1	2	3	4	5	6	7
49	I resist help	1	2	3	4	5	6	7
50	I more and more find that people enjoy my storytelling	1	2	3	4	5	6	7
51	I would spill while pouring hot coffee	1	2	3	4	5	6	7

Please go to part 2 now...

Part 2

The format in Part 2 is similar to Part 1. Each question is followed by seven choices. Again, please circle the number that best represents how much you agree with the statement

In this part, you will answer each question with a **"Typical institutionalized person with Alzheimer Disease"** in mind. Some of these questions may be very difficult for you to answer. In such cases, please let your response reflect your best guess.

Please begin now answering the questions for **"Typical institutionalized persons with Alzheimer Disease".**

For the following statements, please indicate your degree of agreement or disagreement using the scale provided:

1	2	3	4	5	6	7
Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neither Agree Nor Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**

Typical institutionalized persons with Alzheimer Disease:

1	Are intelligent people	1	2	3	4	5	6	7
2	Have a tendency to ramble on about random topics	1	2	3	4	5	6	7
3	Have a lot of energy	1	2	3	4	5	6	7
4	Have good memory for events from their childhood	1	2	3	4	5	6	7
5	Enjoy life	1	2	3	4	5	6	7
6	Are suspicious of other people	1	2	3	4	5	6	7
7	Are easily distracted by random thoughts	1	2	3	4	5	6	7
8	Are dishonest people	1	2	3	4	5	6	7
9	Find it easier to understand a message when simple words are used	1	2	3	4	5	6	7
10	Do not tell good stories	1	2	3	4	5	6	7
11	Have good memory for events that happened to them long ago	1	2	3	4	5	6	7
12	Feel happy a lot of the time	1	2	3	4	5	6	7
13	Seek social interaction	1	2	3	4	5	6	7
14	Find it easier to understand when spoken to slowly	1	2	3	4	5	6	7
15	Are good problem solvers	1	2	3	4	5	6	7
16	Are physically strong people	1	2	3	4	5	6	7
17	Find that people speak too softly to hear	1	2	3	4	5	6	7
18	May hurt themselves while chopping onions	1	2	3	4	5	6	7
19	Would appreciate help	1	2	3	4	5	6	7
20	Are physically active people	1	2	3	4	5	6	7

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree Nor Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree

Typical institutionalized persons with Alzheimer Disease:

21	Prefer to be with other people	1	2	3	4	5	6	7
22	Tell the truth	1	2	3	4	5	6	7
23	Have a poor sense of smell	1	2	3	4	5	6	7
24	Have good memory	1	2	3	4	5	6	7
25	Prefer to be by themselves rather than to be with other people	1	2	3	4	5	6	7
26	Do not trust other people	1	2	3	4	5	6	7
27	Easily grow impatient	1	2	3	4	5	6	7
28	Are wise people	1	2	3	4	5	6	7
29	Are sometimes paranoid	1	2	3	4	5	6	7
30	Would be accepting of help	1	2	3	4	5	6	7
31	Are good story tellers	1	2	3	4	5	6	7
32	Are stubborn people	1	2	3	4	5	6	7
33	Avoid social interaction	1	2	3	4	5	6	7
34	Find newspaper print too small to read	1	2	3	4	5	6	7
35	Are knowledgeable people	1	2	3	4	5	6	7
36	Are not easily upset	1	2	3	4	5	6	7
37	Have good memory for events that happened recently	1	2	3	4	5	6	7
38	Are smart people	1	2	3	4	5	6	7
39	Are caring people	1	2	3	4	5	6	7
40	Are not easily irritated	1	2	3	4	5	6	7
41	Find that their minds wander to random thoughts	1	2	3	4	5	6	7
42	May drop a boiling pot of water	1	2	3	4	5	6	7
43	Are kind people	1	2	3	4	5	6	7
44	Find it easy to hear faint sounds	1	2	3	4	5	6	7
45	Do not experience tastes strongly	1	2	3	4	5	6	7
46	Are argumentative	1	2	3	4	5	6	7
47	Are friendly people	1	2	3	4	5	6	7
48	Have difficulty seeing small print	1	2	3	4	5	6	7
49	Resist help	1	2	3	4	5	6	7
50	More and more find that people enjoy their storytelling	1	2	3	4	5	6	7
51	Would spill while pouring hot coffee	1	2	3	4	5	6	7

Please go to part 3 now...

Part 3

The format in Part 3 is similar to Part 2. Each question is followed by seven choices. Again, please circle the number that best represents how you feel about the statement

In this part, you will answer each question with a **"Typical 75 year old individual"** in mind. Some of these questions may be very difficult for you to answer. In such cases, please let your response reflect your best guess.

Please begin now answering the questions for **"Typical 75 year old individuals"**.

For the following statements, please indicate your degree of agreement or disagreement using the scale provided:

1	2	3	4	5	6	7
Strongly Disagree	**Disagree**	**Slightly Disagree**	**Neither Agree Nor Disagree**	**Slightly Agree**	**Agree**	**Strongly Agree**

Typical 75 year olds:								
1	Are intelligent people	1	2	3	4	5	6	7
2	Have a tendency to ramble on about random topics	1	2	3	4	5	6	7
3	Have a lot of energy	1	2	3	4	5	6	7
4	Have good memory for events from their childhood	1	2	3	4	5	6	7
5	Enjoy life	1	2	3	4	5	6	7
6	Are suspicious of other people	1	2	3	4	5	6	7
7	Are easily distracted by random thoughts	1	2	3	4	5	6	7
8	Are dishonest people	1	2	3	4	5	6	7
9	Find it easier to understand a message when simple words are used	1	2	3	4	5	6	7
10	Do not tell good stories	1	2	3	4	5	6	7
11	Have good memory for events that happened to them long ago	1	2	3	4	5	6	7
12	Feel happy a lot of the time	1	2	3	4	5	6	7
13	Seek social interaction	1	2	3	4	5	6	7
14	Find it easier to understand when spoken to slowly	1	2	3	4	5	6	7
15	Are good problem solvers	1	2	3	4	5	6	7
16	Are physically strong people	1	2	3	4	5	6	7
17	Find that people speak too softly to hear	1	2	3	4	5	6	7
18	May hurt themselves while chopping onions	1	2	3	4	5	6	7
19	Would appreciate help	1	2	3	4	5	6	7
20	Are physically active people	1	2	3	4	5	6	7
21	Prefer to be with other people	1	2	3	4	5	6	7

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree Nor Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree

Typical 75 year olds:

22	Tell the truth	1	2	3	4	5	6	7
23	Have a poor sense of smell	1	2	3	4	5	6	7
24	Have good memory	1	2	3	4	5	6	7
25	Prefer to be by themselves rather than to be with other people	1	2	3	4	5	6	7
26	Do not trust other people	1	2	3	4	5	6	7
27	Easily grow impatient	1	2	3	4	5	6	7
28	Are wise people	1	2	3	4	5	6	7
29	Are sometimes paranoid	1	2	3	4	5	6	7
30	Would be accepting of help	1	2	3	4	5	6	7
31	Are good story tellers	1	2	3	4	5	6	7
32	Are stubborn people	1	2	3	4	5	6	7
33	Avoid social interaction	1	2	3	4	5	6	7
34	Find newspaper print too small to read	1	2	3	4	5	6	7
35	Are knowledgeable people	1	2	3	4	5	6	7
36	Are not easily upset	1	2	3	4	5	6	7
37	Have good memory for events that happened recently	1	2	3	4	5	6	7
38	Are smart people	1	2	3	4	5	6	7
39	Are caring people	1	2	3	4	5	6	7
40	Are not easily irritated	1	2	3	4	5	6	7
41	Find that their minds wander to random thoughts	1	2	3	4	5	6	7
42	May drop a boiling pot of water	1	2	3	4	5	6	7
43	Are kind people	1	2	3	4	5	6	7
44	Find it easy to hear faint sounds	1	2	3	4	5	6	7
45	Do not experience tastes strongly	1	2	3	4	5	6	7
46	Are argumentative	1	2	3	4	5	6	7
47	Are friendly people	1	2	3	4	5	6	7
48	Have difficulty seeing small print	1	2	3	4	5	6	7
49	Resist help	1	2	3	4	5	6	7
50	More and more find that people enjoy their storytelling	1	2	3	4	5	6	7
51	Would spill while pouring hot coffee	1	2	3	4	5	6	7

Please go to part 4 now...

Part 4

The format in Part 4 is similar to Parts 2 and 3. Each question is followed by seven choices. Again, please circle the number that best represents how you feel about the statement

In this part, you will answer each question with a **"Typical 25 year old individual"** in mind. Some of these questions may be very difficult for you to answer. In such cases, please let your response reflect your best guess.

Please begin now answering the questions for **"Typical 25 year old individuals"**.

For the following statements, please indicate your degree of agreement or disagreement using the scale provided:

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree Nor Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree

Typical 25 year olds:

1	Are intelligent people	1	2	3	4	5	6	7
2	Have a tendency to ramble on about random topics	1	2	3	4	5	6	7
3	Have a lot of energy	1	2	3	4	5	6	7
4	Have good memory for events from their childhood	1	2	3	4	5	6	7
5	Enjoy life	1	2	3	4	5	6	7
6	Are suspicious of other people	1	2	3	4	5	6	7
7	Are easily distracted by random thoughts	1	2	3	4	5	6	7
8	Are dishonest people	1	2	3	4	5	6	7
9	Find it easier to understand a message when simple words are used	1	2	3	4	5	6	7
10	Do not tell good stories	1	2	3	4	5	6	7
11	Have good memory for events that happened to them long ago	1	2	3	4	5	6	7
12	Feel happy a lot of the time	1	2	3	4	5	6	7
13	Seek social interaction	1	2	3	4	5	6	7
14	Find it easier to understand when spoken to slowly	1	2	3	4	5	6	7
15	Are good problem solvers	1	2	3	4	5	6	7
16	Are physically strong people	1	2	3	4	5	6	7
17	Find that people speak too softly to hear	1	2	3	4	5	6	7
18	May hurt themselves while chopping onions	1	2	3	4	5	6	7
19	Would appreciate help	1	2	3	4	5	6	7
20	Are physically active people	1	2	3	4	5	6	7

1 Strongly Disagree	2 Disagree	3 Slightly Disagree	4 Neither Agree Nor Disagree	5 Slightly Agree	6 Agree	7 Strongly Agree

21	Prefer to be with other people	1	2	3	4	5	6	7
22	Tell the truth	1	2	3	4	5	6	7
23	Have a poor sense of smell	1	2	3	4	5	6	7
24	Have good memory	1	2	3	4	5	6	7
25	Prefer to be by themselves rather than to be with other people	1	2	3	4	5	6	7
26	Do not trust other people	1	2	3	4	5	6	7
27	Easily grow impatient	1	2	3	4	5	6	7
28	Are wise people	1	2	3	4	5	6	7
29	Are sometimes paranoid	1	2	3	4	5	6	7
30	Would be accepting of help	1	2	3	4	5	6	7
31	Are good story tellers	1	2	3	4	5	6	7
32	Are stubborn people	1	2	3	4	5	6	7
33	Avoid social interaction	1	2	3	4	5	6	7
34	Find newspaper print too small to read	1	2	3	4	5	6	7
35	Are knowledgeable people	1	2	3	4	5	6	7
36	Are not easily upset	1	2	3	4	5	6	7
37	Have good memory for events that happened recently	1	2	3	4	5	6	7
38	Are smart people	1	2	3	4	5	6	7
39	Are caring people	1	2	3	4	5	6	7
40	Are not easily irritated	1	2	3	4	5	6	7
41	Find that their minds wander to random thoughts	1	2	3	4	5	6	7
42	May drop a boiling pot of water	1	2	3	4	5	6	7
43	Are kind people	1	2	3	4	5	6	7
44	Find it easy to hear faint sounds	1	2	3	4	5	6	7
45	Do not experience tastes strongly	1	2	3	4	5	6	7
46	Are argumentative	1	2	3	4	5	6	7
47	Are friendly people	1	2	3	4	5	6	7
48	Have difficulty seeing small print	1	2	3	4	5	6	7
49	Resist help	1	2	3	4	5	6	7
50	More and more find that people enjoy their storytelling	1	2	3	4	5	6	7
51	Would spill while pouring hot coffee	1	2	3	4	5	6	7

Please go to part 5 now...

Part 5 (caregivers)

Please answer the following questions about yourself:
Year of birth: _____

Number of years working with people with Alzheimer Disease: _____

Number of years working with people aged 65 and older: _____

Please circle the answers that apply to you:
We would like to ask a sample of people who participated in this study to participate in another study. Would you be interested in participating in another study?

Yes Maybe No

If you answered yes or maybe, how can we contact you? (e.g., phone number, address, email address, mail at the Alzheimer Care Centre)
Name: _____
Address/phone number/email/mail at work: _____
_____

For the following questions please circle the number that best applies to you:
What is your gender?
1 Male
2 Female

What is your birthplace?
1 Canada
2 USA
3 Other please specify which country _____

Are you a native speaker of English (i.e., was English the first language that you learned)?
1 Yes
2 No (at what age did you begin to speak English?_____)

If you are not a native speaker, please rate your proficiency in English by circling one number:

poor			good			excellent
1	2	3	4	5	6	7

What language do you primarily speak at home?
1 English
2 French
3 Other please specify which language(s) _____

What language do you feel most comfortable speaking?

1 English
2 French
3 Other please specify which language_____

Circle the one number that is most descriptive of your educational background

1 Less than grade 8
2 Completed grade 8
3 Some High School
4 Completed High School
5 Some College or University
6 Completed College or University
7 Graduate studies

Do/did you have contact with your grandparents?

1 Yes
2 No

If yes,

How much contact do/did you have with your grandparents?

not at all						very much
1	2	3	4	5	6	7

How positive would you say your contact with your grandparents is/was?

not at all						very much
1	2	3	4	5	6	7

Do you have contact with seniors (persons older than 65 years of age) in general?

1 Yes
2 No

If yes,

How much contact do you have with seniors in general?

not at all						very much
1	2	3	4	5	6	7

How positive would you say your contact with seniors is?

not at all						very much
1	2	3	4	5	6	7

How much knowledge do you have about Alzheimer disease?

not at all						very much
1	2	3	4	5	6	7

Do you have contact with people who have Alzheimer disease or related dementias?

1 Yes
2 No

If yes,

How much contact do you have with people who have Alzheimer disease or related dementias?

not at all						very much
1	2	3	4	5	6	7

How positive would you say your contact with people who have Alzheimer disease or related dementias is?

not at all						very much
1	2	3	4	5	6	7

Have you attended any courses/education/in-services about Dementia or Aging?

1 Yes
2 No

If yes,

What courses/education/in-services have you attended?

1 *The* CAPITAL CARE *Group* Dementia Care Education
2 Personal Care Aid Course
3 Other (please specify) _____

_____

_____

_____

Part 5 (students)

Please provide the following information about yourself:

Your year of birth: _____

For the following questions please circle the number that best applies to you:
What is your gender?

1 Male
2 Female

What is your birthplace?

1 Canada
2 USA
3 Other please specify which country _____

Are you a native speaker of English (i.e., was English the first language that you learned)?

1 Yes
2 No (at what age did you begin to speak English?_____)

If you are <u>not a native speaker</u>, please rate your proficiency in English by circling one number:

poor			good			excellent
1	2	3	4	5	6	7

What language do you primarily speak at home?

1 English
2 French
3 Other please specify which language(s) _____

What language do you feel most comfortable speaking?

1 English
2 French
3 Other please specify which language_____

Do/did you have contact with your grandparents?

1 Yes
2 No

If yes,

How much contact do/did you have with your grandparents?

not at all						very much
1	2	3	4	5	6	7

How positive would you say your contact with your grandparents is/was?

not at all						very much
1	2	3	4	5	6	7

Do you have contact with seniors (persons older than 65 years of age) in general?

1 Yes
2 No

If yes,

How much contact do you have with seniors in general?

not at all						very much
1	2	3	4	5	6	7

How positive would you say your contact with seniors is?

not at all						very much
1	2	3	4	5	6	7

How much knowledge do you have about Alzheimer disease?

not at all						very much
1	2	3	4	5	6	7

Do you have contact with people who have Alzheimer disease or related dementias?

1 Yes
2 No

If yes,

How much contact do you have with people who have Alzheimer disease or related dementias?

not at all						very much
1	2	3	4	5	6	7

How positive would you say your contact with people who have Alzheimer disease or related dementias is?

not at all						very much
1	2	3	4	5	6	7

APPENDIX C

Revised Facts on Aging Quiz 1

Circle the letter of the best answer. If you do not know the best answer, you may put a question mark to the left of the answers instead of circling a letter.

1) The proportion of people over 65 who are senile (have impaired memory, disorientation, or dementia) is
   A) About 1 in 100
   B) About 1 in 10
   C) About 1 in 2
   D) The majority

2) The senses that tend to weaken in old age are
   A) Sight and hearing
   B) Taste and smell
   C) Sight hearing and touch
   D) All five senses

3) The majority of old couples
   A) Have little or no interest in sex
   B) Are not able to have sexual relations
   C) Continue to enjoy sexual relations
   D) Think sex is only for the young

4) Lung vital capacity in old age
   A) Tends to decline
   B) Stays the same among non-smokers
   C) Tends to increase among healthy old people
   D) Is unrelated to age

5) Happiness among old people is
   A) Rare
   B) Less common than among younger people
   C) About as common as among younger people
   D) More common than among younger people

6) Physical strength
   A) Tends to decline with age
   B) Tends to remain the same among healthy old people
   C) Tends to increase among healthy old people
   D) Is unrelated to age

7) The percentage of people over 65 in long-stay institutions (such as nursing homes, mental hospitals, and homes for the aged) is about
   A) 5%
   B) 10%
   C) 25%
   D) 50%

8) The accident rate per driver over age 65 is
   A) Higher than for those under 65
   B) About the same as for those under 65
   C) Lower than for those under 65
   D) Unknown

9) Most workers over 65
   A) Work less effectively than younger workers
   B) Work as effectively as younger workers
   C) Work more effectively than younger workers
   D) Are preferred by most employers

10) The proportion of people over 65 who are able to do their normal activities is
   A) One tenth
   B) One quarter
   C) One half
   D) More than three fourths

11) Adaptability to change among people over 65 is
   A) Rare
   B) Present among about half
   C) Present among most
   D) More common than among younger people

12) As for old people learning new things
   A) Most are unable to learn at any speed
   B) Most are able to learn, but at a slower speed
   C) Most are able to learn as fast as younger people
   E) Learning speed is unrelated to age

13) Depression is more frequent among
   A) People over 65
   B) Adults under 65
   C) Young people
   D) Children

14) Old people tend to react
   A) Slower than younger people
   B) At about the same speed as younger people
   C) Faster than younger people
   D) Slower or faster than others, depending on the type of test

15) Old people tend to be
   A) More alike than younger people
   B) As alike as younger people
   C) Less alike than younger people
   D) More alike in some respects and less alike in others

16) The proportion of old people who are socially isolated is
   A) Almost all
   B) About half
   C) Less than a fourth
   D) Almost none

17) Most old people say
   A) They are seldom bored
   B) They are usually bored
   C) They are often bored
   D) Life is monotonous

18) The accident rate among workers over 65 tends to be
   A) Higher than among younger workers
   B) About the same as among younger workers
   C) Lower than among younger workers
   D) Unknown because there are so few workers over 65

19) The proportion of the Canadian population now age 65 or over is
   A) 3%
   B) 13%
   C) 23%
   D) 33%

20) Medical practitioners tend to give older patients:
   A) Lower priority than younger patients
   B) The same priority as younger patients
   C) Higher priority than younger patients
   D) Higher priority if they are low income seniors

21) The poverty rate (as defined by the federal government) among old people is
   A) Higher than among children under age 18
   B) Higher than among all persons under 65
   C) About the same as among persons under 65
   D) Lower than among persons under 65

22) Most old people are
   A) Still employed
   B) Employed or would like to be employed
   C) Employed, do housework or volunteer work, or would like to do some kind of work
   D) Not interested in any work

23) Religiosity tends to
   A) Increase in old age
   B) Decrease in old age
   C) Be greater in the older generation than in the younger
   D) Be unrelated to age

24) Most old people say they
   A) Are seldom angry
   B) Are often angry
   C) Are often grouchy
   D) Often lose their tempers

25) The health and economic status of old people (compared with younger people) in the year 2010
   A) Will be higher than now
   B) Be about the same as now
   C) Be lower than now
   D) Show no consistent trend

APPENDIX D

Revised Alzheimer Disease Knowledge Test

For the following questions please circle the letter of the best answer.

1) The percentage of people over 65 who have dementia caused by Alzheimer's disease or a related disorder is estimated to be
   A) Less than 2%
   B) 5-8%
   C) About 15%
   D) 20-25%
   E) I don't know

2) The number of people with Alzheimer's disease in the general population of Canada is expected to
   A) Decrease slightly
   B) Remain approximately the same
   C) Increase in proportion to the number of people over 65
   D) Nearly triple by the year 2020
   E) I don't know

3) The cause of Alzheimer's disease is
   A) Old age
   B) Hardening of the arteries
   C) Senility
   D) Unknown
   E) I don't know

4) Preliminary research concerning the role of heredity in Alzheimer's disease suggests that
   A) Persons with a close relative with Alzheimer's disease have an increased risk of becoming afflicted
   B) Alzheimer's disease is always transmitted genetically
   C) Alzheimer's disease is only inherited if both parents are carriers of the disease
   D) Alzheimer's disease is never inherited
   E) I don't know

5) Larger than normal amounts of aluminum have been found in the brains of some people with Alzheimer's disease. Studies investigating the role of Aluminum in causing Alzheimer's disease
   A) Have determined that it is the major cause
   B) Have established that it plays a role in the onset of the disease
   C) Are inconclusive
   D) Have proven that it is not a cause
   E) I don't know

6) A person suspected of having Alzheimer's disease should be evaluated as soon as possible because
   A) Prompt treatment of Alzheimer's disease may slow the progression of symptoms
   B) It is important to rule out and treat reversible disorders
   C) It is best to institutionalize an Alzheimer's disease patient early in the course of the disease
   D) Both A and B
   E) I don't know

7) Which of the following procedures is required to confirm that symptoms are due to Alzheimer's disease?
   A) Mental status testing
   B) Autopsy
   C) CT scan
   D) Blood test
   E) I don't know

8) Which of the following conditions sometimes resembles Alzheimer's disease?
   A) Depression
   B) Delirium
   C) Stroke
   D) All of the above
   E) I don't know

9) Which of the following is always present in Alzheimer's disease?
   A) Loss of memory
   B) Loss of memory, incontinence
   C) Loss of memory, incontinence, hallucinations
   D) None of the above
   E) I don't know

10) Although the rate of progression of Alzheimer's disease is variable, the average life expectancy after onset is
   A) 6 months-1 year
   B) 1-5 years
   C) 8-12 years
   D) 15-20 years
   E) I don't know

11) Which of the following statements describes a reaction Alzheimer's disease patients may have to their illness?

A) They are unaware of their symptoms
B) They are depressed
C) They deny their symptoms
D) All of the above
E) I don't know

12) Sometimes Alzheimer's disease patients wander away from home. Caregivers can best manage this problem by

A) Reasoning with the patient about the potential dangers of wandering
B) Sharing feelings of concern with the patient in a calm and reassuring manner
C) Making use of practical solutions such as locked doors
D) Remaining with the patient at all times to prevent the behaviour
E) I don't know

13) Which statement is true concerning treatment of Alzheimer's disease patients who are depressed?

A) It is usually useless to treat them for depression because feelings of sadness and inadequacy are part of the disease process
B) Treatments for depression may be effective in alleviating depressive symptoms
C) Anti-depressant medication should not be prescribed
D) Proper medication may alleviate symptoms of depression and prevent further intellectual decline
E) I don't know

14) What is the role of nutrition in Alzheimer's disease?

A) Proper nutrition can prevent Alzheimer's disease
B) Proper nutrition can reverse the symptoms of Alzheimer's disease
C) Poor nutrition can make the symptoms of Alzheimer's disease worse
D) Nutrition plays no role in Alzheimer's disease
E) I don't know

15) What is the effect of orienting information (i.e., reminders of the date and the place) on Alzheimer's disease patients?

A) It produces permanent gains in memory
B) It will slow the course of the disease
C) It increases confusion in approximately 50% of patients
D) It has no lasting effect on the memory of patients
E) I don't know

16) People sometimes write notes to themselves as reminders. How effective is this technique for Alzheimer's disease patients?

A) It can never be used because reading and comprehension are too severely impaired
B) It may be useful for the mildly demented patient
C) It is a crutch which may contribute to further decline
D) It may produce permanent gains in memory
E) I don't know

17) When an Alzheimer's disease patient begins to have difficulty performing self-care activities, many mental health professionals recommend that the caregiver

A) Allow the patient to perform the activities regardless of the outcome
B) Assist with the activities so that the patient can remain as independent as possible
C) Take over the activities right away to prevent accidents
D) Make plans to have the patient moved to a nursing home
E) I don't know

18) Which of the following is a primary function of the Alzheimer Society?

A) Conducting research
B) Providing medical advice
C) Family support and education
D) Providing day care for Alzheimer's disease patients
E) I don't know