

EXPLORING RESPONSES OF OLDER ADULTS TO UNSOLICITED HELP WITH  
PHYSICAL TASKS: A SOCIAL COGNITIVE THEORY PERSPECTIVE

by

Adrienne Tse

A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Master of Science

in

Kinesiology

Waterloo, Ontario, Canada, 2007

© Adrienne Tse 2007

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

## Abstract

Continually improving population health in the context of increased life expectancy challenges the assumption that aging invariably leads to significant physical decline. Currently, there is a perception that physical function and hence, independence, can be maintained well into later life (Ory, Hoffman, Hawkins, Sanner & Mockenhaupt, 2003). Given the growing proportion of older adults in many industrialized nations, it is imperative to consider possible factors that influence behaviour, which may in turn contribute to functional losses that have hitherto been attributed to aging. For example, pervasive ageist stereotypes may play a role in reducing older adults' opportunities to independently perform physical tasks (i.e. removal of difficult or challenging physical tasks from older adult residences; younger individuals insisting on physical help that is unneeded) so that ability is gradually compromised by disuse.

This study explores the potential for such reduced opportunity among community-dwelling older adults using a questionnaire-based methodology and hypothetical stimulus scenarios. In the scenarios, participants' mature children offer the older adults unsolicited help with two functional tasks: rising from a sofa and grocery shopping. The 52 study participants (mean age =  $78.4 \pm 6.0$  years) were each asked to report their independence preference, anticipated affective responses, behavioural intentions, self-efficacy for relevant physical skills, relation-inferred self-efficacy (RISE), attribution for why the help was offered, and perceived benefits of accepting and declining the help. Using a Social Cognitive Theory (SCT) framework, individuals with higher self-efficacy, stronger preference for independence, or more perceived benefits of declining relative to those of accepting help were expected to be more likely to intend to *decline* assistance.

In addition to being related to intentions, these factors, along with lower RISE beliefs, were expected to be associated with greater negative affect. Finally, RISE was anticipated to be directly proportional to self-efficacy and thus, attribution of the offered help to physical (versus social) reasons was hypothesized to relate to lower self-efficacy and RISE.

Primary study hypotheses were generally not supported, with a few exceptions. First, as hypothesized, those who perceived more benefits associated with declining help were more likely to decline and less likely to accept the offered help ( $p \leq 0.005$ ). Second, the more perceived benefits associated with declining help (relative to those associated with accepting help), the less total positive affect older adults reported ( $r \leq -0.31$ ,  $p \leq 0.02$ ). Third, individuals who had higher self-efficacy also reported higher RISE ( $r \geq 0.34$ ,  $p \leq 0.01$ ). Finally, those who made physical attributions for the offer of help reported lower RISE ( $p \leq 0.009$ ), and lower shopping self-efficacy ( $p = 0.004$ ).

Secondary analyses provided some insight into the lack of support for study hypotheses regarding the receipt of unsolicited assistance. For example, both high self-efficacy beliefs (mean =  $85.1 \pm 15.8\%$  for rising and  $91.5 \pm 11.2\%$  for shopping) and low TUG times (mean =  $12.2 \pm 4.7$ s) suggested that the sample was particularly high-functioning. This would help to explain why self-efficacy was not found to be significantly related to participant intentions to accept help.

Another explanation for this finding is the influence of social factors considered by older adults in these helping situations. Participant intentions could have been based on anticipated social rather than physical benefits. This rationale was supported by high rates of selection for socially-relevant perceived benefits of receiving help. Further

examination also confirmed that participants generally reported very low levels of total negative affect. This would partially account for the absence of a relationship between perceived benefits and negative affect, even though the former was shown to be correlated with total positive affect.

Despite raising as many questions as it answers, the present study succeeds in illustrating the perceptions of higher functioning older adults in situations where physical help is offered to them. Although these participants would not require any help with the physical tasks presented, on average, older adults indicated that they would likely accept the offered assistance approximately half of the time. When the findings of the two sets of analyses are considered, they suggest that much research is needed to understand the perspective of older adults in helping situations. Assumptions about older adults' reactions to receiving assistance with physical tasks may not be straightforward. Having the ability to function independently may not necessarily mean that older adults refuse assistance. Like younger adults, they may interpret the social situation in terms of a variety of outcomes. Indeed, if researchers do not consider complex interpretations for how older adults function in regard to physical independence, they may be letting personal ageism shape their research. Consequently, there is cause to pursue further research in this underserved area of investigation into the perceptions and actions of older adults. Future studies in this vein may make use of the lessons learned from this exploratory investigation.

## Acknowledgments

This thesis was only possible through the support of a number of people. I want to take this opportunity to thank them all.

First, I would like to thank Dr. Lawrence Brawley, whose extensive knowledge and constant encouragement were essential to the completion of this thesis. I could not have asked for a better guide and mentor. Thank you, Larry, for those inspiring lectures that first opened my eyes to the field of social psychology. They provided some of the answers that I had long been seeking, while stimulating me to make more enquiries that continue to excite me.

I also wish to thank Drs. Sherry Dupuis, Roger Mannell, Eric Roy, and Jim Frank. This thesis bore considerable improvement through the invaluable advice that I have received from each of you at some point during the development of this thesis. I feel particularly fortunate to have benefited so much from your knowledge and expertise, given the many demands on your time. Finally, thank you for your understanding and accommodation throughout the course of this project – it meant so much to me at times when I seemed to be facing an uphill battle.

I would be remiss if I did not acknowledge the participants whose help I relied upon for this research. These included the older adults who provided input during the pilot testing stage of the project. I cannot thank all of you enough for being so generous with your time and for your interest in my work.

Wen, thank you for all the support you have provided me with over the last few years. It made the pursuit of my studies immeasurably less stressful in many respects and

burdened me with a debt I can only attempt to repay. Yes, things didn't quite work out as planned but do they ever? Remember that you'll always be my s.j.

Samuel, je n'ai aucun mot pour décrire ta patience. Je suis désolée que tu aies dû m'accepter comme j'étais. Ça n'a pas toujours été facile pour nous... Heureusement, tout cela fait partie de passé maintenant. Ça en valait la peine, n'est-ce pas? Merci de m'avoir enseigné ce qui est vraiment important dans la vie. Je n'oublierai jamais. À notre nouveau départ!

And finally, to my family: without your love, there would be nothing worth pursuing. Mom, Dad, B, and C, thank you for everything.

A.

“All I say is by way of discourse, and nothing by way of advice. I should not speak so boldly if it were my due to be believed.”

– Montaigne

## Table of Contents

	Page
Title Page	i
Author's Declaration	ii
Abstract	iii
Acknowledgments	vi
Table of Contents	viii
List of Tables	xi
List of Figures	xii
Introduction	1
Stereotypes and Realities of Aging	1
Potential Consequences of Ageist Stereotypes	1
Caregiving Research	2
Unsolicited Help Research	3
Motivations to Provide Assistance	4
Social Cognitive Theory (SCT) as a Framework for Investigation	5
Study Purpose	7
Study Hypotheses	9
Main Hypotheses	10
Secondary Hypotheses	10
Method	11
Participants and Design	11
Measures	12
Demographic Information	12
Cognitive Competence	12
Level of Physical Activity	13
Independence Preference	14
Affect	14
Behavioural Intentions	15
Actual Experience of Unsolicited Help	15
Self-Efficacy	15
Relation-Inferred Self-Efficacy	16
Causal Attribution and Causal Dimensions	16
Perceived Benefits	17
Desire for Physical Competence	18
Timed Up-and-Go Test	18
Procedure	19
Questionnaire Pilot-Testing	19
Recruitment	19
Assessment	20
Data Preparation and Analytic Strategies	22
Composite and Modified Measures for Analysis	22
Total Physical Activity	23
Total Positive and Negative Affect	23
Overall Self-Efficacy	23
Efficacy Discrepancy	24



Attribution Type	24
Perceived Benefits	25
Desire for Physical Competence	25
Data Management	26
Missing Data	26
Outlying Data	26
Skewed Data	27
Analytic Strategies	28
Results	29
Demographics	29
Main Hypotheses	34
Self-Efficacy and Intentions	34
Preference for Independence and Intentions	34
Perceived Benefits and Intentions	34
Secondary Hypotheses	36
Relationships between Social Cognitions and Affect	36
Self-Efficacy and Affect	36
Independence Preference and Affect	36
Perceived Benefits and Affect	37
Relation-Inferred Self-Efficacy and Affect	37
Self-Efficacy and Relation-Inferred Self-Efficacy	37
Causal Attribution Type and Efficacy	38
Self-Efficacy and Causal Attribution Type	38
Relation-Inferred Self-Efficacy and Causal Attribution Type	38
Summary Results Pertaining to Hypothesis Testing	40
Alternative Explanations	42
Differing Natures of the Stimulus Scenarios	42
Actual Experience of Scenario-Like Situations	42
Affect	43
Physical Function and Behavioural Intentions	43
The High-Functioning Nature of the Study Sample	46
The Level of Total Negative Affect among Active Older Adults	48
Descriptive Statistics	48
Intentions and Affect	51
Total Physical Activity and Affect	52
Efficacy Discrepancy and Affect	52
The Influence of Social Considerations	53
Socially Relevant Perceived Benefits	53
Discussion	55
Overview of Study Hypotheses	55
Hypothesis One	56
Hypotheses Two and Three	56
Hypothesis Four	57
Hypotheses Five and Six	59
Secondary Analyses	60

Non-Support of Hypothesis One and the High-Functioning Nature of the Study Sample	60
Non-Support of Hypothesis Four (Part A) and Its Possible Explanations	61
Partial Support of Hypothesis Four (Part C) and the Level of Total Negative Affect	63
Non-Support of Hypothesis Four (Part D) and the Influence of Social Considerations	64
Partial Support of Hypothesis Six (Part A) and the Differing Natures of the Stimulus Scenarios	66
Summary of Results of Study Hypotheses and Secondary Analyses	70
Suggestions for Future Research	70
Sampling Suggestions	71
Measurement Suggestions	72
Design Suggestions	73
Cohort-Based Designs	74
Field Studies	74
The Potential Role of SCT in Future Research	75
Justification for Further Research in Ageing	75
Appendices	
A List of Abbreviations Used	77
B Telephone Screener	79
C Study Questionnaire	85
D Questionnaire Pilot-Testing	98
E TUG Test Procedures	102
F Development of Overall Self-Efficacy Measure	104
G Physical and Social Causal Attributions	108
H Reverse-Scaled Variables	111
I Personal and Social Perceived Benefits	113
References	116

## Tables

Table	Title	Page
1	Characteristics of Study Participants	29
2	Data Summary for Key Study Variables	32
3	Summary of Results for the Three Main Hypotheses	35
4	Summary of Results for the Secondary Hypotheses	39
5	Overview of Hypothesis Tests	41

## Figures

Figure	Title	Page
1	Reciprocal Determinism in SCT	6
2	Distribution of Overall SE for Rising	47
3	Distribution of Overall SE for Shopping	47
4	Distribution of Total Negative Affect (Rising Scenario)	49
5	Distribution of Total Positive Affect (Rising Scenario)	50
6	Distribution of Total Negative Affect (Shopping Scenario)	50
7	Distribution of Total Positive Affect (Shopping Scenario)	51
8	Total Negative Affect versus Overall Shopping Self-Efficacy	62

## Introduction

### *Stereotypes and Realities of Aging*

As people age, there may come a point in their lives when they will require assistance with day-to-day physical tasks from significant others (White-Means & Hong, 2001). For example, consider the fact that 22.9% of Americans  $\geq 65$  years old were found to be functionally disabled or in need of some form of long-term care (Tennstedt, 1999) and that caregivers of older adults ( $\geq 50$  years old) reported that the main “problem” suffered by the person they care for is aging, followed by diabetes, cancer and heart disease (NAC & AARP, 2004). Given that the incidence of disability and chronic disease increases over the life course and is observable to the population (Ory et al., 2003), it is not surprising that there exist common stereotypes that associate advancing age with natural physical decline (Levy, Hausdorff, Hencke & Wei, 2000). For example, consistently negative attitudes towards older adults have been found with respect to physical appearance, health, and abilities (Slotterback & Saarnio, 1996). However, Ory and colleagues (2003) note that age need not be indicative of actual ability as most older adults are quite capable of performing activities of daily living (ADLs: e.g., getting out of a chair), and instrumental activities of daily living (IADLs: e.g. grocery shopping).

### *Potential Consequences of Ageist Stereotypes*

Stereotyped generalizations about older adults can predispose adult children to offer aging parents help that is not necessary to their daily functioning. The help that is offered may be unwanted and even upsetting to those whom it was intended to please, placing additional strain on relationships that already contain inherent tensions (Fingerman, 1996; Pyke, 1999). In offering superfluous assistance, overprotective

children limit their parents' opportunities to practice the physical skills that are essential to the maintenance of independence. Although independence may not always be the priority for older adults and their families (e.g. interdependence may be a more preferable outcome), its preservation certainly figures prominently from a health and physical activity promotion perspective. After all, if older adults act in stereotype-consistent, self-fulfilling ways, as suggested by Palmore (1999), ageist stereotypes can directly shape older adults' health outcomes.

### *Caregiving Research*

Help that is given to older adults is typically studied in the context of caregiving. Currently, there exists a substantial body of research on the subject of caregiving, much of which is devoted to the care of those with particular diseases, children and older adults. The older adult studies examine individuals who demand considerable care as a function of disablement resulting from disease. However, research on care provided to older adults for whom this does not apply is uncommon. In fact, the provision of help to higher-functioning individuals may not even be defined as caregiving, given the significantly lesser degree of assistance that is entailed. Irrespective of the precise definition of what constitutes caregiving, the bulk of this research has been concerned with the caregiver in this relationship, particularly with respect to the cost of caregiving (e.g. Pinquart & Sörenson, 2003; Schulz & Beach, 1999). More recent studies have also considered the benefits associated with caring for older adults (e.g. Raschick & Ingersoll-Dayton, 2004). The preponderance of caregiver burden studies is underscored by the development of a number of scales used to assess caregiving distress (e.g. Cousins, Davies, Turnbull & Playfer, 2002).

On the other hand, there has been a noticeable lack of research focus on the care recipient's perspective, a shortcoming of this literature that was highlighted over a decade ago (Malonebeach & Zarit, 1991) and which remains today (Gaugler, Kane & Kane, 2002). In light of recent developments in health care and the resultant increase in the proportion of older adults who are experiencing relatively good health later in life (Crimmins, 2004), physical activity and function research that considers the unique perspective of the older adult in the caregiver-care recipient relationship has been long overdue.

#### *Unsolicited Help Research*

In contrast to the literature on requested and desired caregiving, there has been relatively little research on *unsolicited help*, particularly with respect to physical abilities or function. The few studies examining the effect of this help typically involved students (e.g. Schneider, Major, Luhtanen & Crocker, 1996; Graham & Barker, 1990). For example, studies have examined the consequences of help with math problems (Graham & Barker, 1990) or verbal-spatial tasks (Schneider et al., 1996). Such studies suggest that unsolicited help can have the unintended effect of conveying that recipients lack the ability to independently perform a task. In turn, this may result in the lowered self-esteem of the assisted individuals. If individuals make low-ability attributions, they may agree with the helper's assumed assessment or harbour feelings of resentment toward the helper. Neither of these outcomes is desirable for either party in this social interaction context.

Although the findings on unsolicited help are primarily found with students, an interesting hypothesis is whether similar effects would be found in the context where

older adults receive unsolicited help with physical tasks such as activities of daily living. For example, would older adults who accept ageist stereotypes of low physical ability happily accept help, independent of their real need? To date, there has been little research examining what factors influence whether or not help with physical function is accepted by aging individuals who actually do not need the assistance.

#### *Motivations to Provide Assistance*

Beyond the influence of ageist stereotypes, individuals may have personal reasons for trying to be helpful towards older adults. For instance, past research has shown that care may be provided for reasons of obligation (e.g. Cicirelli, 1993; Leigh, 1982), reciprocity (e.g. Brubaker, 1990; Carruth, 1996; Callahan, 1985), affection and inadequate community resources (Guberman, Maheu & Maille, 1992). A more recent study also demonstrated that a lack of choice, guilt, older adults' expectation of help, perceived disapproval from others, a desire to provide care, the caregiver's resistance to other forms of care, his/her caring nature and need to live up to own principles are some additional motivating factors affecting informal caregivers (Lyonette & Yardley, 2003). Thus, motives for the provision of care may be unrelated to older adults' actual needs (e.g. reciprocity, affection, a desire to provide care).

Motivations to provide care may have some bearing on the subsequent behaviour of the care recipients. For instance, if older adult care recipients perceive others as having extrinsic motivations, such as a lack of choice in providing help, they may be less inclined to accept the grudgingly-provided assistance. If the older adults nevertheless accept the help (e.g. if they also have no other alternatives), the caregiver-recipient relationship may suffer. This is consistent with Lyonette and Yardley's (2003) finding



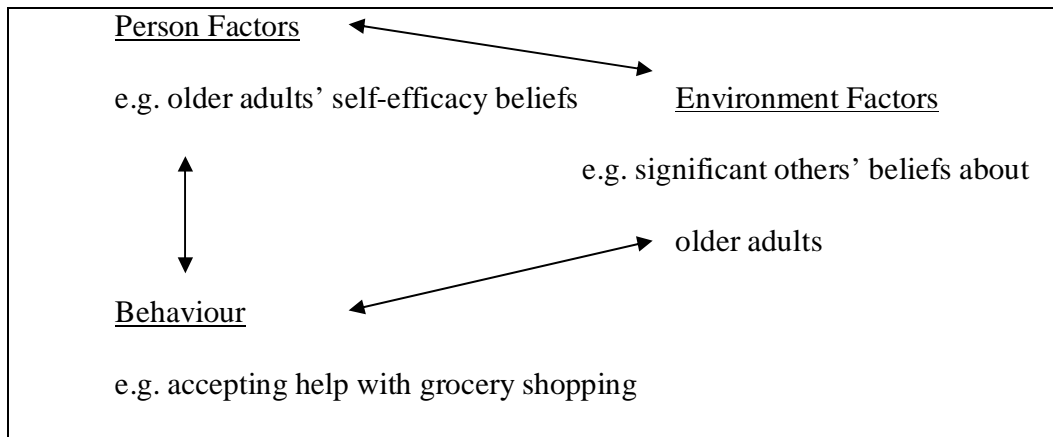
that higher extrinsic motivation to provide care is associated with poorer quality of the relationship. By contrast, when older adults perceive others as having intrinsic motivations to care, including the caregiver's desire to care, older adults may be more likely to accept the help and the caregiver-recipient relationship may benefit. This might explain why the researchers also demonstrated an association between higher intrinsic motivation to care and better relationship quality (Lyonette & Yardley, 2003).

However, the study conducted by Lyonette and Yardley (2003), like much of the caregiving literature, only examined the perspective of the caregiver. Research is needed to confirm whether older adults' perceptions of their caregivers' motivations (i.e. their attributions about why help is being offered) are related to the likelihood of help acceptance and the quality of the relationship. There is also a need for research on older adults' perspectives on unsolicited help, as well as the factors that are related to their responses to such help, in order to achieve a more complete understanding of positive caregiver-care recipient relations.

#### *Social Cognitive Theory (SCT) as a Framework for Investigation*

One theoretical framework that may be used to investigate perceptions of help-giving and older adults' reactions to unsolicited assistance with their physical functioning is Bandura's Social Cognitive Theory (SCT: Bandura, 1986). The basic assumption of SCT is that dynamic personal, environmental and behavioural factors interact reciprocally, a concept termed 'reciprocal determinism' by Bandura (1986). In SCT, personal factors, which include an individual's biology, emotions, self-perceptions, beliefs, expectations, preferences, intentions, and goals, along with the situational context, affect and are affected by behaviour (see Figure 1).

Figure 1. Reciprocal Determinism in SCT



If SCT is applied to situations in which older adults are offered assumptive, unsolicited help, factors that may influence whether or not the help is accepted could involve: older adults' self-efficacy for their ability to perform the task (a self-perception); their preference for independence or aid; the benefits they expect to receive through accepting or declining the help (i.e. their outcome expectations); their affective responses to the offer; their beliefs about others' estimations of their abilities (i.e. their relation-inferred self-efficacy, the confidence people believe others have about the former individuals' ability; Lent & Lopez, 2002) and why others offer them help (i.e. their attributions). Based on SCT premises, it is suggested that, regardless of their actual abilities, older adults' *self-efficacy* or confidence in their situation-specific abilities to perform a given task may be a strong determinant of whether or not unsolicited help with the task will be accepted. However, perceived ability is a necessary but insufficient condition. Older adults must also be *willing* to turn down uninvited help and perform a physical task independently. This willingness to turn down help should be related to older adults' preferences for independence and the benefits they expect to accrue by accepting or declining the help. Thus, when older adults decline physical assistance, their

confidence in their physical functioning should be adequate given their preferences for independence and they should also perceive that the benefits of declining the help outweigh those of accepting it.

Consistent with SCT, older adults' affective reactions may also have some bearing on how they intend to respond to the offered help. For example, if deeply offended by the perceived implications of the offer, an older adult may prefer to decline the physical assistance. In addition to influencing self-efficacy by providing individuals with another source of information about their capabilities, relation-inferred self-efficacy (RISE) beliefs and attributions about why help is being offered may be related to older adults' behavioural intentions. RISE beliefs and causal attributions that are in conflict with an older adult's self-efficacy beliefs could provoke strong affective (e.g. *negative*) responses and in turn, have some bearing on intentions.

#### *Study Purpose*

The main purpose of the current exploratory project was to determine whether older adults' self-efficacy for community mobility, preferences for independence, and perceived benefits of accepting and declining help are associated with behavioural intentions following hypothetical offers of assistance with ADLs or IADLs. In addition, this study intended to establish whether self-efficacy, independence preference, perceived benefits and RISE beliefs had any bearing on affective reactions to such offers of help. Finally, potential relationships between self-efficacy, RISE and attributions were also sought.

As with numerous other areas (e.g. smoking cessation – Wang, Borland, & Whelan, 2005; condom use – Mashegoane, Moalusi, Ngoepe & Peltzer, 2004; blood

donation – Giles, McClenahan, Cairns & Mallet, 2004; exercise – Gyurcsik & Estabrooks, 2004), self-efficacy should play a role in determining older adults' behavioural intentions. Based on Social Cognitive Theory, it was also expected that older adults' confidence in their abilities in the domain in which help is offered would be related to their causal attributions about why others offer them assistance.

Since both variables consider the perspective of the individual who offers assistance, older adults' causal attributions about why the other person would offer them help should correspond to their beliefs about the helper's confidence in the older adult's ability to perform the task (RISE). In turn, RISE is expected to play a significant role in colouring the older adult's affective response to the offer of help. Subsequently, affect may have a relationship with intentions to accept or decline the offer.

As a possible moderator, older adults' preference for independence should also be related to behavioural intentions and was therefore measured in this study. The perceived benefits that older adults associate with accepting and declining the hypothetical offer should be consistent with their preference for independence and therefore were also expected to help predict their behavioural intentions.

Social Cognitive Theory alone provided the foundation that was used to anticipate possible relationships given the lack of prior physical activity literature. SCT suggests that individuals with higher self-efficacy for mobility, stronger preference for independence and more perceived benefits of being independent may be more likely to report negative affect in response to the unsolicited offer. However, this expectation was expected to be strengthened in instances where older adults attribute the offer to a caregiver's underestimation of their capabilities. In other words, the offer is attributed to

perceived need where older adults do not feel that they require assistance and RISE beliefs are perceived to be incongruent with the older adult's own self-efficacy beliefs. If this is the case, it would also be expected that negative affect would be associated with the intention to turn down the offer of help. However, positive affect that may arise from an appreciation of the unsolicited offer need not necessitate help acceptance. Thus, relative to behavioural intentions, affective reactions were anticipated to reflect greater individual variation, as illustrated below.

While unsolicited help is, to a certain degree, presumptive of older adults' physical inability, such help has been found to be associated with *increased* liking towards helpers (Schneider et al., 1996). Whereas the presumptive aspect of uninvited help may make older adults more likely to decline assistance, increased liking of the helper may increase the odds of help acceptance. Thus, it is not easy to anticipate how affect may be related to intentions to accept or decline unsolicited help. Ultimately, affective reactions were thought to vary depending on the particular causal attributions and RISE beliefs held by individual older adults. However, whether or not attributions or RISE beliefs are associated with intentions is also difficult to predict. Consequently, without formulating an explicit hypothesis, this study also sought to explore the potential relationship between affective responses and older adults' future intentions to either personally perform physical tasks or accept offered help with these tasks.

### *Study Hypotheses*

Inasmuch as there are a number of variables being explored in this study, some were more primary to the overall study purposes than others. Likewise, certain

relationships between some of these variables were of greater interest. As a consequence, the following main hypotheses and secondary hypotheses were advanced separately:

*Main Hypotheses*

- 1) Older adults with higher self-efficacy for community mobility are significantly more likely to decline (and therefore, less likely to accept) an offer of help with physical tasks.
- 2) Older adults with stronger preference for independence are more inclined to turn down uninvited assistance (and less inclined to take up the assistance).
- 3) Older adults who perceive more benefits associated with performing a task on their own (relative to those benefits associated with engaging the assistance of a caregiver) are more likely to refuse help with the task. These individuals will also be less likely to accept the offered help.

*Secondary Hypotheses*

- 4) Self-efficacy, preference for independence, perceived benefits and RISE beliefs are all related to older adults' affect as a function of being offered help with physical tasks, as follows:
  - a. Older adults with higher self-efficacy are less likely to report positive affect (and more likely to report negative affect) in response to an offer of help with physical tasks.
  - b. Older adults with stronger preference for independence are less inclined to report positive affect (and more inclined to report negative affect) after being offered uninvited assistance.

- c. Older adults who perceive more benefits associated with performing a task on their own, relative to those associated with enlisting caregiver assistance, are less likely to report positive affect (and more likely to report negative affect) with the offer of help.
- d. Older adults with lower RISE beliefs are less inclined to report positive affect (and more inclined to report negative affect) after being offered help.
- 5) Older adults with higher self-efficacy tend to have correspondingly higher RISE beliefs.
- 6) Causal attributions are related to efficacy beliefs in the following ways:
  - a. Older adults who make physical (vs. social) attributions for why the help was offered are more likely to have lower self-efficacy.
  - b. Older adults who make physical (vs. social) attributions for why the help was offered are more likely to have lower RISE beliefs.

## Method

### *Participants and Design*

The participants in this study were a convenience sample of 52 volunteers who were independent (i.e. lived on their own or with a spouse only), community-functioning (had sufficient cognitive and mobility function such that they were able to perform instrumental activities of daily living in their community environment) older adults ( $\geq 70$  years old) of both genders.

The study design was observational and cross-sectional.

## *Measures*

A number of measures were taken for this research using the telephone screener (see Procedure below and Appendix B) and the study questionnaire (see Appendix C). The key study variables are described below.

### *Demographic Information*

Information on gender, age, ethnicity, education, living arrangements, and numbers of sons and daughters was collected from participants. These data were used to characterize the older adult study sample.

### *Cognitive Competence*

To ensure that older adults had sufficient cognitive capacity to provide meaningful responses to the study questionnaire (i.e. an inclusion criterion), potential participants were administered a previously modified version of the Folstein Mini-Mental State Examination (MMSE). The MMSE is commonly used in research to screen for cognitive impairment. It consists of items that evaluate orientation, registration and recall, attention and calculation, language competence, and how well verbal and written commands are followed, yielding total score out of 30 possible points for the scale. The 26-point telephone version of the MMSE (TMMSE) that was used in this study was adapted by Roccaforte and colleagues from the Adult Lifestyles and Function Interview (ALFI)-MMSE (Newkirk et al., 2004). It differs from the ALFI-MMSE (also designed for telephone administration) by the inclusion of an extra three-step command, making the scale more analogous to the original MMSE. The TMMSE also includes prompting respondents for a phone number where they can usually be reached. Despite these differences from the ALFI-MMSE, this scale retains MMSE items that assess orientation,



registration and recall, attention and calculation, and language competence, with minimal omission of orientation and language items (see Appendix B for the full TMMSE at the end of the telephone screener). The TMMSE was shown to correlate well with the original instrument ( $r = 0.88$ ,  $p < 0.001$ ) among patients with Alzheimer's disease (Newkirk et al., 2004). A minimum cut-off score of 21 for the TMMSE was employed as the criterion for inclusion. Based on the work of Newkirk and colleagues with Alzheimer's disease patients (2004), this corresponds to the widely used MMSE cut-off of 24 that is indicative of no cognitive impairment (Ruchinskas & Curyto, 2003).

#### *Level of Physical Activity*

In order to determine older adults' physical activity habits, participants were asked to provide frequency estimates for activity bouts of different intensity levels. For each of the mild, moderate and strenuous intensity levels (examples of each type were provided for consistency of interpretation), older adults were told to recall frequencies during a typical week in the past month, in the effort to acquire current, representative data. In the interest of consistent interpretation among participants and greater accuracy (e.g. 10 minute activity sessions within the previous month may be difficult to remember), only bouts that were at least 30 minutes in duration were considered. This measure was modeled after a portion of the Godin Leisure-Time Exercise Questionnaire (GLTEQ: Godin & Shephard, 1985). It differs from the GLTEQ measure in that it specifies that the typical week for which participants estimate their activity levels should be during the past month, and the minimum length of time of a valid activity bout is 30 minutes (vs. 15 minutes for the GLTEQ).

### *Independence Preference*

Independence preference was defined by a single item that categorized older adults into three groups on the basis of the degree to which they generally desire assistance. This measure was designed specifically for the present study to provide a general idea of participants' help-related preference orientation. Since independent older adults were targeted for this study (i.e. recall that the purpose was to investigate a reaction to potential ageism through the offer of help), independence preference was framed in a hypothetical manner. Specifically, participants were prompted to respond to the item based on the assumption that they experienced partly limited function with respect to most physical tasks. Given this assumption, help acceptance would not be a requirement for the successful completion of physical tasks, but would make such completion easier to achieve.

### *Affect*

On 11 nine-point scales, older adults rated the degree to which they felt distinct emotions as a result of being offered unsolicited help in each stimulus scenario. That is, a rating of '1' on any of the scales indicated that the individual did not feel a particular affect at all and a rating of '9' meant that the affect was felt very much. To a large extent, these affective reactions overlapped with those employed by Courneya and McAuley (1993) to examine older adults' affect after an acute exercise bout. The exceptions included the replacement of the scale rating how "ashamed" by one that assessed how "inadequate" participants might feel in response to the offer of help. Two additional scales were also introduced to ascertain how "dependent" and "offended" older adults may feel in the scenarios presented. (See Appendix C for all affective scales

used.) These changes were implemented after pilot-testing of the study questionnaire (see below and Appendix D for additional information on Questionnaire Pilot-Testing).

### *Behavioural Intentions*

The likelihood that older adults believed that they would select a specified behavioural option (e.g. accepting the offered help) represented their behavioural intentions. For instance, participants were asked to indicate how likely they would be to: a) “allow [their] son to assist [them] in getting off [their] sofa in most cases”, and b) “decline [their] son’s offer in most cases and get up on [their] own”. All older adults rated their intentions for each behavioural possibility on nine-point scales where a rating of ‘1’ indicated that the participant definitely would not engage in accepting or declining help and a rating of ‘9’ represented a definite intention to accept or decline help. In the shopping scenario, older adults were also asked to rate their intentions to accompany their daughter shopping on another, identical nine-point scale.

### *Actual Experience of Unsolicited Help*

An item that determined the extent to which participants actually experienced unsolicited help with the presented tasks served to check the realism of the stimulus scenarios. Actual experience was divided into five frequency categories ranging from an event that “never” to one that “very often” occurs, on the basis of older adults’ past experiences.

### *Self-Efficacy*

As a measure of self-efficacy (SE), older adults rated, on 11-point percentage scales (i.e. 0%, 10%, 20%, etc.), their level of confidence in their abilities to perform two specific physical tasks: a) rising from a sofa and b) grocery shopping. Each of the two

scenario-based activities was associated with a series of relevant physical skills that occurred on a graded scale of increasing task complexity/difficulty. This is consistent with the recommendations of Bandura (1986) with respect to the hierarchical measurement of self-efficacy (also see McAuley & Mihalko, 1998). In the case of rising from a sofa, for instance, participants were asked to provide self-efficacy ratings for their confidence in being able to readily get up using only the strength in their legs, to readily get up using the strength in their legs and the assistance of one and then both arms, and finally to readily get up using both their legs and arms. Each item response was made on 0 to 100 percent confidence scale. The internal consistency for the overall rising self-efficacy scale was  $\alpha = 0.780$  and for the overall shopping self-efficacy scale was  $\alpha = 0.849$  (see Composite and Modified Measures for Analysis for overall self-efficacy scales).

#### *Relation-Inferred Self-Efficacy*

Relation-inferred self-efficacy (RISE) corresponded to older adults' beliefs about others' estimations of their abilities to perform a specific task (Lent & Lopez, 2002). For example, under the circumstances in which they may be offered assistance, participants were asked to suggest how much confidence they perceived that their sons or daughters had in their parents' abilities to perform the physical task independently. As with self-efficacy, RISE was also measured by means of an 11-point percentage scale (i.e. 0%, 10%, 20%, ..., 90%, 100%).

#### *Causal Attribution and Causal Dimensions*

The causal attribution and causal dimensions measures were drawn directly from the revised Causal Dimensions Scale (CDSII: McAuley, Duncan, Russell, 1992). As

with the CDSII, for each scenario, an open-ended item allowed the participants to provide what they believed was the principal reason that assistance would be offered to them (i.e. their causal attributions) under the provided circumstances and their present state of health. Older adults were then asked to rate their provided causal attribution on a set of five nine-point, semantic differential scales. The departure from the CDSII lay in the removal of most of the original twelve semantic differential scales (i.e. *you can / cannot regulate*, *inside / outside of you*, *stable / variable over time*, *under / not under the power of other people*, *something about you / others*, *unchangeable / changeable*, *other people can / cannot regulate*) after the complete study instrument underwent pilot-testing (see Questionnaire Pilot-Testing below). Despite the omission of many CDSII items, the final study scale nevertheless employed the same principles as the original does. The five remaining items (i.e. reflects an aspect of *yourself / the situation*, *manageable / not manageable by you*, *permanent / temporary*, *over which you have / have no control*, *over which other have / have no control*) included at least one representative of each of the four causal dimensions (i.e. locus of causality, stability, internal control and external control) found in the CDSII (McAuley, Duncan, Russell, 1992).

### *Perceived Benefits*

Older adults' perceived benefits (PBs) included all of the applicable benefits associated with each specific behavioural option (e.g. accepting the help) that they selected from a list. Participants also had the option of including additional, self-generated benefits that were significant to them and that they felt were not represented in the provided list. (See Composite and Modified Measures for Analysis for more details.)

### *Desire for Physical Competence*

According to the developers of this construct (Rejeski, Ip, Katula & White, 2006), desire for physical competence (DPC) represents older adults' motivation to be able to perform physical tasks that demand different skills and varying levels of functioning. This study used the measure designed by Rejeski and colleagues (2006) to assess DPC. The DPC scale consists of 16 physical tasks that can be broadly characterized as being low (e.g. "having the ability to stand up from a low, soft couch or chair") or high (e.g. "having the ability to do heavy work in the house or yard") in physical demand. For each of these tasks, participants were asked to indicate on a five-point Likert scale whether it described something that they possessed "no desire whatsoever", a "low desire", "moderate desire", "strong desire" or "very strong desire" to be able to perform. As with the original instrument, older adults were instructed to provide their DPC irrespective of their current ability to perform the task in question. DPC has been shown to be a valid and reliable means (two-week test-retest reliability of 0.93) of ascertaining the extent to which older adults (mean age = 78.3 + 8.0 years old) value the ability to perform common physical tasks (Rejeski et al., 2006). (See Composite and Modified Measures for Analysis for more details.)

### *Timed "Up and Go" Test*

As an objective measure of physical ability, the Timed "Up and Go" (TUG: Podsiadlo & Richardson, 1991) test complemented measures of participant self-efficacy. The TUG test measures the amount of time required for an individual to rise from an armchair, walk to a mark three meters away, turn around, return to the chair and sit down again. Podsiadlo and Richardson (1991) demonstrated the TUG to be a valid test for

assessing functional mobility and the test-retest reliability for the measure has consistently been shown to be high (i.e. ICC  $\geq$  0.97: Podsiadlo & Richardson, 1991; Schoppen et al., 1999; Steffen, Hacker & Mollinger, 2001). It has been widely used as a realistic indicator of functional mobility for older adults in past research (Bohannon, 2006). (See Appendix E for details on the TUG Test Procedures.)

### *Procedure*

#### *Questionnaire Pilot-Testing*

Prior to data collection, the questionnaire was pilot-tested to ensure the clarity of each of its items. On the whole, the instrument was judged to be sufficiently clear to address study questions. Items that were problematic (e.g. were unclear, confusing or difficult to answer) were subsequently altered on the basis of older adults' suggestions or removed altogether. The resulting questionnaire demanded slightly less time to complete and proved to be more acceptable to older adults. (See Appendix D for a more detailed overview of the Questionnaire Pilot-Testing.)

#### *Recruitment*

Participants for this study were recruited from three municipalities. The majority of participants were recruited from the Kitchener-Waterloo community (n = 29). Flyers describing the study were posted in local senior residences (not nursing homes) where the University of Waterloo has already established a practice of university research relations (e.g. Luther Village). Additionally, presentations describing the study were made in various venues (e.g. in residences and a cardiac rehabilitation program). In a number of cases, older adults volunteered to participate in the research after hearing it mentioned by friends or acquaintances who had previously been involved in the study.

A number of participants were also recruited from the Toronto (n = 13) and Saskatoon (n = 10) areas. The formal recruitment approaches (i.e. not word of mouth recruitment) in these cities were similar to those employed in Kitchener-Waterloo.

It should be noted that the means of recruiting the convenience sample for this study were made necessary by the challenges encountered in attempting to persuade independent older adults to participate in the research study. Individuals who are physically competent are frequently too busy with their own affairs to volunteer their time for research. Perhaps this is particularly true for those who are not burdened with serious medical diagnoses. These people may have even less personal interest in participating in health-related research.

#### *Assessment*

After having been recruited, older adults who expressed an interest in the study were informed of the protocol during an initial telephone interview. This initial phone call also involved screening for participant suitability for the study. Eligibility was determined by the use of a modified version of a previously employed telephone screener (from a mobility improvement/study: BESAFE; Brawley, Frank, Patla, Gardner & Shields, 2003) and the TMMSE. The screener was used to exclude individuals whose conditions precluded any physical activity. For example, those who experienced frequent angina, took medications that cause dizziness or nausea, or used supplemental oxygen for breathing difficulties could not participate in this research. Sensory and cognitive problems that would interfere with successful study completion also excluded older adults from participation. Only one older adult was excluded on the basis of her severe vision problems. None were excluded due to problems with hearing as individuals who



were significantly hearing impaired all used hearing aids. A total score of at least 21 on the TMMSE served as the cognitive requirement for study inclusion. Finally, older adults who lived in nursing homes or with younger family members (e.g. a son or daughter), and therefore could not be presumed to be independent, were also excluded from this study. Once older adults were deemed eligible and invited to participate in the study, the investigator answered all of their questions and established a mutually agreeable time and location to meet with them. Typically, participants preferred to meet in their own residences. In a few cases, the investigator met with older adults in a common area of their senior residences.

During the face-to-face meeting, written informed consent was obtained from older adults. The study questionnaire was then administered on an individual basis, to minimize the influence of significant others (particularly in cases where couples were participating). This also permitted the investigator to clarify any items with which participants struggled. Although the questionnaire was presented to older adults in paper format, it was also read to participants by the investigator to reduce misunderstanding.

The questionnaire began with the assessment of participants' levels of mild, moderate and strenuous physical activity. Following this, participants were categorized on the basis of their preference for independence. The questionnaire consisted predominantly of questions and items that prompted participants to respond to two scenarios in which older adults are offered unsolicited help with common physical tasks. After participants were prompted to put themselves in the place of the older adult in each scenario, they were asked to respond to items relating to the variables under investigation (see Measures above).

The two questionnaire scenarios both involved situations where an older adult is offered unsolicited help with a physical task. They differed in that one focused on an ADL (i.e. rising from a seated position), and the other on an IADL (i.e. grocery shopping). The two scenarios were presented randomly to prevent any order effects. The purpose of using two different scenarios was to determine whether offers to assist with fundamental physical skills like ADLs are associated with different reactions from older adults than offers to help with more complex IADL tasks. However, no scenario-based differences had been hypothesized. Finally, a number of demographic and health status details pertaining to the older adults (i.e. age, ethnicity, education level, number of sons and daughters, and medical conditions) were recorded.

Following completion of the questionnaire, the investigator described the TUG test to participants (see Appendix E for details on the TUG Test Procedures), informing them that their performance would be timed using a stopwatch. Older adults were then tested one single time. Most participants required approximately one hour to complete the questionnaire and perform the TUG test. Upon study completion, older adults were provided a feedback letter and thanked for their participation.

### Data Preparation and Analytic Strategies

#### *Composite and Modified Measures for Analysis*

In the interest of parsimony, a number of the original study variables were combined to form composite measures for data analysis. Other variables also required some degree of modification prior to analysis. The following section lists and describes all the composite and modified measures that were employed in this research.

*Total physical activity.* The reported weekly frequencies of mild, moderate and strenuous physical activity bouts (at least 30 minutes in duration) were summed, generating an estimate of the total number of physical activity bouts over the course of a typical week during the past month.

*Total positive and negative affect.* Individual affect items were collapsed into one of two composite measures, depending upon their valence. Thus, the four scales on which participants rated how “happy”, “pleased”, “competent” and “proud” they might feel in response to the unsolicited offer of help were summed to yield a total positive affect measure (range of possible scores: 4 to 36). The seven others that measured how “inadequate”, “depressed”, “guilty”, “upset”, “disappointed”, “dependent” and “offended” older adults might feel were also summed to create a total negative affect measure (range of possible scores: 7 to 63). The internal consistencies for total positive affect was  $\alpha = 0.609$  for the rising scenario and  $\alpha = 0.575$  for the shopping scenario. For total negative affect, internal consistencies were  $\alpha = 0.700$  for the rising scenario and  $\alpha = 0.825$  for the shopping scenario.

*Overall self-efficacy.* A composite measure of overall self-efficacy for each scenario was developed by means of reliability analysis. Where possible, Cronbach’s alpha ( $\alpha$ ) statistic was maximized by the omission of component self-efficacy variables that detracted from optimal internal consistency (see Appendix F for a description of the Development of Overall Self-Efficacy Measure). As a result, rising self-efficacy (i.e. the overall self-efficacy for the rising scenario) was defined as the sum of the self-efficacies for: 1) rising using only the legs, 2) rising using the legs and the assistance of one arm, and 3) rising using the legs and the assistance of both arms (range of possible scores: 0 to

300,  $\alpha = 0.780$ ). Similarly, shopping self-efficacy (i.e. the overall self-efficacy for the shopping scenario) was defined as the sum of the self-efficacies for: 1) walking around a large supermarket at one's own pace, 2) lifting goods from supermarket shelves into a shopping cart, 3) lifting goods from a shopping cart onto a checkout counter, and 4) lifting goods from a shopping cart into a car trunk (range of possible scores: 0 to 400,  $\alpha = 0.849$ ).

*Efficacy discrepancy.* To gauge relative divergence between the overall self-efficacy and RISE beliefs of older adults, the two measures were subtracted (i.e. SE – RISE) to yield a new combined measure, “efficacy discrepancy” (ED). Given that the two overall self-efficacy measures had different ranges of values, ED comparisons between the two scenarios would not be meaningful. No attempt was made to alter these measures to generate a scale that could readily be interpreted (e.g. transforming it into a percentage scale) since this measure was only used for further analysis. As a result, the range of possible values for rising ED (i.e. ED in the rising scenario) would be -100 to 300 and for shopping ED (i.e. ED in the shopping scenario) would be -100 to 400.

*Attribution type.* Given the relatively small size of the sample, the causal attributions that had been obtained using an open-ended format were grouped prior to analysis. Explanations for why sons or daughters may offer unsolicited help were categorized as either being physical or social in origin, after agreement about categories between two separate investigators. For example, if the offer was attributed to a daughter's desire to show that she cared for the older adult, the attribution was deemed to be social. However, if the older adult believed that such an offer would only be extended if a son perceived her to need some assistance, the attribution was considered to be a

physical one. (See Appendix G for more examples of Physical and Social Causal Attributions that were provided by participants.)

*Perceived benefits.* Perceived benefits were grouped according to whether they were associated with the acceptance or declining of offered help. It was therefore possible to make a frequency tally of each type of perceived benefit selected by individual participants. Since the perceived benefits of one behaviour (e.g. accepting the offered help) should be considered by older adults in concert with the perceived benefits of the contrasting behaviour (e.g. declining the help), a measure that combined the benefits of both behavioural options had to be formed. Thus, further data analysis was conducted using a measure of the difference between the numbers of benefits associated with accepting and with declining the unsolicited help.

*Desire for physical competence.* DPC was originally conceptualized to “[reflect] older adults’ motivation to possess the ability to perform tasks that require different elements and levels of physical functioning” (Rejeski et al., 2006). In addition to employing the full scale, the current study makes use of Rejeski and colleagues’ (2006) distinction between basic and advanced categories of physical demand to further differentiate between older adults with greater and lesser desires for physical competence. Sub-scores for basic and advanced physical tasks were calculated using the original scoring system (i.e. where “no desire whatsoever” = 0, “low desire” = 1, “moderate desire” = 2, “strong desire” = 3, very “strong desire” = 4; Rejeski et al., 2006). Total DPC (possible range of values: 0 to 64), DPC for basic tasks (range: 0 to 32; internal consistency,  $\alpha = 0.94$ : White, 2003), DPC for advanced tasks (range 0 to 32; internal consistency,  $\alpha = 0.92$ : White, 2003) and difference in DPC between basic and advanced

tasks (i.e. basic DPC – advanced DPC; range: 0 to 32) were aggregate scores then used in the data analysis stage.

### *Data Management*

Before any analysis could be undertaken, it was necessary to ensure that missing, outlying and skewed data were treated. The following describes data management procedures that were used to prepare such data for analysis.

*Missing data.* The relatively small sample size necessitated an attempt to maximize statistical power via data substitution for missing values. Only two older adults failed to provide responses for all of the main study variables. In both cases, the participants declined to complete the CDSII subscales associated with their attributions for why help would be offered in the presented scenarios. Given the exploratory character of this research, a conservative approach to data substitution was deemed most appropriate. Consequently, each missing CDSII item was replaced by its mean for the entire sample (Tabachnick & Fidell, 2001). This method was independently applied for the rising and shopping scenarios.

*Outlying data.* Outliers are defined as data points that are located beyond 1.5 times the value of the interquartile range from the upper and lower quartiles. They were treated according to a process suggested by Tabachnick & Fidell (2001) whereby they were shifted to a new location that was only one raw score unit past the next most extreme score. For example, in the case of total negative affect in response to help with rising, there was a single outlier. Since the next most extreme score was 33 (out of a possible 63) and the scale consisted of one unit increments, this individual's score was shifted from 39 to 34. This conservative approach permitted the retention of data in a

manner that maintained the ordinal relationships between individual points. In cases where this procedure would not result in any changes (i.e. the outlier was already a single raw score unit from the next most extreme score), no adjustments were made.

*Skewed data.* Data analysis was preceded by the evaluation of all major study variables for skewness. An unacceptable (i.e. non-normal) skewness value for a variable would be one in excess of twice its standard error (Tabachnick & Fidell, 2001). Where the data remained skewed after outliers had been modified (as described above), this treatment involved, at the very least, logarithmic (i.e. ln) transformation. In cases where the data were negatively skewed, since logarithmic transformation invariably increases skew, it was necessary to first reverse-scale that data (e.g. direct re-mapping of {0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100} → {100, 90, 80, 70, 60, 50, 40, 30, 20, 10, 0}). Where the reverse-scaled data included null values, which cannot be operated on by the logarithmic function, the entire scale was then shifted by the addition of the same, sufficiently large number to each observation (i.e. if the lowest value was -40 and the original scale employed increments of 10 units, observations were uniformly increased by 50 units to eliminate those equalling to 0). In all but two cases (i.e. total negative affect in the shopping scenario and the difference between overall self-efficacy and relation-inferred self-efficacy in the rising scenario), this process was capable of reducing skew to acceptable values (i.e. a skewness value within twice its standard error). For the two highly skewed variables, skew was significantly reduced such that it was just beyond twice its standard error (i.e. for total negative affect in the shopping scenario, skew = 2.06 times its standard error; for efficacy discrepancy in the rising scenario, skew = 2.13 times its standard error). Consequently, rather than applying logarithmic transformations,

inverse transformations were adopted in these cases. This procedure succeeded in controlling the skews of both total negative affect (skew = 0.314, standard error, std error = 0.330) and efficacy discrepancy (skew = 0.350, std error = 0.330).

Note that, where necessary (unless otherwise mentioned), the relationships reported below employed transformed data for analysis. In some cases (e.g. total positive affect), these transformed variables were reverse-scaled, and thus the sign of a correlation should be ignored unless otherwise stated. Statements summarizing the relationships are also provided. Where basic statistics (e.g. means, frequencies, distributions) are given, raw (unmodified) data have been used for ease of interpretation. (See Appendix H for a list of all Reverse-Scaled Variables.)

#### *Analytic Strategies*

For the purposes of this study, an overall analytic strategy was involved in the exploration of how older adults may respond to offers of unsolicited help with physical tasks. Where relationships between study variables were anticipated (e.g. between self-efficacy and behavioural intentions), two-tailed bivariate correlations were conducted. Two-tailed procedures were considered to be more appropriate for this exploratory study. For between-subjects comparisons (e.g. contrasting individuals who attributed the offer of help to physical versus social reasons), a Student's procedure was employed since no significant Levene's test for homogeneity of variances was observed for any of the analyses. Finally, analysis of variance (ANOVA) procedures were planned for comparisons between more than two groups of participants (i.e. with different preferences for independence).



## Results

### *Demographics*

The study participants were 52 independent, community-dwelling older adults from Kitchener-Waterloo, Toronto, and Saskatoon, with a mean age of 78.4 years. About half of the older adults lived on their own and the remainder lived with a spouse. The majority of participants were female, Caucasian, did not live in residences for seniors, were drivers, did their own grocery shopping, walked on a regular basis (i.e. at least weekly) for a minimum of 10 minutes continuously either in the community or in their own residences. These individuals generally used no mobility assistive devices and did not experience arthritis that inhibited their daily mobility.

Many older adults reported having some form of cardiovascular problems (the majority of these participants had hypertension), with 10 having experienced a heart attack (six of them within the past five years). Table 1 provides a summary of these and additional descriptive data. Table 2 presents summary data for key study measures.

Table 1. Characteristics of Study Participants

Variable	Mean $\pm$ SD or n (%)	Median	Range
Age, years	78.4 $\pm$ 6.0	78	70 – 91
Sex (% female)	38 (73.1%)		
Race (% Caucasian)	48 (92.3%)		
Live alone	25 (48.1%)		
Live in seniors' residence	11 (21.2%)		

Table 1 (continued). Characteristics of Study Participants

Variable	Mean $\pm$ SD or n (%)	Median	Range
Drive	37 (71.2%)		
Do grocery shopping	49 (94.2%)		
Weekly frequency of leaving home	3.5 $\pm$ 0.7	4	1 – 4
Walk regularly for $\geq$ 10 minutes continuously			
Walk frequency	45 (86.5%) 4.8 $\pm$ 2.9	5	0 – 14
Use mobility device(s)	6 (11.5%)		
Arthritis inhibiting daily	4 (7.7%)		
Mobility			
Cardiovascular problems	35 (67.3%)		
Hypertension	28 (53.8%)		
Congestive Heart Failure	10 (19.2%)		
Diabetes	6 (11.5%)		
Hip fracture	4 (7.7%)		
Osteoporosis	11 (21.2%)		
Lung condition [emphysema/COPD/asthma]	6 (11.5%)		
Number of daughters	1.8 $\pm$ 1.2	2	0 – 6
sons	1.4 $\pm$ 1.1	1	0 – 5

Table 1 (continued). Characteristics of Study Participants

Variable	Mean $\pm$ SD or n (%)	Median	Range
Level of education			
Grade school	9 (17.3%)		
Some high school	6 (11.5%)		
High school	16 (30.8%)		
College/university	18 (34.6%)		
Graduate studies	1 (1.9%)		
Self-rated overall mobility [on a 1 – 10 scale]	8.7 $\pm$ 1.4	9	5 – 10
Timed up and go [TUG] test, seconds	12.2 $\pm$ 4.7	10.44	6.63 – 27.48
TMMSE [out of 26]	24.4 $\pm$ 1.5	25	21 – 26
Location			
Kitchener-Waterloo	29 (55.8%)		
Toronto	13 (25%)		
Saskatoon	10 (19.2%)		

Table 2. Data Summary for Key Study Measures

Variable	Mean $\pm$ SD	Median	Range
<b>Level of Physical Activity</b>			
Total	8.0 $\pm$ 4.9	8.0	0 – 18
Mild	5.3 $\pm$ 3.4	5.0	0 – 14
Moderate	2.5 $\pm$ 2.3	3.0	0 – 7
Strenuous	0.2 $\pm$ 1.0	0	0 – 6
<b>Affect</b>			
In response to rising help			
Positive	26.8 $\pm$ 6.3	27.5	12 – 36
Negative	13.7 $\pm$ 7.2	11.0	7 – 34
In response to shopping help			
Positive	29.4 $\pm$ 4.9	30.8	17 – 36
Negative	10.9 $\pm$ 4.8	8.5	7 – 24
<b>Behavioural Intentions</b>			
To accept rising help	5.5 $\pm$ 2.5	5.0	1 – 9
To decline rising help	4.6 $\pm$ 2.6	5.0	1 – 9
To accept shopping help	5.8 $\pm$ 2.7	5.0	1 – 9
To decline shopping help	4.1 $\pm$ 2.7	5.0	1 – 9
To accompany a daughter shopping	7.1 $\pm$ 2.4	5.0	1 – 9
<b>Actual Experience</b>			
Of rising help	1.8 $\pm$ 1.0	2.0	‘never’ to
Of shopping help	2.2 $\pm$ 1.2	2.0	‘very often’

Table 2 (continued). Data Summary for Key Study Measures

Variable	Mean $\pm$ SD	Median	Range
Self-Efficacy			
For rising	255 $\pm$ 47	270	140 – 300
For shopping	366 $\pm$ 45	390	240 – 400
RISE			
For rising	78 $\pm$ 22	80	20 – 100
For shopping	81 $\pm$ 23	90	20 – 100
Number of Perceived Benefits			
Of accepting rising help	2.8 $\pm$ 1.3	3.0	0 – 5
Of declining rising help	2.8 $\pm$ 1.5	3.0	0 – 6
Of accepting shopping help	2.8 $\pm$ 1.4	2.5	0 – 6
Of declining shopping help	3.8 $\pm$ 2.1	4.0	0 – 7
DPC			
Total	41.8 $\pm$ 11.3	42.5	18 – 64
For basic tasks	26.0 $\pm$ 3.7	26.0	17 – 32
For advanced tasks	15.9 $\pm$ 8.3	16.0	0 – 32
Difference (between basic and advanced tasks)	10.0 $\pm$ 6.1	10.0	0 – 26

\* Where they differed from observed ranges, the overall possible ranges of study variables were: 4 to 36 for positive affect, 7 to 63 for negative affect, 0 to 300 for rising SE, 0 to 400 for shopping SE, 0 to 100 for RISE, 0 to 64 for total DPC, and 0 to 32 for DPC for basic and advanced tasks.

### *Main Hypotheses*

Six hypotheses, derived using a Social Cognitive Theory framework, were proposed for this research project. These hypotheses represented the initial focus of the present study and the results pertaining to the first three (i.e. the main hypotheses) are described below. For each of the hypothesis-driven analyses, there were no missing data for any of the 52 study participants. Table 3 provides a summary of all relevant data analyses pertaining to the main hypotheses.

*Self-efficacy and intentions.* Older adults with higher self-efficacy for community mobility were hypothesized to be more likely to decline and less likely to accept offers of help with the physical tasks presented to them. However, in neither scenario was overall self-efficacy related to intentions to accept or to decline help ( $-0.202 \leq r \leq 0.196$ , all NS).

*Preference for independence and intentions.* Older adults were also expected to be more inclined to turn down uninvited assistance where they had stronger preferences for physical independence. Given the uniform responses of participants to the question of preference for physical independence, this hypothesis could not be tested. Only one participant indicated that she would prefer help with most tasks. Of the remaining 51 study participants, 40 preferred help with only the most difficult tasks and 11 stated that, ideally, they would prefer no help. There was no evidence to suggest that independence preference was related to intentions.

*Perceived benefits and intentions.* It was also hypothesized that older adults who perceived a greater number of benefits associated with performing a task independently relative to those associated with performing it with a caregiver's assistance, would be:  
a) more likely to intend to refuse help and b) less likely to accept help. To test this

hypothesis, tallies were made of the numbers of perceived benefits of each type (i.e. accepting and declining help) that had been indicated by participants (including self-generated ones). Then, the difference between these counts was used in subsequent correlation analyses with behavioural intentions. For both scenarios, the more benefits older adults perceived to be associated with performing a task on their own (versus with accepting help), the more likely they were to refuse (rising:  $r = 0.386$ ,  $p = 0.005$ ; shopping:  $r = 0.428$ ,  $p = 0.002$ ) and the less likely they were to accept help with the task (rising:  $r = -0.395$ ,  $p = 0.004$ ; shopping:  $r = -0.451$ ,  $p = 0.001$ ).

Table 3. Summary of Results for the Three Main Hypotheses

Hypothesis	Analyses	Results	
		Rising Scenario	Shopping Scenario
1	Correlation: overall SE with intentions to decline help	$r = 0.157$ , N.S.	$r = -0.202$ , N.S.
	Correlation: overall SE with intentions to accept help	$r = -0.027$ , N.S.	$r = 0.196$ , N.S.
2	ANOVA: intentions to decline/accept help Groups: independence preference	Could not test	Could not test
3	Correlation: (PBs of declining – PBs of accepting) with intentions to decline help	$r = 0.386$ , $p = 0.005$	$r = 0.428$ , $p = 0.002$
	Correlation: (PBs of declining – PBs of accepting) with intentions to accept help	$r = -0.395$ , $p = 0.004$	$r = -0.451$ , $p = 0.001$

### *Secondary Hypotheses*

The results pertaining to Hypotheses 4 through 6 are presented below as secondary hypothesis analyses. Table 4 provides a summary of all results pertaining to the secondary hypotheses.

#### *Relationships between Social Cognitions and Affect*

Correlation analyses were used to examine relationships between various social cognitions and affective responses upon receipt of help with the physical tasks. Self-efficacy, preference for independence, perceived benefits and relation-inferred self-efficacy (RISE) beliefs were all hypothesized to be significantly correlated with older adults' affect as a function of being offered help. Specifically, a) greater self-efficacy, b) stronger independence preference, c) a larger discrepancy between the numbers of perceived benefits associated with declining and accepting help, and d) lower RISE were thought to be related to less total positive affect and more total negative affect. The results for each sub-hypothesis follow.

*Self-efficacy and affect.* This part of the fourth hypothesis was not supported by the data. In neither scenario was total positive affect significantly correlated with overall self-efficacy for rising from a couch and for shopping ( $r = -0.173$ , N.S. and  $r = 0.183$ , N.S., respectively). Total negative affect was also unrelated to rising self-efficacy ( $r = 0.058$ , N.S.). However, in contrast to the relationship hypothesized, increasing shopping self-efficacy was correlated with decreasing total negative affect ( $r = 0.417$ ,  $p = 0.002$ ).

*Independence preference and affect.* The examination of affective differences between participant preference-for-independence groups would have required a one-way ANOVA analysis. Unfortunately, the study sample did not permit this comparison,



because of limited variation in participant preference response (i.e. one participant preferred help with most physical tasks, 40 preferred help with only the most difficult physical tasks and 11 preferred no help).

*Perceived benefits and affect.* There was partial support for this portion of the fourth hypothesis, which initially suggested that less positive affect and more negative affect were related to a greater number of perceived benefits of declining, relative to the number of perceived benefits of accepting help. As for the third hypothesis, to examine this relationship, the number of perceived benefits of accepting help was subtracted from the number of perceived benefits of declining help. For both rising and shopping scenarios, a larger PB difference was related to less total positive affect ( $r = 0.314$ ,  $p = 0.023$  and  $r = 0.334$ ,  $p = 0.015$ , respectively). In contrast, total negative affect was not significantly related to the size of the discrepancy in either the rising or shopping scenario ( $r = 0.119$ , N.S. and  $r = 0.050$ , N.S., respectively).

*Relation-inferred self-efficacy and affect.* Neither scenario provided support for the final section of the fourth hypothesis, which stated that lower relation-inferred self-efficacy would be associated with less positive affect and more negative affect ( $0.111 \leq r \leq 0.227$ , N.S.).

#### *Self-Efficacy and Relation-Inferred Self-Efficacy*

Where older adults reported higher overall self-efficacy, they were also expected to provide correspondingly higher relation-inferred self-efficacy ratings (i.e., expected the son or daughter to be perceived as also being confident in the older adults' skills and abilities). This fifth hypothesis was fully supported. For the rising scenario, overall self-efficacy for rising from a sofa and relation-inferred self-efficacy were correlated ( $r =$

0.342,  $p = 0.013$ ). In the shopping scenario, the overall shopping self-efficacy and RISE similarly demonstrated a significant correlation ( $r = 0.373$ ,  $p = 0.006$ ).

#### *Causal Attribution Type and Efficacy*

The final hypothesis stated that older adults who make either task or social causal attributions about why others offer them help would differ with respect to their self-efficacy and RISE beliefs (i.e. relative to the functional domain in which help is extended). Specifically, those who made physical attributions (i.e. versus social ones) were expected to report lower self-efficacy and RISE ratings.

To test this final hypothesis, a Hotelling's procedure was used to test the effect of attribution type (physical versus social) on overall SE and RISE in each scenario. In both scenarios, attribution type was shown to have a significant effect on the combination of overall SE and RISE:  $T = 0.295$ ,  $F(2, 49) = 7.216$ ,  $p = 0.002$  for the rising scenario and  $T = 0.261$ ,  $F(2, 49) = 6.404$ ,  $p = 0.003$  for the shopping scenario.

*Self-efficacy and causal attribution type.* Subsequent independent t-test analyses confirmed that shopping self-efficacy significantly differed between attribution groups ( $t(50) = 3.036$ ,  $p = 0.004$ ), but overall self-efficacy for rising from a couch did not ( $t(50) = 1.131$ , N.S.). Older adults who made physical attributions had significantly lower overall shopping self-efficacy than those who made social attributions.

*Relation-inferred self-efficacy and causal attribution type.* In both scenarios, older adults who made physical attributions ( $n = 22$  in both scenarios) provided lower RISE ratings than those who attributed the offer of help to social reasons ( $n = 30$ ):  $t(50) = 3.837$ ,  $p < 0.001$  for the rising scenario and  $t(50) = 2.710$ ,  $p = 0.009$  for the shopping scenario.

Table 4. Summary of Results for the Secondary Hypotheses

Hypothesis	Analyses	Results	
		Rising Scenario	Shopping Scenario
4a	Correlation: overall SE with total positive affect	r = -0.173, N.S.	r = 0.183, N.S.
	Correlation: overall SE with total negative affect	r = 0.058, N.S.	r = 0.417*, p = 0.002
4b	T-test: total positive/negative affect Groups: independence preference	Could not test	Could not test
4c	Correlation: (declining PBs – accepting PBs) with total positive affect	r = 0.314, p = 0.023	r = 0.334, p = 0.015
	Correlation: (declining PBs – accepting PBs) with total negative affect	r = 0.119, N.S.	r = 0.050, N.S.
4d	Correlation: RISE with total positive affect	r = 0.190, N.S.	r = 0.111, N.S.
	Correlation: RISE with total negative affect	r = 0.227, N.S.	r = 0.224, N.S.
5	Correlation: SE with RISE	r = 0.342, p = 0.013	r = 0.373, p = 0.006

Hypothesis	Analyses	Results	
		Rising Scenario	Shopping Scenario
6a	T-test: SE Groups: causal attribution type	t(50) = 1.131, N.S.	t(50) = 3.036, p = 0.004
6b	T-test: RISE Groups: causal attribution type	t(50) = 3.837, p < 0.001	t(50) = 2.710, p = 0.009

\*This result was significant, but its direction contradicted the hypothesized relationship.

#### *Summary of Results Pertaining to Hypothesis Testing*

As is evident from Table 5 directly below, there was limited support for study hypotheses in this particular sample. The third and fifth hypotheses constituted the only two relationships that were fully supported. Two of the hypothesized relationships could not be tested, given the limited range of participants' independence preferences.

In light of these preliminary results, and considering the exploratory nature of the present research, supplementary analyses were deemed to be necessary to offer possible explanations for non-significant findings. Moreover, the above results stimulated further questions that were not addressed by the original hypotheses. Collectively, these issues were sufficiently compelling to justify continued examination of the existing data set and the resultant analyses are presented below.

Table 5. Overview of Hypothesis Tests

Hypothesis	Hypothesis Description	Result	
		Rising Scenario	Shopping Scenario
1	↑SE associated with ↑intentions to decline, ↑SE associated with ↓intentions to accept	Not supported	Not supported
2	↑independence preference associated with ↑intentions to decline, ↓to accept	Could not test	Could not test
3	↑PB (declining-accepting) associated with ↑intentions to decline ↓to accept	Supported	Supported
4a	↑SE associated with ↓positive affect, ↑negative affect	Not supported	Not supported
4b	↑independence preference associated with ↓positive affect, ↑negative affect	Could not test	Could not test
4c	↑PB (declining-accepting) associated with ↓positive affect, ↑negative affect	Partially supported	Partially supported
4d	↓RISE associated with ↓positive affect, ↑negative affect	Not supported	Not supported
5	↑SE associated with ↑RISE	Supported	Supported
6a	Physical versus social attributions associated with ↓SE	Not supported	Supported
6b	Physical versus social attributions associated with ↓RISE	Supported	Supported

### *Alternative Explanations for Relationships and Differences between Study Variables*

Alternative explanations for unsupported study outcomes included: a) the different nature of assistance provided to older adults in the two scenarios, as perceived by participants; b) the high-functioning nature of the study sample, irrespective of age; c) the low levels of total negative affect among these older adults; and d) the importance of social considerations to older adults' decision-making with regard to unsolicited help. The following post hoc analyses were conducted to examine the possible influence of such factors in regard to primary study outcomes associated with the six study hypotheses. Further elaboration of the significance of these secondary study results is found in the following Discussion section.

Recall that, due to the reverse-scaling of some transformed variables, the signs of correlations may be misleading and should be ignored.

### *Differing Natures of the Stimulus Scenarios*

Although the two separate scenarios were designed to examine distinct types of everyday physical tasks (i.e. ADLs and IADLs), the hypotheses did not differentiate between them. However, there were instances where findings differed by scenario (i.e. those who made physical attributions for unsolicited help had lower self-efficacy only in the shopping scenario). In sum, there were specific ways in which these older adults may have considered these scenarios to be different.

*Actual experience of scenario-like situations.* In terms of the actual experiences of the participants, only nine individuals (~17.3%) rated their past experiences of unsolicited help with rising from a seat as occurring at least "sometimes" (i.e. at least a three on the five-point scale). For the shopping scenario, sixteen participants (~30.8%)

reported that they had experienced unsolicited help “sometimes”, “fairly often” or “very often”. A Wilcoxon signed-rank test confirmed a significant difference between the ratings in the two scenarios ( $z = -2.106$ ,  $p = 0.035$ , two-tailed). This difference was also captured by a one-sample t-test of the (logarithmically transformed) discrepancy between the actual experiences of the two scenarios ( $t(51) = 23.480$ ,  $p < 0.001$ ). Consequently, although neither of the scenarios was reported to have been very commonly experienced, older adults apparently had more experience with the help described in the shopping scenario.

*Affect.* Total positive affect and total negative affect also differed from one scenario to the other. Mean total positive affect was  $\sim 26.8$  in the rising and  $\sim 29.4$  in the shopping scenario (full range: 4 to 36; actual ranges: 12 to 36 and 17 to 36 for rising and shopping scenarios, respectively). For total negative affect, the means for the rising and shopping scenarios were  $\sim 13.7$  and  $\sim 10.9$  (full range: 7 to 54; actual range: 7 to 34 and 7 to 24 for rising and shopping scenarios, respectively). Comparing each affect measure over the two scenarios, using one-sample t-tests of the differences, yielded significantly higher positive ( $t(51) = 2.983$ ,  $p = 0.004$ ) and lower negative affect in the shopping scenario ( $t(51) = -3.013$ ,  $p = 0.004$ ). Apparently, older adults expect to feel both more positive and less negative affect if they were to be offered help with shopping than with rising from a sofa.

*Physical function and behavioural intentions.* Older adults also exhibited other scenario-based differences that were informative. This is true where physical function and behavioural intentions were concerned. Physical function included the participants’ objective physical abilities in the form of their timed “up and go” (TUG) times as well as

the extent to which they desired competence with respect to various simple and complex physical tasks, as reflected by their DPC scores (i.e. desire for physical competence). The results suggest potential reasons why scenarios were perceived differently by older adults than hypothesized.

Regarding TUG times and behavioural intentions in the rising scenario, bivariate correlations between TUG and participant intentions indicated that this objective measure of physical ability was not related to intentions (both to accept and to decline help). However, in the shopping scenario, increasing TUG time was correlated with increasing intentions to accept help with ( $r = 0.295, p = 0.034$ ) and decreasing intentions to accompany a daughter shopping ( $r = -0.293, p = 0.035$ ). However, TUG times were not significantly correlated with intentions to decline help ( $r = -0.184, N.S.$ ). Therefore, despite being more likely to allow someone to do their grocery shopping for them, those who are less functionally mobile are not particularly inclined to accept help with the ADL task of rising from a seat. This is of note since the ADL does require some physical elements similar to those assessed by the TUG.

Regarding desire for physical competence (DPC) and behavioural intentions, participants may have been differentially motivated to accept or decline help on the basis of their desire to have competence in a given task. For example, a person who has a strong desire to be able to perform all IADLs might not want to accept help with an IADL task, in spite of any social considerations that may be involved. Inasmuch as it measures how much older adults desire the physical ability to perform a variety of tasks, DPC may also be able to help explain participant intentions. One might expect the DPC subscales for basic and advanced tasks to relate directly to intentions to accept and



decline help with ADL and IADL tasks. In the rising scenario, this was not found. None of the DPC scales (i.e. total DPC, DPC for basic tasks, DPC for advanced tasks, and the difference between DPC for basic and advanced tasks) were correlated with intentions ( $-0.161 \leq r \leq 0.050$ , NS). In contrast, nearly all of the DPC scales were significantly related to participant intentions (both to accept and to decline help) with respect to shopping. Total DPC was negatively correlated with intentions to accept help ( $r = -0.347$ ,  $p = 0.012$ ) and positively correlated with intentions to decline help with shopping ( $r = 0.326$ ,  $p = 0.018$ ). DPC for basic tasks was also negatively correlated with intentions to accept help ( $r = -0.298$ ,  $p = 0.032$ ). Consistent with these results, DPC for advanced tasks was negatively correlated with intentions to accept help ( $r = -0.341$ ,  $p = 0.013$ ) and positively correlated with intentions to decline help with shopping ( $r = 0.328$ ,  $p = 0.017$ ). Finally, the difference between DPC for basic and advanced tasks was directly related to intentions to accept help ( $r = 0.281$ ,  $p = 0.043$ ) and inversely related to intentions to decline help ( $r = -0.285$ ,  $p = 0.041$ ). Each of these results reinforces the same relationship between DPC and intentions: the stronger older adults' DPC is, the less likely they will want to accept (and conversely, the more likely they will want to decline) help with shopping. The only exception to the pattern of significant correlations was the correlation between the DPC for basic tasks and intentions to decline help ( $r = 0.263$ ,  $p = 0.059$ , N.S.). Thus, whereas DPC had no bearing on older adults' intentions to accept or decline help with rising, it clearly was related to their intentions where the IADL of shopping was concerned.

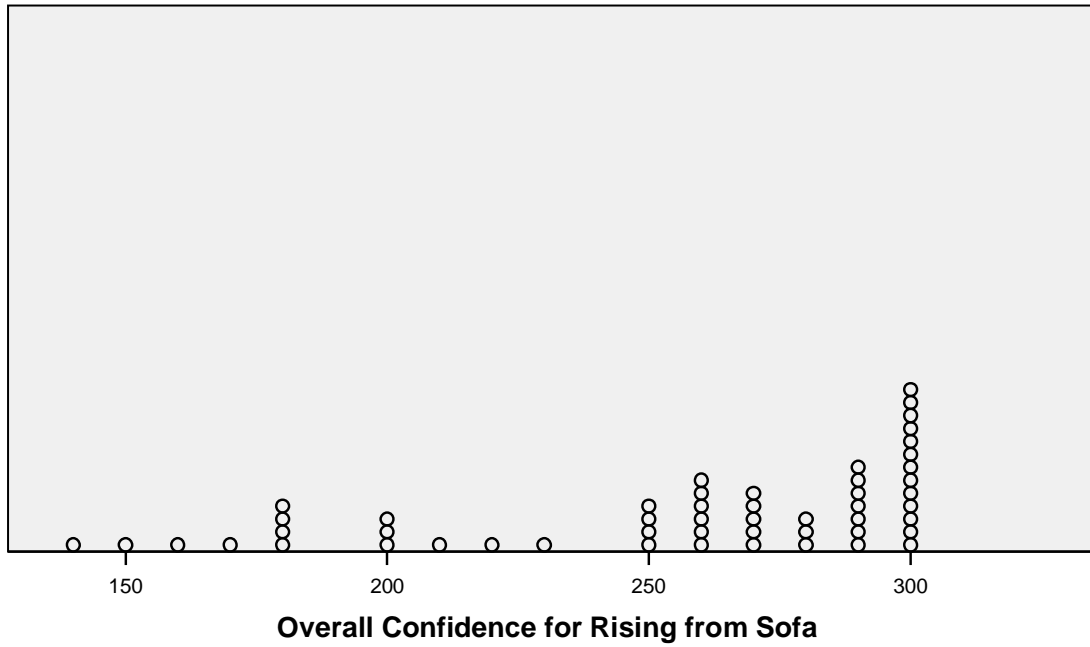
DPC was only related to total positive affect for the rising scenario. Total DPC, DPC for basic tasks and DPC for advanced tasks were all negatively associated with

total positive affect ( $r = 0.351, p = 0.011$ ;  $r = 0.338, p = 0.014$ ; and  $r = 0.328, p = 0.018$ , respectively).

### *The High-Functioning Nature of the Study Sample*

In spite of the advanced age of this sample ( $78.4 \pm 6.0$  years), a relatively small percentage of participants reported serious medical conditions such as diabetes and mobility-inhibiting arthritis (which were reported by six and four participants, respectively). The mean TUG time for the sample (i.e.  $12.2 \pm 4.7$ s) was in line with Bischoff and colleagues' (2003) suggested cut-off time of 12 seconds or less for older, community-dwelling women (as compared to older institutionalized women with poor functional mobility), obtained using a significantly younger sample (i.e.  $73.2 \pm 3.2$  years) and taking the best-of-three TUG trials. This was clearly a testament to the high-functioning nature of these older adults. In addition to these more objective measures, the ceiling effects apparent in the distributions of rising and shopping self-efficacy (see Figures 2 and 3 below) provide a strong argument for a high overall level of physical function among the study participants. Converting overall self-efficacy into a percentage scale for ease of interpretation, averages for the rising and shopping scenarios,  $85.1 \pm 15.8\%$  and  $91.5 \pm 11.2\%$ , respectively, were very high.

**Figure 2. Distribution of Overall SE for Rising**



**Figure 3. Distribution of Overall SE for Shopping**



Furthermore, the screening process, which was designed to provide the study with only independent older adults (only 11 lived in senior residences, with an exclusion being nursing home residence) who were relatively healthy, had the added effect of selecting for high-functioning older adults. Study exclusions resulted in no participants who complained of frequent angina, used oxygen regularly (apart from one participant who only employed it for the treatment of sleep apnoea), and who were on medications that made them feel ill or dizzy.

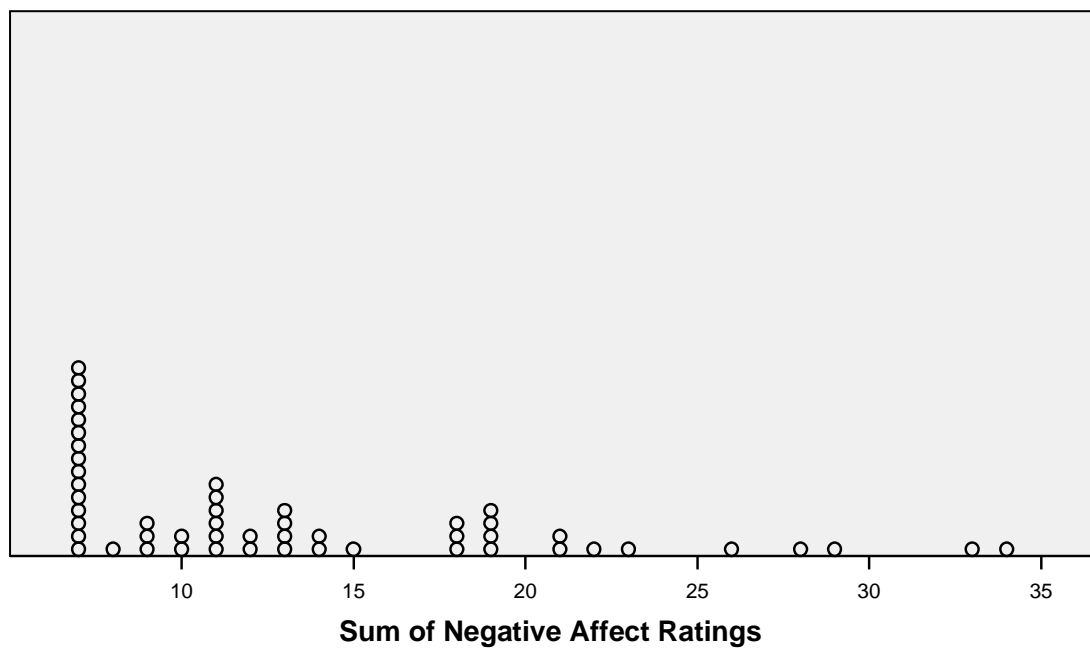
During the screening phase, potential participants were also asked to provide some background health information which was not the subject of any of the study hypotheses. An examination of some of these preliminary data paints a clear picture of the high level of physical functioning of this sample. When asked to describe the average frequency of their leaving home as being: a) once a week b) twice a week c) three or more times a week or d) daily, only three participants reported leaving home once or twice and week, and 33 (63.5%) indicated that they left home daily. Forty-five participants (86.5%) reported walking at least ten minutes regularly, with the average frequency for the entire sample being approximately 4.8 times weekly. The older adults generally felt that they had high overall mobility; the mean of their ratings was ~8.7 on a 10-point (1 to 10) scale.

#### *The Level of Total Negative Affect among Active Older Adults*

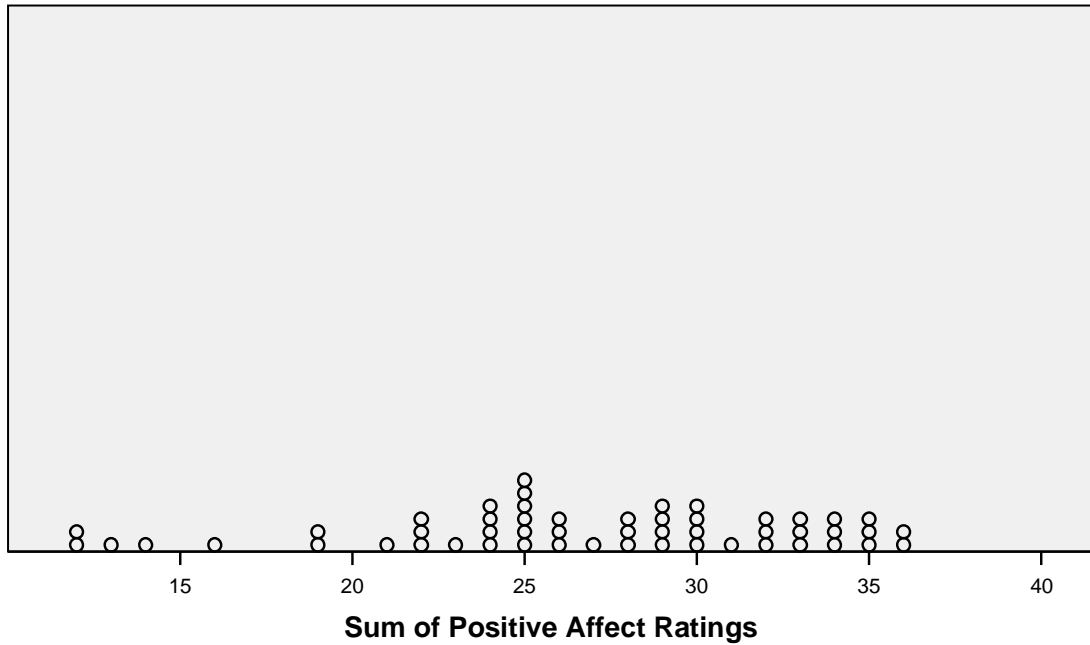
*Descriptive statistics.* Even after outlier modification, total positive affect and total negative affect were highly skewed in the rising (skew = -0.670 and 1.179 for standard error, std error = 0.330, respectively) and shopping scenarios (skew = -0.768 and 1.220 for std error = 0.330, respectively). However, total negative affect in both

scenarios exhibited considerably more skew. The means of total negative affect (~13.7 in the rising and ~10.9 in the shopping scenario) fell very low in the range of possible values (i.e. 7 to 54). For the most part, older adults did not anticipate feeling negatively about offered help. Such a truncated distribution, especially in the case of negative affect in the shopping scenario, may explain the non-support of some of the primary hypotheses (see Figures 4 to 7 below for graphs of these distributions). Even after logarithmic transformation, total negative affect in the shopping scenario had remained skewed (i.e. skew = 0.679, std error = 0.330). And only inverse transformation succeeded at reducing skew to acceptable levels (skew = 0.314, std error = 0.330).

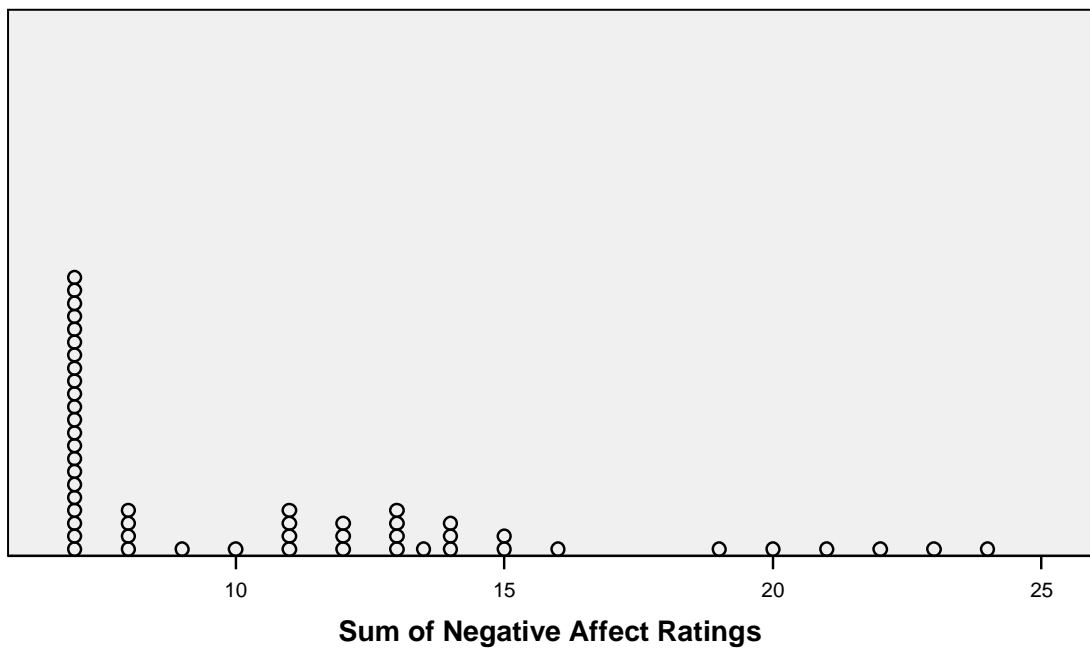
**Figure 4. Distribution of Total Negative Affect (Rising Scenario)**



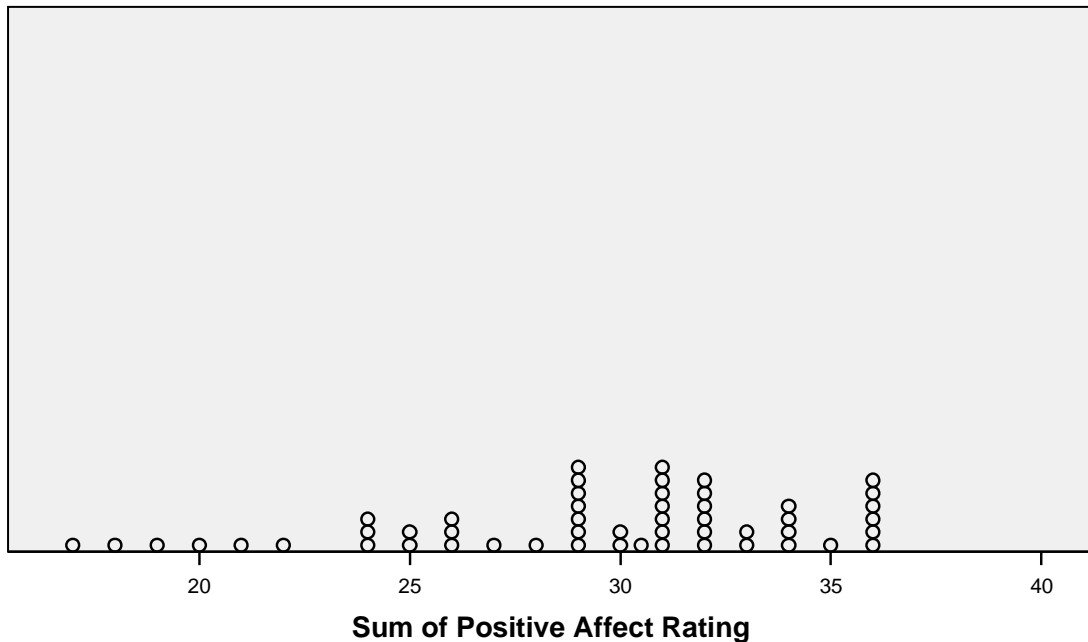
**Figure 5. Distribution of Total Positive Affect (Rising Scenario)**



**Figure 6. Distribution of Total Negative Affect (Shopping Scenario)**



**Figure 7. Distribution of Total Positive Affect (Shopping Scenario)**



Additional analyses were conducted to assess the effects of the truncation of the affect distributions. The following results were consistent with the observed distributions of total positive and negative affect in the study scenarios. Note that since the variable representing total positive affect was reverse-scaled (see Data Management above for description of skew correction procedures), the actual correlations may appear to be in an unexpected direction. Therefore, the signs of the correlations should be disregarded and the reader may rely on the provided statements summarizing the relationships observed.

*Intentions and affect.* Intentions to accept and to decline help in the rising scenario were significantly correlated with total positive affect ( $r = -0.438$ ,  $p = 0.001$  and  $r = 0.328$ ,  $p = 0.018$ , respectively) and total negative affect ( $r = -0.316$ ,  $p = 0.022$  and  $r = 0.369$ ,  $p = 0.007$ , respectively). That is, as intentions to accept help increased (or intentions to decline help decreased), total positive affect in response to the offer

increased and total negative affect decreased. Similarly, in the shopping scenario total positive affect increased as intentions to accept help increased ( $r = -0.438$ ,  $p = 0.001$ ) and intent to decline help decreased ( $r = 0.417$ ,  $p = 0.002$ ). In the case of negative affect, even after transformation, there was no significant correlation with either of the intentions variables ( $r = -0.104$  for accepting and  $r = 0.033$  for declining).

*Total physical activity and affect.* Whereas intentions to accept or decline help were measured for each scenario, older adults' total physical activity was not scenario specific. It was found that total physical activity was unrelated to the positive and negative affect associated with the shopping scenario ( $r = 0.074$  and  $r = 0.057$ , N.S., respectively). However, total physical activity was significantly correlated with total positive affect in the rising scenario, ( $r = 0.280$ ,  $p = 0.044$ ). As participants reported more weekly physical activity, they anticipated experiencing less total positive affect about receiving help. Yet, at the same time, they did not expect to experience more total negative affect ( $r = 0.197$ , N.S.).

*Efficacy discrepancy and affect.* Efficacy discrepancy (ED) is the difference between older adults' self-efficacy beliefs and their RISE beliefs. If participants believe that their children have inappropriately low estimations of the older adults' ability to perform a task independently, there may be implications for their affective reactions to offered help. However, this was only found in the case of total positive affect in the rising situation, where an increase in ED was correlated with an decrease in anticipated positive affect ( $r = -0.333$ ,  $p = 0.016$ ). As with total physical activity, the fact that the expected correlation was not found with respect to negative affect is consistent with the low levels of negative affect in this sample.



### *The Influence of Social Considerations*

Comparing one scenario with the other, there was no observed difference in the older adults' intentions to accept offers of help ( $t = -0.762$ , N.S.) or decline offers of help ( $t = 1.058$ , N.S.). The means (rising:  $\sim 5.5 \pm 2.5$  and shopping:  $\sim 5.8 \pm 2.7$ ) were just above the middle of the nine-point scale, which was represented to participants as signifying a slightly greater than 50% chance that they would accept/decline the offer. Consistent with this finding, the means for intentions to decline help were just below the midpoint of the scale (rising:  $\sim 4.6 \pm 2.6$  and shopping:  $\sim 4.1 \pm 2.7$ ) Their intentions to accompany a daughter shopping, however, were generally quite high (mean  $\sim 7.1 \pm 2.4$ ) and considerably higher than their intentions to accept help with the task of shopping ( $t(51) = 2.491$ ,  $p = 0.016$ ). Inasmuch as older adults were far more likely to want to accompany their daughters to shop than to accept help with the task of shopping, social considerations may have influenced the intentions of independent older adults. To investigate this possibility, the perceived benefits associated with both scenarios were examined.

*Socially relevant perceived benefits.* One possible explanation for the lack of correspondence between self-efficacy and intentions in this study is the influence of social considerations on the decision-making process. For example, social motivations of older adults could be linked to the types of benefits gained from being assisted by others. To explore this possibility, each of the perceived benefits (PBs) was considered for either social or personal relevance.

Those that directly benefited the older adults exclusively were considered to be personally relevant. Examples of personally relevant perceived benefits included: "I am

less likely to fall or otherwise injure myself”, “It is much easier for me to rise with assistance” and “It is more convenient to allow my daughter to help me”. Those that were considered to be socially relevant also benefited others, specifically the son or daughter portrayed in the presented scenarios. Examples of socially relevant perceived benefits included: “It is another chance to directly interact with my son”, “It is less troublesome for both of us if I rise on my own”, “It allows my daughter to feel good about being able to help me” and “I would not have to inconvenience my daughter” (see Appendix I for other examples of Personal and Social Perceived Benefits).

As a group, the older adults reported a greater percentage of socially relevant PBs than personally relevant PBs (~70.4% vs. ~55.7% respectively) in the two scenarios. The difference between the numbers of socially and personally relevant PBs also differed significantly:  $t(51) = 5.132, p < 0.001$ . Examining the two scenarios separately, this difference in selection rates between personal and social PBs was ~62.2% personal and ~68.5% social in the chair rising scenario, and ~53.3% personal and 72% social in the shopping scenario. However, only the shopping scenario rates were significantly different ( $t(51) = -5.992, p < 0.001$ ).

Consideration of the specific benefits of accepting and declining help required further subdivision of frequencies to compare the patterns of selection. For example, this permitted the analysis of relative selection rates of social versus personal benefits when accepting help with shopping is considered. The five analyses (i.e. accepting help to rise, declining help to rise, accepting help with shopping, declining help with shopping and accompanying a daughter shopping) revealed a consistent trend. Whether *accepting* help (i.e. in both scenarios) and *accompanying* a daughter shopping, greater percentages of

*socially relevant* PBs were selected (all greater than 80%, as compared with all less than 61% of personal PBs; Wilcoxon tests:  $-5.304 \leq z \leq -3.858$ ,  $p < 0.001$ ).

However, where participants were asked to consider the benefits of *declining* help with rising, greater percentages of personally relevant PBs were selected (~82.69% vs. 60.26%; Wilcoxon  $z = -3.509$ ,  $p < 0.001$ ). There was no such difference in the shopping scenario ( $z = -1.018$ , N.S.).

## Discussion

Given the exploratory nature of this research, the six study hypotheses that were originally proposed served as useful points of departure. The fact that a number of the hypotheses did not garner any or full support from the data is a good indication that there remain both theoretical and practical gaps that require our attention before larger-scale research can justifiably be pursued. Despite the partial support of study hypotheses, the current study does reveal whether certain factors are related to how independent older adults may perceive and respond to offers of unsolicited help. Consequently, this research represents a much-needed initial foray into the early stages of a socially mediated process with potentially serious implications for the maintenance of physical abilities in later life.

### *Overview of Study Hypotheses*

With only two hypotheses drawing full support, the present study initially raised more questions than it answered. This was especially true in cases where the data only partially supported study hypotheses. Such partial support was encountered after testing the fourth and final hypotheses. However, for the greater part, hypothesis testing yielded unambiguous conclusions about older adults' responses to offers of help.

### *Hypothesis One*

For the first study hypothesis, the data unequivocally demonstrated a lack of correspondence between overall self-efficacy and intentions to accept or decline unsolicited help. In neither the rising nor the shopping scenario was overall self-efficacy related to older adults' intentions. On the surface, this appears to contradict an integral part of SCT, which propounds that self-efficacy is a key determinant of intentions and subsequently of behaviour itself. However, this finding may be misleading on account of the sample of highly independent older adults who were targeted for this study. For the purposes of examining behavioural intentions, the range of overall self-efficacy may have been too restricted in this group of older adults. In any event, if intentions are unrelated to self-efficacy where highly independent older adults are concerned, what *does* influence intentions to accept or decline help?

### *Hypotheses Two and Three*

The second and third hypotheses posited additional factors that were possibly relevant to accepting or declining intentions. Rather than being solely reflective of situation-specific self-evaluations of ability, the second hypothesis suggested that intentions may also be associated with a more pervasive preference for independence among the participants. Unfortunately, on account of the distribution of these preferences in the study sample, this hypothesis could not be tested. The third hypothesis proposed that the difference between the numbers of perceived benefits of accepting and of declining help would be related to behavioural intentions. This was indeed confirmed in both the rising and shopping scenarios. That is, as the number of perceived benefits of

declining the help increased in comparison to the number of benefits of accepting, intentions to decline increased and intentions to accept decreased.

Taken together, the results arising from tests of the first and third hypotheses indicated that independent older adults are very pragmatic where unsolicited help is involved. Specifically, whether or not they intended to accept offered assistance was related solely to the balance of perceived benefits that they associate with accepting and with declining the help, and was unaffected by the relatively small differences in self-efficacy between these participants.

#### *Hypothesis Four*

The fourth hypothesis consisted of several parts that all honed in on the affective domain of this problem. The first section of the hypothesis (4a) put forth the conjecture that both total positive and negative affect are related to overall self-efficacy. Without exception, this portion of the fourth hypothesis was unsupported. Thus, older adults' self-efficacy generally provided little indication of how they might respond affectively to unsolicited help. Contrary to the predicted direction, individuals reporting higher self-efficacy for shopping believed that they would experience significantly *less* negative affect as a result of being offered help with the task.

The next part of the fourth hypothesis (4b), which surmised that greater preference for independence would be associated with less total positive and more total negative affective response, could not be tested on account of the distribution of independence preferences in the study sample.

The third part of the hypothesis (4c) related affect to the difference between the numbers of perceived benefits of declining and accepting help. The more perceived

benefits that older adults associated with declining (relative to accepting) the offered help in both scenarios, the less total positive affect they reported. On the other hand, total negative affect was not related to the difference between perceived benefits of declining and of accepting the offer. This inconsistency in the findings where total positive and total negative affect are concerned was unexpected. After all, the two affect variables were initially conceived to be diametrically opposing and therefore anticipated to differ only in the direction of their relationships to other variables. It should be noted that a similar discrepancy between the results for total positive and negative affect was encountered in the first part of this hypothesis (i.e. in the shopping scenario, higher overall self-efficacy was associated with less total negative affect but was unrelated to total positive affect).

Finally, the last part of the fourth hypothesis (4d) related lower relation-inferred self-efficacy (RISE) with less total positive affect and more total negative affect. The data did not provide support for these relationships in either of the study scenarios.

In sum, tests of the fourth hypothesis were generally characterized by a lack of support for the proposed relationships. Total negative affect only varied with overall self-efficacy and this correlation was confined to the shopping scenario. Total positive affect was only associated with the difference in the number of perceived benefits of declining and of accepting help. The fact that total positive affect and total negative affect were related to different factors is a good indication that the two variables were not simply equal to and opposite of one another, as originally anticipated. This subsequently raised questions about how total positive and total negative affect differed from each other for the study participants.

### *Hypotheses Five and Six*

The final two hypotheses dealt with relationships involving overall self-efficacy and RISE. The fifth hypothesis related these variables, submitting that higher self-efficacy implied higher RISE. This relationship was confirmed in both the rising from the sofa and the shopping scenarios. The sixth study hypothesis made two related assertions) that those making physical, attributions for why help may be offered would report lower overall self-efficacy and would provide lower RISE ratings. Older adults who made physical attributions provided lower RISE ratings in both scenarios and reported lower shopping self-efficacy.

The first part of the final hypothesis (6a) provided an indication that there may be *differences between the two study scenarios* that were not at all addressed by any of the original hypotheses. In this case, the difference in results between scenarios may stem from a discrepancy in the realism of the scenarios to members of the study sample. That is, whereas these independent older adults may experience offers of help with shopping in their lives, a scenario in which they are provided help with rising may be somewhat unrealistic. Consequently, in contrast to the shopping scenario, their attributions for why this atypical offer of help may be made would likely be incongruent with their overall self-efficacy. Such explanations for results arising from tests of the main hypotheses were explored in the secondary analyses of the study data.

Most of the primary results did not support the self-efficacy premises in Social Cognitive Theory, as reflected by the minimal relationship between self-efficacy and participant behavioural intentions. Indeed, self-efficacy has been consistently demonstrated to be a good predictor of individual behaviour in other research (cf.

Bandura, 1997). Consequently, further examination of this surprising finding was necessary to offer insight into possible explanations influencing the behaviour of independent older adults responding to offers of unsolicited help.

### *Secondary Analyses*

The preceding overview provides examples of how the main results made it necessary to seek possible explanations for the patterns of support and non-support uncovered by the original hypotheses. The attempt to answer some of the questions that arose from tests of the study hypotheses took the form of a set of secondary analyses. These secondary analyses consisted of re-examinations of some variables and the study of additional variables that had been collected but not subjected to analysis during the first stage. Further examination of study data confirmed a number of phenomena that could provide some insight into the main findings, including: significant differences between the two scenarios, as perceived by study participants; the high-functioning nature of the study sample, in spite of its advanced average age; low levels of reported negative affect; and the prominence of social considerations in these scenarios.

### *Non-Support of Hypothesis One and the High-Functioning Nature of the Study Sample*

In Social Cognitive Theory, self-efficacy is a key construct that has consistently been demonstrated to predict intentions and subsequent behaviour across a wide range of domains (Bandura, 1997). It was therefore surprising that the first hypothesis did not draw any support in either study scenario. Consequently, secondary analysis was deemed essential to offer a viable explanation for this unforeseen outcome. Since correlation analysis had been employed to test the first hypothesis, the first step in the secondary analyses was to consider the distributions of overall self-efficacy and intentions.



Whereas intentions to accept and to decline help exhibited relatively normal distributions, overall self-efficacy in both scenarios was highly skewed, such that ceiling effects were immediately apparent. The high levels of self-efficacy were likely a direct consequence of the study selection criteria, as the target population consisted of older adults who would not technically require assistance because they lived independently and suffered from no severe health problems. Clearly, it was not expected that the study sample would have such a truncated range of overall self-efficacy. Selection for independent older adults meant that high overall self-efficacy was likely a reflection of high levels of physical functioning. Secondary analyses confirmed this suspicion: most study participants indicated that they left their homes on a daily basis, reported very high self-rated overall mobility, frequently walked at least ten minutes on a regular basis, and had relatively low TUG times.

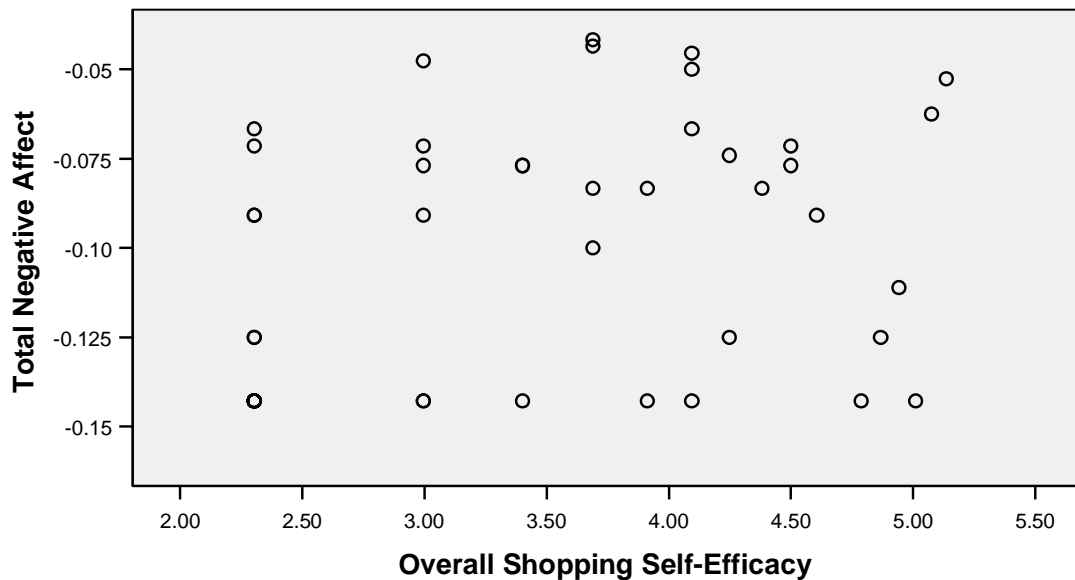
#### *Non-Support of Hypothesis Four (Part A) and its Possible Explanations*

The next proposition that did not stand up under scrutiny was the first portion of the fourth hypothesis (4a). For the most part, overall self-efficacy provided no insight into older adults' affective responses. This result was also a likely consequence of the restricted range of self-efficacy ratings reported by participants. Relative to total positive affect and total negative affect, overall self-efficacy may not have been sufficiently variable.

However, the partial finding associated with this hypothesis may indicate the influence of an additional factor. The particularly low levels of negative affect in the shopping scenario might help to explain the finding of lower total negative affect as a correlate of higher shopping self-efficacy, when considered in combination with the large

self-efficacy skew. This would imply that the sole positive result is a statistical anomaly arising from comparable variances of the two measures. Such an implication does not seem unreasonable when one examines a plot of shopping self-efficacy versus total negative affect, which appears to indicate little correlation, despite the moderate strength of association,  $r = 0.417$ ,  $p = 0.002$  (see Figure 8 below).

**Figure 8. Total Negative Affect versus Overall Shopping Self-Efficacy**



Note: Both variables have been transformed to correct for skew.

If the correlation is not a statistical artefact, higher shopping self-efficacy is only associated with less negative affect. In which case, the absence of a relationship with total positive affect is particularly puzzling. Likewise, it would be difficult to explain why rising self-efficacy is not associated with total negative affect. Whether or not a low level of negative affect played a role in the test outcomes of hypothesis 4a is certainly debatable, but there is a stronger argument for its value in explaining the results of the next tested segment of this hypothesis.

*Partial Support of Hypothesis Four (Part C) and the Level of Total Negative Affect*

The partial support of the third part of hypothesis number four (4c) is much less perplexing. A possible reason why more perceived benefits of declining relative to those of accepting help was associated only with less total positive affect would be a low level of total negative affect in response to unsolicited help. Indeed, total negative affect was characterized by very low means and considerably more skew than total positive affect. This was especially true in the shopping scenario. Despite the fact that unsolicited help may imply low evaluations of older adults' abilities, participants generally did not anticipate feeling negatively about the offers.

Secondary analysis confirmed that, even in cases where study variables were related to total positive affect, they were typically unrelated to total negative affect. Examples included total physical activity, DPC and efficacy discrepancy, which were *all* inversely proportional to total positive affect in the rising scenario. Individuals who reported higher activity levels, stronger desire for physical competence (total, basic and advanced) and greater discrepancy between self-efficacy and RISE had significantly lower ratings of positive affect in response to help with rising. Total negative affect was only related to intentions where rising from a sofa was concerned. On the other hand, more positive affect was associated with greater intention to accept (and less intention to decline) help in both scenarios. Overall, it seems clear that levels of total negative affect, particularly where help with shopping is concerned, were too uniformly low to yield significant correlations.

It is possible that older adults would not tend to respond negatively to help that could be interpreted as a low evaluation of their abilities (i.e. RISE) because they

generally had very high levels of self-efficacy for the physical tasks that were presented. After all, the initial portion of the fourth hypothesis (4a) showed that higher shopping self-efficacy was associated with significantly lower total negative affect. However, the most viable explanation for low levels of negative affect is provided by hypothesis 4c itself: although unsolicited and unneeded help may mean low RISE, it is associated with a set of benefits (particularly *social* ones) that older adults do appreciate. It is perhaps not terribly surprising that perceived *benefits* would be related to how much *positive* affect is felt, but this begs the question: if the perceived benefits had instead been framed as perceived *detriments*, would the concept have exhibited a relationship with total *negative* affect?

#### *Non-Support of Hypothesis Four (Part D) and the Influence of Social Considerations*

The unsolicited offers may be seen to imply low RISE, but this was not true for all study participants. And yet, even where help was considered to reflect low perceptions of older adults' abilities, the final part of the fourth hypothesis (4d) indicated that participants' affective responses were impervious to these assessments. In light of the anticipated benefits associated with the offer of help (hypothesis 4c), independent older adults apparently cared little about their children's opinions about their physical capabilities. Along with the results of the third and first hypotheses (i.e. that the balance of perceived benefits, rather than self-efficacy, was related to intentions), these findings necessitated a more in-depth examination of the nature of the perceived benefits (PBs) that were selected by the participants.

Since self-efficacy was not useful for determining independent older adults' intentions, socially relevant perceived benefits that are unrelated to physical function

were of particular interest in subsequent analyses. The importance of social benefits to older adults would also explain their significantly higher intentions to accompany a daughter shopping rather than to allow her to perform the task for them. In fact, participants selected a significantly higher percentage of social versus personal PBs overall. This superior selection rate of social PBs persisted when PBs of accepting help with both physical tasks, and of accompanying a daughter shopping were examined separately. With PBs of declining help, a greater percentage of perceived personal benefits (vs. social benefits) were selected by participants only in the rising scenario.

Such an initial inspection of the types of perceived benefits deemed relevant by participants suggested that social benefits are the more important consideration where accepting help and accompanying others on shopping excursions are concerned. On the other hand, when contemplating whether or not to decline help with rising, personal benefits seemed to be of greater concern to this group of independent older adults. Taking this analysis one step further and grouping participants by the number of PBs they had selected in each category (as defined by: whether it involved accepting/declining help or accompanying a daughter and whether the focus was on personal or social benefits), then comparing them on the basis of their intentions, a somewhat different perspective was uncovered.

Older adults who perceived greater numbers of social benefits of declining help with rising were much less likely to accept help and much more likely to decline help with the task. Thus, in spite of the greater group selection of *personal* PBs associated with declining rising help, it was only the number of *social* PBs of declining rising help that was related to participant intentions. Those older adults who perceived greater

numbers of social benefits of accepting help with shopping were far more likely to wish to accompany their daughter, even though they were not any more likely to want to accept help with shopping. In retrospect, this is not terribly surprising given that the provided social PBs of accepting shopping help (i.e. “It allows my daughter to feel good about being able to help me” and “It gives me another opportunity to see my daughter”) are likely even more meaningful when shopping is conducted together rather than being performed by a daughter alone.

Although the results of the secondary analysis are not definitive, they do provide a basis for suggesting that social benefits do play a role in both the refusal and the acceptance of help. Perhaps it is also the case that, where the help involved is of a transitory nature, such as that encountered in the rising situation, the social concerns or benefits of declining help can outweigh those of accepting help and the former are therefore more likely to influence behavioural intentions. Whether or not this is shown to be true, one thing seems clear: when there are significant social benefits involved in accepting help, such as those found in the shopping situation, they can prove to be very salient when older adults do not absolutely require the offered help. These suggestions underscore the importance of the context in which help is offered and the remaining secondary analyses were designed to explore how the two study scenarios may have differed.

#### *Partial Support of Hypothesis Six (Part A) and the Differing Natures of the Stimulus Scenarios*

At the outset of the project, two physical tasks were selected for use as stimuli in this scenario-based study. These tasks were settled on because they were deemed to be

representative of two broad classes of physical skills that are commonly made reference to in research with aging populations. The rising task is a typical activity of daily living (ADL), which is a necessary component of basic everyday functioning. The shopping task is commonly encountered, not as strictly essential as the ability to rise from a seated position, but nevertheless related to independent living. It therefore represents what are known as instrumental activities of daily living (IADLs).

Although it was clear that IADL tasks are slightly more demanding than ADLs, the inclusion of both types of activities was intended to ensure thorough coverage of relevant activities and was regarded as a means to ensure the consistency of older adults' responses given the single-measurement design of the study. The hypotheses that were originally laid out reflected this perspective: the propositions made did not distinguish between the physical tasks. Initially, the potential for any differences between scenarios was not fully recognized. The results of testing the sixth hypothesis (6A) provided a reason to question this early assumption: the formation of physical (versus social) attributions was associated with lower overall self-efficacy only in the shopping scenario. One possible explanation for this difference between the scenarios involves participants' actual experience of similar situations. If a given scenario is more realistic, past experience of such help is more likely to be related to others' beliefs about older adults' abilities and consequently, to self-efficacy also. Thus, based on the results of hypothesis 6a and the fact that the study participants were highly independent, one would expect that they were much more likely to have had experience with offered help in the shopping domain. Despite the relatively low levels of unsolicited help experience overall, this was indeed found in subsequent analyses.

Both parametric and non-parametric testing confirmed that participants reported more actual experience of help in the shopping scenario. In addition to having more actual experience with the shopping scenario, older adults apparently also had a preference for the type of assistance that was presented. Total positive affect was higher and total negative affect was lower in response to help with shopping, but not with rising from a sofa. This too may have arisen partly from a greater need for help where shopping is concerned. If help is offered in the context of greater physical (or social) relevance, it is to be expected that higher positive affect and lower negative affect should result. However, since these relationships were based on correlation rather than causation, there exists an additional explanation. Another social outcome that could also be possible is that, if shopping help pleases older adults more (and others perceive this to be the case), it may subsequently be offered more frequently. Thus, it would be more commonly encountered by the participants, regardless of its usefulness.

In addition to differences between scenarios on such variables as affect and actual experience, the scenarios also diverged with respect to the presence of relationships between measures of physical function and behavioural intentions. Increasing TUG time corresponded with increasing intentions to accept help with shopping and decreasing intentions to accompany a daughter shopping. Consistent with these findings, decreasing desire for physical competence was associated with increasing intentions to accept and decreasing intentions to decline help with shopping. The directions of all these relationships were foreseeable and likely represented rational behavioural responses given the older adults' TUG times and DPC levels.



Conversely, intentions to accept help with rising were unrelated to the abilities and desires of the participants. Thus, even a high level of physical ability (i.e. low TUG time) and a high level of desire for physical competence may not preclude the acceptance of rising help. It is therefore fortunate that such help is, according to the participants, uncommonly encountered by them. Perhaps the absence of these relationships in the rising scenario has another explanation. Providing help with rising may not be as considerable a favour as shopping assistance and likely would not make older adults feel especially grateful or indebted to the assisting person. A social interaction norm may be that it is easier to simply accept the offer of help, even when it is completely unnecessary and thus not risk offending the well-intentioned person offering the help.

One way to ascertain whether this explanation bears any weight is to examine the perceived benefits of declining help that were selected by older adults. In both scenarios, there were PB items that reflected participants' consideration of the son or daughter's perspective. Specifically, these items were: "It is less troublesome for both of us if I rise/shop on my own" and "I would not have to inconvenience my son/daughter". Comparison of the average rates of selection of these perceived benefits between the two scenarios would provide some insight into participant differences in their views of the rising and shopping help. Whereas nearly equal numbers of participants in the two scenarios selected the perceived benefit of each as being "less troublesome" to decline the help ( $t(51) = 0.423$ , N.S.), significantly more participants felt that not having to inconvenience their son or daughter was a benefit in the shopping scenario ( $t(51) = -2.470$ ,  $p = 0.017$ ). There seemed to be a perception that help involved in shopping is significantly more inconvenient (i.e., participants' view that shopping is more

inconvenient to the helper) than that involved in helping with rising. Therefore, it seems reasonable to suggest that the relationships between physical function and intentions differ between scenarios in part because there are essential differences in the way the help in each scenario is regarded.

#### *Summary of Results of Study Hypotheses and Secondary Analyses*

Taken together, the primary and secondary analyses revealed the study sample to consist of self-efficacious individuals with a high overall preference for independence. Thus, while this sample of older adults did not require assistance, the salience of perceived social benefits relative to both their behavioural intentions and their positive affect following offers of unsolicited help may offer an explanation for responses. Despite the RISE implications of such offers (i.e. “my son or daughter thinks I’m not capable and need help”), these perceived benefits perhaps partially explain the low levels of negative affect among participants. Along with different rates of actual experience, perceived benefits could possibly also have influenced the observed discrepancies between the two study scenarios. Thus, for a group of high-functioning older adults, perceived social benefits are potentially highly influential in determining a number of outcomes in such social situations. This finding is consistent with the SCT suggestion that, in some cases, outcome expectancies may be more influential in determining behaviour than even self-efficacy (Bandura, 1997).

#### *Suggestions for Future Research*

The secondary analyses addressed some of the issues that had been unforeseen at the conception of this study. Nevertheless, there remained a number of areas where questions persisted; an indication that this research can be improved upon. Sampling,

measurement and design were domains that would benefit from modification for future studies.

### *Sampling Suggestions*

An argument can be made that the sampling for this study resulted in the most challenges. Highly independent older adults had been selected for participation in this research in order to allow the assumption that these individuals did not require help, in the strictest, physical sense. However, it was found that the high overall self-efficacy of the group did not provide sufficient variability for the purposes of examining correlations with other variables such as behavioural intentions. Sampling from a wider range of the older adult population could provide larger variability in physical function.

An additional way to achieve greater variability in responses may be through the use of a wider range of IADL activities. More specifically, it would be advantageous to include more difficult physical tasks as stimuli, if a high-functioning sample is to be employed. Ideally, the types of tasks would range from those with which older adults do not or may not need help with, to those that they definitely would need help with. For example, in addition to a less challenging IADL such as sweeping the floors, research can make use of more physically demanding tasks such as snow shovelling. Whereas one might expect the majority of high-functioning older adults to have no difficulty with sweeping the floor, snow shovelling would likely better discriminate between these individuals.

With respect to the sample, it is important to also bear in mind the cultural limitations that may have impacted this study. For example, findings should be considered in the context of culture. As the study participants were predominantly of

European descent, there is the possibility that results may have differed if an Asian population (in which interdependence may be favoured over independence) had been sampled

### *Measurement Suggestions*

Measurement is another area that can be expanded upon for further research in this topic. Specific measures could be designed for greater sensitivity in detecting differences between study participants. For example, the independence preference item was clearly insufficient for the task of differentiating between older adults' actual preferences for independence with respect to physical tasks. Based upon verbal feedback from participants, it appeared that the item was inappropriate because of a lack of specificity. A number of participants indicated that, although they technically preferred not to receive help with any physical tasks, they felt that this statement was extreme and opted for the less-than-ideal statement that they preferred to receive help only with the most difficult tasks. Therefore, in hindsight, perhaps a fourth option should have been offered so that participants would not feel that their selection was a compromise. For instance, another moderate option such as "Ideally, I would prefer not to receive help with *most* physical tasks" could also have been included.

A better approach that might be used to remedy this problem is to model this measure after DPC. That is, rather than to make very general statements about independence preferences, it may be preferable to couch statements within an explicit, task-specific framework. DPC uses concrete physical tasks to ascertain older adults' desires with respect to physical competence, and has been shown to be correlated with better physical health (Rejeski et al., 2006). Designing a preference measure that is based

on the DPC would be a more precise means of gauging preferences and would have the added advantage of being more direct and hence easier for participants to conceptualize.

### *Design Suggestions*

In the present study, there was no attempt to influence the way in which the stimulus scenarios were perceived by older adults. Rather, how perceptions of unsolicited help may differ according to participant characteristics was of primary interest and the study design reflects this. As a result, there was considerable variability in the interpretation of help by older adults, as evident from the range of attributions that they offered. It is quite possible that such perceptions of help may differ on the basis of how that help is offered. For instance, although older adults generally looked favourably on the unsolicited help described, they may not be as pleased if help was effectively forced upon them. It would therefore be interesting to see whether affect and behavioural intentions differ depending on the form that unsolicited help takes (i.e. forced versus socially acceptable assistance). Such an extension of the current study could be readily conducted using a similar scenario-based paradigm. In this case, the stimulus information could be manipulated to guarantee that help was regarded by participants as being foisted on them. Beyond examining the effects associated with how help is offered, subgroups such as the frail and the very able could also be compared on the basis of their perceptions of imposed help.

Another interesting extension of the current research might be to examine the other side of the social equation: the adult children who offer unsolicited help. For instance, do help providers convey non-verbal cues about their assessment of the older adult's abilities and if so, what specific cues communicate such information? Such

examination may be accomplished by means of observational studies of actual help provision to older adults. This suggestion provides opportunity to see if any information that could influence beliefs is actually being transmitted to the older adult recipient.

*Cohort-based designs.* In addition to the above suggestions, future research could benefit from larger sample sizes. Apart from providing more statistical power, this would permit analyses based on age group. Perhaps five or ten-year windows of aging can be used to compare older adults. In combination with sampling from younger individuals (i.e. those who are 60 to 65 years of age) also, such study may be able to ascertain whether a particular age group is at an elevated risk of declining physical abilities. We can then ask if there is a time in the average individual's life when they begin to conceptualize themselves as being "old" in terms of physical abilities and act according to such schema. The importance of determining when this process may begin is underscored by research that has linked exposure to negative aging stereotypes with decreased self-efficacy (Ory et al., 2003).

*Field studies.* Based on the lessons derived from this study, the logical next step would be to conduct a larger scale study implementing the above suggestions in the interest of greater internal validity. After this has been done, there is the potential for additional research involving a field experimental type of design that would offer the opportunity for researchers to consider the actual responses of older adults. For example, the first step of such a design might be to use a number of the activities that form the DPC and pilot test various tasks to determine the types with which older adults more commonly receive help. Then, confederates can be put into place to offer other participants actual, unsolicited help with these tasks. This is just one example of research

in this area that has yet to be undertaken and that promises greater insight into the age-related decline of physical function.

#### *The Potential Role of SCT in Future Research*

Social Cognitive Theory was used to develop the general framework of the current study. For example, the focus of the study on the interaction between older adults and members of their families is based upon the social cognitive concept of reciprocal determinism, which suggests that an individual's physical characteristics (among other things like their personal beliefs) can be affected by other people in that individual's life. The importance of perceived benefits that was drawn out by the secondary analyses was also in line with this theoretical foundation and lent support to Bandura's notions about the prominence of incentives in determining our behavioural intentions and actions (Bandura, 1986). Thus, it seems likely that future research would continue to benefit from the use of Social Cognitive Theory in the design of additional studies in this vein.

#### *Justification for Further Research in Ageing*

It is this author's hope that the present study succeeds in stimulating further research in this under-investigated yet pressing area. As average lifespan continues to lengthen, the proportion of older adults in our society grows and concerns about quality of life gain prominence, research that relates to the maintenance of physical independence in later life has never been timelier. Furthermore, the perception that health care costs will escalate in parallel with this aging trend makes this topic of interest to governments as well as to older adults and their families. A research program that focuses on the potential impact of ageist stereotypes on successful aging is also in accord with the recent emphasis on preventive approaches to improving population health.

Despite the fact that the present exploratory study raises more questions than it answers, this research does provide some cause for concern. That is, although participants report being on average equally likely to accept or decline help, considering that the sample was particularly high-functioning, these older adults believed that, half of the time, they would accept help that they do not need. This finding is consistent with the proposed mechanism of functional decline that involves a reduction in opportunities to perform physical tasks and on its own is sufficient to merit further research attention.



## APPENDIX A

### List of Abbreviations Used

ADL = activity of daily living

DPC = desire for physical competence

ED = efficacy discrepancy

GLTEQ = Godin Leisure-Time Exercise Questionnaire

IADL = instrumental activity of daily living

MMSE = (Folstein) Mini-Mental State Examination

NS = non-significant

PB = perceived benefits

RISE = relation-inferred self-efficacy

SCT = Social Cognitive Theory

SE = self-efficacy

TMMSE = telephone Mini-Mental State Examination

TUG = Timed "Up and Go" Test

APPENDIX B

Telephone Screener

Participant ID Number:

Phone Number:

Status after screening:

Suitable for study \_\_\_\_ Exclude from study \_\_\_\_

Participant: Hello, my name is [name of potential participant]. I am interested in learning more about the questionnaire-based study you are conducting with older adults.

Interviewer: Hello, my name is Adrienne Tse from the Department of Kinesiology at the University of Waterloo and I am the student investigator of the study. This particular study is part of my work for my Master's degree. I am interested in finding out if older adults' personal preferences and their confidence in their physical abilities are related to how they react to a number of scenarios. In order to do this, participants will be asked to fill out a questionnaire that I will administer in person. The questionnaire of approximately 30 to 40 minutes will take place at a mutually agreed upon location. In addition, participants will be asked to perform a very brief physical task involving rising from a chair, walking a short distance and sitting down again.

Any information you provide during the course of this study will be considered confidential. Consequently, the data that is collected will be kept in a secure location – a locked filing cabinet in one of my supervisors' (Dr. James Frank's) lab – and will be disposed of (i.e. shredded) after a year's time. This project has been reviewed by, and received ethics clearance from, the Office of Research Ethics at the University of Waterloo. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes in the Office of Research Ethics at (519) 888-4567, ext. 6005. In return for your participation, and after all of the data has been analyzed, (and if you so desire), you will receive a summary of the research results.

Finally, since the study will be focusing on older adults who have particular characteristics, to determine your eligibility for the study, I will have to ask you a few background questions. The questions will address your recent medical history, current activity level and demographics. The interview will last about 10 minutes. Would you be willing to answer this set of questions and is this a convenient time to speak with you?

[If Participant: No. – no longer interested in participating]

Interviewer: Thank you for your time and your interest in my study.

[If Participant: No. – not a convenient time]

Interviewer: Is there a better time to call? ...

[If Participant: Yes.]

Interviewer: To start, I would like to let you know that these questions are only an initial screening. Based on your answers we will be able to decide if you are eligible to participate in the study. Of course, you may wish to decline answering any of the following questions. Before I move on, do you have any questions for me?

**The first set of questions pertains to your medical history. There are 10 questions. Are you ready?**

1. Have you ever had a heart attack?  
No Yes (When: \_\_\_\_\_)
2. Do you experience angina frequently?  
No Yes (How often: \_\_\_\_\_)
3. Do you use supplemental oxygen for any respiratory problems?  
No Yes (How often: \_\_\_\_\_)
4. Do you have arthritis that significantly inhibits your daily mobility? It might not be severe but still might limit your mobility.  
No Yes (Specify: \_\_\_\_\_)
5. Has a health professional (i.e. a doctor) responsible for your care told you that you have any cardiovascular problems?  
No Yes (When: \_\_\_\_\_)
6. Do you have any health or physical symptoms that inhibit you from getting around or any other health problems not mentioned?  
No Yes (Specify: \_\_\_\_\_)
7. Do you use a walker, or other mobility assistive device?  
No Yes (How often: \_\_\_\_\_)
8. Do you have any vision problems that make getting around a problem?  
No Yes (Specify: \_\_\_\_\_)
9. Have you experienced any severe hearing loss?  
No Yes

10. Are you on any medications that make you feel ill or dizzy?

No Yes

**The next set of questions pertains to your current activity level.**

11. Do you walk on a regular basis for 10 minutes or more continuously in either the community or in your own residence?

No Yes (How often: \_\_\_\_\_)

12. Do you do your own shopping by going to the grocery store?

No Yes (If not, reason: \_\_\_\_\_)

13. On a scale of 1 to 10, can you rate your overall mobility? 1 being dependent on a wheelchair and 10 having no mobility problems whatsoever.

1 2 3 4 5 6 7 8 9 10

14. On average, how often do you leave your home on a weekly basis?

- a. Once a week
- b. Twice a week
- c. Three or more times a week
- d. Daily

**The last set of questions pertains to your demographics.**

15. How old are you? \_\_\_\_\_

16. Do you live in a senior's residence or nursing home?

No Yes (Which: \_\_\_\_\_)

17. Do you live on your own?

Yes \_\_\_ No \_\_\_ (with a spouse/partner \_\_\_ with a son/daughter \_\_\_  
Other: \_\_\_\_\_)

18. a. Do you drive? No Yes  
b. Do you own a vehicle? No Yes

Telephone Folstein MMSE

<u>Orientation</u>	Score
1. Year/season/month/day/date?	/5
2. Country/province/city/location (building)?	/4

Registration

1. Naming 3 objects (repeating 3 objects named by interviewer)	/3
--	----

Attention and Calculation

1. Serial 7's (spelling "world" backwards)	/5
--	----

Recall

1. Objects mentioned above (3 objects previously named)	/3
---	----

Language Tests

1. Naming ("Tell me, as you talk to me, what is the thing that you are speaking into called?")	/1
2. Repeating (the phrase: "No ifs, ands, or buts.")	/1
3. Following three stage command ("Say 'hello', tap the mouthpiece 3 times, then say 'I'm back'.")	/3

Provision of a phone number where participant can usually be reached	/1
--	----

[If excluded:]

Interviewer: Unfortunately, based on the interview, you are not eligible for this particular study. However, you may be eligible for a study that involves the effects of aging and the control and accuracy of movements to remembered targets, being conducted by another student (A.S.) in the Department of Kinesiology. Would you be interested in learning more about this study?

[If yes:]

Interviewer: You can reach A.S. by phone at (519) 888-4567 ext. xxxx or by email at \_\_\_\_\_@ahsmaail.uwaterloo.ca. She will be able to answer any of your questions

regarding that study. Thank you very much for your time and your interest in my research.

[If no:]

Interviewer: Thank you very much for your time and your interest in my research.

[If included:]

Interviewer: Based on this interview, you are eligible to participate in this study. If you still wish to do so, we just have to decide on a time and place to meet in order to go through the questionnaire together...[set up meeting time and place]



APPENDIX C  
Study Questionnaire

This version of the questionnaire was administered to female participants. It differed from the one used for male participants only in the use of same-gender models in the provided stimulus scenarios.

## Questionnaire

### Current level of physical activity:

**Please read the following definitions carefully.**

- 1) **Mild physical activity** is considered to be physical movement that is easy to sustain over a prolonged period of time (e.g., light walking).
- 2) **Moderate physical activity** is considered to be somewhat harder activity that may have you breathing faster, and could only be sustained for a shorter period of time (e.g., brisk walking).
- 3) **Strenuous physical activity** is considered to be activity that is hard, has you breathing heavily and sweating, and could only be sustained for very short periods of time (e.g., running).

**Now use these definitions to answer the next three questions** that assess the frequency of your mild, moderate, and strenuous physical activity. Please recall your physical activity frequencies during a *typical week* over the **past month**.

During your *typical week in the past month*:

How often did you engage in bouts of MILD physical activity for at least 30 minutes in duration?" \_\_\_\_\_(times/week)

How often did you engage in bouts of MODERATE physical activity for at least 30 minutes in duration? \_\_\_\_\_(times/week)

How often did you engage in bouts of STRENUOUS physical activity for at least 30 minutes in duration?" \_\_\_\_\_(times/week)

If you experienced partly limited function with respect to *most physical tasks*, which of the following statements do you believe would apply most to you?

- 1) Ideally, I would prefer to receive help with most physical tasks.
- 2) Ideally, I would prefer to receive help with only very difficult physical tasks.
- 3) Ideally, I would prefer not to receive help with any physical tasks.

### Scenario-Based Questions

Through your interaction with family members, you may encounter those who volunteer to help you with various day-to-day tasks. Please think about each of the following situations independently. Then please answer the following questions as accurately as you can for each situation.

**I. Home Scenario**

A son and his family are spending the day at his mother's home. Such visits are not unusual even though the son's family is generally quite busy. Whenever they visit, the mother and her son enjoy talking to one another, preparing food together and sometimes watching a rented movie together.

During the day, the mother notices that every time that she is about to get up from the sofa, the son moves to help her up.

Put yourself in the place of this mother and answer the following questions:

1) **Affect** – whenever your son moves to help you off the sofa, you feel (circle ONE number for each scale):

- a. Happy  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- b. Inadequate  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- c. Pleased  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- d. Depressed  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- e. Competent  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- f. Guilty  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- g. Proud  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- h. Upset  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- i. Disappointed  

9	8	7	6	5	4	3	2	1
feel very much							don't feel at all	
- j. Dependent  

9	8	7	6	5	4	3	2	1
---	---	---	---	---	---	---	---	---

k. Offended

	9	8	7	6	5	4	3	2	1
	feel very much								don't feel at all
	feel very much								don't feel at all

Are there any other words/emotions you would add to the above to describe how you feel? Place these in the following spaces and rate the extent to which you feel each one.

l. \_\_\_\_\_

	9	8	7	6	5	4	3	2	1
	feel very much								don't feel at all

m. \_\_\_\_\_

	9	8	7	6	5	4	3	2	1
	feel very much								don't feel at all

**2) Behavioural Intentions**

Putting yourself in place of the mother, please indicate how likely you would be to (circle ONE number for each statement):

a) allow your son to assist you in getting off of your sofa in most cases.

1	2	3	4	5	6	7	8	9
definitely will not allow				may allow				definitely will allow

b) decline your son's offer in most cases and get up on your own.

1	2	3	4	5	6	7	8	9
definitely will not decline				may decline				definitely will decline

**3) Actual Experience**

From your actual experience, how often do you believe that such a situation (i.e. others offering to help you stand from a seated position) arises?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly Often	Very Often

**4) Self-Efficacy**

On a scale of 0% to 100%, please rate your confidence in your own ability to do the following:

a) How confident are you that you can readily get up off the sofa using *only* the power in your legs? (0% = no confidence, 100% = very high confidence)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

b) How confident are you that you can readily get up off the sofa using the power in your legs and the assistance of *one* of your arms? (0% = no confidence, 100% = very high confidence)

                                         
 0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

c) How confident are you that you can readily get up off the sofa using the power in your legs and the assistance of *both* your arms? (0% = no confidence, 100% = very high confidence)

                                         
 0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

d) How confident are you that you can readily get up off the sofa using both your arms and legs? (0% = no confidence, 100% = very high confidence)

                                         
 0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

e) How confident are you that you *require assistance* to get up off the sofa despite using both your arms and legs? (0% = no confidence, 100% = very high confidence)

                                         
 0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

**5) RISE**

Consider the fact that your son offered to lend you a hand getting off the sofa. How much confidence do you think he has in your ability performing tasks like getting off a sofa or chair on your own? Please rate what you believe your son's confidence is regarding your ability to do this task by using a scale from 0% (no confidence) to 100% (very high confidence):

                                         
 0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

**6) Attributions**

What is the most important reason you think your son offered to help you get off the sofa? Write that reason in the space below

---

Considering this reason, use each of the following scales to describe the characteristics of your primary reason. Please answer using all the characteristics even if this is difficult.

For those that either apply quite strongly or do not apply quite strongly give them high values or low values. For those for which you are undecided, you may wish to rate these in the middle of the scale. Rate where your reason falls on the following scales by circling the value that best applies in describing your reason:

- a) reflects an aspect of yourself    9 8 7 6 5 4 3 2 1    reflects an aspect of the situation
- b) manageable by you                9 8 7 6 5 4 3 2 1    not manageable by you
- c) permanent                            9 8 7 6 5 4 3 2 1    temporary
- d) over which you have control    9 8 7 6 5 4 3 2 1    over which you have no control
- e) over which others have control 9 8 7 6 5 4 3 2 1    over which others have no control

**7) Perceived Benefits**

a) Placing yourself in the mother’s position, what advantages do you see in taking up your son’s offer? Check all that apply:

- “I am less likely to fall or otherwise injure myself.” (I.e. it is safer)
- “It is much easier for me to rise with assistance.” (I.e. it takes less effort)
- “It allows my son to feel good about being able to help me.”
- “It is another chance to directly interact with my son.”
- “None of the above applies to me.”

Are there any additional advantages in taking up your son’s offer that were not listed above? If so, please include them below:

---

What is the most important advantage you see in taking up your son’s offer? Please indicate that advantage by circling it. Considering this advantage, please rate how important it is to your decision to take up the offer.

1	2	3	4	5	6	7	8	9
not important at all								extremely important

b) Placing yourself in the mother’s position, what advantages do you see in standing up on your own? Check all that apply:

- “It would allow me to make use of my muscles and balance.”
- “It is less troublesome for both of us if I rise on my own.”
- “I would not have to inconvenience my son.”
- “It would show my son that I can do it myself.”
- “None of the above applies to me.”

Are there any additional advantages in standing up on your own that were not listed above? If so, please include them below:

---

What is the most important advantage you see in standing up on your own? Please indicate that advantage by circling it. Considering this advantage, please rate how important it is to your decision to stand up on your own.



- feel very much don't feel at all
- j. Dependent  
 9 8 7 6 5 4 3 2 1  
 feel very much don't feel at all
- k. Offended  
 9 8 7 6 5 4 3 2 1  
 feel very much don't feel at all

Are there any other words/emotions you would add to the above to describe how you feel? Place these in the following spaces and rate the extent to which you feel each one.

- l. \_\_\_\_\_  
 9 8 7 6 5 4 3 2 1  
 feel very much don't feel at all
- m. \_\_\_\_\_  
 9 8 7 6 5 4 3 2 1  
 feel very much don't feel at all

### 9) Behavioural Intentions

Putting yourself in place of the mother, please indicate how likely you would be to (circle ONE number for each statement):

- a) allow your daughter to go shopping for you in most cases.  
 1 2 3 4 5 6 7 8 9  
 definitely will may definitely  
 not allow allow will allow
- b) decline your daughter's offer in most cases and go shopping on your own.  
 1 2 3 4 5 6 7 8 9  
 definitely will may definitely  
 not decline decline will decline
- c) go to the supermarket with your daughter in most cases.  
 1 2 3 4 5 6 7 8 9  
 definitely will may go definitely  
 not go with her with her will go  
with her

### 10) Actual Experience

From your actual experience, how often does such a situation (i.e. others offering to go shopping for you) arise?

- Never  Rarely  Sometimes  Fairly Often  Very Often



### 11) Self-Efficacy

On a scale of 0% to 100%, please rate your confidence in your own ability to do the following:

a) How confident are you that you can walk around the large supermarket at your own pace without tiring yourself out? (0% = no confidence, 100% = very high confidence)

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

b) How confident are you that you can lift all the groceries or goods you require from the supermarket shelves into the shopping cart? (0% = no confidence, 100% = very high confidence)

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

c) How confident are you that you can lift all the groceries or goods you require from the shopping cart onto the checkout counter? (0% = no confidence, 100% = very high confidence)

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

d) How confident are you that you can lift all your purchases from the shopping cart to the trunk of your car/taxi? (0% = no confidence, 100% = very high confidence)

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

e) How confident are you that you can carry your purchases on the bus? (0% = no confidence, 100% = very high confidence)

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

### 12) RISE

Consider the fact that your daughter offered to lend you a hand with grocery shopping. How much confidence do you think she has in your ability performing tasks like grocery shopping on your own? Please rate what you believe your daughter's confidence is regarding your ability to perform all the tasks necessary in grocery shopping by using a scale from 0% (no confidence to 100% (very high confidence):

0%    10%    20%    30%    40%    50%    60%    70%    80%    90%    100%

### 13) Attributions

What is the most important reason you think your daughter offered to pick up your groceries? Write that reason in the space below



- “It is less troublesome for both of us if I shop on my own.”
- “I would not have to inconvenience my daughter.”
- “It would show my daughter that I can do it myself.”
- “It would allow me to use my planning and organizational skills.”
- “It would allow me to get *exactly* what I want.”
- “None of the above applies to me.”

Are there any additional advantages in shopping on your own that were not listed above? If so, please include them below:

---

What is the most important advantage you see in shopping on your own? Please indicate this advantage by circling it. Considering this advantage, please rate how important it is to your decision to shop on your own.

1	2	3	4	5	6	7	8	9
not important at all								extremely important

c) Placing yourself in the mother’s position, what advantages do you see in going shopping with your daughter? Check all that apply:

- “It would allow me to make use of my muscles and balance, while having someone there in case I need support.”
- “It gives me a chance to spend more time with my daughter.”
- “It would allow me to get *exactly* what I want.”
- “None of the above applies to me.”

Are there any additional advantages in shopping with your daughter that were not listed above? If so, please include them below:

---

What is the most important advantage you see in shopping with your daughter? Please indicate this advantage by circling it. Considering this advantage, please rate how important it is to your decision to shop with your daughter.

1	2	3	4	5	6	7	8	9
not important at all								extremely important

**15) DPC Scale**

Place an X in the box that best describes your current desire to be able to perform each task. *It is very important to remember that we are not interested*



11) Having the ability to reach behind your back, as if to scratch the middle of your back

no desire whatsoever       low desire       moderate desire       strong desire       very strong desire

12) Having the ability to walk 3 miles on hilly, uneven paths

no desire whatsoever       low desire       moderate desire       strong desire       very strong desire

13) Having the ability to do light work in the house or yard

no desire whatsoever       low desire       moderate desire       strong desire       very strong desire

14) Having the ability to carry a 10-pound object or bag while climbing two flights of stairs in a row

no desire whatsoever       low desire       moderate desire       strong desire       very strong desire

15) Having the ability to walk up and down a flight of stairs that has a handrail

no desire whatsoever       low desire       moderate desire       strong desire       very strong desire

16) Having the ability to jog half a mile nonstop

no desire whatsoever       low desire       moderate desire       strong desire       very strong desire

### **General Information**

Age: \_\_\_\_\_ years

Sex: M / F

Ethnicity: \_\_\_\_\_

Highest level of education completed: \_\_\_\_\_

Number of children: \_\_\_\_\_ sons and \_\_\_\_\_ daughters

Medical conditions (please check ALL that apply):

- |   |   |
|---|---|
| <input type="checkbox"/> a. Cerebrovascular accident (stroke) | <input type="checkbox"/> j. Arthritis             |
| <input type="checkbox"/> b. Congestive heart failure          | <input type="checkbox"/> k. Hip fracture          |
| <input type="checkbox"/> c. Coronary artery disease           | <input type="checkbox"/> l. Other fractures       |
| <input type="checkbox"/> d. Hypertension                      | <input type="checkbox"/> m. Osteoporosis          |
| <input type="checkbox"/> e. Irregularly irregular pulse       | <input type="checkbox"/> n. Cataract              |
| <input type="checkbox"/> f. Peripheral vascular disease       | <input type="checkbox"/> o. Glaucoma              |
| <input type="checkbox"/> g. Hemiplegia/hemiparesis            | <input type="checkbox"/> p. Pneumonia             |
| <input type="checkbox"/> h. Multiple sclerosis                | <input type="checkbox"/> q. Diabetes              |
| <input type="checkbox"/> i. Parkinsonism                      | <input type="checkbox"/> r. Emphysema/COPD/asthma |
|   | <input type="checkbox"/> s. None of the above     |

## APPENDIX D

### Questionnaire Pilot-Testing

### *Pilot Work*

Although the questionnaire derived a number of its elements from existing, widely recognized measures (e.g. GLTEQ, CDSII, DPC, TUG), the instrument was designed specifically for the current study with relevance for older adults. As such, it was necessary to pilot-test the questionnaire prior to employing it for data collection purposes. The principal aim of the pilot work was to ensure that older adults would not struggle to respond to specific items. This included verifying that questions were clear and specific, scales permitted individuals to provide sufficiently precise responses, and items did not upset or offend the participants. To this end, seven independent, community-dwelling older adults (five females and two males, aged 70 to 86 years) were recruited.

Overall, the pilot-testers pronounced the questionnaire to be adequate for its intended task and consequently, much of it remained unaltered. Nevertheless, it was necessary to make several modifications to the affect and causal dimensions portions of the instrument. During pilot-testing, a number of the older adults reacted negatively when prompted to rate how “ashamed” they might feel in the provided stimulus scenarios. It appeared that this descriptor was too emotionally charged, in addition to being inappropriate in the given contexts. “Inadequate” was deemed to be more fitting and replaced “ashamed” as an item on the affective scale. Older adults were also prompted to suggest additional adjectives that might help to more completely describe their affective experiences. Several pilot-testers felt that “dependent” and “offended” were not represented by the other affects and should also be included. Response scales

for these affect terms were therefore incorporated in the final version of the questionnaire.

Many of the items that were used to characterize causal attributions (i.e. the causal dimension scales of the CDSII) were eliminated after they consistently proved to be difficult for older adults to interpret. Individuals frequently struggled to provide ratings, and with twelve scales, this portion of the questionnaire was excessively time-consuming. Nearly every individual requested additional clarification with respect to the causal dimensions in general and individual causal dimension scales in particular. It was not uncommon for older adults to express mild frustration when attempting to accurately respond to these items and responses often seemed very tenuous (as evidenced by a propensity to change ratings that was not observed with other parts of the overall questionnaire). Furthermore, dimension scale items that were similar served only to further confuse older adults as they tried to understand how they differed. For example, distinguishing between related items of external control such as “over which others *have / have no control*” and “other people *can / cannot regulate*” was difficult.

Rather than remove the entire causal dimensions section and be left without participants’ subjective interpretations of their causal attributions, a subset of the original scales was retained. Retention of scales was based on the principles of clarity and parsimony. That is, where items were highly similar, the simplest was retained. For example, in the case of external control dimensions, only the semantic differential item “over which others *have / have no control*” was retained, while the items “other people *can / cannot regulate*” and “*under / not under the power of other people*” were removed from the instrument. Using these principles also ensured that each of the four causal



dimensions (i.e. locus of causality, stability, internal control and external control) from the original CDSII had at least one representative in the final version of the older adult-modified instrument. These items were: “reflects an aspect of *yourself / the situation*” (locus of causality), “*permanent / temporary*” (stability), “*manageable / not manageable by you*” (internal control), “over which you *have / have no control*” (internal control) and “over which others *have / have no control*” (external control). Finally, the wording of the internal control dimension had been changed from its original wording (i.e. “over which you *have / have no power*”) to “over which you *have / have no control*” for ease of interpretation and consistency with the external control dimension (i.e. “over which others *have / have no control*”).

With the omission of many problematic CDSII items, the final version of the instrument required less time to complete. In combination with the modifications to the affect scales, the questionnaire also seemed to be more acceptable to older adults as few changes or additions were suggested during data collection with the finalized questionnaire.

APPENDIX E  
TUG Test Procedures

## Appendix E: TUG Test Procedures

The TUG test measures the amount of time, in seconds, required by a person to stand up from a standard armchair (i.e. one with a seat height of approximately 46cm and arm height of about 65cm), walk forward over a distance of three meters, turn around at a mark on the floor (e.g. a length of tape), walk back to the chair and sit down again. Prior to performing the test, the investigator ensured that participants understood the sequence of actions that they must perform. They were then informed that their performance would be timed using a stopwatch. Older adults completed the test by walking normally, or they used a mobility device (e.g. cane or walker). At the start of the test, participants sat with their backs against the armchair and their arms on the armrests. If a mobility device was used, it was kept at hand. They were cued to begin rising from the chair (e.g. “one, two, three...go!”) and at that moment, timing of the performance was initiated. The stopwatch was stopped the moment the older adult returned to their starting position on the armchair. At no point during TUG test performance did the investigator assist the individual.

## APPENDIX F

### Development of Overall Self-Efficacy Measure

### *Overall Rising Self-Efficacy*

For the rising scenario, there were a total of five self-efficacy items on the questionnaire: confidence rising using only the legs, using the legs and the assistance of one arm, using the legs and the assistance of both arms, using both legs and arms, and confidence that help is needed to rise. In order to develop an overall measure for rising self-efficacy, reliability analysis was conducted to ensure adequate internal consistency. The following table lists the Cronbach's alpha statistic for the omission of each rising self-efficacy item:

Item(s) Omitted (mean $\pm$ S.D.)	Cronbach's alpha if item(s) omitted
None	0.638
Confidence that help is needed to rise (1.5 $\pm$ 8.0%)	0.775
Confidence that help is needed to rise Confidence rising using both legs and arms (97.9 $\pm$ 11.4%)	0.780
Confidence that help is needed to rise Confidence rising using both legs and arms Confidence rising using only the legs (67.3 $\pm$ 33.0%)	0.819

Cronbach's alpha was marginal when all five rising self-efficacy items were retained (i.e.  $\alpha = 0.638$ , cf. Tabachnick & Fidell, 2001). Dropping the highly invariable

“confidence that help is needed” item (nearly all participants were perfectly confident that they required no help at all with rising) increased the statistic the most (i.e. to  $\alpha = 0.775$ ). In order to continue to maximize internal consistency, the “confidence rising using only the legs” item would then have to be dropped. However, this item is the most variable among the high-functioning adults and its omission would entail very low variability in the overall measure. Dropping the next least variable item (i.e. “confidence rising using both legs and arms”) did lead to a small increase in Cronbach’s alpha (i.e. to  $\alpha = 0.780$ ). Thus, overall rising self-efficacy was defined as the arithmetic sum of the “confidence rising using only the legs”, “confidence rising using the legs and the assistance of one arm” and “confidence rising using the legs and the assistance of both arms” items. This combination of items increased internal consistency to an acceptable level (i.e.  $\alpha = 0.780$ ), while preserving both variability and realism (i.e. many participants stated that they nearly always employed the assistance of one or both arms in the effort to rise from a seat) in the overall measure.

#### *Overall Shopping Self-Efficacy*

For the shopping scenario, there were also a total of five self-efficacy items on the questionnaire: confidence walking around a supermarket, lifting goods from shelves, lifting goods from the cart to the counter, lifting goods from the cart to the car trunk, and confidence carrying groceries on the bus. Reliability analysis was once again used to develop an overall measure for shopping self-efficacy. The following table lists the Cronbach’s alpha statistic for the omission of each shopping self-efficacy item:

Item(s) Omitted (mean ± S.D.)	Cronbach's alpha if item(s) omitted
None	0.836
Confidence carrying groceries on the bus (66.9 ± 33.1%)	0.849
Confidence carrying groceries on the bus Confidence lifting good from shelves (90 ± 19.2%)	0.839

Cronbach's alpha was quite high using the full scale of all five shopping self-efficacy items (i.e.  $\alpha = 0.836$ ). However, on the basis of participant feedback, the "confidence carrying groceries on the bus" item was removed. A majority of the older adults told the investigator that this was a task that they have never needed to perform. In fact, many struggled to provide a self-efficacy rating for their confidence carrying groceries on the bus as they had to imagine what it might be like to perform this task. Omission of this unrealistic task from the overall measure maximized internal consistency (i.e. to  $\alpha = 0.849$ ). The remaining four self-efficacy items had high means (i.e. between 86.9% and 92.1%), but were relatively variable (i.e.  $19.2\% \leq \text{S.D.} \leq 25.9\%$ ). Overall shopping self-efficacy was therefore defined as the arithmetic sum of the "confidence walking around a supermarket", "confidence lifting goods from shelves", "confidence lifting goods from the cart to the counter", and "confidence lifting goods from the cart to the car trunk" items. This combination of items increased internal consistency (i.e. to  $\alpha = 0.849$ ) and improved realism (i.e. via the omission of the "confidence carrying groceries on the bus" item) of the overall measure.

## APPENDIX G

### Physical and Social Causal Attributions



Prior to data analysis, participants' primary attributions about why help would be offered in the scenarios (i.e. their response to the query: "What is the most important reason your son/daughter offered to help you...?") were coded as being either relevant to task performance (i.e. a physical attribution) or socially-motivated (i.e. a social attribution). Thus, reasons such as "I can't do it on my own", "I need help", "I'm getting older", and "to make it easier for me" were coded as being physical attributions for why help may be extended in a given context. On the other hand, explanations such as "love", "kindness", "to show that he/she cares", "a chance/an excuse to visit me", "to please me", "being considerate", "wants to help/be helpful", and "a sense of responsibility" were categorized as social attributions for the offer of unsolicited help. The following table provides an exhaustive list of the physical and social causal attributions provided by participants for both stimulus scenarios.

Physical Attributions	Social Attributions
Aging	Caring
"I'm getting older"	"Love" "Kindness" "Being nice"
Ability	Demonstration
"I can't do it on my own" "I need help"	"A gesture" "To show affection" "To show that he/she cares" "To please me"

Physical Attributions	Social Attributions
Safety	Society
“To prevent my falling” “He/she is afraid I’ll hurt myself” “Concern about my well-being”	“A chance/an excuse to visit me” “Companionship”
Relief	Consideration
“To make it easier for me” “So I won’t be tired” “To lessen my pain”	“He/she was going shopping anyway” “Being considerate” “Convenience”
	Helpfulness
	“Wants to help/be helpful”
	Social Mores
	“A sense of responsibility/duty” “His/her upbringing” “Out of respect” “To be polite”

## APPENDIX H

### Reverse-Scaled Variables

The following is a list of variables that had to be reverse-scaled prior to undergoing transformation to correct for skew. In certain instances, this reverse-scaling necessitates careful interpretation of generated statistics. For example, where reverse-scaled variables are correlated with non-reverse-scaled variables, the signs of Pearson correlation coefficients ( $r$ ) appear to be reversed. Note that, where this procedure was called for, it was required in *both* scenarios.

Reverse-scaled variables:

Total positive affect

Overall self-efficacy

Relation-inferred self-efficacy (RISE)

Efficacy discrepancy (ED)

## APPENDIX I

### Personal and Social Perceived Benefits

For secondary analyses that examined the frequency at which personal and social perceived benefits were selected, the following list provides a reference for how each perceived benefit was categorized. Note that each perceived benefit is paraphrased from the original questionnaire (see Appendix C for exact wording of each benefit). The list is divided into the subsections that participants encountered on the questionnaire (i.e. rising and shopping scenarios, then benefits associated with accepting and declining for each of them). Personally relevant perceived benefits were ones that proved advantageous to older adults exclusively, whereas social perceived benefits also suited the interests of the son or daughter in the helping scenarios.

Rising Scenario:

Accepting

*Personally-Relevant*

- safety
- less effort

*Socially-Relevant*

- son feels good
- direct interaction with son

Declining

*Personally-Relevant*

- use of muscles and balance

*Socially-Relevant*

- less troublesome for both
- not inconvenience son
- shows son I am able

Shopping Scenario:

Accepting

*Personally Relevant*

- safety
- convenience
- time to do other things

Declining

*Personally Relevant*

- use of muscles/balance
- use of planning skills
- get exactly what I want

*Socially Relevant*

- daughter feels good
- opportunity to see daughter

*Socially Relevant*

- less troublesome for both
- not inconvenience daughter
- shows daughter I am able

Accompany

Personally Relevant

- use of muscles/balance, plus other's support
- get exactly what I want

Socially Relevant

- time with daughter

## References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.
- Bischoff, H.A., Stähelin, H.B., Monsch, A.U., Iversen, M.D., Weyh, A., von Dechend, M., Akos, R., Conzelmann, M., Dick, W. & Theiler, R. (2003). Identifying a cut-off point for normal mobility: A comparison of the timed 'up and go' test in community-dwelling and institutionalised elderly women. *Age and Ageing*, 32(3), 315-320.
- Bohannon, R.W. (2006). Reference values for the timed up and go test: A descriptive meta-analysis. *Journal of Geriatric Physical Therapy*, 29(2), 64-68.
- Brawley, L.R., Frank, J., Patla, A., Gardner, A. & Shields, C. (2003, October). *BESAFE: Behavioral and Exercise Strategies for Alleviating Falls in the Elderly*. Presented for the National Falls Prevention Initiative special meeting at the Canadian Association of Gerontology annual meeting in Toronto, ON.
- Brubaker, T.H. (1990). A contextual approach to the development of stress associated with caregiving in later life families. In M.A.P. Stephens, J.H. Crowther, STD ERROR Holofill & D.L. Tennenbaum (Eds.), *Stress and coping in later life families* (pp. 29-47). Washington, DC: Hemisphere Publishing Corp.
- Callahan, D. (1985). What do adult children owe elderly parents? *The Hasting Center Report*, 15(2), 32-37.



- Carruth, A.K. (1996). Motivating factors, exchange patterns and reciprocity among caregivers of parents with and without dementia. *Research in Nursing and Health, 19*, 409-419.
- Cicirelli, V.G. (1993). Attachment and obligation as daughters' motives for caregiving behavior and subsequent effect on subjective burden. *Psychology and Aging, 8*(2), 144-155.
- Courneya, K. & McAuley, E. (1993). Efficacy, attributional, and affective responses of older adults following an acute bout of exercise. *Journal of Social Behavior and Personality, 8*, 729-742.
- Cousins, R., Davies, A.D.M., Turnbull, C.J., & Playfer, J.R. (2002). Assessing caregiver distress: A conceptual analysis and a brief scale. *British Journal of Clinical Psychology, 41*, 387-403.
- Crimmins, E.M. (2004). Trends in the health of the elderly. *Annual Review of Public Health, 25*, 1 –20.
- Fingerman, K.L. (1996). Sources of tension in the aging mother and adult daughter relationship. *Psychology and Aging, 11*(4), 591-606.
- Folstein, M.F., Folstein, S., McHugh, P.R. (1975). Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research, 12*(3), 189-198.
- Gaugler, J.E., Kane, R.L., & Kane, R.A. (2002). Family care for older adults with disabilities: Toward more targeted and interpretable research. *International Journal of Aging and Human Development, 54*(3), 205-231.

- Giles, M., McClenahan, C., Cairns, E., & Mallet, J. (2004). An application of the theory of planned behavior to blood donation: The importance of self-efficacy. *Health Education Research, 19*(4), 380-391.
- Godin, G. & Shephard, R.J. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Sciences, 10*, 141-146.
- Graham, S. & Barker, G.P. (1990). The down side of help: An attributional-developmental analysis of helping behavior as a low-ability cue. *Journal of Educational Psychology, 82*(1), 7-14.
- Guberman, N., Maheu, P. & Maille, C. (1992). Women as family caregivers: Why do they care? *The Gerontologist, 32*(5), 607-617.
- Gyurcsik, N.C. & Estabrooks, P.A. (2004). Acute exercise thoughts, coping and exercise intention in older adults. *Journal of Applied Social Psychology, 34*(6), 1131-1146.
- Leigh, G.K. (1982). Kinship interaction over the family life span. *Journal of Marriage and the Family, 44*, 197-208.
- Lent, R.W. & Lopez, F.G. (2002). Cognitive ties that bind: A tripartite view of efficacy beliefs in growth-promoting relationships. *Journal of Social and Clinical Psychology, 21*, 256-283.
- Levy, B.R., Hausdorff, Hencke, R. & Wei, J.Y. (2000). Reducing cardiovascular stress positive self-stereotypes of aging. *Journal of Gerontology, 55*, 205-213.
- Lyonette, C. & Yardley, L. (2003). The influence on carer wellbeing of motivations to care for older people and the relationship with the care recipient. *Ageing and Society, 23*, 487-506.

- Malonebeach, E.E. & Zarit, S.H. (1991). Current research issues in caregiving to the elderly. *International Journal of Aging and Human Development*, 32(2), 103-114.
- Mashegoane, S., Moalusi, K.P., Ngoepe, M.A., & Peltzer, K. (2004). The prediction of condom use intention among South African university students. *Psychological Reports*, 95(2), 407-417.
- McAuley, E., Duncan, T., & Russell, D. (1992). Measuring causal attributions: The revised causal dimension scale (CDSII). *Personality and Social Psychology Bulletin*, 18, 566-573.
- McAuley, E. & Mihalko, S. (1998). Measuring exercise-related self-efficacy. In J.L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 371-90). Morgantown, WV: Fitness Information Technology.
- National Alliance for Caregiving & AARP. (2004, April). *Caregiving in the U.S.* Retrieved March 11, 2005, from <http://www.caregiving.org/04finalreport.pdf>
- Newkirk, L.A., Kim, J.M., Thompson, J.M., Tinklenberg, J.R., Yesavage, J.A., & Taylor, J.L. (2004). Validation of a 26-point telephone version of the mini-mental state examination. *Journal of Geriatric Psychiatry and Neurology*, 17(2), 81-87.
- Office of the Chief Actuary. (2005, May). *National population projections*. Retrieved May 11, 2005, from [http://www.osfi-bsif.gc.ca/app/DocRepository/1/eng/oca/studies/popcdn\\_e.pdf](http://www.osfi-bsif.gc.ca/app/DocRepository/1/eng/oca/studies/popcdn_e.pdf)
- Ory, M., Hoffman, M.K., Hawkins, M., Sanner, B., & Mockenhaupt, R. (2003). Challenging aging stereotypes: Strategies for creating a more active society. *American Journal of Preventive Medicine*, 25(3Sii), 164-171.

- Palmore, E.B. (1999). *Ageism: Negative and positive*, 2<sup>nd</sup> edition. New York: Springer Publishing.
- Pinquart, M. & Sörenson, S. (2003). Differences between caregivers and noncaregivers in psychological and physical health: A meta-analysis. *Psychology & Aging, 18*(2), 250-267.
- Podsiadlo, D. & Richardson, S. (1991). The timed “up and go”: A test of basic functional mobility for frail elderly persons. *Journal of the American Geriatric Society, 39*, 142-148.
- Pyke, K. (1999). The micropolitics of care in relationships between aging parents and adult children: Individualism, collectivism, and power. *Journal of Marriage and the Family, 61*, 661-672.
- Raschick, M. & Ingersoll-Dayton, B. (2004). The costs and rewards of caregiving among aging spouses and adult children. *Family Relationships, 53*(3), 317-325.
- Rejeski, W.J., Ip, E.H., Katula, J.A., & White, L. (2006). Older adults’ desire for physical competence. *Medicine and Science in Sports and Exercise, 38*(1), 100-105.
- Ruchinkas, R.A. & Curyto, K.J. (2003). Cognitive screening in geriatric rehabilitation. *Rehabilitation Psychology, 48*(1), 14-22.
- Schneider, M.E., Major, B., Luhtanen, R., & Crocker, J. (1996). Social stigma and the potential costs of assumptive help. *Personality and Social Psychology Bulletin, 22*(2), 201-209.
- Schoppen, T., Boonstra, A., Groothoff, J.W., de Vries, J., Göeken, L.N., & Eisma, W.H. (1999). The timed “up and go” test: Reliability and validity in persons with unilateral

- lower limb amputation. *Archives of Physical Medicine and Rehabilitation*, 80(7), 825-828.
- Schulz, R. & Beach, S.R. (1999). Caregiving as a risk factor for mortality: The caregiver health effects study. *Journal of the American Medical Association*, 282(23), 2215-2219.
- Slotterback, C.S. & Saarnio, D.A.. (1996). Attitudes towards older adults reported by young adults: Variation based on attitudinal task and attribute categories. *Psychology and Aging*, 11(4), 563-571.
- Steffen, T.M., Hacker, T.A., & Mollinger, L. (2001). Age- and gender-related test performance in community-dwelling elderly people: Six-minute walk test, berg balance scale, timed up and go test, and gait speeds. *Physical Therapy*, 82(2), 128-137.
- Tabachnick, B.G. & Fidell, L.S. (2001). *Using Multivariate Statistics* (4<sup>th</sup> ed). Boston, MA: Allyn & Bacon.
- Tennstedt, S. (1999, March 29). *Family caregiving in an aging society*. Paper presented at U.S. Administration on Aging Symposium: Longevity in the New Century. Retrieved March 8, 2005, from <http://64.233.167.104/search?q=cache:zQYvCqDpZQsJ:www.aoa.gov/prof/research/famcare.pdf+tennstedt+family+caregiving+aging&hl=en>
- Wang, S.H.Q., Borland, R., & Whelan, A. (2005). Determinants of intention to quit: Confirmation and extension of western theories in male Chinese smokers. *Psychology and Health*, 20(1), 35-51.

- White, L.J. (2003). *The development and validation of a measure to assess desire for physical competence*. Unpublished masters thesis, Wake Forest University, Winston-Salem, North Carolina, United States.
- White-Means, S.I. & Hong, G.-S. (2001). Giving incentives of adult children who care for disabled parents. *Journal of Consumer Affairs*, 35(2), 364-389.