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Community-based Memory Screening Intervention and Memory Knowledge in Older Adults

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Community-based Memory Screening Intervention and Memory Knowledge in Older
Adults

A Dissertation Presented

by

TESSA S. LUNDQUIST

Submitted to the Graduate School of the University of Massachusetts Amherst in partial
fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 2015

Clinical Psychology

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DEDICATION

To all those affected by Alzheimer's disease.

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I would like to thank my advisor, Rebecca Ready, for her many years of mentorship and support. Thank you also to Michael Constantino, Christopher Overtree, and Joseph Mangine. Together, their friendship and contributions to my professional development have meant the world to me. I wholeheartedly thank all of my mentors and clinical supervisors throughout my time at UMass, all of whom have helped me get to this point. I would also like to express gratitude to the members of my committee, Linda Isbell and Cynthia Jacelon, for their guidance and suggestions throughout all stages of this project.

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ABSTRACT

COMMUNITY-BASED MEMORY SCREENING INTERVENTION AND MEMORY KNOWLEDGE IN OLDER ADULTS

SEPTEMBER 2015

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As the United States' population ages, there is a growing need for older adults to screen for age-related memory problems. Four theoretically-derived psychosocial factors are predictive of dementia screening intention: perceived benefits, perceived susceptibility, self-efficacy, and knowledge about aging memory. The current study preliminarily tested whether these factors could be increased with a community-based, educational memory screening intervention. Educational presentations were offered at community senior centers and data on psychosocial factors and willingness to screen were collected pre- and post-presentation from 32 older adult participants (age $M = 78.69$, $SD = 7.12$). Perceived benefits and self-efficacy significantly increased from pre- to post-presentation (Perceived benefits $F(1,31) = 8.73$, $p < .01$, partial $\eta^2 = .22$; Self-efficacy $F(1,30) = 7.52$, $p < .01$, partial $\eta^2 = .20$). The majority of participants (75%) signed up for memory screens following the presentation. Participants had generally high satisfaction ratings and positive narrative responses about the presentation. Results provide information about how the presentation can be refined to address psychosocial factors and determine if these factors impact willingness to screen for memory. This feasibility and efficacy

study represents a step to raising knowledge and awareness of memory and aging issues among older adults in the community.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT.	v
ABSTRACT.....	vi
LIST OF TABLES	xii
CHAPTER	
I. AGING MEMORY AND MEMORY SCREENING	1
A. Introduction.....	1
B. Benefits of Memory Screening	1
C. Psychosocial Factors Related to Screening.....	2
1. Perceived Benefits	3
2. Perceived Susceptibility.....	4
3. Self-efficacy.....	5
4. Knowledge about the Disease.....	6
II. HEALTH INTERVENTIONS.....	8
A. Successful Health Intervention Programs	8
1. Pain Management.....	8
2. Community-based Intervention	9
3. Regional Memory Screening Day.....	10
III. MEMORY SCREENING INTERVENTION	11
A. Current Study	11
B. Additional Considerations	12
1. Anxiety about AD	12
2. Preventive Health Behaviors.....	12
C. Hypotheses.....	13
IV. METHOD.....	14
A. Power Analysis.....	14
B. Participants	14
C. Measures.....	15

1. Demographic Questionnaire	15
2. Psychosocial Factors of Screening.....	15
3. Knowledge of Memory and Aging	16
4. Willingness to Screen for Memory	17
5. AD Anxiety	17
6. Feasibility Data.....	17
D. Procedure	18
E. Educational Presentation.....	20
1. Goal of Educational Presentation	20
2. Knowledge of Memory and Aging	21
3. Perceived Benefits	21
4. Perceived Susceptibility	21
5. Self-efficacy	22
6. Discussion and Question and Answer	22
V. RESULTS	24
A. Participants	24
B. Preliminary Analyses	24
1. Descriptive Statistics	24
2. Differences among Senior Centers	24
3. Associations among Outcomes and Demographic Characteristics	25
C. Primary Analyses	26
1. Efficacy Testing	26
a. Knowledge about Memory and Aging	27
b. Perceived Benefits	27
c. Self-efficacy	27
d. Perceived Susceptibility.....	28
e. Willingness to Screen.....	28
2. Durability of Effects for Self-efficacy and Perceived Benefits.....	29
a. Descriptive Statistics of Follow-up Data	29
b. ANOVAS Across Three Time Points	30
i. Follow-up Perceived Benefits	31

ii. Follow-up Self-efficacy.....	31
D. Feasibility	31
1. Satisfaction Rating	31
a. Most and Least Helpful Aspects of Presentation	32
b. Influence or Impact of Presentation.....	33
c. Suggestions for Improvement	34
d. Other Comments	34
E. Exploratory Analyses	35
1. AD Anxiety.....	35
2. Preventive Health Behaviors	36
3. Screening Engagement	36
4. Concerns about Memory Functioning.....	37
5. Previous Memory Evaluation.....	37
VI. DISCUSSION.....	38
A. Current Study Overview	38
B. Efficacy of the Educational Presentation.....	38
1. Perceived Benefits.....	38
2. Self-efficacy	39
3. Knowledge about Memory and Aging	40
4. Perceived Susceptibility	41
5. Willingness to Screen	43
6. AD Anxiety.....	44
C. Future Directions	44
1. Outreach to Older Adults.....	44
2. Development of the Presentation	45
3. Psychosocial Factors of Screening and Willingness	46
D. Limitations.....	47
E. Conclusions.....	47
APPENDICES	
A. DEMOGRAPHIC QUESTIONNAIRE	55
B. PSYCHOSOCIAL FACTORS OF SCREENING	60

C. KNOWLEDGE OF MEMORY AND AGING QUESTIONNAIRE	64
D. WILLINGNESS TO SCREEN	68
E. ANXIETY ABOUT MEMORY PROBLEMS.....	69
F. REACTION TO THE PRESENTATION	70
G. EDUCATIONAL PRESENTATION	72
BIBLIOGRAPHY.....	73

LIST OF TABLES

Table	Page
1. Descriptive Statistics for Pre- and Post-Presentation Outcome Variables.....	49
2. Demographic Characteristics of participants with Complete Data and Follow-up Participants.....	50
3. Associations among Outcomes and Categorical Demographic Variables: T-values.....	51
4. Correlations Among Outcomes and Continuous Demographic Variables.....	52
5. Descriptive Statistics for outcome variables: Subset of Participants with Follow-up Data.....	53
6. Mean Comparisons on Outcome Variables: Participants Who Did and Did Not Engage in Memory Screening.....	54

CHAPTER I

AGING MEMORY AND MEMORY SCREENING

A. Introduction

Memory capabilities change with age. Some changes with memory are a normal, yet frustrating, part of growing older. In contrast, some memory changes are significant, abnormal, and may be a sign of neurologic impairment or medical disease. Indeed, age is the biggest risk factor for developing memory deficits. Ten to 20% of American adults age 65 and older have mild cognitive impairment (MCI). About half of persons with MCI will progressively decline and may meet diagnostic criteria for Alzheimer's disease (AD) or another type of dementia within five years (Yesavage et al., 2002). A program to encourage older adults to engage in memory screening would provide opportunities for them to learn more about memory, allay many anxieties about memory, and identify persons that would benefit from a more thorough assessment of cognitive functioning. This program would have high societal impact due to the unprecedented aging of the U.S. population (Ashford, 2008). The current study tested the feasibility and efficacy of an innovative memory screening intervention for older adults.

B. Benefits of Memory Screening

Older adults worry about their memory functioning, but are unsure how to address their concerns (Corner & Bond, 2004; Werner, 2003a). By undergoing a memory screen, older adults may discover that their worries are unfounded. The majority of older adults who undergo a screen will score in the normal range; as noted, MCI is estimated in only 10 to 20% of the older adult population. A screening that incorporates feedback about scores can provide older adults the opportunity to learn more about what are normal aging memory changes, as well as how best to cope with changing cognition as they age.

Alternatively, an older adult who demonstrates impaired memory scores on a screening instrument can be alerted to seek a more extensive assessment (Yesavage et al., 2002). That is, a memory screen can serve to identify those individuals who may be at risk for more serious memory problems (Ashford, 2007) and help inform their next steps. The direct and indirect care costs for memory disorders increase with disease progression. Identifying, treating, and managing dementia in the milder disease stages can reduce these costs (Fillit & Hill, 2005).

Despite the benefits of memory screening, many older adults who meet criteria for memory impairment remain undetected (Ashford et al., 2007; Boustani et al., 2003; Lawrence et al., 2003). There are barriers to memory screening, such as older adults' lack of willingness to screen (Boustani et al., 2003), low knowledge about aging memory and dementia (Ayalon & Arean, 2004), and fear about memory loss (Corner & Bond, 2004; Galvin et al., 2008). Currently, there are limited published data on the efficacy or acceptability of memory screening programs among older adults (Crews, Harrison, Keiser, & Kunze, 2009).

C. Psychosocial Factors Related to Screening

Galvin, Scharff, Glasheen, and Fu (2006) developed a model and corresponding questionnaire to measure older adults' intentions to undergo memory screening. Their study explored how older adults' health perceptions might motivate them to seek cognitive screening for dementia (Galvin et al., 2008). They based their model on the conceptual framework of the behavioral model of health services use (BMHSU) (Andersen, 1995) with elements from the health belief model (HBM; Redding, Rossi, Rossi, Velicer, & Prochaska, 2000), theory of reasoned action (TRA; Ajzen, & Fishbein,

1980), and theories of self-efficacy (Bandura, 1998). The BMHSU proposes that health service use is a function of demographic, social, and belief factors specific to the behavior in question (Andersen, 1995). In the case of memory impairment, it may be that individual perceptions about need, accessibility, and availability affect screening usage. After development of the model, the questionnaire was subsequently used to determine which psychosocial factors were associated with intention to screen for dementia via telephone survey in a large sample of community-dwelling older adults ($N = 1,039$, age $M = 62.7$, $SD = 10.2$) (Galvin et al., 2008). Knowledge about dementia and its consequences was a significant predictor of screening intention, as well as the HBM factors of perceived benefits and perceived susceptibility. In addition, self-efficacy and engagement in previous preventive health behaviors were significant predictors. These four predictors of intention to screen are elaborated in more detail below.

1. Perceived Benefits

The HBM was originally developed by social psychologists in public health to predict who would engage in health screening (Redding et al., 2000). Since then, the model has been widely used to understand disease screening and engagement in healthy behaviors (Werner, 2004). The HBM proposes that an individual must believe that the benefits of a preventable action, such as disease screening, outweigh the barriers to doing so (Galvin et al., 2006). Indeed, for cancer screening, greater perceived benefits improved behavioral intention to screen. Women who perceived a benefit from early detection of colorectal cancer were more likely to undergo a screening colonoscopy (Frank, Swedmark, & Grubbs, 2004), and women who believed there was a benefit to regular self-breast examinations performed them more frequently (Graham, 2002). Werner

(2003) measured help-seeking for memory impairment through unstructured interviews and questionnaires administered to 79 older adults. Participants who perceived strong benefits from cognitive assessment expressed more intention to seek an assessment. Galvin et al. (2008) found that perceived benefits significantly predicted participants' willingness to engage in dementia screening.

2. Perceived Susceptibility

Personal susceptibility is one of the more powerful factors in determining engagement in healthy behaviors; people take preventive action when they believe they are at risk for a disease (Hayden, 2009). According to the HBM, to take preventive action, an individual must believe that they are susceptible to the disease and that the disease is sufficiently severe to warrant preventive behavior. As noted above, Galvin et al. (2008) found perceived susceptibility to be significantly related to memory screening intention. Participants who perceived a threat or risk of dementia expressed more likelihood to seek cognitive testing to determine their own risk of dementia, even if they were not experiencing symptoms. Interestingly, Werner (2003) found that items assessing perceived susceptibility were not significantly related to intention to seek a memory screening in older adults so data are mixed on this issue. Different results regarding perceived susceptibility and memory screening intention in Galvin et al. (2008) and Werner (2003) may be due to differences among the study design. For example, Werner (2003) asked participants about their perceived susceptibility after reading various hypothetical scenarios of an individual with memory loss, while Galvin et al. (2008) did not use such scenarios before participants' responded. Providing hypothetical scenarios may have minimized the impact of participants' personal susceptibility in relation to

seeing memory screening, since they were reading them in the context of someone else's hypothetical experience. Additionally, Werner measured perceived susceptibility with two questionnaire items, whereas Galvin et al. (2008) included four items that had good reliability.

3. Self-efficacy

Self-efficacy, which is the confidence to perform a particular behavior, was an important predictor of older adults' intention to engage in memory screening (Galvin et al., 2008). Self-efficacy may be the most important requisite for health behavior change; multiple theories of health behavior take self-efficacy into account. Recent formulations of the HBM have included self-efficacy as a key additional factor (Redding et al., 2000). According to social cognitive theory (Bandura, 1998), an individual's personal sense of control facilitates health behavior change, and self-efficacy is a sense of control over one's environment and behavior. Bandura proposed that the performance of a preventive behavior is highly related to an individual's belief and confidence in their ability to perform that behavior. The Transtheoretical Model states that self-efficacy is a factor that increases across the stages of change and is associated with health behavior change (Redding et al., 2000). Individuals with higher self-efficacy are more likely to express screening intention for cancers (Friedman, Puryear, Moore, & Green, 2005).

Hyde, Hankins, Deale, and Marteau (2008) reviewed the effectiveness of interventions aimed at increasing self-efficacy and changing health-related behaviors. The majority of the intervention studies reported a positive effect on self-efficacy, and self-efficacy can be changed using a range of methods (Hyde et al., 2008). Interventions that incorporated verbal persuasion and experiential activities were particularly effective

in modifying self-efficacy. These methods included presentation of information about the benefits of behavior change (e.g., quitting the addictive behavior), a reframe of possible negative outcomes, group discussion, and a plan to begin behavior change (e.g., steps to achieve quitting the addictive behavior).

4. Knowledge About the Disease

Galvin et al. (2008) found that knowledge about AD and aging memory was significantly related to intention to screen for memory. Similarly, Werner (2003b) found that older adults who had increased awareness and knowledge about AD and memory problems were more likely to engage in help-seeking for memory problems. Indeed, disease-specific knowledge has been identified as important for acceptance of screening for other diseases, such as colon and breast cancer (Boustani et al., 2003). While having more knowledge is associated with more intention to screen, older adults often exhibit low knowledge about memory and memory disorders. There is a tendency among older adults to think that memory problems are an inevitable part of aging and to be unaware of the difference between normal memory changes with age and symptoms of memory impairment (Werner, 2004; Knopman, Donohue, & Gutterman, 2000). In other words, older adults do not know when or why it would be necessary to seek a memory evaluation (e.g., Devlin et al., 2007; Galvin et al., 2008; Knopman et al., 2000; Werner, 2003b).

In one-on-one interviews and small focus groups with older adults who were AD caregivers, Knopman et al. (2000) found that the majority of participants had misperceptions and low knowledge about AD, including uncertainty about the point at which memory changes are severe enough to indicate a problem. Their lack of knowledge

about differences between normal and abnormal changes in memory with age was one of the main reasons for delayed help-seeking for their loved one's memory problems (Knopman et al., 2000).

Misperceptions and lack of knowledge regarding memory problems highlight the importance of expanding education about dementia among the older adult population (Werner, 2003b). Many experts suggest that programs to raise awareness and knowledge about AD could increase older adults' identification and evaluation of memory impairment symptoms (Ayalon & Arean, 2004; Galvin et al., 2008).

CHAPTER II

HEALTH INTERVENTIONS

A. Successful Health Intervention Programs

There are no published studies testing the development and implementation of an intervention for older adults to increase willingness to undergo memory screening. However, there are health promotion programs that have effectively addressed barriers to screening and improved healthcare outcomes for other chronic medical conditions. Programs to improve pain management in older adults and senior-center based initiatives to promote healthy aging behaviors are examples of effective interventions. These programs provide inspiration and ideas for the design and implementation of a memory screening intervention for older adults.

1. Pain Management

Gagliese et al. (2012) designed and implemented an intervention for improved chronic pain management in older adults. Health-related knowledge deficits about pain had been associated with delayed healthcare seeking. The study tested a community-based educational presentation to increase older adult knowledge about pain; the goal of the intervention was to increase proactive pain management. The one-time presentation was given at community centers in seven cities over the course of two months. Two speakers administered each 90-minute presentation; with the first speaker providing information about the fundamentals of chronic pain, the epidemiology of pain across adult life span, and impact of chronic pain, and the second speaker covering comorbidities of chronic pain and aging, barriers to pain management, and recommendations for caregivers. The final twenty minutes of each presentation were a question and answer period. Up to thirty people attended each presentation, with a total of

119 participants. Satisfaction scores were high and the educational presentations were effective; attendees' had significant knowledge gains as a result of the presentations. Results suggest that even a brief educational intervention can have positive effects among older community members (Gagliese et al., 2012).

2. Community-based Interventions

Community senior centers can be effective venues in which to provide healthcare education and to promote healthy behavior in older adults (Frosch, Rincon, Ochoa, & Mangione, 2010). Older adults regularly visit senior centers to access services and seek social support; it is estimated that over 14,000 senior centers in the United States serve more than 10 million seniors annually (Aday, 2003, as cited in Frosch et al., 2010). Screening interventions at community senior centers may be well received by older adults, and may be a feasible and effective way to increase participation in memory screening (Frosch et al., 2010; Lawrence et al., 2003). Programs to increase memory and dementia knowledge provided through community centers may increase awareness and support decisions to engage in memory screening (Galvin et al., 2008).

Indeed, Frosch et al. (2010) tested the use of educational and motivational video programs to promote healthy behavior in two senior centers. They presented a series of five videos, each 20 to 45 minutes long, about common chronic diseases in older adults and the importance of engaging in self-care behaviors. Repeated exposure to the motivational videos was successful in increasing participants' activation of self-care behaviors. Group discussions with a trained facilitator about the topics in the video program aided in integration of the information. Participants who attended three or more video screenings demonstrated more motivation and had better health-related quality of

life at follow-up. Overall, this intervention targeting older adults in a community setting was successful in increasing participants' proactive health care, engagement in activities to maintain functioning, and involvement in clinical decision making (Frosch et al., 2010).

3. Regional Memory Screening Day

Lawrence et al. (2003) offered memory screens to older adults by hosting a Regional Memory Screening Day in greater Boston area community centers. They measured older adults' attitudes about undergoing memory screens in venues such as churches, senior centers, and clinics and found that screening was well-received and of interest to participants. In fact, participants felt less stigma and isolation about screening for memory loss in a supportive community atmosphere (Lawrence et al., 2003). The screenings, which utilized the 7-minute screen test, identified potential cognitive impairment in several participants (Lawrence et al., 2003). While there are many factors to be considered in the implementation of this type of program, such as logistics, cost effectiveness, screening instrument, and follow-up, obstacles are surmountable and community screening could result in earlier interventions for previously undetected memory impairment (Lawrence et al., 2003).

CHAPTER III
MEMORY SCREENING INTERVENTION

A. Current Study

The current study tested the feasibility and efficacy of a community-based educational intervention designed to modify factors associated with older adult engagement in memory screening. To do this, the intervention was based on data that identified four factors associated with screening intention that are theoretically-grounded in models for health behavior change (Galvin et al., 2006; Galvin et al., 2008). Specifically, change in knowledge about aging memory and memory disorders, perceived benefits of screening, perceived susceptibility to memory disorders, and self-efficacy to get a screening were targeted by the intervention. Willingness to engage in memory screening, the ultimate target of the intervention, also was expected to increase as a result of the presentation. The durability of change effects was assessed approximately one week following the intervention. Feasibility of the intervention was assessed by participants' ratings of their satisfaction with the presentation and by reviewing their narrative responses of their experience of the presentation.

After the educational presentation, participants had the opportunity to sign up for a memory screening. The theory of reasoned action (Ajzen & Fishbein, 1980) states that the intention to perform a behavior is strongly related to actual performance of the behavior (Galvin et al., 2008), though there may be differences between participants' expressed willingness to screen, as measured through questionnaires, and their actual screening behavior. While willingness to screen, as measured through a questionnaire, was a main outcome of the study, actual screening engagement served as another

outcome to assess screening behavior. Participants' expressed willingness to screen was compared with their screening engagement.

B. Additional Considerations

1. Anxiety about AD

Memory impairment is one of the primary health-related worries of older adults (Borgault-Fagnoult & Hadjistavropoulos, 2008), and older adults have significant fear and anxiety about dementia (Corner & Bond, 2004). Fears and anxieties about dementia may contribute to avoidance of the problem and may inhibit some older adults from seeking a memory evaluation (Corner & Bond, 2004; Devlin, MacAskill, & Stead, 2007). Studies assessing the association between worry about cancer and screening have shown mixed results; some have shown that worry is a barrier to screening, while others have found that worry is positively related to screening usage (Friedman, Puryear, Moore, & Green, 2005). Our previous work suggests that anxiety about AD might be associated with more willingness to engage in memory screening (Lundquist & Ready, 2011). As an exploratory aspect of the current project, anxiety about AD was measured before and after the intervention to determine if the intervention had an effect on anxiety, either by lowering or raising it, and to explore how these changes might be associated with willingness to screen.

2. Preventive Health Behaviors

Galvin et al. (2008) found that an additional factor may be important to consider when trying to increase memory screening engagement in older adults. Participants' engagement in previous preventive health behaviors, such as having undergone a cancer screening, were predictive of intention to screen for dementia (Galvin et al., 2008). Thus,

previous preventive health behaviors were measured before the intervention to determine if there were significant associations with this factor and the main outcomes of the study.

C. Hypotheses

The current study is partially hypothesis-driven and partially exploratory in nature. The efficacy of the intervention was determined by testing changes in five outcomes from pre- to post-intervention. Specifically, it was hypothesized that between pre- and post-presentation, significant increases in knowledge about aging and memory, perceived benefits, perceived susceptibility, self-efficacy, and willingness to screen for memory would occur. It was expected that these increases would be stable over time when measured at a third time point one week post-presentation.

Exploratory analyses determined if the intervention had an effect on anxiety about AD. Previous engagement in preventive health behaviors was expected to be a positive predictor of pre- and post-presentation willingness to screen. Participants' engagement in memory screening as an outcome variable was explored.

CHAPTER IV

METHOD

A. Power Analysis

To determine the sample size, a power analysis for a repeated-measures within and between subjects analysis of variance (ANOVA) was conducted to account for potential covariates being added into the repeated measures within-subjects ANOVA model based on significant associations among demographic variables and main outcomes. Cherry et al. (2000) measured the effects of instruction on college students' knowledge about memory and aging and found a medium-large effect (Cohen's $d = 0.75$). Similarly, an intervention to increase older adults' knowledge about chronic pain found a medium-large effect (Cohen's $d = 0.71$) (Gagliese et al., 2012). Thus, the current study is powered to find a medium effect (Cohen's $d = 0.50$ or $f = 0.25$) of the memory screening intervention on change in outcomes between pre- and post-presentation. The power analysis revealed a required sample size of 28 to detect a medium effect with a power of .80 and an alpha of .05 in a mixed repeated-measures within and between subjects design.

B. Participants

Participants were older (≥ 65 years), English-speaking, male and female adults. Participants' data were excluded if they reported having a diagnosis of any form of memory impairment. They were community members who attended the memory presentation at a local senior center or senior living community. Ethnicity of the sample was representative of the communities in and around Western Massachusetts.

C. Measures

1. Demographic Questionnaire (Appendix A)

The demographic questionnaire assessed participants' age, gender, occupation status, income, education history, race, marital status, family history of AD, whether the participant had any friends or family with memory problems, whether the participant had ever been a caregiver for someone with memory problems, concerns about current memory functioning, overall health rating, history of memory evaluation, and whether the participant regularly saw their doctor for check-ups. The demographic questionnaire also included a question asking the participant whether they had ever been diagnosed with any form of memory impairment or dementia. Two participants responded yes to this question, thus, their data were not included in analyses. The demographic characteristics of particular interest were age, gender, education, family history of AD, friends or family with AD, whether the participant was or had ever been a caregiver for someone with AD, and physician usage.

2. Psychosocial Factors of Screening (Appendix B)

Perceived susceptibility, perceived benefits, and self-efficacy items were taken from a questionnaire developed by Galvin et al. (2006). Several items assessed each construct. In a sample of 1,024 older adults with a mean age of 62, each construct had acceptable internal consistency (Perceived Benefits Cronbach's alpha = .75; Self-efficacy Cronbach's alpha = .83; Perceived Susceptibility Cronbach's alpha = .70) (Galvin et al., 2006). In the current study, perceived susceptibility had fair internal consistency at pre- and post-presentation (Table 1). Perceived benefits had fair internal consistency at pre- and post-presentation. Self-efficacy had acceptable internal consistency at pre-

presentation and good internal consistency at post-presentation. Previous engagement in preventive health behaviors was measured at pre-presentation using items from the Galvin et al. (2006) questionnaire. Four preventive health behavior items encompassed the frequency of contact with health professionals and previous experiences with screening tests for a variety of chronic conditions. The preventive health behaviors construct had good internal consistency.

3. Knowledge of Memory and Aging (Appendix C)

The Knowledge of Memory and Aging Questionnaire- Don't Know option (KMAQ-DK) was used to assess knowledge about aging memory. The KMAQ-DK is a 28-item true/false questionnaire with 14 items related to normal memory changes occurring in later life and 14 items about pathological memory deficits due to abnormal memory functioning, such as AD (Cherry, Brigman, & Hawley, 2003). In a sample of 46 undergraduates, the Knowledge of Memory Aging Questionnaire (KMAQ) had fair internal consistency (Cronbach's alpha = .66). The fair coefficient value is not unexpected as the KMAQ items are heterogenous by nature and provide broad coverage of five different areas of normal and pathological memory aging (Cherry et al., 2000). The KMAQ-DK was developed as an extension of the KMAQ (Cherry et al., 2000) to determine potential differences in responses when participants had a "Don't know" option. The sensitivity of the measure was determined in a study in which it was given to college-aged adults before and after an information presentation about memory aging issues. In this sample, fewer "Don't know" responses were made at post-test compared to pre-test, and response accuracy improved between testing points, confirming the sensitivity of the KMAQ-DK to instruction (Cherry et al., 2003). In the current study, the

KMAQ-DK had poor internal consistency (Table 1). As noted, Cronbach's alpha measure of internal consistency may not be a meaningful metric for the KMAQ-DK, as it consists of items that are designed not to be heterogenous and are intended to measure different areas within normal and pathological memory and aging (Cherry et al., 2000).

4. Willingness to Screen for Memory (Appendix D)

The questionnaire to assess willingness to screen for memory contains five items asked on a 5-point Likert scale. In a previous study sample of 92 midlife and older adults, the questionnaire had good internal consistency (Cronbach's alpha = .87) (Lundquist & Ready, 2011). In the current study, the willingness to screen questionnaire had good internal consistency at pre- and post-presentation (Table 1).

5. AD Anxiety (Appendix E)

The AD anxiety questionnaire contains seven items to measure anxiety about AD on a 5-point Likert scale. In a previous study sample of 92 mid-life and older adults, the questionnaire had good internal consistency (Cronbach's alpha = .82) (Lundquist & Ready, 2011). In the current study, the AD anxiety scale had good internal consistency at pre- and post-presentation (Table 1).

6. Feasibility Data (Appendix F)

Feasibility of the intervention was measured with satisfaction ratings and narrative responses from all participants. Participants were given a satisfaction questionnaire designed by Gagliese et al. (2012). Eight items rated on a 5-point Likert scale assessed participant response to and satisfaction with the educational presentation intervention. A lower score indicated more satisfaction. In a sample of 54 older community members attending a pain management intervention, the satisfaction scale

had excellent internal consistency (Cronbach's alpha = .90). In the current study, the satisfaction scale had excellent internal consistency (Cronbach's alpha = .89).

Four open-ended questions were at the end of the satisfaction questionnaire. The questions asked (1) suggestions for improving the intervention, (2) other comments about the presentation or the topic of memory in older adults, (3) the most and least helpful aspects of the presentation, and (4) impact of the presentation on thoughts about screening for memory. This qualitative data were intended to provide information about the general acceptance and utility of the intervention.

As noted earlier, one group of participants was given a different satisfaction rating questionnaire; it had one item to rate satisfaction with the presentation on a scale of 1 to 10. This questionnaire included two of the four narrative questions described above: (1) the most and least helpful aspects of the presentation and (2) impact of the presentation on thoughts about screening for memory.

Fidelity data were collected by tracking time spent on each slide during each presentation and the total length of each presentation. This data was intended to provide comparison of how the presentation was disseminated at each location.

D. Procedure

Data collection began in September 2013 and continued through July 2014. Presentations were held in three senior center communities for a total of four presentations: Northampton Senior Center in Northampton, MA (first presentation in September 2013 and a second in July 2014); Applewood Senior Living Community in Amherst, MA (December, 2013); and Belchertown Senior Center in Belchertown, MA (March, 2014). In collaboration with directors and program coordinators at each center,

the presentations were offered on one date and the brief memory screens were held on another date about one week following the presentation. The presentations were promoted through newsletters, posted fliers, press releases, and at the community centers. The principal investigator delivered each presentation, which lasted about one hour each. Memory screenings were conducted by the principal investigator and various other advanced clinical psychology graduate students.

Prior to beginning each educational presentation, the presenter explained the research project and participants were invited to complete questionnaires. Participants who agreed to be in the study were instructed to leave one signed consent form in a folder with their completed questionnaires and to keep one copy for themselves. Pre-presentation questionnaires assessed participant demographics, psychosocial factors of screening (perceived benefits, perceived susceptibility, self-efficacy, knowledge about memory and aging), anxiety about AD, and willingness to screen for memory. Following the presentation, participants were asked to complete the second set of questionnaires. Post-presentation questionnaires included repeat measures of psychosocial factors of screening (perceived benefits, perceived susceptibility, self-efficacy, knowledge about memory and aging), anxiety about AD, and willingness to screen for memory, as well as a satisfaction rating questionnaire, which included quantitative items assessing satisfaction and narrative questions asking about participants' experience of the presentation. Due to researcher error, participants at the first Northampton presentation were given a different satisfaction measure than other participants. One week follow-up data were mailed to participants and included the psychosocial factors of screening, knowledge about memory and aging, and willingness to screen for memory questionnaires. A research

assistant made reminder calls about the follow-up data approximately one week following the presentation. If a packet was not returned, a research assistant again called that participant one week after the first reminder phone call. All participants were asked to complete this third time point of data, regardless of whether they signed up for a memory screen or not. All participants were entered into a raffle to win one of two fifty-dollar gift cards. Participants who completed the third time point of data were compensated five dollars. Once their completed third set of questionnaires was received, including a signed receipt, those participants were mailed a check.

E. Educational Presentation

1. Goal of Educational Presentation

The goal of the educational presentation was to increase psychosocial factors associated with intention to engage in memory screening, namely perceived benefits, perceived susceptibility, self-efficacy, and knowledge about memory and aging. To achieve this goal, the presentation consisted of PowerPoint slides designed to address each of these factors (Appendix G). The presentation was sent to experts in gerontology to review the breadth and depth of the content. Feedback was received from four neuropsychologists, one psychologist, one neurologist, and one behavioral neurologist. Reviewers provided generally positive feedback about the slides and offered constructive feedback to improve the presentation. Several suggested additions of brief discussion of dementia, further description of what is involved in a full memory evaluation, explanation of what would happen after a positive memory screen, and clarification of some examples of normal versus non-normal aging memory changes. The content and design of the slides were edited accordingly.

2. Knowledge of Memory and Aging

Six slides (slides 3, 4, 5, 6, 7, and 12) address knowledge about memory and aging. Information about normal memory changes with age is covered, as well as memory changes that are not a normal part of aging. Examples of normal and abnormal memory changes are given. Explanation of potential causes of memory impairment in older adults is provided, such as depressive symptoms, medication side effects, or poor nutrition. In a later slide (slide 12), information about memory screening is provided (which also addresses perceived benefits).

3. Perceived Benefits

Three slides (11, 12, and 13) address the benefits of memory screening and the earlier detection of memory impairment. The reasons to seek a screening, including knowing about one's own cognition and the possibility of early detection of memory impairment, are highlighted. The presentation explains that many individuals will demonstrate normal cognitive functioning during a memory screen, and may feel relieved by these results. The presentation explains that if an individual demonstrates non-normal cognition, it is beneficial to seek further cognitive assessment. The benefits of detecting memory impairment earlier, in terms of family planning and ability to make healthcare decisions, as well as current treatment options, including pharmacological and psychosocial treatments, are explained.

4. Perceived Susceptibility

Three slides (8, 9, and 10) address perceived susceptibility. To do so, the presentation provides facts about the symptoms of MCI, and the causes, risks, and prevalence rates of memory impairment among older adults. Additionally, a slide covers

the definition and different types of dementia. The presentation aims to provide clarity about the risk and threat of memory disorders by providing accurate information about susceptibility. The information is designed to not be alarming and anxiety-provoking to participants, but rather to cover facts about the prevalence and risks of developing memory disorders in older adults.

5. Self-efficacy

In addition to gaining information, having time and space to pose questions can help foster participants' feelings of self-efficacy and thus confidence to engage in screening (Hyde et al., 2008). It was hoped that by learning information about memory and screening and having the opportunity to engage in discussion, question, and answer, participants' self-efficacy to engage in memory screening would increase. The three final slides of the presentation (slides 14, 15, and 16) are intended to guide self-reflection, discussion of the material covered, and question and answer. Interventions to increase healthy behaviors and decrease addictive behaviors have effectively increased self-efficacy (Hyde et al., 2008). To do so, the interventions modified individuals' thoughts and cognitions with information about symptoms and behavior, and also used engaging methods such as group discussion (Hyde et al., 2008).

6. Discussion and Question and Answer

As noted, the presentation included time for discussion among participants and time during which they could ask questions of the presenter. The inclusion of an interactive component in an educational presentation, such as a question and answer period and discussion, can increase its effectiveness and positively impact health promotion behaviors (Curry, Hogstel, Davis, & Frable, 2002; Gagliese et al., 2012). To

stimulate group discussion, a vignette about an older adult with memory loss was included at the end of the presentation. Participants were asked to discuss reactions, thoughts, and advice about the vignette. As anticipated, it was easy to stimulate discussion about memory, likely because this issue is pervasive in older adult communities (Borgault-Fagnou & Hadjisavropoulos, 2009).

In addition to the PowerPoint slide presentation, a handout was provided to participants with tips to maintain cognitive health and memory because older adults generally appreciate this information. Information about resources was included in the slides and on the handout for participants to learn more about memory and dementia, including contact information for the National Institutes of Aging Information Center, the American Psychological Association, and the Alzheimer's Association.

CHAPTER V

RESULTS

A. Participants

Data from 48 participants were collected, but there was some missing data because some participants skipped too many items for a scale (more than 20%) to be scored or did not complete all the measures in a reasonable time frame. Thirty-two participants with complete data were included in efficacy analyses to determine change in outcome variables from pre- to post-presentation (Table 2).

B. Preliminary Analyses

1. Descriptive Statistics

Descriptive statistics were calculated for all variables at pre- and post-presentation (Table 1). Outcome variables at pre- and post-presentation were tested for normality. Pre- and post-presentation Knowledge of Memory and Aging, Perceived Benefits, Perceived Susceptibility, and Self-efficacy scores were normally distributed. Willingness to Screen scores displayed a ceiling effect at both time points, though this variable was not transformed, and original scores were used in primary analyses.

2. Differences among Senior Center Locations

The educational presentation was given in three different senior centers: Northampton ($n = 19$), Applewood ($n = 9$), and Belchertown ($n = 4$). The timing of the presentation ranged from 34.16 minutes (Applewood) to 48.62 minutes (Northampton). The difference in presentation time is largely attributed to audience questions or comments; some presentations resulted in more discussion than others.

A mixed-measures 2x3 ANOVA was conducted to determine whether there were

differences among participants at the three senior center locations across two time points (pre- and post-presentation). There was not a statistically significant interaction between senior center location and time on Knowledge of Memory and Aging, $F(2, 29) = 3.29$, $p > .05$, partial $\eta^2 = .185$; Perceived Benefits, $F(2, 29) = 1.71$, $p > .05$, partial $\eta^2 = .105$; Perceived Susceptibility, $F(2, 29) = 0.284$, $p > .05$, partial $\eta^2 = .019$; or Self-efficacy, $F(2, 29) = 0.267$, $p > .05$, partial $\eta^2 = .018$. There was a significant interaction between senior center location and time on Willingness to Screen, $F(2, 29) = 4.57$, $p < .05$, partial $\eta^2 = .240$. Specifically, post-hoc univariate ANOVAS of each time point revealed that there was a statistically significant difference in Willingness to Screen among the senior center locations at pre-presentation ($p < .05$), however, there was not a statistically significant difference in scores at post-presentation ($p > .05$). At pre-presentation, Belchertown had the highest mean ($M = 23.38$, $SD = 1.38$), followed by Northampton ($M = 21.21$, $SD = 2.74$), and lastly, Applewood ($M = 19.33$, $SD = .71$). Independent samples t-tests revealed that the Applewood mean was significantly different from Northampton ($t(21) = 2.04$, $p < .05$) and Belchertown ($t(11) = -5.55$, $p < .01$), though Northampton and Belchertown means were not significantly different from each other ($p > .05$). Because of the significant difference in pre-presentation Willingness to Screen, senior center location was controlled in primary analyses involving Willingness to Screen.

3. Associations among Outcomes and Demographic Characteristics

Associations were examined among outcome variables at pre- and post-presentation and demographic variables using t-tests for categorical variables (gender; family history of AD; friends/family with AD; caregiver history) (Table 3) and Pearson correlations for continuous variables (age; education level) (Table 4). These associations

were conducted to determine which variables needed to be controlled in primary analyses. Of note, all participants reported that they saw their physician regularly, so physician usage was not included in analyses. Gender and having friends or family with memory problems were both significantly associated with Perceived Susceptibility; females had a higher amount of post-presentation Perceived Susceptibility than males, and participants who reported having friends or family with memory problems had a higher amount of Perceived Susceptibility at both pre- and post-presentation than participants who did not report having friends with family with memory problems.. Willingness to Screen was associated with family history; participants who reported having a family history of AD had higher Willingness to Screen than participants who reported no such history, and was negatively associated with age. Age was also negatively associated with Knowledge of Memory and Aging and Self-efficacy.

C. Primary Analyses

1. Efficacy Testing

To test hypothesis that knowledge of memory and aging, perceived benefits, perceived susceptibility, self-efficacy, and willingness to screen would increase between pre- and post-presentation, a series of repeated measures, within-subjects ANOVAS were performed using time (pre- and post-presentation) as the repeated measure and each outcome as the dependent variable. It was expected that there would be a significant difference among the means of each variables between pre- and post-presentation. Effect sizes for each within-group comparison were calculated using partial eta-squared.

a. Knowledge about Memory and Aging

A repeated measures within-subjects ANOVA examined the effect of time on Knowledge scores between pre- and post-presentation while controlling for age. The presentation did not elicit significant changes in Knowledge scores over time, $F(1, 30) = 2.91, p > .05$, partial $\eta^2 = .107$; further, there was no significant interaction between age and time on Knowledge scores between pre- and post-presentation, $F(1, 30) = 3.59, p > .05$, partial $\eta^2 = .107$.¹

b. Perceived Benefits

A repeated measures within subjects ANOVA examined the effect of time on Perceived Benefits scores between pre- and post-presentation. The presentation elicited a statistically significant increase in Perceived Benefits over time, $F(1, 31) = 8.73, p < .01$, partial $\eta^2 = .22$, with a mean increase of .92.

c. Self-efficacy

A repeated measures within subjects ANOVA examined the effect of time on Self-efficacy between pre- and post-presentation while controlling for age. The presentation elicited a statistically significant increase in Self-efficacy over time, $F(1, 30) = 7.52, p < .01$, partial $\eta^2 = .20$, with a mean increase of 1.40. There was a significant interaction between age and time on Self-efficacy scores, $F(1, 30) = 5.98, p < .05$, partial $\eta^2 = .17$.

To examine the effect of age on Self-efficacy scores over time, two age groups were created: (1) participants aged 79 and younger ($n = 17$) who were categorized as

¹Due to the poor internal consistency of the KMAQ-DK, in exploratory analyses, ANOVAS for Knowledge were re-run after splitting the Knowledge questionnaire items into two categories; Aging Knowledge, consisting of items from the KMAQ-DK assessing knowledge of memory changes normal for age, and Pathological Knowledge, items assessing knowledge of pathological memory changes with age. There were no significant changes in Normal Knowledge or Pathological Knowledge between pre- and post-presentation ($p > .05$).

Young-Old and (2) participants aged 80 and older ($n = 15$) who were categorized as Old-Old. The change in self-efficacy between pre- and post-presentation for each age group was explored. A paired samples t-test showed that for Young-Old participants, post-presentation Self-efficacy scores ($M = 29.71$, $SD = 2.82$) were significantly higher than at pre-presentation ($M = 27.76$, $SD = 3.40$), $t(16) = -2.82$, $p < .05$. A paired samples t-test showed that there was no significant difference in Self-efficacy for Old-Old participants between pre ($M = 26.17$, $SD = 2.60$) and post-presentation ($M = 26.96$, $SD = 2.83$), $t(14) = -1.56$, $p > .05$.

d. Perceived Susceptibility

A repeated measures within-subjects ANOVA examined the effect of time on Perceived Susceptibility scores between pre- and post-presentation while controlling for gender and whether the participant had friends or family with memory problems. The presentation did not elicit a significant change in Perceived Susceptibility over time, $F(1,28) = 2.75$, $p > .05$, partial $\eta^2 = .089$. There was no significant interaction between gender and time on Perceived Susceptibility scores, $F(1, 28) = 2.93$, $p > .05$, partial $\eta^2 = .095$; and no significant interaction between friends or family with memory problems and time on Perceived Susceptibility scores, $F(1, 28) = 0.12$, $p > .05$, partial $\eta^2 = .004$.

e. Willingness to Screen

A repeated measures within-subjects ANOVA examined the effect of time on Willingness to Screen between pre- and post-presentation while controlling for age, family history of AD, and senior center location. The presentation elicited no significant change in Willingness to Screen over time, $F(1, 26) = 3.57$, $p > .05$, partial $\eta^2 = .121$. There was no significant interaction between age and time on Willingness to Screen, $F(1, 26) = 3.51$, $p > .05$, partial $\eta^2 = .119$; nor between family history of AD and time on

Willingness to Screen, $F(1, 26) = 2.61, p > .05$, partial $\eta^2 = .091$; nor between senior center location and time on Willingness to Screen, $F(1, 26) = 0.126, p > .05$, partial $\eta^2 = .005$.

Change scores were calculated to measure the difference between self-efficacy scores at Time 1 (pre-presentation) and Time 3 (follow-up) and Perceived Benefits scores at Time 1 and Time 3. Change scores were regressed on Willingness to Screen scores at Time 3. Specifically, a regression analysis was run to test the associations between the change scores and Willingness to Screen at follow-up. Self-efficacy change scores were not a significant predictor of Willingness to Screen, while controlling for age ($B = .03, p > .05$), and Perceived Benefits change scores were not significant predictors of Willingness to Screen ($B = -.03, p > .05$).

2. Durability of Effects for Self-efficacy and Perceived Benefits

a. Descriptive Statistics of Follow-up Data

Seventy-eight percent of participants ($n = 25$) with complete pre- to post-presentation data completed follow-up questionnaires (Table 2). All questionnaires were returned within two weeks of being mailed to the participant, thus about three weeks after the presentation.

Participants who did ($n = 25$) and did not ($n = 8$) provide longitudinal follow-up data were compared. An independent samples t-test showed that there was no statistically significant difference in age between the two groups, $t(30) = -.764, p > .05$. Chi square tests for association were run to determine whether there were differences in other categorical demographic variables between participants. There was a statistically significant association between participant groups and family history, $\chi^2(1) = 9.36, p <$

.01. This association was moderately strong, as assessed by phi, $\phi = .56, p < .01$. Participants with follow-up data were less likely to have a family history of AD than those without follow-up. There was not a statistically significant association between participant groups and gender, $\chi^2(1) = 2.07, p > .05$; education level, $\chi^2(4) = 2.52, p > .05$; whether the participant reported having friends or family with memory problems, $\chi^2(1) = 1.42, p > .05$; whether they reported being or ever having been a caregiver for someone with AD, $\chi^2(1) = 0.11, p > .05$; whether the participant reported having concerns about their memory functioning at the present time, $\chi^2(1) = 0.38, p > .05$; or whether the participant reported having had a previous memory evaluation, $\chi^2(1) = 0.30, p > .05$.

Descriptive statistics were calculated for all variables at pre-presentation, post-presentation, and follow-up for participants with complete data at all three of these time points (Table 5). Participants with and without follow-up data were compared on pre- and post-presentation variables (Knowledge of Memory and Aging, Perceived Benefits, Perceived Susceptibility, Self-efficacy, and Willingness to Screen). A series of independent samples t-tests revealed no statistically significant differences ($p > .05$) between participant groups on outcome variables at pre- or post-presentation.

b. ANOVAS across Three Time Points

To test the durability of significant changes, repeated measures within-subjects ANOVAS were conducted on Perceived Benefits and Self-efficacy with follow up participant data to investigate change in these variables across all three time points (pre-presentation, post-presentation, and follow-up).

i. Follow-up Perceived Benefits

For the perceived benefits model, Mauchly's test of sphericity indicated that the assumption of sphericity had not been violated, $\chi^2(2) = 2.44, p > .05$. There was a significant effect of time on Perceived Benefits, $F(2, 48) = 4.32, p < .05$, partial $\eta^2 = .152$. Planned pairwise Bonferonni comparisons demonstrated that there was a significant difference in Perceived Benefits between pre- and post-presentation ($p < .05$) and no significant difference in Perceived Benefits between post-presentation and follow-up ($p > .05$).

ii. Follow-up Self-efficacy

For the Self-efficacy model, Mauchly's test of sphericity indicated that the assumption of sphericity had not been violated, $\chi^2(2) = .032, p > .05$. The presentation elicited significant changes in Self-efficacy over time, $F(2, 46) = 5.59, p < .01$, partial $\eta^2 = .20$, while controlling for age. There was a significant interaction between age and time on Self-efficacy, $F(2, 46) = 5.59, p < .01$, partial $\eta^2 = .20$. Planned pairwise Bonferroni comparisons demonstrated that there was a significant difference in Self-efficacy between pre- and post-presentation ($p < .05$) and that there was not a significant difference in Self-efficacy between post-presentation and follow-up ($p > .05$).

D. Feasibility

1. Satisfaction Rating

Feasibility was assessed quantitatively by collecting a satisfaction rating of the presentation from each participant. Using descriptive qualitative methods, participants' narrative responses about their reaction to and experience of the presentation were thematically organized. Eighteen (56%) of the 32 participants with complete pre- and

post-presentation data completed an eight-item satisfaction rating scale. The mean satisfaction rating (8 to 40, with lower scores indicating more satisfaction) was 12.75 ($SD = 3.92$). As noted, due to an error, participants at the first Northampton presentation ($n = 10$) were provided a different satisfaction questionnaire with only one quantitative item assessing their satisfaction worded as “On a scale of 1 to 10, with 1 being not at all and 10 being extremely satisfied, please rate your satisfaction with the presentation.” Participants that were given this item had a mean satisfaction of 8.7 ($SD = 1.64$). These participants were asked to provide narrative responses to two items asking about the most and least helpful aspects of the presentation, and what impact or influence they thought the presentation had on them. Of note, these participants were not asked the two narrative items asking their suggestions for improvement and if they had any other comments about the presentation or topic or memory and aging in older adults.

a. Most and Least Helpful Aspects of Presentation

Sixteen participants provided feedback detailing what they found to be the most helpful aspects of the presentation. Of these, six responses spoke to the quality of the presenter and presentation, for example, noting aspects such as the presentation being clear and well-organized, an encouraging atmosphere for asking questions, and the outline and presentation slides as being most helpful. Seven responses spoke to the information contained in the presentation, for example, noting the helpfulness of overview and descriptions of normal memory loss and memory changes, and of hearing signs of different kinds of memory problems and diagnoses. Three responses noted that having an open discussion and talking about these issues in a neutral and reassuring way

were the most helpful aspects, and finally, two responses noted that being alerted to these issues in general was most helpful.

Five participants provided feedback detailing what they found to be the least helpful aspects of the presentation. Two of these responses noted that the presenter should repeat all audience questions since they were often hard to hear, particularly in a senior audience. The three other responses described wanting more information about specific issues, namely, the crucial time for screening; more information needed about what is occurring in the brain; and noted that there was not enough detailed discussion of therapeutic treatments and research findings.

b. Influence or Impact of Presentation

Twenty participants provided narrative responses to the item asking them to describe what impact or influence they thought the presentation may have had on their thoughts about screening for memory. Six participants described being more willing to screen as a result of the presentation, for example, writing, “I would have a memory screening done” or “More incentive for screening.” Three participants provided responses related to increased thought about these issues, for example, noting that the presentation made them more aware of possibilities of screening, and that it increased their thoughts about future screenings. Three participants described that there was no change, specifically citing that they had already wanted to be screened for memory. The remaining participants provided a variety of types of responses, with one noting that he or she felt more motivated to take steps to improve overall memory, one writing about how he or she understand resistance to testing given the status of treatments and low social acceptance for AD, one participant writing that he or she will urge others to get a memory

screen, too, and one saying that maybe he or she will pay more attention to his or her doctor now.

c. Suggestions for Improvement

Six participants (participants at the first Northampton presentation were not asked this question) provided responses to the item asking if they had suggestions for how the presentation could be improved in the future. Four participants provided suggestions specifically about the presentation, namely to provide copies of details provided on the slides, for the presenter to only take questions at the end of the presentation, and to have a better view of the slideshow. The other responses included participants requesting the inclusion of loss of hearing and vision as risk factors, reviewing compensatory strategies for memory problems, and describing more methods of memory testing.

d. Other Comments

Five participants (participants at the first Northampton presentation were not asked this question) responded to the item asking if they had any other comments on the presentation or on the topic of memory in older adults. Participants generally answered with positive comments, such as being glad they had the opportunity to become more informed, happy to have UMass conducting research, and being happy that the presenter is advocating, researching, and providing education in the field of dementia. One participant noted that the presentation did not cover a number of questions asked in the questionnaire, and one stated that it would have been nice if more men attended the presentation.

E. Exploratory Analyses

1. AD Anxiety

Exploratory analyses determined whether the presentation had an effect on AD Anxiety. Independent samples t-tests revealed that gender and family history of AD were associated with pre-presentation AD Anxiety. At pre-presentation, males had significantly lower AD Anxiety than females (male $n = 6$, $M = 16.80$, $SD = 3.31$; female $n = 25$, $M = 20.61$, $SD = 3.72$; $t(29) = -2.30$, $p < .05$; Cohen's $d = 1.08$). At pre-presentation, participants who reported having a family history of AD had significantly higher AD Anxiety than participants who reported no family history (family history $n = 7$, $M = 22.80$, $SD = 4.41$; no family history $n = 22$, $M = 19.15$, $SD = 3.44$; $t(27) = 2.29$, $p < .05$; Cohen's $d = 0.93$).

Pre-presentation AD Anxiety was significantly associated with pre- and post-presentation Perceived Susceptibility ($r = .45$, $p < .05$; $r = .58$, $p < .01$, respectively) and post-presentation AD Anxiety was also significantly associated with pre- and post-presentation Perceived Susceptibility ($r = .41$, $p = .05$; $r = .57$, $p < .01$, respectively). AD Anxiety was not significantly associated with other outcome variables at either time point.

To determine the effect of the presentation on AD Anxiety, a repeated measures within-subjects ANOVA was conducted to assess AD Anxiety at pre- and post-presentation while controlling for gender and family history of AD. The presentation elicited no significant change in AD Anxiety between pre- and post-presentation, $F(1, 26) = .122$, $p > .05$, partial $\eta^2 = .005$. There was no significant interaction between gender and time on AD Anxiety scores, $F(1, 26) = .089$, $p > .05$, partial $\eta^2 = .077$, and no

significant interaction between family history and time on AD Anxiety scores, $F(1, 26) = .089, p > .05$, partial $\eta^2 = .003$.

2. Preventive Health Behaviors

Exploratory analyses determined whether preventive health behaviors were related to willingness to screen. Preventive health behaviors were measured at pre-presentation as part of the Psychosocial Factors of Screening questionnaire. A Pearson correlation was conducted to test the exploratory hypothesis that preventive health behaviors would be positively related to willingness to screen. Preventive health behaviors were significantly positively correlated with post-presentation Willingness to Screen ($r = .37, p < .05$). Preventive health behaviors were significantly positively associated with post-presentation Perceived Benefits ($r = .39, p < .05$), and pre- and post-presentation Self-efficacy ($r = .69, p < .001; r = .56, p < .01$, respectively).

3. Screening Engagement

Independent samples t-tests were conducted to examine differences between participants with complete pre- to post-presentation data ($n = 32$) who opted to undergo a memory screening after the presentation ($n = 24$) versus those who did not ($n = 8$) on outcome variables (Table 6). Notably, there were significant differences on post-presentation Self-efficacy, with participants who screened having higher Self-efficacy than participants who did not screen. Participants who screened had higher Perceived Susceptibility than participants who did not screen at pre-presentation. Finally, participants who screened had higher Perceived Benefits and Willingness to Screen at pre- and post-presentation.

4. Concerns about Memory Functioning

Pre-presentation, participants indicated if they had concerns about their memory functioning. Fifty-three percent of participants reported that they had concerns about their memory functioning at the present time. An independent samples t-test revealed that participants who reported having concerns about their memory functioning had significantly more post-presentation Perceived Susceptibility than those who reported no concerns (concerns $M = 12.29$, $SD = 2.82$; no concerns $M = 10.40$, $SD = 2.23$; $t(30) = 2.09$, $p < .05$; Cohen's $d = 0.74$).

5. Previous Memory Evaluation

Twenty-two percent of participants reported that they had previously had a memory evaluation. These participants reported that they had had the memory evaluation either at a memory screening day held at a university, at their primary care doctor, or could not remember. An independent samples t-test revealed that participants who had a memory evaluation before had significantly higher AD Anxiety at pre-presentation ($M = 23.00$, $SD = 4.84$) than participants who reported no prior memory evaluation ($M = 18.95$, $SD = 3.14$; $t(29) = 2.64$, $p < .05$; Cohen's $d = 0.99$). Participants who had a memory evaluation also had significantly higher AD Anxiety at post-presentation (yes evaluation $M = 22.29$, $SD = 3.14$; no evaluation $M = 18.62$, $SD = 3.66$; $t(30) = 2.19$, $p < .05$; Cohen's $d = 1.08$). Participants who reported having had a memory evaluation before had more post-presentation Perceived Susceptibility than those who did not (yes evaluation $M = 13.42$, $SD = 3.60$; no evaluation $M = 10.84$, $SD = 2.15$; $t(30) = 2.41$, $p < .05$; Cohen's $d = 0.87$).

CHAPTER VI

DISCUSSION

A. Current Study Overview

The current study evaluated the feasibility and efficacy of an intervention designed to affect change in psychosocial factors related to willingness to screen for memory in older adults. The memory screening intervention consisted of an educational presentation disseminated in community senior centers. The intervention was generally well received. Participants had positive reactions to the presentation, the majority of participants signed up for memory screens after the presentation, and senior center administrators were amenable to having university researchers add to their programming. The intervention was effective in increasing participants' perceived benefits of memory screening and self-efficacy to engage in a memory screen.

B. Efficacy of the Educational Presentation

1. Perceived Benefits

The current study results support the notion that an educational presentation to increase knowledge about memory and aging significantly increases older adults' perception of the benefits of screening for memory. The HBM factor of perceived benefits proposes that an individual must judge that the benefits of disease screening outweigh the barriers in order to engage in screening (Galvin et al., 2006). In terms of memory disorders, convincing older adults about the benefits of screening can be difficult. Memory screening rates are low partly due to the belief that learning about memory impairment is futile, since treatments are limited and there is no cure (Connell et al., 2009). Indeed, there remains debate among researchers and clinicians about the utility

of screening for and diagnosing Alzheimer's disease, the most common memory disorder (Mangialasche et al., 2010).

However, there are compelling reasons to screen for memory and one goal of the intervention was to communicate these reasons to participants. For example, identifying and treating a memory disorder in the milder stages can reduce treatment costs and allow for long-term planning (Fillit & Hill, 2005). Further, some causes of memory impairment are reversible, such as medication side effects, undiagnosed medical conditions, and sleep disturbances (Alzheimer's Association, 2014). Alternatively, a large proportion of older adults who undergo a memory screen will have normal memory functioning and may feel relieved by this feedback. Many older adults lack the knowledge and awareness of these benefits of screening and disease detection. By providing educational information about these issues through a community-based presentation, the current study was able to increase participants' perceived benefits of memory screening.

2. Self-efficacy

The current study results provide evidence that self-efficacy to get a memory screening can be enhanced by an educational presentation providing knowledge about memory and aging issues. This finding is significant because self-efficacy is an important predictor of older adult intention to engage in memory screening (Galvin et al., 2008) and has emerged as one of the most important elements of health behavior change. For example, individuals with higher self-efficacy are more likely to express intention for cancer screening (Friedman et al., 2005). Multiple theories, including the HBM (Redding et al., 2000), social cognitive theory (Bandura, 1998), and the transtheoretical model (Prochaska & Velicer, 1997), consider self-efficacy as a primary factor that enables an

individual to perform a behavior. Hyde et al. (2008) reviewed interventions aimed at positively changing health-related behaviors and found that across studies, interventions had a positive effect on self-efficacy. They found that interventions using experiential activities and that included a verbal element were effective in increasing self-efficacy and these elements were included in the current intervention.

The self-efficacy findings are qualified by age group differences. While both age groups had similar levels of baseline self-efficacy, for young-old participants, self-efficacy significantly increased between pre- and post-presentation. However, for the old-old participants, self-efficacy did not significantly change as a result of the presentation. These findings indicate that the educational presentation was impactful in terms of self-efficacy for younger adults, though not for older adults. Perhaps something about the slides specifically intended to address self-efficacy, which included the vignette and prompts for discussion, were less salient for the older participants. Given the importance of self-efficacy in health behavior, it will be important for future research to better understand this age difference in self-efficacy change. Eventually, a study could investigate ways to increase self-efficacy in old-old adults, as this process may be different than for young-old adults. This research could have broad implications for promoting healthy behavior of all kinds in older adults.

3. Knowledge about Memory and Aging

Many experts have suggested that programs to raise awareness and knowledge about AD could increase older adults' identification of memory impairment symptoms (Ayalon & Arean, 2004; Galvin et al., 2008). Unfortunately, the educational presentation did not have a significant effect on knowledge about memory and aging.

Perhaps a lecture format is the not the best means to increase knowledge. For example, it may be more effective for a presentation to include an interactive component specifically regarding knowledge, such as a series of sample cases of older adults with normal memory changes versus memory impairment symptoms that the audience works together to identify. This way, participants could actively use the information they just learned which may result in greater knowledge gains.

It may also be that the measure used to assess knowledge did not capture the information provided by the presentation. That is, in retrospect, the questionnaire items may not have mapped well enough onto the topic areas covered in the educational presentation; this is a limitation of the current study. In future studies, it may be useful to use or create a knowledge questionnaire that more specifically maps onto the material disseminated in the presentation, and that is sensitive to changes in individuals' knowledge after attending the presentation. Alternatively, the educational presentation could be modified to better correspond with the questionnaire used to assess knowledge. It may be that the educational presentation could be effective at increasing knowledge about memory and aging, but a better correspondence between the material disseminated and the assessment of knowledge is needed.

4. Perceived Susceptibility

Perceived susceptibility did not significantly change as a result of the educational presentation. However, it is unclear the degree to which the perception of susceptibility for a memory disorder should be increased. Some degree of worry may be motivating to seek a memory evaluation but too much anxiety may discourage participants from facing their concerns. To refine the intervention to better address participants' feelings of susceptibility, this construct needs to be better understood.

AD anxiety was significantly positively associated with perceived susceptibility. Thus, perceived susceptibility may in fact be an anxiety-provoking construct. In this case, it would be important to identify who may feel more susceptible to and anxious about memory impairment prior to attending a presentation about memory issues. In the current study, 53% of participants reported that they had concerns about their memory functioning at the time of the presentation. Other studies have demonstrated a range of how worried older adults are about losing their memory capabilities. In one study investigating worry about dementia, only 16% of over 500 older adults reported worrying about dementia (Yeo, Horan, Jones, & Pendleton, 2007). However, Werner (2002) found that almost half of older adult participants reported being highly concerned about developing dementia. Another study found that in over 750 adults over the age of 50, the average perceived risk of developing AD on a scale from 0 to 100 was about 30 (Chung, Mehta, Shumway, Alvidrez, & Perez-Stable, 2009). Future studies should determine what a normative level of perceived susceptibility is for older adults, so that those who have higher or lower levels can be targeted more appropriately when encouraging memory screening.

Indeed, previous data are mixed on the effect of perceived susceptibility on willingness to screen in older adults. Galvin et al. (2008) found this factor to be positively associated with screening intention. Older adults who perceived a risk of dementia were more likely to seek out cognitive testing to determine their own risk of dementia (Galvin et al., 2008). However, Werner (2003) found that items assessing perceived susceptibility were not related to intention to seek a memory screening in a sample of older adults.

Further, there is no data addressing if and how older adults may over- or under-estimate their susceptibility of memory impairment and memory disorders.

A key component in a refined memory screening intervention will be addressing perceived susceptibility by providing accurate information about risk and susceptibility while also adequately reducing anxiety and attempting to keep perceptions realistic. The current study tried to accomplish this balance when addressing susceptibility. However, maybe a presentation dedicated to issues of memory and aging naturally increases individuals' perceived susceptibility. Perhaps in the future, the presentation facilitator could encourage discussion topics following the presentation that are more catered to each audience. For example, a group of participants with higher perceived susceptibility prior to the presentation may benefit from post-presentation discussion highlighting accurate rates of memory impairment and individuals' risk factors of developing it. More attention to this issue is warranted to ensure that participants leave with accurate knowledge of their risk of memory issues, but without undue anxiety.

5. Willingness to Screen

The educational presentation did not have an effect on participants' willingness to screen. This finding may be a consequence of the sample. Participants were older adults who were sufficiently motivated to attend a community presentation about memory and aging. Indeed, pre- and post-presentation willingness to screen scores demonstrated a ceiling effect. These participants may have been particularly eager to learn more about this topic and to receive a free screening. Thus, the sample may have entered the study having a relatively high level of willingness to screen, therefore limiting the potential effect of the educational presentation to produce change in willingness.

6. AD Anxiety

Learning information about aging and memory issues did not significantly increase older adults' anxiety about AD, which is encouraging. Fear about dementia is significant among older adults, may contribute to avoidance of memory problems, and may inhibit older adults from seeking memory evaluation (Corner & Bond, 2004; Devlin et al., 2007). It is important to know that an intervention disseminating information about these issues does not cause undue anxiety.

Research suggests that there may actually be an ideal amount of anxiety about an issue that can be motivating for individuals to engage in preventive health behaviors (Tanner, Hunt, & Eppright, 1991). In the current study, participants who had had a memory evaluation before had more AD anxiety than those who did not. In the future, it will be important to determine what an ideal level of AD anxiety may be for older adults that would encourage them to seek screening yet not raise their anxiety to a harmful level. Interestingly, prior to the presentation, male participants in the current study had significantly less AD anxiety than females. Men and women may benefit from different approaches to encouraging memory screening.

C. Future Directions

1. Outreach to Older Adults

A crucial next step in this line of research will be to consider how to reach individuals who are not interested enough in memory and aging issues to attend an educational presentation. Individual characteristics in the current study sample provide insight into what types of older adults may need more targeted outreach. Participants with a family history of AD had more baseline AD anxiety than those with no such history, and also were less likely to provide follow-up data than participants with no family

history. It may take more concerted effort to reach out to and maintain interest in the intervention content in individuals who have a family history of AD. They may represent a cohort who has higher perceived susceptibility to and fear of memory impairment, to the point of having less interest in and willingness to screen.

Participants who had engaged in previous preventive health behaviors had significantly higher willingness to screen and perceived benefits after the presentation. It is consistent with expectations and common sense that an individual who has engaged in preventive health behaviors in the past would express more willingness to screen for memory, particularly after attending an informational presentation on the subject. Perhaps it is the individuals who do not routinely engage in preventive behaviors that most need to be encouraged to attend the educational presentation. Recruitment may involve more targeted sign-ups at senior centers and senior communities to reach individuals who are not initially interested in a presentation about health or screenings.

2. Development of the Presentation

Participants' narrative feedback provides ideas for content to add to the presentation. For example, the presentation could be edited to include slides about treatments available for memory impairment and memory disorders, as well as the status of current research into the causes of disease and new treatments for dementia. Also, more information about research findings regarding memory impairment and what is occurring in the aging brain could be added to the presentation. Specifically, visual aids of the brain and how it looks with normal aging cognition versus with mild memory impairment, versus the later stages of dementia, could be salient for participants. This type of information would likely help to increase participants' knowledge about memory and aging, and represents topics about which older adults are interested in learning.

In order to impact more older adults, it is hoped that the educational presentation will be disseminated in a large amount of senior centers at some point in the future. Standardization of the presentation would make it more feasible and economical to implement in multiple settings. One possibility would be to create a video recording of the presentation that could be shown at senior centers, or perhaps plan the presentation to be shown via a webinar in real time. This type of dissemination would greatly increase the scope of the presentation, and each instance of the presentation would cover the exact same information on each slide. In this case, a facilitator would still be present to encourage audience discussion and participation after the video presentation.

3. Psychosocial Factors of Screening and Willingness

A key future direction of the current study would be to test whether changes in the psychosocial factors addressed in the educational presentation increase willingness to screen for memory impairment. The current study was focused on whether an educational presentation in senior centers could change psychosocial factors of screening. Future studies should refine the intervention to better effect change in these factors, and also determine whether modifying these psychosocial factors subsequently increases willingness to screen.

There are indications from the current study that the psychosocial factors have an effect on willingness to screen. The majority of participants opted to have a memory screening following the educational presentation, and there were some differences between participants who screened and participants who chose not to screen. Participants who screened had more self-efficacy following the presentation, providing more evidence that self-efficacy is a key component to engaging in screening. Participants who screened

also had higher perceived benefits, perceived susceptibility, and willingness to screen before and after the presentation. While, overall, the presentation did not elicit significant change in all of these factors, previous research and the current study indicate that they are likely important components of screening engagement and should be addressed when encouraging screening.

D. Limitations

The current study was composed of a sample of older adults living in communities in Western Massachusetts. Participants were highly educated and not racially or ethnically diverse, and are not representative of the general population. Additionally, there was no control group; thus, the current study design does not allow for causality to be determined between the presentation and significant change in perceived benefits and self-efficacy. While the content of the presentation slides was uniform across sites, each presentation had unique audience participation and discussion throughout, thus creating some variability in dissemination. Due to researcher error, two different rating scales of presentation satisfaction were administered to participants, which limits conclusions that can be drawn from the satisfaction results.

E. Conclusion

Previous studies have identified psychosocial factors related to dementia screening intention (Galvin et al., 2006). The current study developed and disseminated an intervention to test whether an educational presentation given in community senior centers could change those factors. Results indicate that the presentation effectively addressed participants' perceived benefits and self-efficacy, but may need to be modified to change knowledge and perceived susceptibility. The findings and participant feedback

provide ideas for refinement of the intervention to more effectively address psychosocial factors related to screening intention, and how these are related to willingness to screen. Future work should explore ways to disseminate the presentation to a wider range of older adults. As rates of memory impairment and other memory disorders continue to rise, educating older adults about memory issues associated with aging becomes increasingly important. Testing the use of a community-based intervention is an important step in impacting memory screening rates, and, ultimately, increasing awareness of aging memory issues among the older adult population.

Table 1: Descriptive Statistics for Pre- and Post-Presentation Outcome Variables

Variable	<u>Pre-Presentation</u>		Alpha	<u>Post-Presentation</u>	
	<i>N</i> = 32			<i>N</i> = 32	
	<i>M (SD)</i>	Scale Range		<i>M (SD)</i>	Alpha
Perceived Benefits	14.61 (2.15)	4-20	.70	15.54 (1.84)	.74
Perceived Susceptibility	11.56 (2.33)	4-20	.65	11.41 (2.70)	.77
Self-efficacy	27.02 (3.11)	7-35	.73	28.42 (3.11)	.82
Knowledge of memory aging	19.71 (2.98)	0-28	.51	20.52 (2.54)	.18
Willingness to Screen	20.95 (2.50)	5-25	.86	21.53 (2.48)	.86
AD Anxiety	20.03 (3.94)	7-35	.72	19.43 (4.14)	.77

Table 2: Demographic Characteristics of Participants with Complete Data and Follow-up Participants

Characteristic		<u>Complete sample</u> (<i>n</i> = 32) % or <i>M(SD)</i>	<u>Follow-up participants</u> (<i>n</i> = 25) % or <i>M(SD)</i>
Age		78.69 (7.12)	79.2 (7.14)
Gender	Male	18.8%	24.0%
	Female	81.3	76.0
Education	High school grad/GED	6.3	8.0
	Partial college	3.1	4.0
	College graduate	50.0	44.0
	Master's degree	31.3	32.0
	Doctoral degree, MD, or equivalent	9.4	12.0
Family history of AD	Yes	26.7	13.0
	No	73.3	87.0
Family or friends with memory problems	Yes	51.6	45.8
	No	48.4	54.2
Caregiver for someone with AD	Yes	37.5	36.0
	No	62.5	64.0
Concerns about memory functioning	Yes	53.1	56.0
	No	46.9	44.0
Previous Memory Evaluation	Yes	21.9	24.0
	No	78.1	76.0

Table 3: Associations Among Outcomes and Categorical Demographic Variables: T-values

	Gender	Family history	Friends/family with AD	Caregiver history
<u>Pre-presentation</u>				
Perceived Benefits	-0.14	1.56	0.98	0.38
Perceived Susceptibility	-1.25	1.04	2.63*	-.22
Self-efficacy	-0.16	0.44	0.79	-0.90
Knowledge of memory aging	-1.80	0.52	0.33	0.10
Willingness to Screen	-0.49	2.90**	0.64	-0.21
<u>Post-presentation</u>				
Perceived Benefits	0.18	0.19	0.75	-0.29
Perceived Susceptibility	-2.43*	1.84	2.53	0.02
Self-efficacy	0.07	0.72	0.56	-0.08
Knowledge of memory aging	-1.29	0.67	-0.45	0.91
Willingness to Screen	-1.33	1.80	0.93	-0.05

* $p < .05$; ** $p < .01$

Table 4: Correlations Among Outcomes and Continuous Demographic Variables

	Age	Education level
<u>Pre-presentation</u>		
Perceived Benefits	-.10	.05
Perceived Susceptibility	-.12	-.05
Self-efficacy	-.23	.16
Knowledge of memory and aging	-.50**	.18
Willingness to Screen	-.36*	.12
<u>Post-presentation</u>		
Perceived Benefits	-.28	-.01
Perceived Susceptibility	-.23	.01
Self-efficacy	-.55**	.33
Knowledge of memory and aging	-.29	.22
Willingness to Screen	-.17	.20

* $p < .05$; ** $p < .01$

Table 5: Descriptive Statistics for Outcome Variables: Subset of Participants with Follow-up Data ($n = 25$)

	<u>Pre-Presentation</u>		<u>Post-Presentation</u>		<u>Follow-up</u>	
	<i>M (SD)</i>	Alpha	<i>M (SD)</i>	Alpha	<i>M (SD)</i>	Alpha
Perceived Benefits	14.61 (2.19)	.30	15.47 (1.87)	.63	15.14 (1.63)	.69
Perceived Susceptibility	11.40 (2.31)	.67	11.41 (2.70)	.82	11.34 (2.68)	.76
Self-efficacy	26.87 (3.05)	.81	28.58 (3.02)	.83	28.48 (3.08)	.85
Knowledge of memory aging	17.78 (2.91)	.61	18.50 (2.63)	.14	17.61 (2.54)	.34
Willingness to Screen	20.90 (2.52)	.77	21.53 (2.48)	.81	21.04 (2.49)	.83

Table 6: Mean Comparisons on Outcome Variables: Participants Who Did and Did Not Engage in Memory Screening

	<u>Screen (<i>n</i> = 24)</u>	<u>No Screen (<i>n</i> = 8)</u>	
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>T</i>
<u>Pre-presentation</u>			
Perceived benefits	15.11 (1.97)	13.13 (2.10)	2.44*
Perceived susceptibility	12.04 (10.13)	10.13 (2.47)	2.12*
Self-efficacy	27.56 (2.70)	25.38 (3.85)	1.78
Knowledge about aging and memory	19.96 (3.22)	18.95 (2.12)	0.82
Willingness to screen	21.58 (2.32)	19.06 (2.11)	2.72*
<u>Post-presentation</u>			
Perceived benefits	15.93 (1.85)	14.38 (1.30)	2.19*
Perceived susceptibility	11.83 (2.55)	10.13 (2.90)	1.59
Self-efficacy	29.22 (2.93)	26.00 (2.39)	2.80**
Knowledge about aging and memory	20.62 (2.64)	20.24 (2.34)	0.37
Willingness to screen	22.17 (2.01)	19.63 (2.88)	2.78**

* $p < .05$; ** $p < .01$

**APPENDIX A
DEMOGRAPHIC QUESTIONNAIRE**

1. What is your age?

2. What is your gender?

0) M

1) F

3. Are you retired or employed?

0) Retired

1) Employed

If employed, do you work full time or part time?

0) Full time

1) Part time

4. Please circle which of the following best describes your current income:

0) 0-15,000

1) 15,000-30,000

2) 30,000-45,000

3) 45,000-60,000

4) 60,000-75,000

5) Above 75,000

5. What is the highest level of education you have completed? (Please circle one)

- 0) Less than 7 years of school (6th grade or less)
- 1) Junior High School (completed grades 7, 8, or 9)
- 2) Partial High School (completed grade 10 or 11)
- 3) High School Graduate or GED
- 4) Partial college
- 5) College Graduate
- 6) Master's Degree
- 7) Doctoral Degree, or MD, or the equivalent

6. Are you Hispanic or Latino?

- 0) Yes
- 1) No
- 2) Don't know/Not sure

7. Which one of these groups would you say best represents your race?

- 0) White
- 1) Black or African American
- 2) Asian
- 3) Native Hawaiian or Other Pacific Islander
- 4) American Indian, Alaska Native
- 5) Other (specify)
- 6) Don't know/Not sure

8. What is your marital status? (Please circle one)

- 0) Married
- 1) Widowed
- 2) Divorced
- 3) Separated
- 4) Never married
- 5) A member of an unmarried couple

9. Is there a family history of Alzheimer's disease in your family?

- 0) Yes
- 1) No

10. Does anyone in your family currently have Alzheimer's disease?

- 0) Yes
- 1) No

11. Do you have any friends with Alzheimer's disease?

- 0) Yes
- 1) No

12. Have you ever been a caregiver for someone with Alzheimer's disease?

- 0) Yes
- 1) No

If yes, please describe the nature of your relationship:

13. Do you have any concerns about your memory functioning at the present time?

0) Yes

1) No

14. How would you rate your overall health at the present time?

0) Extremely poor

1) Very poor

2) Average

3) Very Good

4) Excellent

15. Have you ever been diagnosed and/or treated with a psychiatric or mental disorder?

0) Yes

1) No

16. Have you ever had a memory evaluation before?

0) Yes

1) No

If yes, please describe where and when:

17. Do you see your doctor for regular check-ups?

0) Yes

1) No

APPENDIX B
PSYCHOSOCIAL FACTORS OF SCREENING

Please read each of the following statements carefully and rate how much you agree with each statement, ranging from “Strongly Disagree” to “Strongly Agree.” You may skip any questions that you do not want to answer.

1. Screening tests can make an early diagnosis of memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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2. The earlier the diagnosis of memory loss, the better.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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3. Diagnosing memory loss at a very mild stage will allow me to get medication to treat it.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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4. Early diagnosis of memory loss will allow me to plan my life.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

5. I see my doctor for regular check-ups

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

6. I have regular mammograms (female) or prostate checks (male)

- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
7. I have regular colonoscopy examinations
- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
8. I see the dentist regularly.
- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
9. Compared to other people my age, I have a pretty good chance of getting Alzheimer's disease.
- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
10. As I age, I am more likely to get Alzheimer's disease.
- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
11. If a family member suffered from Alzheimer's disease then I will too.
- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
12. I feel the chances are good that I will get Alzheimer's disease.
- | | | | | | |
|--|-------------------|----------|---------|-------|----------------|
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|

13. I am confident I can get a screening test for memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

14. I am confident I could find out about how to get a screening test for memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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15. I am confident I can ask my doctor for a referral to get a screening test for memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

16. I am confident I can get a screening test for memory loss even if I don't have symptoms of memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

17. I am confident I can get a screening test for memory loss if I have symptoms of memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

18. It's entirely my decision about whether I get screened for memory loss.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
----------------------	----------	---------	-------	-------------------

19. Getting an early diagnosis of Alzheimer's disease would help me feel more in control of my future.

Strongly
disagree

Disagree

Neutral

Agree

Strongly
agree

8. Sometimes the effects of intense grief over the loss of a loved one may be mistaken for early Alzheimer's disease in older adults.

True

False

Don't Know

9. A complete physical exam by a doctor is routinely recommended if a diagnosis of Alzheimer's Disease is suspected.

True

False

Don't Know

10. Older people tend to remember specific past events in their daily life better than they remember the meanings of words (vocabulary) and general facts (such as the capital of the United States).

True

False

Don't Know

11. Frequent complaining about memory problems is an early sign of Alzheimer's disease.

True

False

Don't Know

12. The only way to tell for sure if an individual has Alzheimer's disease is to do an autopsy after that person has died.

True

False

Don't Know

13. If an older adult is unable to recall a specific fact (e.g., remembering a person's name), then providing a cue to prompt or jog the memory is unlikely to help.

True

False

Don't Know

14. When older people are trying to memorize new information, the way they study it does not affect how much they will remember later.

True

False

Don't Know

15. If one has lived to be 85 years old and shows no signs of Alzheimer's disease, then the chances are very high that this person will live out the rest of his or her life without developing the disease.

True

False

Don't Know

16. For older adults, the ability to remember something is unrelated to the number of other thoughts or issues on their mind when trying to recall this information.

True

False

Don't Know

17. Memory for how to do well-learned things, such as reading a map or riding a bike, does not change very much, if at all, in later adulthood.

True

False

Don't Know

18. Signs and symptoms of Alzheimer's disease show up gradually and become more noticeable to family members and close friends over time.

True

False

Don't Know

19. When an older adult comes in for a checkup, doctors and psychologists can now clearly tell the difference between the symptoms of mental health problems and the symptoms of physical illness.

True

False

Don't Know

20. Immediate memory (such as repeating a telephone number) is about the same for younger and older people, but an older person's memory for things that happened days, weeks, or months ago is typically worse than that of a younger person.

True

False

Don't Know

21. If an older person has gone into another room and cannot remember what he or she had intended to do there, going back to the place where the thought first came to mind will often help one recall what he or she had intended to do.

True

False

Don't Know

22. Alzheimer's disease is the only illness that leads to confusion and memory problems in older adults.

True

False

Don't Know

23. For older people, education, occupation, and verbal skills tend to have little influence on their memory.

True

False

Don't Know

24. Modern-day memory improvement methods that are based on organization (e.g., grouping similar items together) and association (e.g., linking new information to what is already known) can actually be traced back to the ancient Greek scholars, such as

Aristotle and Plato.

True

False

Don't Know

25. Healthy older adults have trouble remembering how to use familiar gadgets (like a key chain) and appliances (like a can opener).

True

False

Don't Know

26. Dramatic changes in personality and relationships with others may be seen in persons who have Alzheimer's disease.

True

False

Don't Know

27. Memory training programs are not helpful for older persons, because the memory problems that occur in old age cannot be improved by educational methods.

True

False

Don't Know

28. Lifelong alcoholism may result in severe memory problems in old age.

True

False

Don't Know

APPENDIX D
WILLINGNESS TO SCREEN

Please answer the following questions based on the rating scales provided for each answer. You may skip any questions that you do not want to answer.

1. I would be willing to undergo a brief screening test for Alzheimer's disease if I felt I was experiencing memory problems

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

2. I would want to know as early as possible if I had Alzheimer's disease

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

3. If my primary care doctor was offering free screenings for Alzheimer's disease, I would gladly do one

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

4. For the following question, please imagine a hypothetical situation in which you are suffering from signs of Alzheimer's disease, and then rate how much you agree with this statement: I would seek professional help (such as from my primary care doctors, family physician, psychiatrist, psychologist, neurologist, social worker)

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

5. If my doctor told me I was experiencing signs of Alzheimer's disease, I would want to get them evaluated as soon as possible

Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

APPENDIX E
ANXIETY ABOUT MEMORY PROBLEMS

Please read each of the following statements carefully and rate how much you agree with each statement, ranging from “Strongly Disagree” to “Strongly Agree.” You may skip any questions that you do not want to answer.

1. The older I become the more I worry about developing Alzheimer’s disease

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

2. The thought of Alzheimer’s disease makes me anxious

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

3. I avoid thinking about Alzheimer’s disease because it worries me

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

4. I find it hard to stop worrying about Alzheimer’s disease

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
----------------------	----------	------------	-------	-------------------

5. I’m afraid that my life would have no meaning if I had Alzheimer’s disease

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
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6. I worry that if I developed Alzheimer’s disease I would feel embarrassed and foolish

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
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7. I worry when I experience small memory slip-ups

Strongly Disagree	Disagree	Don’t Know	Agree	Strongly Agree
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**APPENDIX F
REACTION TO THE PRESENTATION**

Please rate the presentation using the following scale:

	Strongly Agree 1	Agree 2	Neutral 3	Disagree 4	Strongly Disagree 5
1. Overall this presentation met my expectations	1	2	3	4	5
2. The presentation topic was of interest to me personally	1	2	3	4	5
3. The presentation material was well-organized	1	2	3	4	5
4. The presentation material was clear and easy to follow	1	2	3	4	5
5. The presentation provided information I can use	1	2	3	4	5
6. I would like to learn more about this topic	1	2	3	4	5
7. There was enough time for questions	1	2	3	4	5
8. Questions were answered clearly	1	2	3	4	5

1. Do you have any suggestions for how we can improve the presentation in the future?

2. Do you have any other comments on the presentation or the topic of memory in older adults?

3. Please describe what you found to be the most helpful and least helpful aspects of the presentation.

4. Please describe what impact or influence you think the presentation may have had on your thoughts about screening for memory.

APPENDIX G
EDUCATIONAL PRESENTATION (SEE ATTACHED PDF)

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