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HELP-SEEKING FOR COGNITIVE IMPAIRMENT BY THE PATIENT: THE ROLE
OF SELF-COMPASSION

By

Allison J. Midden
B.A., Scripps College, 2012
M.S., University of Louisville, 2016

A Dissertation
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in Clinical Psychology

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University of Louisville
Louisville, Kentucky

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ABSTRACT

HELP-SEEKING FOR COGNITIVE IMPAIRMENT BY THE PATIENT: THE ROLE OF SELF-COMPASSION

Allison J. Midden, M.S.

June 22, 2018

Older adults represent one of the fastest growing population groups with estimates predicting global growth from 617 million in 2015 to 1.6 billion in 2050. As the aged population increases, incidence of Alzheimer's disease (AD) and other dementias will also increase. Professionals agree that early intervention is essential for therapeutic and quality of life purposes. However, many older adults wait several months or years to seek medical help after first noticing signs of cognitive impairment. The present study seeks to identify the predictors of help-seeking for cognitive impairment by an individual for him/herself and the role that self-compassion may play in this process. Using two approaches, the present study reveals that cognitive (i.e., symptom identification and disease attribution) and affective (i.e., symptom impact and threat appraisal) factors predict help-seeking intentions while also providing evidence that help-seeking intentions may be a separate construct from help-seeking behavior in the context of responding to signs of AD. Contrary to hypotheses, self-compassion did not function as a moderator of help-seeking intentions nor did it significantly predict help-seeking intentions beyond other variables. Consideration is given as to why self-compassion may not have

functioned in this process as expected. Self-compassion may have a greater impact on help-seeking actions than the intentions that seem to have been measured by the present study. Recommendations are made for future research to further investigate patients' help-seeking actions in response to signs of cognitive impairment and to clarify whether or not self-compassion plays a role.

Keywords: cognitive impairment, dementia, help-seeking, aging, self-compassion

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INTRODUCTION

Older adults represent one of the fastest growing subsections of the population; the United States Census Bureau (Wan, Goodkind, & Kowal, 2016) estimated that the global population of adults aged 65 and over was 617 million (i.e., 8.5 percent of the total population) in 2015 and predicted that there will be 1.6 billion elderly people globally by 2050. Additionally, Alzheimer's Disease International (2010) estimated that 35.6 million people globally were living with dementia in 2010 and predicted that this number would increase to 65.7 million by 2030 and 115.4 million by 2050 with the majority of cases occurring in older adults. Thus, physical and mental healthcare for the elderly is an international concern that must be prioritized; addressing needs associated with dementia is particularly important because dementia is one of the two most feared diseases and costs society a significant amount in time, money, and resources (Alzheimer's Disease International, 2010; MetLife Foundation, 2011).

Over the past several years, it has become clear that early detection and diagnosis of cognitive impairment is essential for the best possible quality of care, quality of life, and general outcomes for patients and their families. Seeking help earlier after the detection of symptoms may lead to the identification of reversible causes of memory loss and may allow for intervention to slow cognitive decline, especially as science continues to advance in this area. Beyond broader and more effective treatment options, early detection may, most importantly, influence the quality of life of the patient and his/her family by allowing time for preparation and planning while the patient is still able to be

actively involved in the process (Bradford et al., 2009).

More often than not, the dementia diagnosis pathway in the formal healthcare system begins with a patient's primary care physician (e.g., Hodgson, 2004). The primary care physician may even be the first person to detect symptoms of cognitive impairment (Bradford et al., 2009). Otherwise, the detection of symptoms may begin with the patient or his/her close family and friends. Many studies indicate that there is a significant delay between first noticing signs or symptoms of dementia and actually seeking help from a healthcare professional; one study specifically found that this lag was 2.4 years on average (Chrisp, Thomas, Goddard, & Owens, 2011). This timing is unfortunate because, as previously discussed, it is during this time period when help and intervention can be most effective for patients and their families.

There is a growing body of research intent on identifying the delays and contributing factors to dementia help-seeking and diagnosis. For example, Bradford and colleagues (2009) listed patient factors as a barrier to diagnosis and specifically cited a patient's refusal to seek help, assessment, or treatment as a common barrier; the current study suggests that this behavior is an avoidant response to negative emotions.

A variable that has yet to be explored in the dementia help-seeking body of research but may play an important role in the decision to seek help specifically by moderating the effect of negative emotion on help-seeking is that of self-compassion. Self-compassion has been associated with health-promoting behaviors, shorter time to seeking help for health concerns, and greater willingness to accept help (Allen & Leary, 2013; Sirois, Kitner, & Hirsch, 2015; Terry, Leary, Mehta, & Henderson, 2013). Thus, it is worth investigating if self-compassion acts as a moderator in the models representing

the relationships between symptom detection, illness appraisal, and patient help-seeking intent and behavior.

The present study adds to the building research on the role of self-compassion in aging and further explores its role in the process of a patient seeking help for him/herself. This may be an encouraging line of exploration based on research indicating that interventions can effectively increase self-compassion; thus, if self-compassion is found to moderate older adults' decision to seek help for dementia, then perhaps interventions targeting self-compassion will result in earlier help-seeking and diagnosis, thereby allowing patients and their families to benefit from the opportunities associated with that early diagnosis.

Subjective Memory Complaints and the Path to Dementia

Within the past ten years, there has been growing consideration of what has been termed pre-clinical dementia or pre-clinical Alzheimer's disease. Sperling and colleagues (2011) presented the discovery of pathophysiological evidence of functional and structural brain alterations, such as amyloid beta accumulation, in cognitively normal older adults that is consistent with the abnormal patterns seen in patients with mild cognitive impairment (MCI) and Alzheimer's disease (AD). Beyond the neurological findings, there may also be subtle cognitive changes that are detectable years before patients meet criteria for MCI or AD. Sperling and colleagues (2011) depicted the clinical trajectory of pathological aging in contrast to healthy aging in Figure 1. This pre-clinical phase may be quite long in duration and provide a critical opportunity for intervention.

Figure 1. Model of the clinical trajectory of Alzheimer’s disease (AD) as presented in Sperling et al. (2011). They explain that the pre-clinical stage of diagnosable cognitive impairment precedes MCI and AD and also emphasize that some individuals may fit the preclinical pattern according to physiological and/or cognitive complaints but may never progress to the clinical phases of MCI or dementia.

An obstacle that clinicians face is identifying individuals in this preclinical stage. Unfortunately, it is not yet feasible to test everyone for biomarkers of AD and determine if they are at risk for developing advanced dementia in the future. Geriatric clinicians, however, have the opportunity to review annually how patients are doing functionally and cognitively, assuming that patients adopt recommended healthcare practices. At these visits patients may have the chance to present concerns regarding subjective memory impairment (SMI), which is the perception that one’s memory is beginning to decline.

SMI is quite prevalent in the community-dwelling population. In a survey of community-dwelling adults 65 years and older, Fritsch, McClendon, Wallendal, Hyde, and Larsen (2014) found SMI in 27.1% of participants. Though it may be unsurprising that older adults are experiencing SMI, Paradise, Glozier, Naismith, Davenport, and Hickie (2011) reveal that it can also be found in middle-aged individuals finding that 12% of individuals aged 45-64 years reported SMI. Therefore, there is cause for investigating SMI and one’s response or intended response to it in both middle-aged and

older groups.

Research suggests that initial worsening of cognitive performance is experienced by individuals before meeting criteria for MCI or mild neurocognitive disorder (MCI, as the more commonly used phrase, is used throughout the present paper to represent both MCI and mild neurocognitive disorder). Indeed, studies conducted with large cross-sectional cohorts have found a slightly poorer performance in individuals with SMI compared to those without cognitive complaints, and longitudinal studies identify SMI as a predictor of cognitive decline and dementia (Jessen et al., 2010). Jessen and colleagues (2010) conducted a longitudinal study over three years to identify the risk of conversion to dementia as predicted by SMI with or without worry at baseline. They ultimately found that SMI with worry at baseline was associated with significant risk for conversion to any dementia or dementia in AD, and SMI at baseline followed by MCI at the first follow-up examination was associated with the greatest risk of conversion to dementia (Jessen et al., 2010). Thus, Jessen and colleagues' (2010) results support the model of a 3-stage progression from SMI to MCI and finally to dementia.

A concern of many researchers and clinicians is that previous research has either not found any or found very small objective cognitive differences between individuals with and without SMI. They wonder if SMI should be taken seriously as a sign of future cognitive decline or if it is more likely a symptom of something else, such as anxiety or depression. Mitchell, Beaumont, Ferguson, Yadegarfar, and Stubbs (2014) conducted a meta-analysis to address this question investigating whether people with SMI but without objective deficits are at increased risk of developing MCI and dementia. They found that the average annual conversion rate of SMI to dementia was 2.33% which was a relative

risk of 2.07 when compared to those without SMI. In studies following participants for more than four years, 14.1% of people with SMI developed dementia and 26.6% developed MCI. Ultimately, they found that individuals with SMI were twice as likely as those without to develop dementia (Mitchell et al., 2014). More recent studies completed by Buckley and colleagues (2016) and Luck, Lupp, Matschinger, Jessen, Angermeyer, and Riedel-Heller (2015) confirmed these findings suggesting that high SMI is predictive of greater rates of clinical progression to dementia, thereby identifying this time period as ideal for intervening and promoting help-seeking behavior.

Models for Help-Seeking for Cognitive Impairment

The Common-Sense Model (CSM) is the general help-seeking model that has received the most support from past research on help-seeking for cognitive impairment. Hagger and Orbell (2003) conducted a meta-analysis of the Common-Sense Model (CSM) of illness representations regardless of illness type. The CSM proposes that people create mental representations of their symptoms or illness based on their interpretations of the information available which then influences their coping strategies. That illness representation can be organized into five dimensions: identity (what the symptoms are and the illness label is), cause (factors causing the illness), consequences (expected impact of the illness on functionality and quality of life), timeline (course and scale of the illness), and controllability (efficacy of treatment and coping behaviors).

Hagger and Orbell (2003) investigated the CSM illness representation dimensions and the relationship of these dimensions to coping behaviors and illness outcomes via a meta-analysis of 45 studies using adult samples with a variety of illnesses, not just those related to cognitive complaints. Their findings generally supported the CSM for health

behavior. Controllability was positively related to problem-focused coping, cognitive reappraisal, and seeking social support. In contrast, the consequences and identity dimensions were positively related to avoidance/denial and the expression of emotions. Thus, belief in serious consequences and a strong illness identity were related to coping behaviors that could be considered maladaptive especially since they may result in not seeking help in a timely manner. These same dimensions of consequences and illness identity were also negatively related to desirable illness outcomes, such as well-being and vitality, and were positively related to maladaptive outcomes, such as psychological distress (Hagger & Orbell, 2003). Of greater relevance to the current study, past researchers have found the components of the CSM to explain some of the variance in dementia help-seeking behavior (e.g., Begum et al., 2012; Hamilton-West et al., 2010; Hurt et al., 2012)

Building upon the CSM, Qualls and colleagues (2015) worked to adapt and apply the model to the help-seeking behavior of Alzheimer's disease (AD) caregivers in the Cognitive Impairment Response Model (CIRM; see Figure 2). They begin with the basic idea that knowledge of symptom presentation is expected to guide help-seeking behavior. Then, they include two cognitive factors of illness representation, symptom identity and attribution, which resemble the identity dimension in the CSM. Qualls and colleagues (2015) also include an affective/motivational pathway in the CIRM that includes factors of symptom salience/impact and risk appraisal. Ultimately, according to the CIRM, the basic knowledge of AD leads to symptom identification and AD attribution along the cognitive pathway, which should drive medical help-seeking by the caregiver; along the affective pathway, knowledge of symptoms and their presence will lead to an impact on

one's understanding of the situation leading to an appraisal of a risky or concerning situation, which should then also drive medical help-seeking by the caregiver (Qualls et al., 2015).

Figure 2. Model of cognitive and affective pathways to help-seeking as presented by Qualls and colleagues (2015).

When tested, the CIRM accounted for 49% of the variance in caregivers' medical help-seeking intent for a family member with symptoms of dementia (Qualls et al., 2015). The present study proposes a new model for patient help-seeking based upon the CIRM but with the incorporation of self-compassion. Viewing the altered version as modeling patients' help-seeking behavior on their own behalf rather than that of a caregiver for the potential patient, it is now expected that the likeliness of help-seeking decreases as a patient's threat appraisal increases. However, the new model also suggests that self-compassion acts as a moderator between the affective threat appraisal and medical help-seeking, such that those low in self-compassion and high in threat appraisal are significantly less likely to seek help whereas those high in self-compassion are likely to seek help regardless of their threat appraisal (see Figure 3).

Figure 3. Proposed model of dementia help-seeking by the patient based on Qualls and colleagues' (2015) Cognitive Impairment Response Model (CIRM) with the added component of self-compassion mediating the relationship between threat appraisal and medical help-seeking. The altered model is referred to as the Cognitive Impairment Response Model-Patient (CIRM-P).

Dementia Help-Seeking Timeline and Process

Help-Seeking Timeline

To put the discussion of dementia help-seeking in context, it is important to understand the typical diagnosis timeline that currently exists. Knopman, Donohue, and Guterman (2000) identified that the median delay for AD caregivers from the first observation of symptoms to a physician visit was 1.58 years. They also found that, according to caregivers, several factors contributed to the delay in help-seeking, such as uncertainty about problem severity, belief that changes were part of normal aging, difficulty discussing the changes with the patients, the patient's anger when the changes were discussed, the patient's difficulty facing an AD diagnosis, and the patient's refusal

to see the physician (occurred in 24% of the sample; Knopman et al., 2000). Though the authors note that improving education about pathological aging is necessary to accelerate the help-seeking timeline, they also indicate that the emotional reactions surrounding a potential diagnosis, such as a patient's angry response to the discussion of symptoms, create barriers to help-seeking by the patient or caregiver even after the symptoms are recognized as being problematic (Knopman et al., 2000).

Like Knopman and colleagues (2000), Chrisp and colleagues (2011; 2012) more recently explored the timeline to diagnosis but found that the delay between symptom detection and help-seeking from a medical professional was over two years. Chrisp et al. (2012) also identified areas of constraints in the help-seeking process as the caregiver's fear of patient resistance and/or reaction, patient denial, patient refusal, family resistance, and fear of an increase in the burden and demands, such as additional medical visits, associated with comorbid medical conditions.

Ultimately, these three studies suggest that it takes patients and their caregivers between approximately 1.5 to 2.5 years to seek formal help, which is disheartening since the best outcomes are more likely the earlier one intervenes. Beyond providing timeline information, the studies also touched on barriers to help-seeking, which include patients' reaction of anger or denial to any discussion of their symptoms and/or their refusal or resistance to help-seeking. These detected barriers are suggestive of a negative emotional response that may lead to avoidant behavior by the patient based on what is already known of emotional responses to perceived threats. It is important to note that the results of both Chrisp and colleagues (2011) and Knopman and colleagues (2000) are based on retrospective reports; thus, the data may have been influenced by errors in recall or the

impact of recalling an experience through the lens of the present. Additionally, Chrisp and colleagues (2011; 2012) utilized small samples that may not be representative thereby limiting the generalizability of the results.

Help-Seeking Process

Healthy older adults. It is important to acknowledge that help-seeking for cognitive impairment and both its facilitators and obstacles may differ amongst different groups. Fowler and colleagues (2012) recruited healthy older patients from primary care clinics and investigated the relationship of their perceptions of dementia screening with the decision of whether or not to be screened for cognitive impairment. Approximately 10% of the sample refused to be screened; refusal was more likely in participants older than 69 years, which is disconcerting since the incidence of dementia increases with age (Fowler et al., 2012). Those who agreed to memory screening were significantly more likely to see its benefits, see the benefit in planning for future healthcare, believe that treatment for AD is available, and agree to screening for other health conditions. Therefore, individuals who perceived screening as a step toward preventing cognitive decline were more likely to agree to be screened. A limitation of this study was selection bias resulting from the recruitment process, which limits the generalizability of the findings; only older adults who were already seeking some form of professional medical help were included, which means that information on older adults not actively seeking a type of formal medical care was not obtained.

Older adults with SMI. Though not every individual with subjective memory impairment (SMI) is objectively impaired, individuals with subjective memory complaints likely compose the population of individuals seeking help, or potentially who

should be seeking help, for concerns of cognitive impairment. Hurt, Burns, Brown, and Barrowclough (2012) investigated the beliefs held by people with SMI, grouped as help-seekers or non-help-seekers, about their memory and how those beliefs impacted their help-seeking decisions.

Generally, all participants viewed their memory problems as chronic with a deteriorating timeline and their problems were considered to be out of their control. The results also indicated that help-seekers perceived their memory problems to be more severe than non-help-seekers, exemplified by reporting more symptoms, perceiving more serious consequences, and judging their memory skills to be worse than others of similar objective ability; therefore, greater perceptions of identity and consequences were associated with help-seeking behavior (Hurt et al. 2012). Additional results showed that help-seekers were more likely to cope by seeking social support whereas the non-help-seekers were more likely to distance themselves socially, which is an avoidant coping strategy. Additionally, it is relevant to note that most help-seekers (i.e., 66%) sought help because of a family member's concern rather than based on their own initiative, suggesting that the help-seekers may also have engaged in avoidant behaviors at some point between the detection of symptoms and help-seeking (Hurt et al., 2012).

Adding to Hurt and colleagues' (2012) findings regarding SMI and help-seeking, Begum, Morgan, Chiu, Tylee, and Stewart (2012) aimed to describe the prevalence and correlates of SMI in older adults, the salience of SMI, and the level of help-seeking associated with SMI. Some SMI was reported in 66.7% of the sample with 31.0% reporting significant SMI. However, in spite of its prevalence and saliency, only one individual had spoken about SMI to their general physician, making it the health

symptom for which help was least frequently sought (Begum et al., 2012). Thus, though patients are more or equally concerned about SMI when compared to other physical health conditions, they are much less likely to seek help from a medical professional for SMI.

The reviewed results from Hurt and colleagues (2012) and Begum and colleagues (2012) on the perspectives on help-seeking amongst individuals with SMI demonstrate that SMI is prevalent in the elderly and that even those who admit to being concerned about their memory are not guaranteed to seek formal help; indeed, only one out of 84 individuals with SMI reported speaking to a physician (Begum et al., 2012).

By a caregiver or relative. Much of the research on dementia help-seeking is collected from the caregiver's perspective for several reasons including concerns about the accuracy of a patient's retrospective report and the belief that the caregiver plays more of an initiating role in the help-seeking process than the patient him/herself. Boise, Morgan, Kaye, & Camicioli (1999) surveyed caregivers about the dementia diagnosis timeline. The full sample reported an average of 19.1 months between initial symptom recognition and first consultation with a physician. Those who reported a delay of 12 or more months were further interviewed about factors that contributed to that delay. The caregivers most often reported factors related to themselves (e.g., their knowledge of AD) as those that delayed diagnosis, but 18% also reported that the patient refused to go to the doctor, which corresponds with previously reported findings of patients' denial and/or refusal (Boise et al., 1999).

In contrast to Boise and colleagues' (1999) retrospective study, Hamilton-West, Milne, Chenery, and Tilbrook (2010) took a prospective approach to investigate the

process by which individuals identify and respond to dementia symptoms in a relative. They presented undergraduate students with a vignette describing their hypothetical mother's recent behaviors, which fit criteria for either mild or moderate dementia, and then administered a questionnaire about their perceptions. The results revealed that participants in the mild condition were more likely to label the mother's problem as dementia whereas those in the moderate condition were more likely to assign the label of depression or stress. Those in the mild condition were also more likely to perceive more serious consequences and a longer timeline. There was no relationship between condition and help-seeking, though use of the dementia label was the best predictor of help-seeking intentions as long as the symptoms were also perceived to be serious, expected to last a long time, and not thought to be caused by psychological factors. Hamilton-West and colleagues (2010) speculated that the mild condition was more likely to receive the dementia label because only cognitive changes were described whereas other symptoms, such as mood changes, that are less often associated with dementia were in the moderate condition. They note that their results demonstrate how it is the subjective perception of symptoms rather than their objective nature that is more likely to determine help-seeking.

Similarly to Hamilton-West and colleagues (2010), Qualls and colleagues (2015) investigated adults' help-seeking intentions using a vignette describing the reader's mother exhibiting functional problems typical in early stage AD. Building upon previous research on the use of cognitive components in predicting help-seeking for dementia, Qualls and colleagues (2015) expected emotional and motivational elements, such as symptom salience and risk appraisal, to also contribute to help-seeking decisions. Thus, these elements were incorporated into the Cognitive Impairment Response Model

(CIRM; see Figure 2 in the previous section, Models for Help-seeking for Cognitive Impairment), which was then tested regarding its ability to predict caregivers' help-seeking intentions for dementia.

Qualls and colleagues' (2015) results indicated that participants were not very knowledgeable about AD symptoms; advanced memory symptoms were the best recognized symptoms whereas loss of initiation, loss of inhibition, and misplacing items were the least recognized. Though responses varied regarding medical help-seeking, participants most commonly indicated an inclination to encourage their mother to have a cognitive evaluation. The CIRM as a whole accounted for 49% of the variance in medical help-seeking intention, with attribution of AD and appraisal of threat being the strongest predictors for dementia help-seeking intentions by potential caregivers on behalf of a loved one in these hypothetical scenarios (Qualls et al., 2015).

By the patient. Though many researchers have chosen to focus on the caregiver's experience going through the help-seeking process, it is important to consider the patient's perspective as well. Leung and colleagues (2011) explored the experiences of both patients and their caregivers on the path to a dementia diagnosis. They interviewed six patients (over age 55) who had been diagnosed with AD, vascular, or mixed type dementia within the past two years, along with their caregivers. Reflecting the dementia timeline findings, patients and their caregivers reported noticing dementia symptoms two to four years prior to diagnosis (Leung et al., 2011). Interestingly, patients reported an earlier awareness of changes than their caregivers. Both groups reported normalizing the changes at first and attributing them to contextual factors or concurrent health issues. One to three years passed between first symptom detection and medical help-seeking via the

patients' primary care physicians (PCP). With the exception of one, all of the patients first sought help independently. Though eventually diagnosed with dementia, none of the patients were diagnosed with dementia at this first help-seeking event and were given other explanations for their symptoms. It was later, after memory difficulties were compounded by salient losses of skills, that caregivers became more involved in the help-seeking process, PCPs were seen again, and appropriate steps to obtaining a diagnosis were taken (Leung et al., 2011).

There are several limitations to the study by Leung and colleagues (2011): its cross-sectional design; its small sample size that limits its representativeness and generalizability; and its use of retrospective data collection, which may have impacted the accuracy of the information reported and/or may have been influenced by experiences post-diagnosis. That said, many of these limitations are also seen in other help-seeking studies focusing on caregivers, which often report or imply that the caregiver is the first to detect changes and initiate help-seeking. In contrast, Leung and colleagues' (2011) findings identify the patient as the initial symptom detector and help-seeking initiator. The interviews revealed that certain early problems were only salient to the person with dementia indicating that it is essential to include them in help-seeking studies. As this is the only study considering the patient's perspective, additional research, especially that which is theoretically based, with patients is needed to fully understand their pathway to help-seeking and how earlier help-seeking can be promoted.

By middle-aged adults. Because the ultimate goal is to increase the chances of earlier intervention, it is also relevant to investigate help-seeking intentions and behavior in middle-aged adults as they approach old age. Hodgson and Cutler (2004) worked to

identify the incidence, correlates, and predictors of help-seeking behavior in middle-aged adults. Hodgson and Cutler (2004) interviewed middle-aged individuals who expressed concerns about developing AD; they spoke to both adult children (AC) of a parent with AD and comparison individuals (CI) without a parental history of dementia. Of the total sample, 68% had spoken to someone about their concerns and 32.4% had specifically spoken to a formal source of care. In the AC group, five factors accounted for 18.9% of the variance of talking to others: sharing a common memory symptom(s) with the AD parent, self-perception of memory changes, others noticing memory changes, being informed about AD, and being more educated. In the CI group, only concern about developing AD was a significant predictor of help-seeking and accounted for 9.3% of the variance. Thus, the findings indicate that, regardless of parental history of AD, two-thirds of concerned, middle-aged adults seek help from an informal source while only one-third seek help from a formal source and that perceptions mostly related to susceptibility and somewhat related to severity seem to contribute to those help-seeking behaviors (Hodgson & Cutler, 2004).

Werner and Heinik (2004) similarly sought to explore the factors associated with the intention of adult children of parents with AD to seek a cognitive evaluation. Participants' willingness to seek help was moderate on average. Additionally, greater willingness to seek help was associated with lower income level, higher reports of subjective memory problems, perceptions of parent with AD having fewer behavioral problems, not being a primary caregiver, and lower perceptions of the futility of cognitive testing (Werner & Heinik, 2004). It is interesting to note that perceiving fewer behavioral problems was associated with a greater willingness to seek help; the authors posit that

perhaps relatives with greater exposure to the consequences of AD may weigh the negative emotions of stress, worry, and hopelessness associated with the diagnosis as points against help-seeking when making that decision. The cognitive stress model may speak to this, such that the resulting anxiety of these concerns may decrease the intention to seek help and increase the likelihood of an avoidant response.

Adding to this area of the literature, Phillipson, Magee, Jones, Reis, and Skaldzien (2015) asked middle-aged participants to indicate whether they would seek help for (1) themselves and (2) relatives if they believed either had early signs of dementia. They also collected information on attitudes related to the stigma of dementia and the relationships of those attitudes to help-seeking. The large majority of participants (82.2%) indicated that they would seek help for themselves if they detected early signs of dementia, but 21.3% admitted that they would delay help-seeking for as long as possible. Participants were more likely to seek help for a relative than for themselves, thus providing evidence that the help-seeking decision-making process is likely to be different for patients and caregivers. Reduced likelihood of help-seeking for self and others was associated with elements of stigma, such as personal avoidance, fear of labelling, and fear of discrimination (Phillipson et al., 2015).

These studies indicate that approximately one-third of middle-aged adults with concerns about cognitive impairment seek help and that a large percentage would seek help upon symptom detection, though a portion of this group admits they would delay help-seeking for themselves due to fear or worry of extreme symptoms and the associated stigma. Thus, these findings seem to mirror the denial of symptoms and refusal to pursue help-seeking versus the tendency to suggest or initiate help-seeking that has been seen in

older patients and their caregivers, respectively.

Summary of help-seeking findings. Past researchers have begun the exploration of what factors might be causing the problematic delay observed in the dementia help-seeking process. Patient denial of problems and refusal to seek medical help were reported as obstacles to help-seeking in several studies (e.g., Boise et al., 1999; Chrisp et al., 2012). Even middle-aged adults who acknowledge that they would eventually seek help upon detecting problems admit that they would delay help-seeking for as long as possible (Phillipson et al., 2015). A theme of fear of diagnosis and a view of it as a threat emerged from several of the reviewed studies and may perhaps explain patients' responses of denial, avoidance, and refusal of help-seeking actions. Even before signs of cognitive impairment are noticed, older adults have an intense fear of losing their memory, and those facing a potential diagnosis of dementia associate this label with a loss of self and meaning in life (Dark-Freudeman et al., 2006; Moniz-Cook et al., 2006).

Lovibond and colleagues (2009) demonstrated experimentally in a laboratory-created scenario that avoidance is a common safety response to a threat or feared stimulus. Other researchers have more specifically identified avoidance as a common response to health threats, such that individuals will not seek helpful information, thereby decreasing the likelihood that they will adopt adaptive protective behavior (Case, Andrews, Johnson, & Allard, 2005; Eppright, Hunt, Tanner, & Franke, 2003). Werner and Heinik (2004) specifically referenced the cognitive stress model as a theoretical explanation as to how the anxiety resulting from the concern of a serious diagnosis would increase the likelihood of an avoidant response. Therefore, it is not surprising that, viewing a dementia diagnosis as fearsome and/or threatening, older adults might then

avoid seeking medical help that may confirm such a diagnosis.

Qualls and colleagues (2015) presented the CIRM based upon the CSM but with added emotional/motivational components, including threat appraisal. Their study sought to explore the caregiver's help-seeking response on behalf of a hypothetical patient and ultimately demonstrated that increased threat appraisal was directly related to help-seeking behavior. However, it is important to note that individuals are likely to delay seeking help on their own behalf but not on behalf of a loved one (Phillipson et al., 2015). Thus, one's reaction to the perceived threat of dementia for another may be different from one's reaction to such a threat to oneself. Based on the quantitative findings regarding the help-seeking delay and the qualitative findings of patients' fear of a dementia diagnosis in conjunction with their denial and refusal to seek help, it is possible that the more threatening a patient views the diagnosis then the less willing he/she might be to seek help and risk having it confirmed. If so, then an intervention targeting this negative emotional response that drives avoidant behavior may prove effective at promoting earlier help-seeking for dementia.

Self-Compassion in a Geriatric Population

Within the past fifteen years, there has been a growing interest in the construct of self-compassion and its role in well-being. Similar to the expression of compassion for another, self-compassion is the feeling and response of caring and kindness to oneself. While self-compassion can be conceptualized as a trait, it can also be induced as a frame of mind and taught as a set of skills (Neff & Dahm, in press). Neff (2003a) has been instrumental in the development of the concept of self-compassion and its measurement. She has proposed that self-compassion comprises three main components: self-kindness

(vs. self-judgment), common humanity (vs. isolation), and mindfulness (vs. overidentification) (Neff, 2003a). Self-kindness is the ability to be understanding and caring to oneself in negative circumstances, such as in the face of suffering, inadequacy, or failure; this is in contrast to a judgmental reaction. Common humanity represents the sense that all humans experience suffering and misfortune and make mistakes; this idea promotes a feeling of connectedness rather than one of isolation. The third component, mindfulness, emphasizes a balanced response to negative experiences, such that one neither suppresses nor exaggerates the negative; overidentification is the undesirable alternative to mindfulness and refers to being overwhelmed by negative emotions and thoughts (Neff, 2003a).

Measurement of Self-Compassion

Neff (2003b) developed the 26-item Self-Compassion Scale (SCS) to measure self-compassion and its six individual components (self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification). A confirmatory factor analysis (CFA) supported the six factor model, as well as a single higher-order factor of self-compassion that explained the intercorrelations between the six factors (Neff, 2003b). However, though the original six-factor structure of the SCS has been supported in younger populations, a two-factor structure of the items targeting three positive features of self-compassion and then the items targeting the three negative features considered contrary to self-compassion has been supported in older adult populations (Brown, Bryant, Brown, & Judd, 2015; Phillips & Ferguson, 2013) suggesting that self-compassion may look differently as a construct in older adults or at least differs in its measurement.

Self-Compassion and Help-Seeking

As self-compassion encompasses a kind, caring, and accepting response toward one's difficulties and failings, it follows that a self-compassionate person would acknowledge one's challenges and would not be ashamed to seek help from others. Additionally, self-compassion has been linked to other constructs, such as self-improvement motivation, that likely share commonalities with help-seeking tendencies (Breines & Chen, 2012). Thus, it follows that self-compassion might be related to asking for help.

Terry and Leary (2013) investigated self-compassionate reactions to health threats. Through a series of studies, they aimed to contribute to the health behavior literature by exploring the health-related implications of being high or low in self-compassion. They demonstrated that individuals who are higher in self-compassion respond more effectively to health threats and are better at managing emotional distress about their health concerns. Specifically, self-compassionate individuals experienced less negative affect regarding their health for both mild and relatively serious medical problems. Especially relevant to the present study is their finding that self-compassion is associated with how quickly people seek medical attention upon detecting signs of a health problem; this relationship was obtained even after removing variance associated with several other predictors. The authors concluded that self-compassion promotes good health by prompting individuals to care for themselves, seek help when appropriate, and regulate their negative emotions when dealing with health concerns (Terry et al., 2013).

Similarly to Terry and colleagues (2013), Sirois and colleagues (2015) sought to explore the relationship between self-compassion and health behavior but focused on

health-promoting behaviors rather than help-seeking per se. They focused on health behaviors regarding a healthy diet, physical activity, adequate sleep, and stress management. They found that self-compassion was positively associated with positive health behaviors and positive affect and was negatively correlated with negative affect. Furthermore, the relationship between self-compassion and health behaviors was partially but not fully explained by the combination of high levels of positive affect and low levels of negative affect (Sirois et al., 2015). Though it is a different construct, medical help-seeking for cognitive impairment may be conceptualized as a type of health-promoting behavior for older adults; thus, Sirois and colleagues' (2015) findings suggest that there may be a relationship between self-compassion and medical help-seeking for cognitive impairment for the older population or at least that such a relationship is worthy of investigation.

Again looking at a similar but different help-seeking construct, Heath and colleagues (2016) considered that self-compassion may promote mental health help-seeking by influencing one's internalized stigma about the symptoms or illness experienced; such stigma is often cited as a help-seeking barrier, as previously addressed by Phillipson and colleagues (2015) in their research on dementia help-seeking by middle-aged adults. Participants completed measures of perceived public stigma of psychological help-seeking, self-stigma, and self-compassion. Self-compassion was negatively correlated with both anticipated self-stigma and perceived public stigma; furthermore, self-compassion moderated the relationship between perceived public stigma and anticipated self-stigma, such that the relationship was weaker for those with greater self-compassion. The authors suggest that targeting self-compassion rather than

stigma may be a better approach in fostering help-seeking behavior (Heath et al., 2016).

Self-Compassion and Aging

The majority of research on self-compassion has been conducted with young samples, and as those results do not always generalize to other age groups, especially adults over 65, there is a need for self-compassion research within this population.

Phillips and Ferguson (2013), who explored the two-factor structure of self-compassion, found that these two facets of self-compassion uniquely explained a significant amount of variance (11.3%-30.3%) in four tested aspects of well-being, including positive affect, negative affect, ego integrity, and meaning in life, suggesting that self-compassion plays an important role in well-being as people age (Phillips & Ferguson, 2013).

Brown, Bryant, Brown, and Judd (2015) further investigated the contribution of self-compassion to attitudes on aging and the resulting influence on health and well-being. They found that both positive and negative self-compassion significantly predicted three attitudes on aging – physical change, psychosocial loss, and psychological growth – and indirectly predicted physical and mental health via these aging attitudes. Positive and negative self-compassion also both significantly predicted positive well-being, though this relationship was partially mediated by physical change attitudes (Brown et al., 2015). These results support the idea that self-compassion contributes to positive aging attitudes that can then influence one's physical and mental health.

Homan (2016) also sought to explore the relationship of self-compassion to psychological well-being, as well as its moderating effect on health, using a community sample of older adults. Their results showed that self-compassion was positively and uniquely related to psychological well-being. Furthermore, self-compassion moderated

the relationship between health and depression such that those low in self-compassion with poor health were more likely to be depressed whereas the relationship between health and depression did not exist for those high in self-compassion (Homan, 2016).

Adding to the work on self-compassion and well-being in aging, Allen and Leary (2013) qualitatively investigated the role that self-compassion plays in well-being in older adults and to identify the mechanisms underlying how older adults cope with the challenges of aging. Participants were asked to recall a positive, negative, or neutral age-related change or event and then to answer questions about the thoughts, feelings, and impact they experienced as a result of that change or event. Self-compassion was positively associated with positive self-compassionate thoughts and a positive tone in responses for the described events, thoughts about aging, and changes associated with aging. Overall, older adults higher in self-compassion seemed to think differently about events and aging-related changes such that they engaged in more self-compassionate cognitions leading to more positive outcomes (Allen & Leary, 2013).

Based upon findings that individuals higher in self-compassion are likely to think about changes and failures differently and to proactively make changes when necessary, Allen, Goldwasser, and Leary (2012) suggested that older adults high in self-compassion should be more likely to take a proactive approach to the changes and limitations of aging and to accept help if it promotes their well-being. Specifically, they sought to investigate the impact of self-compassion on willingness to engage in health-promoting behaviors typical to aging. Their results demonstrated that self-compassion moderated the relationship between walking difficulty and willingness to use a walker, such that those lower in self-compassion were less willing to use a walker and that self-compassion was

inversely related to the extent they were bothered by needing assistance walking (Allen et al., 2012). However, contrary to expectations, when individuals had greater difficulty walking, those lower in self-compassion were more willing to use another person for support. In reference to hearing difficulties, self-compassion predicted how often people asked others to repeat themselves but neither predicted how bothered they were by the use of a hearing aid nor their attempts to hide their hearing difficulties.

Allen and colleagues' (2012) findings may at first appear to be slightly contradictory and confusing regarding the role of self-compassion in individuals' willingness to seek help. The results that self-compassionate individuals were more willing to both use a walker for walking assistance and request that others repeat themselves when necessary suggest that self-compassionate people are more accepting of their limitations and willing to seek help to maintain their well-being. In contrast, the finding that individuals who experienced difficulty walking were more willing to accept help from another person when they were low rather than high in self-compassion contradicted expectations; the authors suggest that self-compassionate people may be more willing to take independent actions, such as using a cane, than inconvenience those around them (Allen et al., 2012). Another possibility is that the use of a cane or a walker may be seen as more symbolic of impairment and stigmatizing than walking with another person; this hypothesized explanation should be investigated as it would have implications for these findings.

Summary of Self-Compassion Findings

The research on self-compassion discussed demonstrates the strong relationship between self-compassion and well-being in old age (Allen & Leary, 2013; Brown et al.,

2015; Homan, 2016; Phillips & Ferguson, 2013). Further work must be conducted to understand how these two constructs relate to and influence each other. In reference to the current topic, improved well-being may be achieved by effectively and efficiently seeking help in the face of health threats. In the self-compassion and help-seeking literature, Terry and colleagues (2013) showed that individuals higher in self-compassion respond to health threats faster and more effectively than those lower in self-compassion and also better manage the associated emotional distress. These effects of self-compassion would presumably allow one to get the help one needs in a timely manner, thus leading to greater well-being and improved quality of life.

Rationale and Approach of the Current Study

The present study seeks to further explore (1) the factors involved in a patient seeking help for him/herself upon the detection of cognitive decline and (2) the potential role of self-compassion in this help-seeking process. The findings in the help-seeking literature suggest that knowledge of dementia and the cognitive and emotional reactions following symptom identification all contribute to help-seeking decisions and behavior for both the patient and his/her caregiver. Patient denial of the existence of a problem and/or refusal to seek help were identified as significant barriers to help-seeking by multiple sources. Fear of dementia and its stigma were also common themes seen in the literature and may partially explain patients' denial, avoidance, and refusal, as these reactions are common responses to threats (e.g., Case et al., 2005; Eppright et al., 2003). At this point, no research has yet been conducted on the role of self-compassion in help-seeking for dementia or cognitive decline, but consideration of the results of both help-seeking and self-compassion research suggests that self-compassion may play a role in

moderating the relationship between threat appraisals and one's help-seeking response.

Although self-compassion in aging is an emerging area and has not yet been investigated in relation to dementia help-seeking behavior specifically, results of this research could have important and impactful implications. Moss and colleagues (2014) and Perez-Blasco, Sales, Meléndez, and Mayordomo (2015) both recently demonstrated the effectiveness of mindfulness-based interventions in increasing self-compassion and/or its correlates in continuing care and community based older adult populations, respectively. Though both of these studies are relatively small and need to be replicated, their results are promising.

If self-compassion is found to moderate the impact that threat appraisal and negative emotions have on help-seeking as proposed by the suggested model, then one mechanism by which to promote earlier help-seeking may be by enhancing self-compassion. As the identification of methods by which to encourage earlier help-seeking following the detection of dementia is a focus and goal for researchers, clinicians, and society, this area of research is worthy of pursuit. If it is fruitful, then increasing self-compassion and thereby accelerating the help-seeking pathway may allow time for the interventions and/or planning that will help patients and their families maintain a high quality of life for as long as possible.

The present study endeavors to characterize the help-seeking process for cognitive impairment by exploring help-seeking intentions in middle-aged and older adults (i.e., individuals 50 years and older) and consider the moderating role of self-compassion. Participants were presented with a vignette portraying symptoms of early cognitive impairment and then questioned about their thoughts, reactions, and help-seeking

intentions in response; the prospective approach to help-seeking intentions through the presentation of a vignette has been previously and successfully used in prior research (e.g., Hamilton-West et al., 2010; Qualls et al., 2015). Additionally, participants provided information about their perspective on their current level of cognitive functioning and their help-seeking actions and/or intentions if they had detected or were to detect symptoms of cognitive impairment. Additional data on self-compassion, family and caregiving experience with dementia, demographic information, and other relevant constructs was also collected.

Hypotheses

Hypotheses Regarding the Vignette

Participants were presented with a vignette describing a future version of themselves presenting with symptoms of Alzheimer's disease (AD). They were then asked questions about this vignette. Hypotheses one through three are related to this portion of the study.

Hypothesis 1: Knowledge of AD directly predicts an individual's help-seeking intentions for AD.

Hypothesis 2: Cognitive and affective paths proceed from an individual's general knowledge of AD toward medical help-seeking.

Hypothesis 2A: Along the cognitive pathway, knowledge predicts symptom identification (see Figure 2, 1a) and symptom identification predicts attribution of AD (see Figure 2, 1b).

Hypothesis 2B: Along the affective pathway, knowledge predicts symptom impact (see Figure 2, 3a) and symptom impact predicts

emotional appraisals (see Figure 2, 3b).

Hypothesis 2C: Attribution of AD and emotional appraisals each predict medical help-seeking intentions (Figure 2, 1c and 3c, respectively).

Hypothesis 3: The proposed model of help-seeking is moderated by one's level of self-compassion such that when emotional appraisals including threat, fear, and anxiety are higher then those with less self-compassion are less likely to seek help whereas those who are higher in self-compassion are likely to seek help regardless of their emotional appraisals.

Hypotheses Regarding Current SMI

In addition to responding to the vignette, participants were asked questions regarding subjective memory impairment (SMI) via the Subjective Memory Complaint Clinical (SMCC; Ramlall et al., 2013) as well as self-report. They were then asked about their fear of AD as well as their actions and/or intentions to seek help. Hypotheses four through six refer to the data collected in response to these questions.

Hypothesis 4: Knowledge of AD and fear of AD predict how long individuals wait between the recognition of symptoms of cognitive impairment and seeking formal help.

Hypothesis 5: In the model including knowledge of AD and fear of AD as predictors of help-seeking behaviors, self-compassion acts as a moderator such that those lower in self-compassion are less likely to seek help when their emotional appraisals of threat, fear, and anxiety are high whereas individuals higher in self-compassion likely seek help regardless of their emotional appraisals.

Hypothesis 6: Family history of dementia and personal experience with dementia, such as witnessing it in a family member or working as a caregiver to an individual with

dementia predict help-seeking behavior.

Hypothesis 6A: In individuals higher in self-compassion, prior experience positively predicts faster help-seeking behavior, whereas in individuals lower in self-compassion, it is predictive of a delay in help-seeking behavior.

METHOD AND MATERIALS

Participants

It was the intention to recruit 250 participants online via Amazon Mechanical Turk (MTurk), which is a crowdsourcing internet marketplace on which individuals and businesses can post Human Intelligence Tasks (HITs). Individuals were required to be at least 50 years old to participate, be English-speaking, and live in the United States. In efforts to recruit users of diverse ages, separate HITs were posted targeting individuals in age groups of 50-59, 60-69, and over 70. Exclusion criteria included a current diagnosis of mild cognitive impairment, mild or major neurocognitive disorder, AD, or another form of dementia. These individuals were excluded for several reasons: their retrospective report may not be accurate due to memory impairment; they had already sought help at some point and the present study seeks to explore help-seeking intentions, or lack thereof, for both future help-seekers and non-help-seekers; their perspective may have been influenced by going through the help-seeking process and their resulting diagnosis which may influence their report. Each participant was paid \$1.00 for their participation, which is a common amount of payment for a completed HIT on MTurk for a survey of this duration.

Materials

Because members of the public do not often have a clear understanding of the definitions and differences of cognitive impairment, dementia, Alzheimer's disease, and memory problems, the term Alzheimer's disease (AD) was used in the materials of the

present study; this is the term most frequently used by the public to reference the construct of cognitive decline that the present study is seeking to investigate. The survey included questions intended to operationalize the dimensions of the proposed Cognitive Impairment Response Model – Patient (CIRM-P): knowledge of AD, symptom identification, attribution, symptom impact, appraisals, self-compassion, and help-seeking. Subjective memory impairment (SMI) and fear of AD were also measured. Additional questions were asked about personal experience with AD and demographic information was collected to describe the sample.

Help-seeking intention in the context of hypothetical cognitive impairment. A slightly altered version of a vignette first developed, piloted, and tested by Qualls et al. (2015) was presented (see Appendix A). The vignette depicts an individual declining in his/her level of everyday functioning due to early stage memory impairment. The vignette includes two memory problems and two executive dysfunction problems; this is a typical symptom presentation of early AD. Participants were instructed to imagine that the person described in the vignette is their future self. This vignette was piloted in multiple tenses (i.e., third person, second person, and first person) to identify the tense that best allowed individuals to imagine themselves in the story. The second person (i.e., “you”) was identified as the best tense; therefore, the vignette was presented in this format to the participants.

Help-seeking. Similar to Qualls and colleagues’ (2015) approach, participants were asked to rate the likelihood that they would take each of six possible actions: deciding to continue to monitor one’s behavior; trying to cover up one’s difficulties from family and friends; consulting with family and friends; talking to one’s doctor at one’s

next annual physical; making a memory evaluation appointment; doing nothing. Ratings ranged from 1 (not at all likely) to 7 (extremely likely).

Attribution. As in Qualls et al. (2015), attribution ratings for the likelihood that the individual in the vignette has AD were rated using a single item ranging from 1 (not at all likely) to 7 (extremely likely).

Symptom identification. Participants were asked to report what symptoms of AD they noticed in the vignette. Then, as in Qualls et al. (2015), participants rated the extent to which each symptom cue in the vignette was consistent with AD on a 1 (not at all consistent with AD) to 5 (fully consistent with AD) scale. The four scores were summed for a total score of symptom identification.

Symptom Impact. Again based on Qualls and colleagues' (2015) study, each symptom cue was rated as to how much it influenced the participant's overall understanding of the situation on a 1 (did not influence me) to 7 (influenced me greatly) scale. The four ratings were summed for a total score of symptom impact.

Appraisal. Appraisal ratings were the response to the following questions from Qualls et al. (2015): "to what extent is the person in the story experiencing a problem?," "to what extent is he/she unsafe?," and "how anxious would you be if this situation was really happening to you?." Response options ranged from 1 (no problem at all, not unsafe, not anxious) to 7 (definitely a problem, definitely unsafe, extremely anxious). A total appraisal score was calculated by summing the three ratings.

Self-compassion. Self-compassion was measured using the 26-item Self-Compassion Scale (SCS; Neff, 2003b). Participants responded to each item describing how often they typically act towards themselves in difficult times using a scale ranging

from 1 (almost never) to 5 (almost always). Typically, the SCS provides scores for self-kindness, common humanity, mindfulness, self-judgment, isolation, and overidentification. However, this factor structure has not been supported in older adults; rather, a two factor structure – one of the positive dimensions and one of the negative dimensions – has been found to better fit older samples (Brown et al., 2015; Phillips & Ferguson, 2013). Thus, it was planned for participants to receive both positive and negative subscores of self-compassion.

Subjective memory impairment. Participants were presented with seven yes or no items from the Subjective Memory Complaint Clinical (SMCC; Ramlall et al., 2013) to assess for subjective memory impairment (SMI). The questions assess memory recall problems experienced at least once each week over the past year. The SMCC is coded positively for SMI if a patient endorses difficulties with at least one of the seven items. Its specificity is 45.7% and its sensitivity is 90.9% in reference to identifying dementia. These psychometrics suggest that the SMCC functions well in the identification of SMI in a sample including middle-aged adults.

Following the presentation of the SMCC, participants were directly asked if they think they have a memory problem. If so, they were then asked how long they have thought they had a memory problem, whether or not they have sought medical help for their memory problem, and if they have not yet sought help, what would have to happen for them to seek help and how many months from today (i.e., the day of testing) they plan to wait to seek help if at all. If they reported that they do not think they have a memory problem, they were asked how long they would wait in months to seek help if they believed they had a memory problem.

Knowledge of AD. The Alzheimer's Disease Knowledge Scale (ADKS; Carpenter et al., 2009) contains 30 true/false items to assess knowledge about AD. It tests knowledge regarding risk factors, assessment and diagnosis, symptoms, course, life impact, care giving, and treatment and management.

Fear of AD. The Fear of Alzheimer's Disease Scale (FADS; French et al., 2012) is a 30-item self-report scale designed to measure loss of memory, symptoms of fear/anxiety, catastrophic attitude about AD, family related concerns, and concerns about the loss of autonomy. Individuals indicated their level of agreement with the statements using a 5-point scale ranging from never to always. With the minimum score per item as 1 and the maximum as 5, participants' responses were summed for a total score of fear or anxiety about AD out of 150.

Sample characteristics. Demographic questions were asked to collect information regarding gender, age, education level, and income level. Participants were also asked if there is a history of AD or another form of dementia in their family and if they have prior caregiving experience for an individual with AD or dementia. Additionally, the 10-item Center for Epidemiological Studies – Depression Scale (CES-D) and the 7-item Generalized Anxiety Disorder Scale (GAD-7) were presented to obtain data regarding the sample's levels of depression and anxiety. Finally, participants completed Form A of the Multidimensional Health Locus of Control (MHLC).

Procedure

Participation criteria was presented in the format of the MTurk HIT presentation. Upon selecting the HIT, participants were presented with an informed consent explanation following which they agreed to participate or not to participate. Then, they

were directed to stimuli and questionnaires presented using Qualtrics. The vignette and its follow-up questions were presented followed by scales and questions in the order described above; the block including the vignette and its questions was counterbalanced with the block including the SMI and its follow-up questions. Before proceeding from one page to the next, participants were informed if they did not respond to an item or question and were given the opportunity to do so before moving on; however, they were not forced to respond in order to proceed. After completing a page, participants were unable to return to previously completed pages. Completion of the survey was estimated to take approximately 30-45 minutes and occurred online. The Institutional Review Board of University of Louisville approved the study.

Planned Analysis

As appropriate, frequencies and descriptive statistics of demographic characteristics and variables of interest were calculated in order to describe the sample. Additionally, correlations amongst constructs of interest as well as differences amongst groups on these constructs were calculated and reported using appropriate analyses.

Model Testing

Model testing was conducted in two phases using path analysis techniques in AMOS 22.0. A sample of 200 participants is the recommended minimum for structural equation modeling analyses (O'Rourke & Hatcher, 2013); therefore, the present study's recruitment of 250 participants allowed the sample size to meet that 200 participant minimum even if issues such as missing responses arose.

A model depicting independent cognitive and affective paths to help-seeking was tested first, as shown in Figure 2, though in reference to the patient seeking help for

him/herself rather than the caregiver's act of help-seeking as studied by Qualls et al. (2015). The individual hypotheses regarding the relationships amongst the variables was tested and identified.

Secondly, the sample was split into two groups: a higher self-compassion group and a lower self-compassion group. This was accomplished by dividing the groups via a median split of the total SCS score. Then, the hypothesis regarding the moderation of the relationship between emotional appraisals and help-seeking intentions based on level of self-compassion was tested by testing the model separately for both groups to see if the relationship between emotional appraisal and help-seeking differed significantly between them. A two group path model with the path of interest (i.e., the path from emotional appraisals leading to help-seeking intention) constrained to equality across the groups allowed a test for moderation by using a Chi-square difference test between the freely estimated and constrained models.

For all path analyses, model fit was considered "good" if the Chi-squared value is not statistically significant at the .05 level, if the comparative fit index (CFI) is greater than .95, and a root mean square error of approximation (RMSEA) estimate less than .05. Models were adjusted using theoretically based rationale in conjunction with modification indices suggesting model improvement by value of 3.84 Chi-squared value, which is the equivalent of one degree of freedom at the 0.05 level.

Regression Analyses

IBM Statistical Package for the Social Sciences 25.0 was used to conduct hierarchical regression analyses to test the hypotheses of predictors of the help-seeking behavior delay in individuals with SMI. First, knowledge of AD was entered followed by

fear of AD. Then, self-compassion was entered into the regression as a moderator to determine if self-compassion moderated the relationship between fear of AD and help-seeking delay.

If tests of assumptions for regression were met, separate regression analyses were conducted to test whether the variables measuring experience with dementia, i.e., having a family member with AD or acting as a caregiver, predict ones anticipated help-seeking intention timeline. Then, self-compassion was entered as a moderator to determine if self-compassion moderates the relationship between experience with AD and help-seeking intentions.

Relationships of Background Characteristics to Variables of Interest

Correlations of age, education, income category, depression, anxiety, and health locus of control were computed to determine if they should be incorporated into the model as covariates. If the relationships suggested that a variable may function as a covariate, then the regression analyses were conducted again with the potential covariate entered into the model first.

RESULTS

Participants

Data were collected from 250 adults (156 females; $\chi^2 = 15.94, p < 0.001$) over the age of 50 ($M = 63.17, SD = 7.79$). The majority of participants were White ($n = 225; \chi^2 = 770.00, p < 0.001$). Participants' income levels ranged from $<\$19,999$ to $>\$120,000$, and participants had an average of 14.78 years of education ($SD = 2.59$). See Table 1 for more information about the sample.

Table 1

<i>Participant Demographics</i>		
	N	M (SD) or %
Total Sample	250	100%
Age	250	63.17 (7.79)
55-64 years old	130	52.00%
>65 years old	120	48.00%
Gender	-	-
Male	93	37.20%
Female	156	62.40%
Race/Ethnicity	-	-
White/Caucasian	225	90.00%
Black/African American	19	7.60%
Hispanic/Latino(a)	3	1.20%
Asian	2	0.80%
Other	1	0.40%
Education	250	14.78 (2.59)
<12 years	7	2.80%
12-16 years	193	77.20%
>16 years	50	20.00%
Income	-	-
<\$19,999	31	12.40%
\$20,000-\$39,999	85	34.00%
\$40,000-\$59,999	51	20.40%
\$60,000-\$79,999	37	14.80%
\$80,000-\$99,999	21	8.40%
\$100,000-\$119,999	8	3.20%
>\$120,000	16	6.40%

Vignette Analyses

Scale descriptive, reliability, and correlation statistics.

Vignette interpretation and response. The vignette described previously was presented to all participants. After reading the vignette, participants answered questions related to their impressions of what they had read. From these questions, scores related to Symptom Identification, Attribution, Symptom Impact, and Appraisal were calculated; the scales resulting from these items were found to be internally reliable meeting good to excellent criteria according to Cronbach's alpha.

The responses to four questions answered on a Likert scale were summed for Symptom Identification score (Cronbach's alpha = 0.90; $M = 18.16$, $SD = 5.63$). The Attribution score was based on the response to one item indicating a likelihood that the individual in the vignette had Alzheimer's disease (AD; $M = 3.55$, $SD = 1.55$). The responses to four questions answered on a Likert scale were summed for Symptom Impact score (Cronbach's alpha = 0.80; $M = 18.18$, $SD = 5.24$). The responses to three questions answered on a Likert scale were summed for an Appraisal score (Cronbach's alpha = 0.88; $M = 11.33$, $SD = 4.31$). The likelihood to seek formal help was the average of the indicated likelihood of the participant to (1) seek a cognitive evaluation and (2) speak to a healthcare professional ($M = 3.66$, $SD = 1.79$). The relationships amongst all of the aforementioned variables (i.e., Symptom Identification, Attribution, Symptom Impact, Appraisal, and Formal Help-seeking) were direct and significant ($p \leq 0.01$), such that as each increased as the others increased (see Table 2).

Table 2

Relationships amongst Vignette Variables (N = 250)

	Symptom Identification	Attribution	Symptom Impact	Appraisal	Formal Help-seeking	ADKS Score
Symptom Identification	-	-	-	-	-	-
Attribution	0.70*	-	-	-	-	-
Symptom Impact	0.76*	0.71*	-	-	-	-
Appraisal	0.62*	0.75*	0.68*	-	-	-
Formal Help-seeking	0.52*	0.66*	0.61*	0.75*	-	-
ADKS Score	0.22*	0.20*	0.26*	0.24*	0.31*	-
SCS Score	0.00	0.07	0.05	0.05	0.11	-0.01

Note. Relationships are reported as correlations (r) with * denoting significant relationships ($p \leq 0.002$). ADKS and SCS represent the Alzheimer's Disease Knowledge Scale and the Self-Compassion Scale, respectively.

Alzheimer's disease knowledge. Knowledge of Alzheimer's disease (AD) was measured using the Alzheimer's Disease Knowledge Scale (ADKS; Carpenter et al., 2009). Though Carpenter et al. (2009) achieved an acceptable level of internal reliability with a Cronbach's alpha of 0.71, a Cronbach's alpha of 0.51 was identified in the present study. In this instance, the Cronbach's alpha value calculated is equivalent to the Kuder-Richardson Formula 20 (KR-20) value, which is the appropriate measure of internal reliability for binary scales. An exploratory factor analysis with principal axis factor extraction identified 11 factors with Eigen values greater than one and three factors with Eigen values greater than two. These results, which indicate that the ADKS did not function as expected and may not be an accurate measurement of participants' knowledge of AD, should be kept in consideration during the proceeding analyses.

On the ADKS, participants answered an average of 17.89 ($SD = 3.06$) questions accurately out of a possible 30. Total ADKS score was significantly ($p \leq 0.002$) and positively related to the summed vignette scores described above (i.e., Symptom Identification, Attribution, Symptom Impact, Appraisal, and Formal Help-seeking), such that these variables increased with greater knowledge (see Table 2).

Self-compassion. Self-compassion was measured using the Self-Compassion Scale (SCS; Neff, 2001). The scale was found to have excellent internal reliability

(Cronbach's $\alpha = 0.96$). Because past research has disagreed on the number of factors measured by the SCS, especially in older populations, an exploratory factor analysis using the principal axis factoring extraction method and varimax rotation was conducted. Though three factors with Eigenvalues greater than 1.00 were identified, the first factor was 3.95 times that of the second factor; additionally, each of the 26 SCS items had a loading greater than 0.50 on the first factor; Gorsuch (1997) suggested that a loading greater than 0.40 was salient. A visual review of the scree plot supported these conclusions. Thus, it was determined that the SCS should not be divided into subscales and that the total SCS score should be used in present analyses to operationalize self-compassion. The mean of the total score for all participants was 88.36 ($SD = 21.74$) and the median was 88.50. Self-compassion was not significantly related to AD Knowledge, Symptom Identification, Attribution, Symptom Impact, Appraisal, and Formal Help-seeking, though its relationship to formal help-seeking approached significance ($r = 0.11$, $p = 0.082$), such that greater self-compassion was associated with an increased likelihood to seek medical help (see Table 2).

Model analyses. The Cognitive Impairment Response Model (CIRM) as originally proposed by Qualls and colleagues (2015) in their work with caregiver help-seeking was tested in the full sample. Like Qualls and colleagues (2015), it was predicted in the present study that knowledge (operationalized as ADKS total score) would directly predict formal help-seeking (operationalized as likelihood to speak to a HCP and/or seek an evaluation) but would also indirectly predict medical help-seeking through both cognitive (Symptom Identification then predicting Attribution) and affective (Symptom

Impact then predicting Appraisals) pathways (see Figure 2). Thus, this model was tested in the full sample using IBM SPSS Amos 25.0.

All proposed predictive relationships were significant and positive ($p \leq 0.001$).

The model (Model A), however, was not an acceptable fit ($\chi^2(8) = 327.60, p < 0.001$; TLI = 0.329; CFI = 0.642; RMSEA = 0.401, 90% Confidence Interval [CI] = 0.364 – 0.438). Modification indices indicated that the model would most improve by accounting for the relationship between Symptom Identification and Symptom Impact. Theoretically, one can reason that the identification of AD symptoms would likely be predictive of their impact; thus, Symptom Identification may influence Symptom Impact, and Model B allowed for this relationship.

In Model B, all proposed predictive relationships were significantly positive ($p \leq 0.03$). The model, however, was not an acceptable fit ($\chi^2(7) = 121.89, p < 0.001$; TLI = 0.724; CFI = 0.871; RMSEA = 0.257, 90% CI = 0.218 – 0.298). Modification indices indicated that the model would most improve by accounting for the relationship between Attribution and Appraisal. Theoretically, one can reason that the attribution of AD as the cause of the identified symptoms might influence the resulting anxiety and/or fear that one may feel as an appraisal of the situation; thus, Attribution may predict Appraisal, and Model C allowed for this relationship.

In Model C, all proposed predictive relationships were significantly positive ($p \leq 0.03$). The model, however, was not an acceptable fit according to all model fit statistics ($\chi^2(6) = 43.33, p < 0.001$; TLI = 0.895; CFI = 0.958; RMSEA = 0.158, 90% CI = 0.116 – 0.204). Modification indices indicated that the model would most improve by accounting for the relationship between Attribution and Symptom Impact. Theoretically, one can

reason that Symptom Impact may influence Attribution; thus, Model D allowed for this relationship.

Again, in Model D, all proposed predictive relationships were significantly positive ($p \leq 0.03$). The model was an acceptable fit according to all model fit statistics ($\chi^2(5) = 6.44, p = 0.27$; TLI = 0.995; CFI = 0.998; RMSEA = 0.034, 90% CI = 0.000 – 0.099; see Figure 4 for a representation of the final model.

Figure 4. The final model of patient help-seeking.

The individual path coefficients for each iteration of the patient help-seeking model can be found in Table 3. As all coefficients are positive, most of the original hypotheses were supported. As predicted by the first hypothesis, knowledge positively predicted help-seeking likelihood ($p = 0.001$). Hypothesis 2 described the expectation that, proceeding from AD knowledge, cognitive and affective pathways would predict help-seeking. It was expected that all of these relationships with help-seeking would be positive with the exception that help-seeking was expected to decrease as threat appraisal increased. The path coefficients indicate that all of the relationships between the measured constructs and help-seeking were positive ($p \leq 0.02$). Additionally, based on modification indices and theory, the final model identified relations between the

cognitive and affective paths that were not originally predicted ($p < 0.001$). Therefore, the resulting model demonstrates that the affective and cognitive paths do not function independently but, in fact, influence each other.

Table 3

<i>Model Parameter Estimates for Selected Models</i>				
	Model A	Model B	Model C	Model D
Parameter	<i>b</i> (SE) <i>p</i> , β	<i>b</i> (SE) <i>p</i> , β	<i>b</i> (SE) <i>p</i> , β	<i>b</i> (SE) <i>p</i> , β
1a	0.40 (0.11) $p < 0.001$, 0.22	0.40 (0.11) $p < 0.001$, 0.22	0.40 (0.11) $p < 0.001$, 0.22	0.40 (0.11) $p < 0.001$, 0.22
1b	0.19 (0.01) $p < 0.001$, 0.70	0.19 (0.01) $p < 0.001$, 0.70	0.19 (0.01) $p < 0.001$, 0.70	0.11 (0.02) $p < 0.001$, 0.39
1c	0.25 (0.05) $p < 0.001$, 0.24	0.25 (0.05) $p < 0.001$, 0.23	0.25 (0.07) $p < 0.001$, 0.22	0.25 (0.07) $p < 0.001$, 0.22
2	0.08 (0.02) $p = 0.001$, 0.15	0.08 (0.02) $p = 0.001$, 0.14	0.08 (0.02) $p = 0.001$, 0.14	0.08 (0.02) $p = 0.001$, 0.13
3a	0.44 (0.10) $p < 0.001$, 0.26	0.16 (0.07) $p = 0.02$, 0.10	0.16 (0.07) $p = 0.02$, 0.10	0.16 (0.07) $p = 0.02$, 0.10
3b	0.56 (0.04) $p < 0.001$, 0.68	0.56 (0.04) $p < 0.001$, 0.68	0.25 (0.04) $p < 0.001$, 0.31	0.25 (0.05) $p < 0.001$, 0.30
3c	0.23 (0.02) $p < 0.001$, 0.61	0.23 (0.02) $p < 0.001$, 0.58	0.23 (0.02) $p < 0.001$, 0.55	0.23 (0.02) $p < 0.001$, 0.55
4a	NA	0.69 (0.04) $p < 0.001$, 0.74	0.69 (0.04) $p < 0.001$, 0.74	0.69 (0.04) $p < 0.001$, 0.74
4b	NA	NA	1.5 (.13), $p < 0.001$, 0.55	1.50 (.16) $p < 0.001$, 0.54
4c	NA	NA	NA	0.12 (0.02) $p < 0.001$, 0.41

Once a good model fit was identified, analyses were conducted to determine if self-compassion acted as a moderator in the model, such that the relationship between Appraisal and Formal Help-Seeking would differ based on level of self-compassion. Thus, a median split at 88.50 on the SCS was used to create a lower self-compassion group ($n = 125$) and a higher self-compassion group ($n = 125$). Then, the relationship between Appraisal and Formal Help-Seeking was freed and then constrained for both groups; these models were then compared. For the low self-compassion group, the standardized path coefficient of the relationship between appraisal and help-seeking was 0.561 ($B = 0.233$, $SE = 0.025$, $p < 0.001$); for the high self-compassion group, the standardized path coefficient of the relationship between appraisal and help-seeking was 0.565 ($B = 0.233$, $SE = 0.025$, $p < 0.001$). The model comparison was not significantly different ($\chi^2(1) < 0.001$, $p = 0.995$) suggesting that self-compassion did not act as a moderator.

Subjective Memory Impairment (SMI) Analyses

Scale descriptive, reliability, and correlation statistics.

Subjective memory screening. 249 participants completed the Subjective Memory Complaint Clinical (SMCC; Cronbach's $\alpha = 0.65$; $M = 1.57$, $SD = 1.56$) as one method of screening for potential cognitive impairment. It was due to administrator error that one participant did not complete this portion of the study. Using a positive screening criteria of 1 identified by prior research, the SMCC identified 173 individuals (69.2%) as possibly experiencing cognitive decline. Those identified by the SMCC did not significantly differ in age, gender, education, race, or income from those not identified ($p > 0.05$).

Subjective memory impairment. When asked directly if they thought they had memory problems, 137 participants (54.8%) responded "No," 98 participants (39.2%) responded "Maybe," and 14 participants (5.6%) responded "Yes;" from this point forward, the participants who responded "Yes" and those who responded "Maybe" are grouped together as "Yes SMI" participants unless specified otherwise. Interestingly, 68 individuals who reported that they do not think they have memory problems ("No") were positively identified as requiring further testing by the SMCC. There were significant differences in age found among the SMI groups ($F(2, 246) = 3.38$, $p = 0.04$) such that those who selected "No" were significantly older than those who responded "Maybe" ($p = 0.04$). There were no differences among the groups in education, gender, race, or income. See Table 4 for more specific demographic information regarding these groups; data is only reported for those participants who provided valid data regarding both SMI and help-seeking delay.

Table 4

Participant Demographics and Scores Grouped by SMI and Help-seeking Status

	Yes SMI and Yes HS	Yes SMI and No HS	No SMI
N	21	61	131
Age [<i>M (SD)</i>]	60.29 (6.79)	61.46 (8.25)	64.30 (7.82)
Gender	-	-	-
Male	5	20	53
Female	16	41	78
Race/Ethnicity	-	-	-
White/Caucasian	17	57	119
Black/African American	3	4	9
Hispanic/Latino(a)	1	1	0
Asian	0	0	2
Other	0	0	1
Education	-	-	-
<12 years	1	2	2
12-16 years	18	50	98
>16 years	2	9	31
Income	-	-	-
<\$19,999	2	6	17
\$20,000-\$39,999	10	23	43
\$40,000-\$59,999	4	17	23
\$60,000-\$79,999	1	5	23
\$80,000-\$99,999	2	6	9
\$100,000-\$119,999	0	2	5
>\$120,000	2	2	11
HS Delay in Months [<i>M (SD)</i>]	7.95 (7.01)	42.76 (41.84)	8.10 (13.38)
ADKS Total Score [<i>M (SD)</i>]	18.76 (3.18)	18.06 (3.49)	17.72 (2.79)
FADS Total Score [<i>M (SD)</i>]	75.71 (26.72)	72.03 (25.55)	58.96 (18.34)
SCS Total Score [<i>M (SD)</i>]	88.67 (21.05)	84.44 (20.62)	91.32 (21.91)

Note. SMI and HS represent subjective memory impairment and help-seeking, respectively. ADKS, FADS, and SCS represent the Alzheimer's Disease Knowledge Scale, the Fear of Alzheimer's Disease Scale, and the Self-Compassion Scale, respectively. HS Delay for the "Yes SMI and No HS" Group is a summation of time since symptom detection and predicted delay from present until help will be sought.

Help-seeking timeline. Individuals who responded "Yes" to the self-report question regarding memory problems proceeded to answer a series of questions regarding their actions in response to their identified problems. On average, participants who had spoken to a HCP ($n = 21$) reported that they had waited 7.95 months ($SD = 7.01$) to do so with a range of 1 to 24 months. For those participants who had not yet spoken to a HCP

($n = 61$), the averaged sum of the time since they had detected symptoms added to the time they still planned to wait until seeking medical help was 42.76 months ($SD = 41.84$) with a range of 2 to 240 months. It is important to note that, because participants were given the opportunity to respond freely to these questions, many instances of unquantifiable data resulted (e.g., “I don’t know”) in response to the question regarding how long they planned to wait. That said, nine the non-help-seekers indicated they never planned to seek help. Because that data is meaningful to the questions being addressed by the present study as these individuals are representative of those who may delay or avoid seeking help, it was determined that it was important to include them in the analyses. Thus, the maximum value of 60 months, which was actually reported by five other participants, was inserted for these nine individuals.

Individuals who responded “No” to the self-report question regarding memory problems proceeded to answer a series of questions regarding their predicted responses following the potential future identification of memory problems. Of interest, these participants ($n = 131$) responded that on average they would wait 8.10 months ($SD = 13.38$) to speak to a HCP with a range of 0 to 60 months. Six individuals again expressed the idea that they would never seek help; their responses were quantified as 60 months, which was the maximum response by one other participant in the “No” group.

A within study validation inspection using regression analyses revealed that participants’ vignette responses regarding the likelihood of seeking medical help in response to signs of early AD were significantly predictive of the help-seeking delay predictions by only the “No” group without SMI ($F(1, 122) = 15.47, p < 0.001$) and neither of the groups with SMI ($p > 0.05$). These results suggest that both the vignette

portion of the study and the SMI portion of the study are measuring the same construct of help-seeking intentions in the “No” SMI group.

A One-Way Analysis of Variance (ANOVA) was conducted to determine if the three groups (Yes SMI and Yes HS; Yes SMI and No HS; No SMI) differed in the help-seeking delay reported. The results indicated that the groups were significantly different ($F(2, 210) = 42.51, p < 0.001$). The group that reported SMI but had not yet sought help reported a significantly longer help-seeking delay than both of the other groups ($p < 0.001$) by more than 30 months (see Table 4).

Fear of Alzheimer’s disease. Fear of Alzheimer’s disease (AD) was measured using the Fear of Alzheimer’s Disease Scale (FADS; French et al., 2012). The scale demonstrated an excellent level of internal reliability with a Cronbach’s alpha 0.96. Participants scored an average of 65.69 ($SD = 23.24$); the possible range of scores was 30-150 with a higher score indicating a greater level of fear. The three SMI groups differed significantly in their fear of AD ($F(2, 210) = 11.66, p < 0.001$) such that both groups with SMI – the help-seekers ($p = 0.003$) and the non-help-seekers ($p < 0.001$) – were more fearful than those without SMI. The FADS total score was negatively correlated to how long the SMI “No” participants predicted they would wait to speak to a HCP ($p \leq 0.001$) such that greater fear was associated with a shorter help-seeking delay. It was not related to how long the SMI “Yes” participants waited to seek help ($p = 0.536$) or would wait to seek help ($p = 0.202$; see Table 5).

Table 5

Relationships amongst SMI Variables

	ADKS Score	FADS Score	SCS Score
Yes SMI/Yes HS Delay	-0.12	0.14	-0.26
Yes SMI/No HS Delay	0.11	-0.19	-0.12
No SMI Delay	-0.33*	-0.29*	-0.09
ADKS Score	-	0.12	-0.01
FADS Score	0.12	-	-0.32*
SCS Score	-0.01	-0.32*	-

Note. Relationships are reported as correlations (r) with * denoting significant relationships ($p \leq 0.001$). SMI is representative of subjective memory impairment and HS is representative of help-seeking. ADKS, FADS, and SCS represent the Alzheimer's Disease Knowledge Scale, the Fear of Alzheimer's Disease Scale, and the Self-Compassion Scale, respectively.

Alzheimer's disease knowledge and self-compassion. AD knowledge and self-compassion, which were described operationally above (i.e., ADKS and SCS scores) were also considered in this group of analyses. The three SMI groups did not differ significantly in their knowledge of AD ($p > 0.05$), though ADKS total score was negatively related to how long the SMI “No” participants predicted they would wait to speak to a HCP ($p < 0.001$), such that increased knowledge of AD was associated with a shorter help-seeking delay. ADKS total score was not significantly related to how long the SMI “Yes” participants waited to seek help ($p = 0.606$) or would wait to seek help ($p = 0.489$; see Table 5).

The differences in total SCS score amongst the three SMI groups approached significance ($F(2, 211) = 2.97, p = 0.053$) with post-hoc analyses showing those with SMI who had not sought help had significantly less self-compassion than those without SMI ($p = 0.047$). SCS was not significantly related to how long the SMI “No” participants predicted they would wait to speak to a HCP ($p = 0.178$) or to how long the

SMI “Yes” participants waited to seek help ($p = 0.264$) or would wait to seek help ($p = 0.362$). It is worth noting that, though the correlation between SCS and how long those with SMI waited to seek help (i.e., the Yes SMI/Yes HS) did not reach significance, the two were weakly related in the proposed direction such that increased self-compassion was related to a shorter delay; this relationship may have achieved significance if the help-seeking sample had been larger.

The FADS total score was negatively correlated to SCS ($p < 0.001$), such that increased fear was associated with less self-compassion. The relationship between FADS and ADKS approached significance ($p = 0.051$) such that as knowledge increased fear did as well. ADKS total score was not significantly related to SCS ($p = 0.872$; see Table 5).

Regression model. The predictive relationship between AD knowledge and fear of AD on help-seeking delay as moderated by self-compassion was investigated. The preliminary analyses discussed above demonstrated that only the SMI “No” group demonstrated significant links between the variables of interest (i.e., ADKS, FADS, and help-seeking delay). Therefore, it was determined that it was only statistically appropriate to conduct regression analyses for this group. For the sake of being thorough, however, these analyses were also conducted on both the help-seeking and non-help-seeking SMI groups; all regression analyses for these two groups were non-significant ($p > 0.05$).

Regression analyses were conducted using the linear regression analysis function of IBM SPSS 25.0. Three successive regression models were tested. First, only ADKS total was tested as a predictor. In the second model, FADS total was added as a predictor. In the third and final model, self-compassion group was added as a predictor and

moderator through its interaction with FADS. A total of 131 participants were included in the analyses, including 55 low self-compassion and 76 high self-compassion individuals.

All three models were identified as significant. For the first model, 10.4% of the variance on help-seeking delay was explained by ADKS total ($F(1, 129) = 15.00, p < 0.001$). For the second model, 17.1% of the variance was explained by ADKS total and FADS total, which was a significant improvement to the model ($F\text{-change}(1, 128) = 10.33, p = 0.002$). Finally, the third model that also included self-compassion explained 25.9% of the variance in help-seeking delay, which was a significant improvement to the model ($F\text{-change}(1, 126) = 7.46, p = 0.001$). The coefficients describing the relationships of the predictors to the dependent variable can be found in Table 6 and a graph of the interaction between fear of AD and self-compassion on help-seeking delay can be seen in Figure 5.

In Model 3, in which all predictors were included, they all acted as significant predictors of help-seeking delay ($p < 0.005$; see Table 6). For every unit increase of AD knowledge, help-seeking delay decreased by approximately 2.10 months. For every unit increase of AD fear, help-seeking delay decreased by 0.75 month. Belonging to the high self-compassion group rather than the low self-compassion group decreased the help-seeking delay by 47.55 months making it the strongest predictor. Finally, self-compassion and AD fear interacted such that self-compassion acted as a moderator of the impact of AD fear on help-seeking delay. Interestingly, for those high in self-compassion, individuals with varying levels of fear did not differ significantly in their help-seeking delay. In contrast, those low in self-compassion showed a much shorter delay when their fear was heightened than when they had little fear (see Figure 5).

Table 6

SMI Regression Model Coefficients (N=131)

	B (Standard Error)	Beta (β)	Significance (p)
Model 1			
Knowledge of AD (ADKS Total)	-2.88 (0.74)	-0.32	<0.001
Model 2			
Knowledge of AD (ADKS Total)	-2.59 (0.72)	-0.29	0.001
Fear of AD (FADS Total)	-0.36 (0.11)	-0.26	0.002
Model 3			
Knowledge of AD (ADKS Total)	-2.10 (0.70)	-0.24	0.003
Fear of AD (FADS Total)	-0.75 (0.16)	-0.55	<0.001
SCS Group	-47.55 (13.62)	-0.94	0.001
Interaction Term of SCS and Fear	0.62 (0.22)	0.76	0.005

Note. SMI represents subjective memory impairment. AD represents Alzheimer's Disease. ADKS represents the Alzheimer's Disease Knowledge Scale. FADS represents the Fear of Alzheimer's Disease Scale. SCS represents the Self-Compassion Scale.

Figure 5. A scatterplot with lines of best fit depicting the relationship between fear of AD as measured by FADS and help-seeking delay intentions by individuals without SMI as moderated by self-compassion group.

It is worth commenting on the role that outliers may have played in the model.

There were 7 individuals who reported waiting periods that were coded as 60 months; one of these individuals actually reported a wait time of 60 months whereas the others had responses of never, forever, etc. coded as 60 months. With the removal of these seven individuals, only ADKS Total score remained a significant predictor of help-

seeking delay for individuals without SMI. ADKS total score accounted for 5.5% of the variance in help-seeking delay ($F(1,122) = 7.06, p = 0.009$).

Other Variables of Interest

Scale descriptive, reliability, and correlation statistics (see Table 7).

Depression and anxiety. Depression was measured as a potential covariate using the 10 items Center for Epidemiological Studies Depression scale (CESD-10; $M = 7.23$, $SD = 60.62$). The scale demonstrated an excellent level of internal reliability with a Cronbach's alpha of 0.91. CESD-10 scores were positively related to FADS ($p < 0.001$) and were negatively related to SCS ($p < 0.001$). CESD-10 scores were not significantly related to ADKS or any of the help-seeking delay variables ($p > 0.05$). Anxiety was also measured as a potential covariate using the Generalized Anxiety Disorder 7-Item scale (GAD-7; $M = 3.86$, $SD = 5.13$). The scale demonstrated an excellent level of internal reliability with a Cronbach's alpha of 0.94. GAD-7 scores were directly related to CESD ($p < 0.001$), FADS ($p < 0.001$), and ADKS ($p = 0.001$); GAD-7 was indirectly related to SCS ($p < 0.001$). GAD-7 scores were not significantly related to any of the help-seeking delay variables ($p > 0.05$).

Health-related locus of control. Health-related locus of control was measured using the Multidimensional Health Locus of Control Scale (MHLC) which includes three subscales: internal, chance, and powerful other. The powerful other particularly references medical professionals as those individuals with influence or control. The MHLC internal subscale ($M = 26.04$, $SD = 4.21$) demonstrated an acceptable level of internal reliability with a Cronbach's alpha 0.76. The MHLC internal subscale total score was negatively related to CESD-10 ($p = 0.001$) and the MHLC chance subscale ($p =$

0.041); it was positively related to ADKS ($p = 0.028$) and SCS ($p = 0.001$). It was not significantly related to GAD-7, FADS, MHLC powerful other subscale, or any of the help-seeking variables.

The MHLC Chance subscale ($M = 19.44$, $SD = 5.23$) demonstrated an acceptable level of internal reliability with a Cronbach's alpha 0.71. It was directly related to CESD-10 ($p = 0.001$), GAD-7 ($p = 0.001$), MHLC powerful other ($p < 0.001$), FADS ($p = 0.004$), ADKS ($p = 0.006$); it was indirectly related to how long individuals without SMI concerns predicted they would wait to seek help ($p = 0.046$) and self-compassion ($p = 0.026$). The MHLC chance subscale was not significantly related to how long people with SMI waited or planned to wait before seeking help.

The MHLC powerful other subscale ($M = 17.40$, $SD = 6.12$) demonstrated a good level of internal reliability with a Cronbach's alpha 0.80. It was directly related to GAD-7 ($p = 0.017$), FADS ($p = 0.010$), and ADKS ($p < 0.001$); it was negatively related to how long individuals without SMI concerns predict they would wait to seek help ($p < 0.001$). The MHLC powerful other was not significantly related to self-compassion or how long people with SMI waited or planned to wait before seeking help ($p > 0.05$).

Table 7

Relationships amongst Covariates and Variables of Interest

	CESD-10	GAD-7	MHLC: Internal	MHLC: Chance	MHLC: Powerful Other
Yes SMI/Yes HS Delay	-0.033	0.074	-0.107	0.102	-0.301
Yes SMI/No HS Delay	-0.047	-0.125	0.103	0.064	-0.197
No SMI Delay	-0.098	-0.125	0.028	-0.174*	-0.376*
ADKS Score	0.120	0.203*	0.139	0.173*	0.297*
FADS Score	0.453*	0.450*	-0.074	0.324*	0.246*
SCS Score	-0.660*	-0.560*	0.201*	-0.140*	0.053
CESD-10	-	0.826*	-0.217*	0.204*	0.096
GAD-7	0.826*	-	-0.084	0.214*	0.151*
MHLC: Internal	-0.217*	-0.084	-	-0.129*	0.063
MHLC: Chance	0.204*	0.214*	-0.129*	-	0.287*
MHLC: Powerful Other	0.096	0.151*	0.063	0.287*	-

Note. Relationships are reported as correlations (r) with * denoting significant relationships ($p < 0.05$). SMI is representative of subjective memory impairment and HS is representative of help-seeking. ADKS, FADS, and SCS represent the Alzheimer's Disease Knowledge Scale, the Fear of Alzheimer's Disease Scale, and the Self-Compassion Scale, respectively. CESD-10, GAD-7, and MHLC represent the Center for Epidemiological Studies Depression scale, the Generalized Anxiety Disorder scale, and the Multidimensional Health Locus of Control, respectively.

Experience with dementia. Experience with AD and dementia was also assessed.

Of the full sample ($N = 250$), 83 (33.2%) individuals reported that there was a family history of dementia. Of those 83, 43 of these people had a parent with dementia, 26 had a grandparent, and 14 identified another relative with dementia. Of the full sample, 40 (16.0%) of individuals had acted a primary caregiver to an individual with dementia informally, 41 (16.4%) had acted as a secondary caregiver to an individual with dementia informally, 17 (6.8%) had been formally employed to act as a caregiver to an individual with dementia, and 152 (60.8%) had never acted as a caregiver to an individual with dementia. There were no significant differences in any of the help-seeking delay variables based on family history or caregiving experience.

Regression model with covariates. Based on the descriptive, comparative, and correlation analyses conducted, it was determined that MHLC powerful other was the only variable that should be entered into the help-seeking delay regression model as a potential covariate for the SMI “No” group. The MHLC powerful other subscale score was entered into the first block for analysis; ADKS was added in block two, FADS was

then added in block three, and finally SCS and the interaction term of SCS and FADS were added in block four. MHLC powerful other was a significant predictor accounting for 14.1% of the help-seeking delay for individuals without SMI ($F(1, 129) = 21.24, p < 0.001$). In the following steps, ADKS total score and FADS total score accounted for significantly increased amounts of variance (19.2% and 22.1%, respectively). The final step, adding self-compassion group and the interaction term of self-compassion and FADS, did not account for a significantly greater percentage of variance at 24.8% ($F\text{-change}(2, 125) = 2.30, p = 0.105$), though self-compassion group alone was a significant predictor according to parameter estimates ($p = 0.044$). See Table 8 for model estimates.

The fourth iteration of the regression model represents the relationships of all of the considered predictors with help-seeking delay for those participants without current SMI. MHLC: Powerful Other significantly predicted help-seeking delay such that with each unit increase on that measure there was a 0.52 month decrease in help-seeking delay. AD knowledge was also a significant predictor such that with each unit increase of knowledge there was a 1.04 month decrease in help-seeking delay. With each unit increase of AD fear, there was a 0.21 month decrease in help-seeking delay. Though the inclusion of self-compassion group did not significantly improve the model, it was also a significant predictor of help-seeking delay such that being part of the high self-compassion group versus the low self-compassion group resulted in a 0.16 month decrease in help-seeking delay. Finally, the interaction term of AD fear and self-compassion did not significant predict help-seeking delay for those without SMI (see Table 8).

Table 8

SMI "No" Help-Seeking Delay Regression Model Coefficients (N=131)

	B (Standard Error)	Beta (β)	Significance (p)
Model 1			
Powerful Other Locus of Control (MHLC)	-0.84 (0.18)	-0.38	<0.001
Model 2			
Powerful Other Locus of Control (MHLC)	-0.68 (0.18)	-0.30	<0.001
Knowledge of AD (ADKS Total)	-1.13 (0.40)	-0.24	0.005
Model 3			
Powerful Other Locus of Control (MHLC)	-0.55 (0.19)	-0.25	0.005
Knowledge of AD (ADKS Total)	-1.10 (0.39)	-0.23	0.006
Fear of AD (FADS Total)	-0.13 (0.06)	-0.18	0.033
Model 4			
Powerful Other Locus of Control (MHLC)	-0.52 (0.19)	-0.23	0.008
Knowledge of AD (ADKS Total)	-1.04 (0.39)	-0.22	0.009
Fear of AD (FADS Total)	-0.21 (0.07)	-0.28	0.005
SCS Group	-0.16 (0.08)	-0.26	0.044
Interaction Term of SCS and Fear	0.06 (0.05)	0.14	0.25

Note . SMI represents subjective memory impairment. AD represents Alzheimer's Disease. ADKS represents the Alzheimer's Disease Knowledge Scale. FADS represents the Fear of Alzheimer's Disease Scale. SCS represents the Self-Compassion Scale. MHLC represents the Multidimensional Health Locus of Control Scale.

DISCUSSION

It has long been recognized that one of the best and most influential ways to help individuals with cognitive impairment is to identify the condition as early as possible; however, past research conducted with caregivers suggests the average amount of time from memory problem detection to medical help-seeking ranges from 1.5-2.5 years (Chrisp et al., 2011; Chrisp et al., 2012; Knopman et al., 2000). The present study is the first to shed light on the patient perspective on the decision to seek medical help once they begin to see signs of cognitive problems in themselves while also testing the hypothesis that greater self-compassion may facilitate this process. Overall, it was found that greater knowledge of Alzheimer's disease (AD) increases the likelihood of help-seeking intentions and partially does so through both cognitive and affective pathways and, more specifically, greater fear of AD is predictive of planning to seek help sooner. Self-compassion did not contribute to help-seeking as expected but may play a greater role in help-seeking behavior rather than help-seeking intentions. The two parts of the study will first be discussed separately followed by a more general discussion of conclusions, limitations, and future directions.

Help-Seeking Intentions in Response to Hypothetical Cognitive Impairment

The vignette portion of the study posed a hypothetical scenario to the participants depicting an individual – who they were asked to imagine as a future version of themselves – displaying signs of mild AD. The vignette itself and the questions that followed were derived from a similar study by Qualls and colleagues (2015; see

Appendix A) on help-seeking intentions by potential caregivers who were asked to imagine that the character in the vignette was their mother. The model that Qualls and colleagues (2015) ultimately identified as being the best fit for predicting medical help-seeking by caregivers was also tested in the current study for its fit for help-seeking by potential patients (see Figure 2). In caregivers, tests of this model demonstrated that knowledge of AD both directly and indirectly, via separate cognitive and affective pathways, predicted medical help-seeking. The cognitive pathway included symptom detection (i.e., belief that the symptoms described were compatible with AD) which then predicted attribution of AD (i.e., belief that the individual had AD) whereas the affective pathway included symptom impact (i.e., the degree to which each symptom impacted one's understanding) which then predicted threat appraisal (i.e., experienced anxiety and belief that the person was unsafe).

Though it was expected that the same constructs measured by Qualls and colleagues (2015) in their work with caregivers would be involved in patients' likelihood to seek medical help, it was hypothesized that threat appraisal would have the opposite impact on help-seeking for patients in comparison to its effect for caregivers. With caregivers, it was revealed that increased threat (e.g., belief that the individual was unsafe) facing a loved one increased the likelihood of help-seeking, which one could argue is the rational and preferred response. One might intuitively expect the same response from patients on their own behalf, and in fact, the present findings support that expectation. That said, it was hypothesized that for patients an increase in threat appraisal would decrease their likelihood of seeking help; past literature on threat response and decision-making, which is explained below, provided the theoretical rationale for that

hypothesis.

Grossman and Kross (2014) coined the term “Solomon’s Paradox” to refer to the difference between decision-making on behalf of oneself versus a loved one. Their research revealed that regardless of age people tend to make “wiser” decisions for others than for themselves regarding emotionally meaningful situations. Being “self-immersed,” as Grossman and Kross (2014) refer to it, clouds decision-making abilities and impairs one’s ability to think objectively and rationally about options and their consequences. Because the threat of an AD diagnosis may be emotionally charged (e.g., Dark-Freudeman, West, and Viverito, 2006; Ostergren, Heeringa, de Leon, Connell, & Roberts, 2017), patients will be self-immersed and directly threatened and may not be able to make rational decisions.

Low, Weymar, and Hamm (2015) more specifically demonstrate typical responses to impending threats to oneself. They found that when people are exposed to an approaching, uncontrollable threat they often respond with attentive freezing, whereas they respond with active avoidance when given the opportunity to do so. Though these responses may be evolutionarily adaptive in certain situations, neither freezing nor avoiding confirmation of a medical diagnosis of a possible or probable condition is helpful. Although these findings came from different circumstances, one might extrapolate that, while caregivers would have the pragmatic response of seeking medical help upon identifying symptoms of AD in a loved one when they deemed the threat to be high, patients might be more likely to avoid medical help-seeking for fear of having the threat of a diagnosis confirmed. Therefore, it was hypothesized in the present study that

higher perceived threat of AD would predict a decreased likelihood of medical help-seeking by potential patients. This hypothesis was not clearly supported by the findings.

Interestingly, the current findings are comparable to those of Qualls and colleagues (2015) in that a positive predictive relationship between increased threat and increased help-seeking likelihood was identified. If this is truly reflective of decisions regarding help-seeking by individuals in response to identifying their own memory problems, then this similarity between caregiver and patient response is important to know. However, it is possible that what was actually measured in this vignette study was help-seeking intention rather than help-seeking behavior in spite of methodological efforts. Indeed, the scenario presented was hypothetical and though participants were asked, “How likely would you be to call the doctor to express concerns?”, it is possible that, while in the state of being distanced from rather than immersed in the scenario described, participants actually responded with what they *should* do rather than what they *would* do. Past research has demonstrated that self-distancing from emotionally meaningful situations improves rational decision making (Grossmann & Kross, 2014; Kross & Grossman, 2012). This reasoning would explain why these results mirror those of caregivers in Qualls and colleagues’ (2015) study and do not support the present hypothesis based on threat avoidance theory.

The present findings also failed to support the hypothesis regarding the role of self-compassion in the help-seeking process. Self-compassion is the concept of approaching oneself with the same compassion, consisting of kindness and acceptance, that one approaches loved others. As previously discussed in the Introduction, self-compassion has been associated with health-promoting behaviors, earlier help-seeking,

and generally being less distressed by stressful events (Allen & Leary, 2013; Brown et al., 2015; Homan, 2016; Phillips & Ferguson, 2013; Terry et al., 2013). Indeed, research has shown that, even when viewing health threats with the same level of seriousness, individuals higher in self-compassion are able to respond more effectively than those lower in self-compassion suggesting that they appraise situations similarly but either react differently or are able to cope with their reaction differently (Terry et al., 2013). Additionally, Krieger, Altenstein, Baettig, Doerig, and Holtforth (2013) found that increased self-compassion is associated with reduced avoidance and increased positive coping responses when faced with aversive stimuli. Therefore, though self-compassion has not yet been researched in the context of help-seeking for cognitive impairment, it was expected that self-compassion would play a moderating role between threat and help-seeking. Based on the original hypothesis that greater fear would lead to less help-seeking, it was expected that potential patients higher in self-compassion would seek help regardless of their perceived threat of AD whereas increased threat would decrease help-seeking likelihood in individuals lower in self-compassion.

Ultimately, the results of the vignette portion of the present study suggest that self-compassion does not play a role in patients' plans to seek help. As before, these findings may be truly representative of the role that self-compassion plays or, rather, does not play in patient help-seeking following detection of possible cognitive impairment but might also be limited to representing its role in help-seeking intentions rather than help-seeking behaviors. Indeed, self-compassion may only play a role when individuals truly experience and must react to an impending threat; the sampling of the present study may not have adequately allowed for the capture of this reaction. Future research should

attempt to sample individuals better able to give reports in line with a behavioral response rather than behavioral intentions in order to more fully depict the role that self-compassion does or does not play in the help-seeking process.

Help-Seeking Actions and Intentions in Response to Subjective Memory

Impairment (SMI)

The second part of the current study asked participants to reflect on whether or not they believed themselves to have a memory problem (i.e., “Yes,” “Maybe,” or “No”). Most individuals responded that they did not believe they had a memory problem (54.8%); 39.2% reported they might have a memory problem while 5.6% responded that they definitely thought they had a memory problem. Of those who thought they did or might have memory problems, 18.75% of individuals had spoken to a health care professional (HCP); on average, they waited approximately eight months to do so. The 50.89% who had not yet sought help reported that they would wait an average of 3.31 years after detecting symptoms to speak to a HCP. Those who denied SMI predicted they would wait approximately 8 months to speak to a HCP.

Beginning first with the individuals who reported SMI, their actions or lack thereof reflect what might be expected based on the past research and threat avoidance theory discussed in the previous sub-section. The help-seekers, who represented the minority of those concerned about their cognition, sought help relatively quickly in less than one year. In contrast, half of those who had identified memory problems had waited or planned to wait longer than the previously reported average of 1.5 to 2.5 years (Chrisp et al., 2011; Chrisp et al., 2012; Knopman et al., 2000). Thus, the present study suggests that patient help-seeking delay unfortunately remains a problem. Furthermore, 49.6% of

individuals who denied SMI were identified by the Subjective Memory Complaint Clinical (SMCC) screener as requiring further testing. Therefore, some of these individuals may be in the midst of denying and/or avoiding their symptoms; alternatively, they may not view the identified symptoms as threatening or worthy of medical attention. These initial findings demonstrate that the majority of individuals, when actively experiencing a presently perceived threat, engage in avoidance behaviors and delay medical help-seeking.

As in the vignette part of the study, the contributions of AD knowledge, fear of AD, and self-compassion on medical help-seeking were tested in this portion of the study. Though these constructs were not predictive of the help-seeking actions/intentions of individuals with SMI, they were predictive of the planned help-seeking actions of individuals without SMI. For this group, as both knowledge and fear of AD increased, help-seeking delay decreased. This predictive relationship between fear and help-seeking, however, was moderated by self-compassion such that help-seeking delay was not impacted by fear for individuals higher in self-compassion whereas for those lower in self-compassion help-seeking delay was longer when fear was lower and shorter when fear was higher. These results are not entirely consistent with what was hypothesized regarding the interaction of self-compassion and fear on help-seeking delay. That said, as in the first part of the study, these results may best characterize help-seeking intentions rather than actions. Indeed, a brief analysis relating individuals' help-seeking likelihood from the vignette portion of the study to help-seeking delay in the second part of the study demonstrated that there was only a significant relationship for those participants without SMI. This relationship suggests that both parts of the study for those without

SMI measured the same construct of help-seeking intent whereas the parts of the study each measured something distinct – help-seeking intent versus help-seeking actions – for those individuals with SMI.

It is important to note that self-compassion no longer played a significant role both (1) when outliers were excluded and (2) when the covariate of multidimensional health locus of control (MHLC) referencing a powerful other was included in the analyses. These points will be addressed separately. Regarding the first point, the outliers in this case are actually meaningful. These are the individuals who responded that they would “never” speak to a HCP or would wait “forever” to speak to a HCP. These may be some of the very people who need to be understood in order to promote earlier help-seeking! Unfortunately, it is difficult to quantify “never” and “forever” in a meaningful way. Additionally, these individuals may differ from other participants in ways that were not measured, such as trust of the health care system. Future research should work to identify these specific individuals and explore their resistance to medical help-seeking for cognitive impairment and perhaps medical help-seeking in general.

Locus of control in reference to a powerful other – specifically, in this case, a member of the medical field – accounted for a significant amount of variance in medical help-seeking such that the interaction of fear of AD and self-compassion no longer contributed significantly to the model. Referring back to the Common Sense Model (CSM), this measure may relate to the controllability component of the CSM such that belief in a HCP’s ability to handle and control health-related concerns may promote more adaptive and healthy coping skills. Future research on help-seeking for cognitive impairment should more fully explore patients’ beliefs about factors related to the

controllability of cognitive impairment. Additionally, it may be important to further describe and understand the construct of the “powerful other” locus of control as it deviates from the more general external versus internal locus of control. More specifically, it is necessary to understand if the measure is capturing a belief that medical providers have control, trust or distrust in medical providers, or both.

One might look at help-seeking in other domains in attempt to better understand the present results. For example, Hunter, Grunfeld, and Ramirez (2003) investigated help-seeking in women in response to signs of breast cancer. Most individuals responded that they would seek help immediately with a small minority (i.e., 3.2%) indicating that they would wait 2 months or more. Identification of symptoms and perceived control were found to be the greatest predictors of help-seeking whereas consequences did not contribute significantly. Though reflecting upon these results may prove helpful in further understanding those of the present study, there are important differences that must be acknowledged. First, at a certain age, most women receive regular screenings for breast cancer. Furthermore, there are known treatments for breast cancer, especially when administered early in the course of the disease, and it is possible for an individual to survive the condition. In contrast, cognitive screening is just beginning to become a regular feature of American health care for older adults. Additionally, AD and dementia are prolonged disorders that may develop slowly and there are few treatments for the conditions with limited efficacy. The controllability is likely perceived to be quite low and the consequences are likely perceived to be quite high, which is supported by past research on individuals’ fear of AD (Dark-Freudeman, West, and Viverito, 2006). Therefore, though there seem to be similarities amongst the factors that predict help-

seeking for breast cancer and help-seeking intentions for cognitive impairment, based on the differences between the two conditions and the resulting differences in people's perception and experience of them, it is likely that the actual help-seeking behaviors also differ as exemplified by the extreme differences in help-seeking delay as demonstrated.

General Discussion

As stated, the present study sought to expand upon and unite the research on self-compassion and help-seeking for cognitive impairment from the potential patients' perspective. For the most part, the findings from both parts of the study contradicted expectations by revealing that, in response to signs of cognitive impairment, potential patients are less likely to delay help-seeking when they view AD as a greater threat and that this relationship is not moderated by self-compassion. It is important to consider why the present hypotheses were not supported by the data. It is first possible that the fear surrounding impaired cognition in old age leads to the adaptive response of seeking help and information from a medical professional as one would hope. Additionally, it is possible that, because of this adaptive response to this fear, self-compassion does not play a role in the help-seeking process and that other avenues of promoting help-seeking must be identified and pursued. However, these conclusions do not concur with the retrospective research on help-seeking for cognitive impairment that depicts a prolonged help-seeking delay following symptom identification.

Based on the contradiction of present findings with both threat avoidance theory and past research of observed instances, it is worth acknowledging that it is possible that the vignette and questionnaire methodology used presently more specifically measured medical help-seeking intentions for cognitive impairment rather than actual patient help-

seeking behavior and that, as such, intentions cannot be equated with behavior. Indeed, Sheeran (2002) identified the gap between intention and behavior through meta-analyses measuring both constructs. In studies more specifically focused on health-related behavior changes, Armitage, Norman, Alganem, and Conner (2015) and Lash, Smith, and Rinehart (2016) found that intentions were not predictive of behavior. The fact that the results of the vignette portion of the study were only significantly related to the responses of individuals without SMI in the second part of the study lends credence to the theory that the vignette portion was only measuring intentions rather than behavior. As it is likely that it is intentions that were measured rather than behavior and past research suggests that the two cannot be considered equal, perhaps the hypothesized interactive impact of self-compassion and threat on help-seeking is only manifested when the threat is real rather than hypothetical and, therefore, would only be expressed in behaviors rather than intentions. That said, intentions have importance in this context and it is encouraging to see that, for the most part, individuals who view cognitive impairment as a serious condition intend to seek help relatively quickly. Now, researchers and clinicians must work to ensure that those intentions are manifested as actions.

Limitations

The present study has some limitations that are worth acknowledging. One measure, the Alzheimer's Disease Knowledge Scale (ADKS) demonstrated below acceptable internal reliability in the present study though it had been previously shown to be reliable in other psychometric analyses (Carpenter et al., 2009). As this variable was entered in several critical analyses, this is a limitation that must be acknowledged, especially since it was not found to be related to help-seeking delay in individuals with

SMI, which is especially surprising. It is worth noting that this measure still demonstrated statistical significance in some theoretically based analyses and would arguably have simply proven to be more strongly significant in these cases if the measure had been more reliable.

Another measure, the Self-Compassion Scale (SCS), was found to have excellent internal reliability but, as demonstrated by factor analysis, functioned differently in the present study than in past research (Brown, Bryant, Brown, & Judd, 2015; Phillips & Ferguson, 2013). This scale, which is relatively new, requires more investigation in the older population. It is possible that individuals in this age group interpret the items differently thus impacting their response style. Item level analysis is recommended to more fully understand how this population approaches this measure. If future work continues to investigate the role of self-compassion in any type of medical help-seeking by older adults, then it is important to have a strong measure of this construct for this population.

Additionally, all participants completed the study online and without experimenter supervision. Therefore, it cannot be guaranteed that all questions were given adequate attention and accurate responses. That said, all participants passed two embedded attention checks and the reliability tests for most measures ranged from good to excellent. Additionally, for most items, missing data was not a problem using this approach as all participants were prompted when a question was skipped though they were not forced to answer any questions. Therefore, missing or unusable data were only problems on free response items when participants did not respond appropriately (e.g., responding “I don’t know” or “never” to a question of time). Though using an online

approach proved mostly beneficial in collecting a great deal of data efficiently, an in-person approach may have allowed for follow-up to such responses, though an in-person approach also has limitations.

The greatest limitation but also one of the greatest contributions of the present study is that, though the aim was to measure and predict help-seeking behaviors as accurately as possible, both components of the study seemed to have mainly measured help-seeking intentions. Though this limits the conclusions that can be drawn from the present results regarding patient help-seeking behaviors, the relationship between medical help-seeking intentions and help-seeking behaviors has long been in question. The fact that the vignette data on help-seeking intentions was not related to the help-seeking behaviors of participants with SMI indicates that intentions may not be predictive of behaviors in this context.

Because of this, though the present data do not support the original hypotheses regarding patient response to the threat of AD and the protective role that self-compassion may play in promoting an adaptive response to that threat, these hypotheses may still prove true in the context of help-seeking actions. In support of this point, though not significant, a preliminary comparison of self-compassion levels of SMI help-seekers to SMI non-help-seekers demonstrated that non-help-seekers are in fact lower in self-compassion. As stated, this difference was not significant but the non-help-seeking group was also more than twice the size of the help-seeking group which may have impacted the statistical results.

It is also possible that unmeasured constructs are contributing to the help-seeking delay measured presently. Though exclusion criteria included a diagnosis of mild

cognitive impairment or a type of dementia to avoid the impact of cognitive impairment on one's ability to provide accurate reports, it is of course possible that individuals with undiagnosed memory problems participated. An objective measure of cognitive impairment was not included in the present study, and it is possible that already impaired cognitive functioning is contributing to the help-seeking delay and associated constructs. Future research should include an objective measure of cognitive functioning to include as a potential covariate.

Additionally, the interpretation of the results would be aided by additional information. For example, it would be both interesting and helpful to know the employment status of the individuals who participated as well as their health insurance status and/or access to healthcare. Furthermore, information regarding physical and mental health comorbidities and willingness to seek help from a healthcare professional for other health concerns would also provide context in which to interpret the present results. Future research should seek to collect such information in order to shed more light on the help-seeking intentions and actions by older adults and how those intentions and actions for cognitive impairment concerns may differ from other health-related concerns.

Future Directions

Based on the present findings and their implications, future research should seek to build upon what has been demonstrated presently regarding help-seeking intentions and further focus on exploring help-seeking actions. Because of the population and the condition of interest, which by definition may limit retrospective accuracy, this may prove difficult. Perhaps an interdisciplinary approach with geriatric primary care

physicians (PCP) may prove fruitful by recruiting patients and collecting data during an annual wellness exam before a cognitive screening measure is administered. This method, however, would exclude important subsections of the population who are of particular interest: those who are in denial about their declining cognition and refuse to acknowledge those symptoms, as well as those who do not utilize health care resources. Researchers must find a way to access and understand these individuals. For example, if the present study had been designed to allow for follow-up questioning of participants, then more information about these people could have been sought.

Beyond further investigating the help-seeking decision-making process, researchers and clinicians should continue working to identify effective ways of promoting earlier help-seeking. If the suggested research regarding self-compassion proves fruitful, then efforts to promote self-compassion might in turn promote earlier help-seeking. Another construct that may also be worthy of exploration work via a similar mechanism – reducing avoidance behaviors – is cognitive defusion, which is commonly associated with mindfulness practice. Donald, Atkins, Parker, Christie, and Guo (2016) have demonstrated that cognitive defusion, which is the ability to see thoughts simply as thoughts and being separate from the self, fosters approach coping rather than avoidance coping in the face of stress independently of the impact of threat appraisal; therefore, cognitive defusion may also be worthy of investigation in the context of help-seeking. Kelly and Homik (2016) have demonstrated that individuals make healthier choices when health messages are framed in a way that suggests maintaining one's own health has benefits for loved ones and others. This line of reasoning might trigger the compassion that people naturally feel for others. It would be interesting to

conduct a similar study measuring compassion for others and the self to determine if compassion is responsible for the effectiveness of the health promotion message. Regardless, their results might be meaningful to medical professionals and public health organizations working to promote cognitive screening and help-seeking for cognitive impairment.

Ultimately, it is important for researchers and clinicians to decrease the cognitive impairment help-seeking delay to allow patients and their families to receive the best care and to have the best possible quality of life, which likely begins with understanding the help-seeking process. The overarching aim of the present study was to build upon Leung and colleagues' (2011) findings revealing the importance of the patient perspective in the help-seeking process for cognitive impairment. As this had not been explored in depth or in large samples, the present study has introduced a model of help-seeking intentions from the patient perspective and further demonstrated that intentions are not predictive of actions for individuals over the age of 50 in the context of cognitive impairment concerns. As the present study may not have measured help-seeking behaviors as intended, the question of self-compassion's role in this process remains unanswered but is still an exciting avenue for future research with potentially important clinical implications.

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Appendix A

Questionnaire Vignette Derived from Qualls et al. (2015)

Instructions

The study in which you are about to participate involves decisions older adults sometimes must make regarding care for themselves. Please read the following scenario and respond to the questions below as if the person described is you.

Vignette

You are 76 years old and enjoying your life in a small community away from the “big city life” where your family lives. You have lived alone since your spouse died 10 years ago. You’re a retired accountant who enjoys entertaining guests and participating in many activities. The last time your family visited you showed them that the roof had a slight leak as soon as you invited them in. They told you that they would call someone to fix it, but you stayed upset despite their reassurance that it would be repaired.

You and your family sat down to visit, and you all conversed for a long time. You told them about your weekly bridge games and how much fun you have been having with your friends. You mentioned that you needed some items from the grocery store, so you grabbed the grocery list and everyone left. You retrieved the mail from the mailbox and then drove to the grocery store. After everyone finished shopping at the grocery store, you said you wanted to go to the department store to look for clothes. You spent an hour at the store and then returned to the house. Upon arriving you stopped to check the mail and your family reminded you that you had already gotten it. You became angry with them and said that no one is perfect and stormed into the house.

Everyone went inside and began putting the groceries away while you started cooking dinner. While you were cooking, your family began clearing the table and talked with you. You told them about your bridge games again and they continued setting the table. When the meal was ready, you all sat down to eat and had a good conversation.

CURRICULUM VITA

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Education

Ph.D., Clinical Psychology	University of Louisville (2014 - present) Louisville, KY
M.S., Clinical Psychology	University of Louisville (2016) Louisville, KY
B.A., <i>magna cum laude</i>	Scripps College (2012) Claremont, CA Psychology with honors Minor in Hispanic Studies

Honors and Awards

2017	Society of Clinical Geropsychology Student Paper Award, Honorable Mention
2012	Phi Beta Kappa
2011	Sigma Delta Pi: Spanish National Honor Society
2011	Virginia Judy Esterly Award
2011	Psi Chi: Psychology International Honor Society
2010	Joint Program in Survey Methodology Fellow
2008-2012	James E. Scripps Scholarship
2008-2012	Robert C. Byrd Scholarship
2008-2012	Plato and Flora S. McCourtney Scholarship
2008-2012	National Merit Scholar and Scholarship Recipient

Clinical Intervention Experience

2017 – Present	Kindred Transitional Care and Rehabilitation - Wedgewood Supervisor: Suzanne Meeks, Ph.D. <ul style="list-style-type: none">• Provide assessment, conceptualization, and psychotherapy to long-term care residents of a nursing home and rehabilitation center.• Provide and receive individual, peer, and group supervision.
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- 2017 – Present Psychological Services Center, University of Louisville
Mindfulness Clinical Team
Supervisor: Paul Salmon, Ph.D.
- Study, discuss, and learn theory and techniques related to mindfulness therapy and acceptance and commitment therapy.
 - Conceptualize therapy clients.
 - Design and implement mindfulness-based interventions.
 - Provide and receive individual, peer, and group supervision.
- 2017 Psychoeducational Approach to Transcendence and Health (PATH)
Group for Dementia Caregivers Experiencing Chronic Pain
Supervisor: Valerie McCarthy, Ph.D.
- Co-facilitate a group for caregivers to provide support to one another, learn about themselves, and learn and practice self-care.
 - Lead mindfulness activities, group discussions, and creative activities.
 - Work with Dr. McCarthy to develop a facilitator manual to allow for the dissemination of the PATH protocol.
- 2016 – 2017 Psychological Services Center, University of Louisville
Cognitive Behavioral Therapy Clinical Team
Supervisor: Janet Woodruff-Borden, Ph.D.
- Studied, discussed, and learned cognitive behavioral therapy theory and techniques.
 - Conceptualized therapy clients from a cognitive behavioral orientation.
 - Designed and implemented cognitive behavioral interventions with the integration of other techniques when appropriate.
 - Provided and received individual, peer, and group supervision.
- 2014 – 2016 Psychological Services Center, University of Louisville
Integrated Interventions Clinical Team
Supervisor: Richard Lewine, Ph.D.
- Provided psychotherapy to clients with severe affective disorders.
 - Developed case conceptualizations and treatment plans from an integrative perspective.
 - Provided community outreach and therapy to Cardinal Covenant Scholarship program students and engaged in program evaluation.
 - Provided and received individual, peer, and group supervision.

Assessment Experience

- 2017 – Present Frazier Rehabilitation Institute
Neuropsychological Assessment Practicum
Supervisors: Brandon Dennis, Psy.D. and Robert Underwood, Ph.D.

- Work with patients with a variety of clinical presentations and referral questions (e.g., TBI, dementia).
- Observe and conduct semi-structured assessment interviews with patients and/or collateral informants.
- Conduct and score flexible batteries of neuropsychological assessments for outpatients.
- Write evaluative and diagnostic reports based on patients' performance.
- Receive supervision and participate in weekly didactic sessions with supervisors.
- Attend relevant sessions of the University of Louisville Neuroscience Grand Rounds.

2015 – Present

University of Louisville Hospital, Psychological Service Center
Adult Assessment Practicum
Supervisor: David Winsch, Ph.D.

- Conduct semi-structured assessment interviews and flexible batteries of neuropsychological assessments for adult outpatients.
- Address a range of referral questions, including ADHD, learning disorder, and autism spectrum diagnoses.
- Score tests and write reports based on clients' performance.
- Provide feedback to clients.

2015 – Present

University of Louisville Hospital, Psychological Services Center
Child Assessment Practicum
Supervisors: Bernadette Walter, Ph.D. and Paul Rosen, Ph.D.

- Conduct semi-structured assessment interviews and flexible batteries of neuropsychological assessments for child outpatients.
- Address a range of referral questions, including ADHD.
- Score tests and write reports based on clients' performance.
- Provide feedback to clients.

2016 – 2017

University of Louisville Hospital, Health Care Outpatient Center
Neuropsychological Assessment Practicum
Supervisor: Elizabeth Cash, Ph.D.

- Conducted semi-structured assessment interviews and standardized batteries of neuropsychological assessments for geriatric outpatients and collateral informants.
- Conducted semi-structured assessment interviews and standardized battery for central auditory processing referrals to provide auditory testing recommendations.
- Scored tests and wrote reports based on patients' performance.

Research and Related Work Experience

- 2014 – Present University of Louisville: Clinical Geropsychology Lab
Mentor and Supervisor: Benjamin T. Mast, Ph.D., ABPP
- Graduate student.
 - Administer neuropsychological assessment battery to older adults.
 - Score, enter, and analyze assessment data.
 - Develop protocol, battery, and training supplies for upcoming studies.
 - Train and supervise graduate students and research assistants.
- 2012-2014 Washington University in St. Louis: Alzheimer's Disease Research Center and Cognitive Psychology Lab
Supervisors: David Balota, Ph.D. and Jan Duchek, Ph.D.
- Worked on the Healthy Aging and Senile Dementia (HASD) and Adult Child Study (ACS) projects as a research assistant.
 - Administered and scored testing targeting aspects of attention and memory performance to older adults with and without Alzheimer's.
 - Ran the behavioral task aspects of an fMRI study.
- 2012 Scripps College: Neuropsychology Research Lab
Supervisor: Stacey Wood, Ph.D., ABPP
- Research assistant on a study on the identification of risk and preventive factors for elder financial exploitation.
 - Administered neuropsychological test batteries to older adults.
- 2012 Loma Linda University Medical Center, Fieldwork in Clinical Psychology
Supervisor: Jessica Borelli, Ph.D.
- Clinical internship in the pediatric oncology unit.
 - Conducted play therapy with inpatients.
- 2011-2012 Clinical Neuropsychology Practice
Supervisor: Stacey Wood, Ph.D., ABPP
- Discussed assessment selection and interpretation.
 - Conducted and presented research on relevant topics for referrals.
 - Reviewed scoring of assessments.
- 2011 Scripps College: Senior Thesis
Vantage point and visual imagery in episodic memory:
Effects on recall in younger and older adults
Advisors: Stacey Wood, Ph.D., ABPP and Alan Hartley, Ph.D.
- 2011 Washington University in St. Louis
Supervisors: Heather Rice, Ph.D. and Cynthia Fadler, Ph.D.
- Assisted in the development of coding guide.
 - Coded the data of 40 participants across 5 sessions.

- 2011 Scripps College
Supervisor: Michael Spezio, Ph.D.
- Worked with participants in a political decision-making study.
 - Prepared a conference poster.
- 2010 Federal Bureau of Labor Statistics: Office of Survey Methods Research
Supervisors: Scott Fricker, Ph.D. and Polly Phipps, Ph.D.
- Assisted in the development of a coding scheme for the American Time Use Survey.
 - Performed statistical analyses and prepared multiple surveys.
 - Analyzed and reported on the discrepancy between federal data and other sources of national data on sleep.
- 2010 Scripps College
Advisor: Dr. Alan Hartley
- Completed a self-designed research project in Research Methods on the relationship between psychological birth order and family beliefs.
 - Administered the study and analyzed and presented the results.

Publications

- Strong, J.V., & Midden, A.J. (In press). *Neuropsychological differences between older adult instrumental musicians: Cognitive benefits of continuing to play.*
- Flaherty, L., Midden, A.J., & Mast, B.T. (2018). Clinical utility of symptoms of dementia screener in geriatric primary care. *Clinical Gerontologist*.
- Midden, A. J., & Mast, B. T. (2017). DIF analysis of items on the Geriatric Depression Scale Based on presence of cognitive impairment. *Aging and Mental Health*.
- Midden, A. J., & Mast, B. T. (2017). IRT analysis of the Frontal Systems behavior Scale for detecting cognitive impairment in primary care. *Clinical Gerontologist* 40:4, 295-306, DOI: 10.1080/07317115.2016.1276115
- Renn, B., Midden, A. J., & Gallanter, E. (2016). Gerodiversity. *Wikipedia*. Retrieved from <https://en.wikipedia.org/wiki/Gerodiversity>

Presentations

- Midden, A.J. (2018, March). *Help-seeking for cognitive impairment: The role of self-compassion*. Oral presentation at the 2018 Regional Graduate Student Research Conference, Louisville, KY.
- Flaherty, L., Midden, A. J., & Mast, B. T. (2017, August). *Clinical utility of symptoms of dementia screener in geriatric primary care*. Poster presented at the 2017 American Psychological Association, Washington, DC.
- Midden, A. J., & Mast, B. T. (2016, November). *Longitudinal invariance of the CES-D in the REACH sample of dementia caregivers*. Poster presented at the 2016 Gerontological Society of America, New Orleans, LA.

- Midden, A. J., & Mast, B. T. (2016, August). *DIF analysis of items on the Geriatric Depression Scale Based on presence of cognitive impairment*. Poster presented at the 2016 American Psychological Association, Denver, CO.
- Midden, A. J., & Mast, Benjamin T. (2015, November). *IRT Analysis of the Frontal Systems Behavior Scale for Detecting Cognitive Impairment in Geriatric Primary Care*. Poster presented at the 2015 Gerontological Society of America, Orlando, FL.
- Strong, J. V., Midden, A. J., & Mast, Benjamin T. (2015, November). *Neuropsychological functioning in older adult musicians: Cognitive benefits of continuing to play*. Poster presented at the 2015 Gerontological Society of America, Orlando, FL.
- Midden, A. J., Wood, S., & Hartley, A. (2012, April). *Vantage point and visual imagery in episodic memory: Effects on recall in younger and older adults*. Poster presented at the 2012 Western Psychological Association Conference, San Francisco, CA.

Memberships

2017 – Present	Society for Clinical Neuropsychology, American Psychological Association, Division 40
2017 – Present	Division on Adult Development and Aging, American Psychological Association, Division 20
2015 – Present	Society of Clinical Geropsychology, American Psychological Association, Division 12, Section II
2015 – Present	Society of Clinical Psychology, American Psychological Association, Division 12
2015 – Present	American Psychological Association
2014 – Present	Gerontological Society of America

Professional Activities

2017	Reviewer for <i>Aging and Mental Health</i>

Training and Certifications

2017	Competent, Affirming Practice with Older Lesbians and Gay Adults
2017	Avoiding Ethical Missteps
2016	Star Behavioral Health Providers Tier One Training on Military Culture and the Impact of the Deployment Cycle
2015	Allied LGBTQ Health Provider Training
2015	Suicide Prevention
2015	Interpersonal and Social Rhythms Therapy

Teaching Experience

2018	University of Louisville Abnormal Psychology, Teaching Assistant
2016	University of Louisville Aging: Science and Stories, Guest Lecturer
2015	University of Louisville Understanding Alzheimer's Disease, Guest Lecturer
2012	Scripps College Clinical Neuropsychology Course Assistant
2010-2012	Scripps College Psychological Introductory and Advanced Statistics Course Assistant
2009-2010	Scripps College Math Tutor

Leadership Experience

2015 – Present	University of Louisville, Graduate Network of Arts & Sciences Information Officer and Department Representative
2015 – 2017	Society of Clinical Geropsychology (APA Division 12, Section II) Student Representative
2011-2012	Scripps College Co-President of Psi Chi: International Psychology Honor Society
2009-2010	Scripps College Residence Hall Council: Proctor

Volunteer Positions and Extracurricular Activities

2015-present	Louisville Alzheimer's Association
RivALZ/Blondes vs. Brunettes Flag Football Event   • Planning and fundraising committee member, team captain, player and fundraiser.
2015	Habitat for Humanity • Volunteered to finish homes for residents of Louisville, KY.
2013-2014	Sunrise Senior Living in Clayton
- Volunteered with residents on Assisted Living and Reminiscence Floors.