NEGATIVE PERCEPTIONS ON AGING: A PROOF OF CONCEPT STUDY

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A Thesis
Submitted to the Graduate College of Bowling Green State University in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 2018

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ABSTRACT

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Negative perceptions on aging have been found to have numerous detrimental effects on the aging process from memory issues to slower recovery from illness and even including a shortened lifespan. These negative perceptions of aging often begin early in life as children are exposed to these perceptions through the media and those around them. These perceptions seem to be carried into old age and become negative self-perceptions which can impact physical and psychological health as well as quality of life. Nursing home residents may be particularly vulnerable to these types of perceptions as they are consistently reinforced by the nursing home environment and staff. Acceptance and Commitment Therapy (ACT) is effective in targeting negative perceptions, both about the self and about others, and defusion from these thoughts. This study involved a four-week ACT intervention on 5 nursing home residents. The proposed study hypothesized that 1) Residents in the intervention would report a significant decrease from the baseline in their belief in negative aging perceptions, 2) residents in the intervention would report a significant improvement in psychological and physical functioning relative to baseline, 3) residents who participate in the intervention would report a significant improvement of quality of life relative to baseline, 4) participants would report less daily distress, depression, and anxiety relative to baseline, and 5) participants would report more meaningful conversation and social participation relative to baseline. Results indicated improvement in specific areas for certain participants, most notably in acceptance of negative perceptions on aging. It may be beneficial for future studies to adjust the protocol by placing less emphasis on psychoeducation and more on the experiential application of ACT techniques, as well as by starting with the values component as a framework for flexibility and acceptance.
“Do not go gentle into that good night,
Old age should burn and rave at the close of day;
Rage, rage against the dying of the light.”
--Dylan Thomas, “Do Not Go Gentle into That Good Night”
ACKNOWLEDGEMENTS

I would like to thank my advisor, William O’Brien, for all of his help and guidance throughout this project. I would also like to thank my committee members, Dryw Dworsky and Steve Jex, for their feedback and support. Finally, I would like to thank my friends and family for their love and support throughout the course of this project.
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INTRODUCTION

The global population is aging. In developed countries, people are living longer, healthier lives due to increased knowledge on how to be healthy, advanced medical technology that turns once-fatal diseases into minor inconveniences, and, in America specifically, the baby boomer population quickly closing the gap on elderly adulthood. In fact, current statistics predict that by the year 2050, fully a quarter of the world’s population will be 65 years of age or older (OECD, 2016). The United States is no exception to this shift: by 2040, it is predicted that almost 22% of the population in the USA will be 65 or older (Administration on Aging, 2015).

With aging comes certain obstacles and challenges. Physical health, cognitive abilities, and one’s ability to recover from illnesses and injuries are all negatively correlated with age (e.g., Case & Deaton, 2003). In addition to these challenges, the elderly face negative perceptions of aging (Lockenhoff et al., 2009), and these age-related perceptions are reportedly becoming more negative over time (Ng et al., 2015).

Negative age-related perceptions are associated with decreasing likelihood of older adults seeking assistance and less use of assistive technological devices (Fraser et al., 2015). They can also adversely affect older adults’ physical and mental abilities. For example, older adults who have more negative views on aging tend to have worse memory performance, hearing, ambulatory abilities, and self-care abilities after controlling for factors such as mental health, sex, marital status, and race (Levy, 2003; Levy, Slade, & Gill, 2006; Levy, Zonderman, Slade, & Ferrucci, 2011). Negative perceptions on aging are also associated with higher risk of heart problems and slower recovery time from those problems. Also, negative perceptions on aging have been associated with stress, which leads to a higher risk of heart problems and a higher risk of Alzheimer’s disease (Levy et al., 2015).
There are also reports of a decreased “will to live.” For example, Levy and colleagues (2002) reported that older adults who have more negative perceptions on aging live on average 7.5 years less than those with more positive views of aging and require more medical interventions while they live. Further, in a longitudinal study in Germany, it was found that negative perceptions on aging were better predictors of poorer health than poorer health was of negative perceptions on aging (Kotter-Gruhn, Kleinspehn-Ammerlahn, Gerstorf, & Smith, 2009; Wurm, Tesch-Romer, & Tomasik, 2007).

These negative perceptions on aging seem to begin early in life. Children as young as three years old reportedly verbalized negative perceptions on aging in a study where they were asked to describe an older man in a picture (Seefeldt, Jantz, Galper, & Serock, 1977). As children age, they are exposed to negative aging perceptions that exist in the popular culture and social media in the USA (Levy, 2009). These negative perceptions do not seem to fade as a person closes the gap into old age; elderly individuals were reported to have views on the elderly as a group that are just as negative younger persons (Nosek et al., 2002). This suggests that the negative perceptions begin earlier in life and carry over to old age, bringing with them lasting negative effects that could significantly impair one’s quality of life and even correlate with a shorter lifespan as was reported in the Levy and colleagues (2002) longitudinal study.

Quality of Life

The goal of nursing homes is to provide care for those who can no longer care for themselves and to help the residents maintain the highest possible quality of life given their situations. Many different factors go into quality of life, and while every individual may have a different notion of what those factors are, it seems that most agree it involves factors in personal,
social, and environmental dimensions (Levasseur, 2009). More specifically, people will cite factors such as age, health, values, and abilities as important in determining one’s quality of life.

Others have also stated that level of busyness, activities of daily living, health behaviors, and interpersonal relationships are vital in the quality of life calculation, with good social relationships being the most frequently mentioned factor (Bowling et al., 2003). In fact, social contact seems to be considered as important as physical health for the elderly population (Farquhar, 1995). Additionally, it seems that income and the ability to adapt to one’s environment are all useful information when one considers quality of life (Levasseur, 2009). In the elderly population specifically, symptom burden can affect how much meaning one finds in life, which correlates positively with one’s perceived quality of life (Haugan, 2014).

**Nursing Homes**

Approximately 1.4 million Americans currently reside in nursing homes (Center for Disease Control and Prevention, 2016). These facilities are meant to care for patients, ideally with the goal of rehabilitation in order to get them to a level of health where they can again live independently. However, the Minimum Data Set (MDS), a federally mandated health status assessment tool for all Medicare and Medicaid patients, shows that only 15.7% of nursing home residents using federal insurance in the USA have an active discharge plan (Center for Medicare and Medicaid Services, 2012). Further, the vast majority of residents of nursing home leave due to hospitalization or death. The MDS also showed that approximately one fifth of nursing home residents on federal insurance do not have any impairment on Activities of Daily Living (ADLs). In fact, only 15.8% of nursing home residents in the data set fit criteria for being severely impaired, meaning they had impairments on 4 or more ADLs and were severely cognitively impaired. While there may be various reasons for the lack of recovery-related discharge, (i.e.,
disabilities, illness, dementia, etc.), a clear conclusion to be drawn is that most people who enter 
nursing homes will remain there for the rest of their lives.

Nursing home residents tend to become less healthy, both mentally and physically, the 
longer they live in a nursing home (Scocco, Rapattoni, & Fantoni, 2006). Morality rates of 
nursing home residents are highest in the first six months of residence, estimated to range from 
50-60% (Flacker & Kiely, 2003). It is possible that this high mortality rate and decrease in health 
is due to the generally frail condition of this population. However, it seems that more than frailty 
alone is affecting this population. For example, the Nursing Home Data Compendium (2013) 
reported that one fifth of nursing home residents had no impairment in their Activities of Daily 
Living (ADLs) and that a little over a third of nursing home residents had only mild or no 
cognitive impairment. Yet in a study of 100 nursing home residents, the mean Mini Mental 
Status Exam score had decreased significantly from the time of admission to six months later; 
scores on ADLs also fell significantly during that time, and the level of depression among the 
assessed residents rose significantly (Scocco et al., 2006). Residents in this study also reported 
feelings of loneliness and marginalization. This research suggests that something about the 
nursing home environment is contributing to the decrease in health and autonomy of this 
population.

Levy (2009) argues that as people age, they are socially cued to consider themselves 
“old.” For example, once a person reaches a certain age, he or she becomes eligible for myriad 
“senior benefits” ranging from Social Security to discounted movie tickets. Even on a global 
scale the only requirement to be considered a part of the elderly population is that one must be at 
or above the age of 65. Levy (2009) points out that even if the person does not consider him- or 
 hers herself to be old, these societal cues encourage the person to identify with others who are old
(Levy, 2003). In a nursing home, these cues can be much more blatant and can permeate the entire environment in which the person lives. For instance, in nursing home settings, the residents are stereotypically considered incompetent, prompting staff to use “baby talk” when speaking to them (e.g., Caporael, 1981). This can be detrimental in two ways: it reinforces the idea that the elderly are less competent than those who are younger, and it affirms the belief that the person is old, meaning that the negative perceptions of aging he or she had previously believed now become true for the self.

**Dispelling Negative Perceptions**

Unfortunately, once in place, negative perceptions are difficult to dispel, especially if they suggest a negative trait about a group (Rothbart & Park, 1986). Didactic education about the fallacies of a negative perception about a group by itself does not seem to be very effective in decreasing the negative perception (Cottle & Glover, 2007). Other, more experiential methods have shown more promise. For example, there is evidence that suggests if a person in a working environment works closely with an elderly colleague, his or her belief in the negative perceptions of aging will lessen (Allan & Johnson, 2009). Education sessions mixed with a conglomeration of group activities, informational presentations designed to replace stigmatizing thoughts with more informed ones, and discussions about the fallacies of the perceptions seems to be effective methods in countering negative perceptions; however, these effects appear to fade, especially in people who score high on psychological inflexibility (Masuda et al., 2007).

 Few studies have examined strengthening positive age-related perceptions in the elderly population, but a study done by Levy, Pilver, Chung, and Slade (2014) found success in both increasing positive age-related perceptions and decreasing negative ones using implicit methods. Specifically, they used a computer program to generate an optimal subliminal speed at which to
flash positive, negative, or neutral age-related words at each individual participant. When positive aging perceptions were strengthened using subliminal messaging during a computer task for four 1-week-apart sessions, the elderly participants had improved physical functioning for up to three weeks following the strengthening session. This improvement in physical functioning as assessed by the Short Physical Performance Battery was significantly greater than the improvement from an explicit intervention contradicting negative perceptions on aging. In other words, older individuals who were exposed subliminally to positive age-related words (such as learned) improved more in physical functioning than older individuals who had completed an explicit intervention where they had to picture and describe a healthy elderly person in a short essay. This suggests that these negative perceptions are strongly implicit and that simply contradicting them explicitly may not be enough to dispel the distressing effects they can have on the elderly population (Levy et al., 2014).

Strengthening positive perceptions of aging can also help improve memory in the elderly population (Levy, 1996). These effects did not hold true for participants who were ages 18-35, ages which are clearly not a part of the elderly population. This suggests that in order for an intervention on aging perceptions to be effective, the perceptions must be important to one’s self-image. Additionally, this same study found that subliminally enforcing negative perceptions on aging tended to worsen memory performance.

**Acceptance and Commitment Therapy (ACT)**

An underlying position in ACT is that one cannot effectively control one’s thoughts and feelings, and that no thought or feeling is inherently good or bad, right or wrong. Therefore, ACT should work to improve negative self-perceptions because it would allow the people affected by them to recognize that the negative thoughts are just thoughts. They would also help the people
affected by them to recognize that thoughts are neither inherently good nor bad, important nor unimportant. It would allow those people to think the thought in a way that separates it from themselves and accept the thought’s mental presence without having to accept it as true. In other words, ACT would increase the participants’ psychological flexibility in regard to the negative age-related perceptions.

Psychological flexibility is “the ability to contact the present moment fully as a conscious human being, and to change or persist in behavior when doing so serves valued ends” (Hayes et al., 2006; p. 7). This means that a person with high psychological flexibility is able to have a stereotypical thought (i.e., “I am old and frail”) and even in the presence of such a thought perform actions that may be incongruent with it such as performing activities of daily living, exercising, or visiting family. A person with low psychological flexibility, on the other hand, would have the thought “I am old and frail”, believe the thought, and therefore act in ways that are congruent with it.

Psychological flexibility is inversely correlated with stigmatic thoughts (Masuda, Price, Anderson, Smertz, & Calamaras, 2009). Masuda and colleagues (2009) collected data from an undergraduate population on psychological flexibility and stigmatic thoughts using a web-based survey method. They found that the students who were higher in psychological flexibility (as measured by the Acceptance and Action Questionnaire-16) tended to have less stigmatizing attitudes (as measured by the Stigmatizing Attitudes-Believability Questionnaire), specifically toward people with mental illness. Because research suggests that people who believe a negative generalized perception about one group are more likely to believe other negative generalized perceptions against other groups, it is not hard to imagine that the findings from the Masuda and
colleagues (2009) article could generalize to stigmatizing attitudes toward other populations, such as the elderly (e.g., Crandall, 1994).

**ACT to Decrease the Effects of Negative Perceptions**

There is evidence that ACT can be effective for reducing the influence of negative perceptions on behavior (Lillis, Hayes, Bunting, & Masuda, 2009; Masuda et al., 2007). Participants randomly assigned to an ACT intervention as brief as 2.5 hours showed significant decreases in stigmatized attitudes toward mentally ill individuals regardless of their pretreatment level of psychological flexibility (Masuda et al., 2007). Additionally, Masuda and colleagues compared an ACT intervention to an education intervention and reported that the ACT intervention was more effective than the education intervention, which was only effective for participants who had higher pretreatment levels of psychological flexibility.

ACT could also be effective for reducing the impact of negative thoughts about the self. In a study on obesity-related stigma, Lillis and colleagues (2009) recruited participants who had been attending a weight loss program for at least six months prior to the study. An ACT intervention was provided to randomly assigned subgroups of attendees. The other participants were assigned to a waitlist group. The intervention was a 6-hour workshop version of ACT that utilized a series of lectures and exercises from the original ACT manual. The exercises used targeted the teaching of acceptance, mindfulness, values, and defusion of thoughts and emotions. The primary focus of the workshop were negative thoughts about weight. Lillis and colleagues (2009) reported that those who completed the ACT intervention had significantly less obesity-related stigma (Cohen’s $d$: 1.07), psychological distress (Cohen’s $d$: .92), and body mass (Cohen’s $d$: .68) after 3 months than the waitlisted group. Lillis and colleagues (2009) argued that these results support the assertion that using an ACT intervention to target stigma using
mindfulness, acceptance, and values can be effective. They asserted that the intervention decreases patterns of experiential avoidance and therefore leads to values-driven changes in behavior.

**Current Study and Hypotheses**

The population on average is aging, and by the year 2050 a quarter of the world’s population will be 65 years of age or older (OECD, 2016). Negative views on aging are correlated with myriad negative effects on the elderly, including higher susceptibility to illness, lower likelihood of utilizing helpful resources, and a shorter lifespan (e.g. Levy et al., 2002; Levy et al., 2006). Levy (2009) argued that people collect and believe negative perceptions on aging as they grow, and that by the time they reach old age (as defined by societal cues), they have embodied those perceptions and believe them to be true about themselves. This can be especially likely in a nursing home setting as there are many environmental cues that suggest the residents are incompetent (Caporael, 1981). Once in place, negative perceptions about a group are difficult to dispel (Rothbart et al., 1986). ACT has been used effectively to dispel negative stereotypes about an out-group and about the self (Lillis et al., 2009; Masuda et al., 2009). Thus, ACT has the potential to be helpful for nursing home residents who are experiencing the detrimental effects of negative self-perceptions on aging. It is hypothesized that:

1. Nursing home residents in the ACT intervention will report a significant decrease from baseline taken before the intervention in age-related stigma as measured by the Acceptance and Action Questionnaire- Stigma (AAQ-S) and the Image of Aging Scale (IAS).
2. Nursing home residents who participate in the ACT intervention will report a significant improvement in psychological and physical functioning as measured by the SF-12 compared to their baseline scores on the SF-12.

3. Residents who participate in the intervention will report a significant improvement in quality of life as measured by the Quality of Life Scales for Nursing Homes compared to their baseline scores.

4. Participants will report less daily distress, depression, and anxiety as measured relative to baseline.

5. Participants will report more meaningful conversations and more participation in social events relative to baseline.
METHODS

Participants

Participants were 5 nursing home residents from a regional nursing home facility. They were recruited using a door-to-door method. Specifically, the researcher went to individual rooms of the nursing home and explained the study to residents whom on-duty nurses and aides identified as having sufficient cognitive and self-care ability. The criteria for eligibility included: being 65 years of age or older, being able to give voluntary consent (i.e. being their own power of attorney, and achieving a score of 20 or higher on the Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2005). Fifteen residents were identified by staff and were approached by the researcher. Four residents stated that they were not interested in participating in the study. Eleven stated that they were interested and were given an informed consent form to sign. After giving consent, the residents were given the MoCA in order to assess for level of cognitive abilities to determine whether they would be able to comprehend and complete the surveys. Six residents scored at or above the cutoff of 20 points on the MoCA; the scores for the other five fell below the cutoff, thus making them ineligible to continue. The six who met eligibility criteria completed baseline measures and were given instructions on completing the daily questionnaires. After one week, one of the participants dropped out of the study due to a lack of interest in completing surveys. The names of all participants were changed to protect confidentiality.

Participant 1, who will be referred to as Adam, was a 72-year-old Caucasian male who had been living in the nursing home for 2 years and 2 months at the beginning of the study. He scored a 20 on the MoCA. He experienced physical limitations in that he had trouble with ambulation and used an electric scooter to get around the nursing home. During the course of the study, he was taking 250mg of Topamax as needed.
Participant 2, who will be called Beth, was a 76-year-old Caucasian woman who had been living in the nursing home for 6 years at the beginning of the study. She scored a 20 on the MoCA. She was able to ambulate for short distances and used a self-powered wheelchair to take her around the nursing home when she wanted to leave her room. During the course of the study, she was taking 15mg of buspirone twice a day. She was also taking 10mg of Aricept, .137mg of Synthroid, and 15mg of remeron daily.

Participant 3, who will be referred to as Christopher, was a 66-year-old Caucasian male who had been living in the nursing home for 8 months at the beginning of the study. He scored a 23 on the MoCA. He dropped out of the study during the second week, stating that he was “not interested in doing anymore surveys.”

Participant 4, who will be referred to as Denise, was a 79-year-old Caucasian female who had been living in the nursing home for 4 years and 1 month at the beginning of the study. She scored a 24 on the MoCA. She experienced problems with ambulation and used a wheelchair, though she chose to take meals in her room and did not often leave. During the course of the study, she was taking 100mg of amantadine once per day. She was also taking 5mg of buspirone twice per day. She had as-needed prescriptions of 20mg of morphine sulphate, 2.5mg of oxycodone, and 50mg of trazadone.

Participant 5, who will be called Elaine, was a 70-year-old African American woman who had been living in the nursing home for 6 years and 10 months at the beginning of the study. She scored a 24 on the MoCA. She was on a ventilator to help her breathe, and was also in a wheelchair due to problems ambulating. She was not on any medications during the course of the study.
Participant 6, who will be called Frances, was a 70-year-old Caucasian woman who had been living in the nursing home for 2 years and 11 months at the beginning of the study. She scored a 24 on the MoCA. During the course of the study, she was taking 20mg of citalopram and .125mg of Synthroid once per day. She also had a prescription for 5mg of flexeril to take as needed.

Measures

Acceptance and Commitment Questionnaire- Stigma (AAQ-S; Levin et al., 2014):
The AAQ-S is a measure of psychological flexibility in regard to stigmatizing thoughts. It contains 21 items and can be analyzed for psychological flexibility, psychological inflexibility, or a combined total score. Participants indicated how true a statement is to them by circling a number from 1 (never true) to 6 (always true). Questions assessed psychological flexibility (e.g. “I feel I am aware of my own biases”) as a construct related to stigmatizing thoughts. After being tested on an undergraduate population, this scale has been shown to have satisfactory reliability. The mean alpha coefficient was .84 for the total score, .85 psychological inflexibility, and .82 for psychological flexibility (Levin et al., 2014). The scale was also shown to have satisfactory validity. It had correlations ranging from .2 to .48 with other measures of general psychological flexibility, and correlations between .23 and .43 with other measures of stigmatizing thoughts. This measure can be found in Appendix B.

Image of Aging Scale (IAS; Levy Kasl, & Gill, 2004): The IAS is an 18-item scale developed by Levy and colleagues (2004) that measures positive and negatives attitudes on aging. Participants rated how much an item matched their image of themselves form 0 (not at all) to 6 (exactly matches). Half of the items describe positive traits associated with aging, such as becoming wise. The other half describe negative traits associated with aging, such as being
unhealthy. The IAS has been tested both in a young population and an elderly one and has shown to be sufficiently reliable and valid. Specifically for the elderly population, this measure has a test-retest reliability of .92 for the positive view facet and of .79 for the negative facet. Moreover, the Cronbach alpha levels were .84 for the positive and .82 for the negative facets. Finally, the scale showed good convergent validity with a series of open-ended questions on aging stereotypes; the correlation between the questions and the IAS was .83 (Levy et al., 2004). This measure can be found in Appendix C.

**Quality of Life Short Scales for Nursing Homes (Kane et al., 2003):** These scales, developed by Kane and colleagues (2003), test quality of life for nursing home residents in 6 different domains. It involves the researcher asking questions interview-style in order to assess quality of life in the following domains: security, functional competence, privacy, dignity, and food enjoyment. The security domain asks about how safe the resident feels at the home. The functional competence domain measures how easy the resident feels it is to do things for him-or herself. The privacy scale asks about how much privacy or lack thereof the resident feels he or she has. The dignity scale measures resident perception of how well the staff respects him or her. The food enjoyment domain measures the resident’s eating experienced in the nursing home.

The Quality of Life Scales for Nursing Homes were developed as separate measures of different aspects of quality of life rather than a measure of the overarching construct. The scales used in this study have all been shown to have satisfactory validity with Global Satisfaction scales in nursing homes with correlations ranging from .23 to .45. The scales have also been tested for internal reliability and Cronbach’s alphas ranging from .65-.77 have been found (Kane et al., 2003). Participants were instructed to rate their answers to questions on a 4-point Likert scale, with 1 being “Never” and 4 being “Often.” The scales can be found in Appendix E.
Montreal Cognitive Assessment (MoCA; Nasreddine et al., 2005): The MoCA is a measure that is administered by a clinician and that can be completed in approximately 10-15 minutes. It provides an assessment of cognitive functioning, including short-term memory (using delayed recall of a list of words); visuospatial skills (using questions that require the participant to draw); executive functioning (using tasks such as similarities questions); concentration, attention, and working memory (using tasks such as forward and backward digit span); language (using tasks such as sentence repetition); and orientation to time and place (Nasreddine et al., 2005). The highest possible score on the MoCA is 30 points. It has shown adequate internal consistency (Cronbach’s alpha = 0.83) and test-retest reliability with a correlation coefficient of 0.92 (Nasreddine et al., 2005). This measure can be found in Appendix A.

Short Form Health Survey (SF-12; Ware, Kosinski, & Keller, 1996): The SF-12 is a 12-item assessment used to measure outcomes of healthcare services. It asks a variety of questions about psychological and physical symptoms, including having participants rate their general health, how they feel their health limits them in specific situations, and their mental health in regard to depression, anxiety, and energy levels. It has been used with the elderly population and has shown sufficient reliability and validity in this population. The mean alpha coefficient is .81 and the test retest reliability is .795 for the elderly population (Resnick & Parker, 2001). This measure can be found in Appendix D.

Daily Reporting of Behaviors and Wellbeing: Each week, participants were given a folder of seven copies of a measure to be completed daily. This measure asked questions about level of pain and discomfort throughout the day, a rating of how meaningful the resident felt his or her interactions were that day, a rating of depression, a rating of anxiety, and a question about how many out-of-room activities the resident participated in that day. These goals of these
questions were to provide data on physical health, social relationships, psychological health, and
social participation, all of which have been shown to be indicative of quality of life (e.g. Skevington, Lofty, & O’Connel, 2011). What’s more, research has shown that negative perceptions on aging can have a negative impact on physical and psychological health (e.g. Levy et al., 2014; Levy et al., 2016). The goal of the self-report rating of pain and discomfort was to provide a daily measure of the physical implications of the intervention; the goal of the ratings of anxiety and depression was to provide a daily measure of the psychological implications of the intervention. Finally, the questions about meaningful interactions and social participant provided daily measures of the behavioral implications of the intervention. This questionnaire can be found in Appendix H.

**Intervention**

The ACT intervention is adapted from the Acceptance and Commitment Therapy for Work Stress Manual (O’Brien, Bannon, McCarren, & Delaney, 2012) and the Obesity Stigma and Weight Management Acceptance and Commitment Therapy Treatment Manual (Lillis et al., 2009). Both manuals have been tested separately and have been found to be effective (Lillis et al., 2009; O’Brien, Bannon, McCarren, & Delaney, 2012). The manual for this intervention used the same process as the MAPLab (2014) manual and has negative self-thought specific metaphors and information included from the Lillis and colleagues (2009) manual. It has been adapted from a group therapy protocol to one that can be implemented with a single participant. The intervention in this manual was adjusted for the current population so that it focuses on stigma-related thoughts and beliefs and can be completed within a four-week period.

A full protocol of the intervention can be found in Appendix F. The basic components of the intervention are outlined below:
**Session 1:** This session focused on identifying negative age-related thoughts. Next, the researcher presented intervention techniques designed to elicit “creative hopelessness.” This is a method used to portray to clients that one cannot control one’s thoughts or emotions and therefore other methods must be used.

**Session 2:** This session focused on helping the participant simply to notice his or her negative age-related thoughts without trying to change them or without necessarily believing them to be true. This session involved mindfulness exercises and metaphors to enforce willingness to experience negative age-related thoughts and emotions.

**Session 3:** This session focused on defusion, which is the idea that thoughts are merely thoughts and are not inherently good or bad, right or wrong. It included metaphors and activities to reinforce the concept. The goal of this session was to help participants recognize that even thoughts and rules that seem true due to personal experience or their environment (i.e. “I am old and therefore I must be frail”) are not necessarily true, and that they can have a thought and not believe in it.

**Session 4:** This session focused on helping the participant identify values. Metaphors and exercises were used to enable the participant to realize what his or her core values are and that he or she can live in accordance with those values even in the presence of thoughts that might suggest otherwise. The end of the session involved helping the participant list out specific, values-based committed actions he or she could complete that had the goal of helping the participant live a more valued life.

**Session 5:** This session was a follow-up session. It took place 2 weeks after the fourth session, and it consisted of talking with participants about the committed action they articulated during Session 4. Participants were asked if they felt they were successful in completing their
committed action. If they were not successful, the therapist processed potential reasons with them in order to assure that they understood and will commit in the future to acting in accordance with their values.

**Procedure**

All interested participants initially completed the Quality of Life Scales for Nursing Homes, Short Form Health Survey (SF-12), Acceptance and Action Questionnaire-Stigma (AAQ-S), and the Image of Aging Scale (IAS) once a week for two weeks to gather baseline data. Next, participants attended four one-hour weekly individual sessions in ACT that focused on defusing from negative thoughts about aging and focusing on values-based decision-making. Participants completed questionnaires immediately after each ACT session. Finally, the participants completed the surveys for two weeks after the final session. Daily measures were collected by the researcher each week, and new packets of daily questionnaires were given after each session.

**Therapists and Integrity Assurance**

Therapists who ran the interventions with participants were graduate students in clinical psychology and a licensed clinical psychologist who is experienced in ACT. The graduate students have taken an experiential and theory-based class in Acceptance and Commitment Therapy, each therapist has practiced using ACT in a group setting as well as with an individual client, and have each read extensively on the theoretical underpinnings of ACT and relational frame theory. The therapists have also been trained in basic interviewing skills and in the skills needed to perform interventions. The therapists were instructed to follow the protocol for each session. They were supervised by a highly ACT-competent clinician.
Each session with each participant was audiotaped and checked for integrity by a trained undergraduate research assistant. Integrity checks involved assuring that each session was compliant with the protocol for the session. The checklist used by the research assistant can be found in Appendix G. Overall, the therapists followed the treatment protocol with 97% adherence.
RESULTS

Data Analysis Plan

Measures that assessed participants’ stigma-related psychological flexibility (AAQ-S), aging stereotypes (IAS), quality of life (QoL Scales), and overall physical and psychological health (SF-12) were analyzed using the Reliable Change Index (RCI; Jacobson & Truax, 1991) and paired samples t-tests. As suggested in Ferichs and Tuokko (2005), a cutoff of 1.65 for RCI scores was used in order to determine one-tailed clinical significance. The RCIs were calculated using the formula suggested by Jacobson and colleagues (1991) in which the posttreatment score is subtracted from the pretreatment score, and the difference is divided by the standard error of the measure. In this study, the follow-up score was used as the posttreatment score and it was subtracted from the first baseline score.

Changes in daily measures were evaluated using Swanson’s $d_{sw}$ (Swanson, Hoskyn, & Lee, 1999). The $d_{sw}$ measure was developed by Swanson and colleagues (1999) in order to calculate effect sizes for single subject designs. In order to calculate this statistic, the mean of the last three post-intervention data points was subtracted from the mean of the last three baseline data points. The difference was then divided by the pooled standard deviation of the three post-intervention data points and the three baseline data points, which produces a standardized mean difference score for these data points. Swanson and colleagues (1999) stated that there is a possibility that the standardized mean difference could be inflated if a correlation exists between the baseline and post-intervention scores. In order to adjust for this, he argued that one should multiply the standardized mean difference score by $\sqrt{2(1-r)}$, where r equals the correlation between the post-intervention and baseline scores. For this study, the first three baseline data points and the last three treatment data points for each daily question were used to
calculate the effect sizes. For the anxiety, pain, and depression questions, a negative effect size suggested an improvement as it would indicate a decrease on those measures compared to baseline. For the social interaction and meaningfulness of conversations questions, a positive effect size was considered an improvement as it would indicate an increase on those measures relative to baseline.

The daily ratings of physical health, social interactions, and out-of-room activities from the participants were also analyzed using Percentage of Non-overlapping Data (PND). For example, when analyzing the pain/discomfort rating, the lowest measurement from the baseline data was used for each participant, and every intervention point that is lower than the lowest baseline point was counted. This number was then divided by the total number of data points for pain/discomfort in the intervention/follow-up phase in order to calculate the percentage of nonoverlapping data points. This same method was used to analyze the PND for daily ratings of meaningful conversations and for participation in social activities. For the daily ratings of conversation, the lowest level of meaningfulness reported during the baseline phase was used, and for the social activities, the lowest number of activities participated in during baseline was used. PND has been reviewed and found to be a useful and effective method for analyzing single-subject research (Scruggs & Mastropieri, 2013). Percentages over 90% are considered to be an indicator of effective treatment, 50-70% indicates that the treatment may have been effective, and below 50% indicates no large effects from treatment (Olive & Franco, 2008).

Faith, Allison, and Gorman (1996) point out in their article that the PND method can be misleading and overly conservative if there are outliers in the baseline data. In order to account for this, the split-middle trend of estimation (SMTE; White, 1974) was also used. SMTE is calculated by dividing the baseline into two halves, finding the median of both halves, and
connecting the two median points graphically to create a “celeration line.” The celeration line is then extended into the intervention portion of the graph. If the data in the treatment phase are similar in value to the baseline data, the celeration line will divide the treatment data into equal proportions. An inequality between the number of data points above and below the celeration indicates a treatment effect (Kazdin, 1982). The larger the inequality, the larger the treatment effect.

**Outcomes from Questionnaire Measures**

**The Acceptance and Action Questionnaire-Stigma (AAQ-S).** RCIs indicated that 4 out of 5 participants reported significant improvement (see Tables 1-9 for all outcome RCIs, Table 1 for AAQ-S scores and RCIs). A paired samples t-test indicated that the increase in psychological flexibility from pre-treatment (M=64, SD=9.41) to post-treatment (mean=77.2, SD=13.79) was significant \( t (4) = -3.09; p = .04 \).

**Image of Aging Scale (IAS).** RCI analyses indicated that one out of five participants showed a significant improvement on the IAS (See Table 2). A paired samples t-test of the IAS indicated that the collective increase on the IAS was not significant (pretreatment M= 55.6, posttreatment M = 58.0; \( t (4) = -1.25; p = .28 \)).

**Short Form Health Survey (SF-12).** RCI analyses of the physical health scale indicated that one out of five participants improved significantly in physical health and one out of five declined significantly in physical health. RCI analyses of the mental health scale indicated that one out of five participants improved significantly in mental health posttreatment and one out of five participants declined significantly in mental health. A paired samples t-test indicated that the collective changes from pretreatment to posttreatment were not significant for either the physical health subscale (pretreatment M = 51.12, posttreatment M = 46.74; \( t (4) = -\)
1.08, \( p = .339 \) or the mental health subscale (pretreatment M = 36.49, posttreatment M = 34.52; \( t (4) = -.64; p = .56 \)).

**Quality of Life Scales (QoL)**. RCI analyses of the functional competence subscale indicated that one out of five participants showed significant improvement (see Table 5). A paired samples \( t \)-test indicated that the collective improvement in functional competence was not significant (pretreatment M = 16.40, posttreatment M = 17.80; \( t (4) = -1.28; p = .27 \)).

RCI analyses of the privacy subscale indicated that none of the five participants experienced significant improvement in feelings of privacy in the nursing (See Table 6). A paired samples \( t \)-test indicated that there was no significant collective improvement in the experience of privacy (pretreatment M = 16.94, posttreatment M = 18.16; \( t (4) = -1.64; p = .176 \)).

RCI analyses of the dignity subscale indicated that one out of five participants improved significantly in feelings of dignity (See Table 7). A paired samples \( t \)-test indicated that the collective improvement in experience of dignity was not significant (pretreatment M = 18.96, posttreatment M = 18.80; \( t (4) = -1.06; p = .35 \)).

RCI analyses of the food enjoyment subscale indicated that none of the five participants showed improvements in how much they enjoyed the food in the nursing home. A paired samples \( t \)-test suggested that there was no significant collective improvement in food enjoyment (pretreatment M = 9.44, posttreatment M = 8.96; \( t (4) = -.84; p = .448 \)).

RCI analyses of the security subscale indicated that none of the five participants improved significantly in how secure they felt they and their belongings were in the nursing home (see Table 9). A paired samples \( t \)-test indicated that there was no significant collective improvement in the experience of security (pretreatment M = 16.74, posttreatment M = 16.66; \( t (4) = -2.38; p = .812 \)).
Results from Daily Measures

Daily Measures of Anxiety. The graphs of one participant showed no variation throughout the course of the study and therefore were deemed uninterpretable. PND analyses showed that none of the remaining four participants reported improvement in daily experience of anxiety. Swanson’s $d$ calculations for daily measures of anxiety suggested that one out of five participants showed decreases in anxiety after the intervention with a large effect size ($d_{sw} = -2.99$). SMTE analyses indicated that two participants were significantly less anxious after the intervention (see Table 10 for PNDs, SMTEs, $p$-values, and $d_{sw}$ results for all participants for anxiety; see Figures 1-25 for graphs of participant ratings of daily anxiety).

Daily Measures of Pain/Discomfort. The daily ratings of pain for two participants showed little to no variance throughout the course of the study, and therefore the results were deemed uninterpretable. PND analyses showed that none of the remaining three participants reported improvements in daily ratings of pain/discomfort over the course of the treatment. Swanson’s $d$ calculations for daily measures of pain/discomfort suggested that one out of three participants with valid data showed a decrease in pain/discomfort after the intervention with a small effect size ($d_{sw} = -0.32$) and the remaining two showed decreases in pain/discomfort after the intervention with a large effect size ($d_{sw} = -2.92; d_{sw} = -2.0$). SMTE analyses indicated that one out of the three participants with valid data improved significantly on self-reported pain/discomfort (see Table 11 for PNDs, SMTEs, $p$-values, and $d_{sw}$ results for all participants for pain/discomfort; see Figures 1-25 for graphs of participant ratings of daily pain/discomfort).

Daily Measures of Meaningful Conversations. The daily ratings of meaningfulness of conversation for one participant could not be interpreted due to a lack of variance throughout the course of the study. PND analyses indicated that none of the remaining four participants
improved in daily ratings of meaningfulness of conversations over the course of the treatment. Swanson’s $d$ calculations for daily measures of meaningfulness of conversations suggested that two out of the four participants with valid data showed decreases in meaningfulness of conversations after the intervention with large effect sizes ($d_{sw} = -1.23$; $d_{sw} = -0.82$), and one out of four participants with valid data showed a small increase in meaningful conversation after the intervention ($d_{sw} = 0.17$). SMTE analyses indicated that three out of four participants with valid data showed improvements in meaningfulness of conversation, though it should be noted that acceleration lines for two of the three participants had a negative slope during baseline (see Table 12 for PNDs, SMTEs, $p$-values, and $d_{sw}$ results for all participants for meaningfulness of conversations; see Figures 1-25 for graphs of participant ratings of daily meaningfulness of conversations).

**Daily Measures of Depression.** Three participants showed negligible variance in levels of depression throughout the course of the study, and therefore their results were deemed uninterpretable. PND analyses indicated that none of the remaining two participants improved in daily ratings of depression over the course of the treatment. Swanson’s $d$ calculations for daily measures of depression suggested that one out of the two participants with valid data showed decreases in depression after the intervention with a large effect size ($d_{sw} = -2.43$). SMTE analyses indicated none of the two participants with valid data improved on self-reported depression over the course of the study (see Table 13 for PNDs, SMTEs, $p$-values, and $d_{sw}$ results for all participants for depression; see Figures 1-25 for graphs of participant ratings of daily depression).

**Daily Times Left Room.** Results for the number of times one participant left her room could not be interpreted due to a lack of variance throughout the course of the study. The PND
analyses indicated that none of the four participants with valid data left their room more frequently after the start of the treatment compared to baseline. Swanson’s $d$ calculations for daily measures of times participants left their rooms suggested that one out of the four participants with valid data showed an increase in the times she left her room after the intervention with a small effect size ($d_{sw} = .23$) and one participant left the room more frequently posttreatment with a large effect size ($d_{sw} = .82$). SMTE analyses suggested that one of the four participants with valid data reported leaving their room significantly more often post-intervention (see Table 14 for PNDs, SMTEs, $p$-values, and $d_{sw}$ results for all participants for daily times left room; see Figures 1-25 for graphs of participant ratings of times they left their rooms each day.

**Qualitative Observations**

Adam reported that he very much enjoyed the ACT sessions. The therapist reported that it was difficult to elicit negative perceptions of aging, lack of acceptance, or unworkable rules from him until after values were discussed. After stating that he had a value of being a good family member, Adam reported that he wanted to talk to his family more often than he did, but felt that they should call him rather than him calling them. The therapist was able to use this as an example of an unworkable rule.

Beth reported being accepting of negative thoughts and feelings at the very beginning of the study. She stated that she had been in the nursing home long enough to “learn to let things go.” She remarked that there were aspects of the nursing home she knew she could not change or control, and that there was “no use getting upset” about them. She was not following her values in that she kept to herself rather than speaking to other residents and helping them. Her committed action was to help the other residents.
Denise reported that loneliness was her biggest complaint, and the hardest thing to accept about her life. She stated that she felt it was the cause of all of her sadness, and that it was exacerbated by the fact that her daughter was diagnosed with a degenerative illness and could no longer come visit. Denise’s committed action was to call her daughter and talk on the phone with her every day for a week.

Elaine reported that she very much enjoyed the ACT sessions. Her therapist noted that it was difficult to have her recognize negative perceptions she had about aging, but that once she recognized them they were able to successfully discuss acceptance and willingness. Elaine reported that acceptance made sense to her and showed willingness to have the thoughts and emotions.

Frances reported that she also really enjoyed the ACT sessions. She told the researcher that it felt nice to have someone come in and listen to her, even just once a week. Frances also stated that she felt she was already very accepting, and that she enjoyed the focus on values toward the end of the protocol.

Overall, the therapists reported that the participants felt they were already highly accepting of negative thoughts and emotions. They also noticed that the residents reported symptoms of loneliness (i.e., stating that it was nice to have someone come talk to them). Finally, the therapists observed that committed action was difficult in the nursing home setting due to the rigidity of the system. For example, Beth reported that she would love to cook for her fellow residents since she values caring for others and cooking is a pastime she both enjoys and spent her entire life doing. According to Beth, the nursing home could not support this, however, due to health codes and a lack of available staff to make it possible.
Clinical observation and post-treatment interviews indicated that participants enjoyed the protocol overall. Specifically, participants reported that they appreciated having someone to talk to about what they were thinking and feeling. Therapist observations during the sessions revealed that the participants were reporting acceptance of negative thoughts and emotions during the very first session. Further, the therapists agreed that it was difficult to elicit negative perceptions of aging from participants. When asked what thoughts and emotions were difficult for them, participants all reported that thoughts and emotions are just a part of life and there was no use getting caught up in them. Therapists found that once values were discussed and participants talked specifically about reasons they were not living in line with their values there was a clearer picture of the negative affect and cognitions.
DISCUSSION

The purpose of this study was to explore the effectiveness of ACT in reducing the impact negative perceptions on aging can have on the daily functioning and physical health of nursing home residents. Hypothesis 1 stated that nursing home residents who participated in the ACT intervention would report a significant decrease in age-related stigma as measured by the AAQ-S and the IAS. This hypothesis was partly supported both on an individual level and through group-based analyses. Overall, participants reported experiencing more acceptance of negative thoughts about aging, although only one participant showed significant improvement in negative beliefs about aging. As stated earlier in this document, the goal of ACT is not to challenge or dispel negative beliefs, but rather to intervene on the impact they can have on functioning (Hayes et al., 2012). The improvements on the AAQ-S suggest that though most participants are still having similar negative thoughts about aging compared to their baseline scores, they are accepting them at a higher rate without necessarily believing them or allowing them to have an impact on their day-to-day lives.

Hypothesis 2 stated that participants would experience significant increases in physical and mental health post-intervention relative to baseline. This hypothesis was partially supported, as Elaine improved in physical health and Adam improved in mental health. Adam reported a decline in physical health during the course of the study, though it is unclear in exactly what way he declined and he did not report feeling unwell to the researcher who gave him the intervention. Further, Beth reported a decline in mental health throughout the course of the study. As shown in Table 4, Beth began the study with very high scores on the SF-12 mental health subscale, and it is possible that she was avoiding unpleasant thoughts and emotions before the intervention and began accepting them during and after the intervention. This hypothesis is corroborated by her
scores, as they decline in the treatment phase but were high during both of the baseline time
points.

Hypothesis 3 stated that participants would experience a significant improvement in quality of life post-intervention relative to baseline. Adam improved significantly in beliefs related to competency of completing daily activities the course of the study, and Denise improved significantly in beliefs relating to dignified treatment. Overall, it does not seem that this hypothesis was supported as most of the participants did not report a significant change in the quality of life subscales after the intervention.

Hypothesis 4 stated that participants would report significantly less daily pain, depression, and anxiety post-intervention relative to baseline. This hypothesis was partially supported, as one participant, Denise, showed significant improvement in depression and anxiety, two participants showed improvements in experience of pain with large effect sizes, and one showed improvements in pain with a small effect size. As is evident from the graphs of the daily measures, Denise began the intervention in more distress from depression and anxiety than the other participants. It is possible that the others were not in any distress due to anxiety or depression, or that the intervention focused more on negative perceptions on aging and did not expand enough to other difficult thoughts and emotions.

Hypothesis 5 stated that participants would report significantly more meaningful conversations and would leave their rooms more often post-intervention relative to baseline. This hypothesis was partially supported in that one of the participants left her room more frequently post-intervention with a large effect size, one left her room more frequently with a small effect size, and one participant reported improvements in meaningfulness of conversations with a small effect size. However, two participants rated that the meaningfulness of their conversations
decreased post-intervention relative to baseline, and the SMTE results that showed improvements were influenced by a downward trend in meaningfulness of conversation that began during baseline. This could be due to the participants having an increased awareness into meaningfulness of conversations. Nursing home staff are likely speaking to residents in ageist manners, using elderspeak, or using task-oriented conversational styles rather than having personal conversations (Bourgeois, Dijkstra, Burgio, & Allen, 2004). It is possible that after four weeks of talking to a researcher about philosophical concepts and about their thoughts and emotions, the residents shifted their definition of meaningful conversation.

Overall, it seems the intervention was successful in some areas, particularly in increasing acceptance of negative thoughts and feelings, though it is clear from the researchers’ impressions and the results of the study that it could be adjusted and tailored more to the nursing home population. For example, the therapists noticed that it was difficult to elicit negative perceptions on aging during the first session with the participants, and that new perceptions came up during the part of the intervention where obstacles to pursuing values were discussed. This may be due to difficulties with abstract thought, which is illustrated by the focus on metacognition in the first sessions, whereas the fourth session is more concrete and focused on values-directed behaviors. Therefore, in future ACT interventions in nursing homes it may be beneficial to talk about values and obstacles to pursuing them first to provide that framework for clients.

It is worth noting that there appeared to be some disparity between the therapists’ impressions of the effectiveness of the intervention and the participants’ self-report on the daily and weekly measures. Singh and O’Brien (2016) also found that a therapeutic intervention led to participants showing improvement during session. However, the self-report data filled out by participants did not corroborate the improvements observed in session. It is possible the
therapists evoked specific behavior from participants then reinforced adaptive behaviors in session. However, these behaviors did not generalize outside of session.

Another consideration for future ACT interventions with nursing home residents the residents may not require an introduction or as in depth of an introduction to mindfulness. The therapists in the study observed that residents were utilizing mindfulness and acceptance language in the first session. For example, Beth remarked, “The thoughts don’t bother me. You just have to live with them and do your best” within the first fifteen minutes of session 1. Perhaps future interventions could focus more on experiential practice and application of mindfulness and acceptance rather than psychoeducation.

This study was not without its limitations. As a single-subject design with a small sample size, the results of this study may not generalize to the entire nursing home resident population. Further, the AB design of the intervention leaves open the potential of several threats to internal validity such as maturation, regression to the mean, selection, instrumentation, and history. The RCI analyses address the threats of regression to the mean, selection, instrumentation, and maturation by making it so that in order to meet significance criteria, the changes pretreatment to posttreatment must exceed the standard error of measure for each assessment. This study also relied on self-report data, which can be potentially biased by social desirability, individual difference when filling out scales, and memory limitations.

Another limitation to this study was incompletion of self-report data. It appeared the participants experienced difficulty filling out the daily questionnaires without the presence of a researcher. The lack of variance in some of the daily measures over a period of eight weeks suggests that some of the participants were not conscientious about reporting their true daily levels of depression, anxiety, pain, and engagement. In the future, adherence may be improved
through using interview-style questioning techniques, finding more sensitive measures, or using observable behavioral data. Examples of behavioral data could be using pedometers to see if number of steps taken by participants increases after an intervention, or recording conversations to see if any change in topic or depth takes place throughout the course of an intervention. For participants in wheelchairs, it may be useful to track the number of rotations of the wheels each day. Finally, it may be beneficial for future researchers to elicit report from family members or medical staff to see if those close to the residents noticed any changes in the residents post-intervention.

Given these limitations and the suggested changes to the protocol, future studies may wish to begin with values as a framework for metacognition and rely less heavily on psychoeducation in regard to mindfulness and acceptance. It may also be beneficial for future researchers to use a randomized control trial design to address the concerns with validity. Further, it may be helpful for change to be measured using idiographic goals, such as amount of family contact for a resident to whom family is important. Because the goal of ACT is to increase values-based behaviors, it may be helpful to measure behaviors related to an idiographic value. Finally, future research may wish to include objective measures of physical and mental health rather than relying on self-report.

In summary, the residents reported enjoying the intervention and were able to benefit from it individually in a variety of areas. The least successful parts of the intervention (i.e., the physical and mental health aspects and the changes in quality of life) were potentially more related to systems-level than individual-level variables. That being said, future research may wish to extend interventions to the systemic level of the nursing home, finding ways to make it possible to value each person as a social individual. Residents can be encouraged to start
conversations with healthcare staff, but if the staff are too busy to respond in kind or are not motivated to do so then the residents’ desire for meaningful social interaction may be punished. In this way, it is important to focus on the individual and the system as a whole in order to create meaningful change that will be most beneficial for the people in nursing homes.
REFERENCES


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doi:10.1111/jan.12173


DOI:10.1037/a0016510


### Table 1

*Weekly AAQ-S scores and RCIs for all participants.*

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<th>Participant</th>
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<th>Baseline 2</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
<th>Treatment 4</th>
<th>Follow Up</th>
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*Note.* RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.
Table 2

Weekly IAS scores and RCIs for all participants.

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*Note. RCIs were calculated using the first baseline score and the follow-up score.* * denotes significance.
### Table 3

**Weekly SF-12 Physical Health scores and RCIs for all participants.**

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</tr>
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*Note. RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.*
Table 4

*Weekly SF-12 Mental Health scores and RCIs for all participants.*

<table>
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<th>Participant</th>
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<th>Baseline 2</th>
<th>Treatment 1</th>
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<th>Treatment 3</th>
<th>Treatment 4</th>
<th>Follow Up</th>
<th>RCI</th>
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*Note:* RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.
Table 5

*Weekly QoL Functional Competence scores and RCIs for all participants.*

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<th>Treatment 1</th>
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<th>Treatment 3</th>
<th>Treatment 4</th>
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<th>RCI</th>
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<td>17.01</td>
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<td>17.76</td>
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</tr>
</tbody>
</table>

*Note.* RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.
Table 6

Weekly QoL Privacy scores and RCIs for all participants.

<table>
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<th>Baseline 1</th>
<th>Baseline 2</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
<th>Treatment 4</th>
<th>Follow Up</th>
<th>RCI</th>
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<td>19</td>
<td>19</td>
<td>0</td>
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<td>18.2</td>
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<tr>
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<td>17.12</td>
<td>17.28</td>
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<td>18.08</td>
<td>17.84</td>
<td></td>
<td></td>
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</tbody>
</table>

*Note. RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.*
Table 7

*Weekly QoL Dignity scores and RCIs for all participants.*

<table>
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<th>Participant</th>
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<th>Baseline 2</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
<th>Treatment 4</th>
<th>Follow Up</th>
<th>RCI</th>
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<td>19.2</td>
<td></td>
<td>-0.19</td>
</tr>
<tr>
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<td>18.2</td>
<td>19</td>
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*Note.* RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.
Table 8

*Weekly QoL Food Enjoyment scores and RCIs for all participants.*

<table>
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<th>Participant</th>
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<th>Treatment 1</th>
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<th>Treatment 3</th>
<th>Treatment 4</th>
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<td>11.4</td>
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<td>9</td>
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<td>8.96</td>
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</table>

Note. RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.
Table 9

Weekly QoL Security scores and RCIs for all participants.

<table>
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<th>Participant</th>
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<th>Baseline 2</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Treatment 3</th>
<th>Treatment 4</th>
<th>Follow Up</th>
<th>RCI</th>
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<td>17.28</td>
<td>16.96</td>
<td>16.12</td>
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*Note.* RCIs were calculated using the first baseline score and the follow-up score. * denotes significance.
Table 10

*PND and SMTE, and $d_{sw}$ results for daily ratings of anxiety for all participants.*

<table>
<thead>
<tr>
<th>Participant</th>
<th>PND %</th>
<th>SMTE %</th>
<th>$P$</th>
<th>$d_{sw}$</th>
</tr>
</thead>
<tbody>
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<td>16.0</td>
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<td>0</td>
</tr>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
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<td>0</td>
<td>59.26</td>
<td>.12</td>
<td>-2.99*</td>
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<td>0</td>
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<tr>
<td>6</td>
<td>0</td>
<td>100</td>
<td>&lt;.01</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note.* $d_{sw}$ scores were calculated using the first three baseline score and the three final scores. * denotes a large effect size. N/A indicates that results were uninterpretable due to a lack of variance in responses across the study.
Table 11

*PND and SMTE, and d_{sw} results for daily ratings of pain for all participants.*

<table>
<thead>
<tr>
<th>Participant</th>
<th>PND %</th>
<th>SMTE %</th>
<th>( P )</th>
<th>d_{sw}</th>
</tr>
</thead>
<tbody>
<tr>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
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<td>37.04</td>
<td>74.07</td>
<td>&lt; .01</td>
<td>-2.92*</td>
</tr>
<tr>
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<td>-.32</td>
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<td>&gt; .99</td>
<td>-2.0*</td>
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</tbody>
</table>

*Note.* \( d_{sw} \) scores were calculated using the first three baseline score and the three final scores. * denotes a large effect size. N/A indicates that results were uninterpretable due to a lack of variance in responses across the study.
Table 12

PND and SMTE, and $d_{sw}$ results for daily ratings of meaningfulness of conversations for all participants.

<table>
<thead>
<tr>
<th>Participant</th>
<th>PND %</th>
<th>SMTE %</th>
<th>$P$</th>
<th>$d_{sw}$</th>
</tr>
</thead>
<tbody>
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<td>80</td>
<td>&lt; .01</td>
<td>0</td>
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<tr>
<td>4</td>
<td>0</td>
<td>70.37</td>
<td>.03</td>
<td>-1.23*</td>
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<tr>
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<td>81.82</td>
<td>&lt; .01</td>
<td>.17</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>7.14</td>
<td>&gt; .99</td>
<td>-.82*</td>
</tr>
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</table>

*Note. $d_{sw}$ scores were calculated using the first three baseline score and the three final scores. * denotes a large effect size. N/A indicates that results were uninterpretable due to a lack of variance in responses across the study.
Table 13

*PND and SMTE, and d<sub>sw</sub> results for daily ratings of depression for all participants.

<table>
<thead>
<tr>
<th>Participant</th>
<th>PND %</th>
<th>SMTE %</th>
<th>P</th>
<th>d&lt;sub&gt;sw&lt;/sub&gt;</th>
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</thead>
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<td>N/A</td>
<td>N/A</td>
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</table>

*Note.* d<sub>sw</sub> scores were calculated using the first three baseline score and the three final scores. * denotes a large effect size. N/A indicates that results were uninterpretable due to a lack of variance in responses across the study.
Table 14

PND and SMTE, and $d_{sw}$ results for daily times each participant left his or her room.

<table>
<thead>
<tr>
<th>Participant</th>
<th>PND %</th>
<th>SMTE %</th>
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<th>$d_{sw}$</th>
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</thead>
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<td>N/A</td>
<td>N/A</td>
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<td>70.37</td>
<td>.03</td>
<td>.82*</td>
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<tr>
<td>6</td>
<td>0</td>
<td>11.76</td>
<td>&gt; .99</td>
<td>.23</td>
</tr>
</tbody>
</table>

*Note.* $d_{sw}$ scores were calculated using the first three baseline score and the three final scores. * denotes a large effect size. N/A indicates that results were uninterpretable due to a lack of variance in responses across the study.
APPENDIX B FIGURES

Figure 1

*Daily ratings of pain for Participant 1*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 2

*Daily ratings of meaningfulness of conversation for Participant 1*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 3

*Daily ratings of depression for Participant 1*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 4

Daily ratings of anxiety for Participant 1

Note. Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 5

Daily number of times Participant 1 left his room

Note. Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 6

*Daily ratings of pain for Participant 2*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 7

Daily ratings of meaningfulness of conversations for Participant 2

Note. Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 8

Daily ratings of depression for Participant 2

Note. Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 9

*Daily ratings of anxiety for Participant 2*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 10

Daily number of times Participant 2 left her room

Note. Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 11

*Daily ratings of meaningfulness of conversations for Participant 4*

*Note.* Diagonal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 12

Daily ratings of pain for Participant 4

Note. Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 13

*Daily ratings of depression for Participant 4*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 14

*Daily ratings of anxiety for Participant 4*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 15

*Daily number of times Participant 4 left her room*

*Note.* Diagonal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 16

*Daily ratings of pain for Participant 5*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 17

_Daily ratings of meaningfulness of conversation for Participant 5_

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 18

*Daily rating of depression for Participant 5*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 19

Daily rating of anxiety for Participant 5

Note. Diagonal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 20

*Daily number of times Participant 5 left her room*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 21

Daily Ratings of pain for Participant 6

Note. Diagonal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 22

*Daily ratings of meaningfulness of conversations for Participant 6*

*Note.* Horizontal line indicates SMTE acceleration line. Vertical line indicates the beginning of the intervention phase.
Figure 23

*Daily ratings of depression for Participant 6*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 24

*Daily ratings of anxiety for Participant 6*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
Figure 25

*Daily number of times Participant 6 left her room*

*Note.* Horizontal line indicates SMTE celeration line. Vertical line indicates the beginning of the intervention phase.
## APPENDIX C MONTREAL COGNITIVE ASSESSMENT

**Montreal Cognitive Assessment (MOCA)**

### Visual-Spatial / Executive

<table>
<thead>
<tr>
<th>Copy Cube</th>
<th>Draw CLOCK (Ten past eleven) (3 points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>END</td>
<td></td>
</tr>
<tr>
<td>BEGIN</td>
<td></td>
</tr>
<tr>
<td>END</td>
<td></td>
</tr>
</tbody>
</table>

### Naming

- Rhino
- Camel

### Memory

- Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

<table>
<thead>
<tr>
<th>FACE</th>
<th>VELVET</th>
<th>CHURCH</th>
<th>DAISY</th>
<th>RED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1st trial: [ ]
2nd trial: [ ]

### Attention

- Read list of digits (1 digit/sec.). Subject has to repeat them in the forward order.
- Subject has to repeat them in the backward order.

| [ ] FBACMNAAJKLBFAKDEAAAJAM OFAAB |

| 1st trial: [ ] 2 1 8 5 4 |
| 2nd trial: [ ] 7 4 2 |

### Serial 7 Subtraction

- Serial 7 subtraction starting at 100: [ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65

- 4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt

- [ ] [ ]

### Language

- Repeat: I only know that John is the one to help today.
  - The cat always hid under the couch when dogs were in the room.

- Fluency / Name maximum number of words in one minute that begin with the letter F: [ ]

- [ ] (N ≥ 11 words)

### Abstraction

- Similarity between e.g. banana - orange = fruit.
  - Train - bicycle (1 pt), watch - ruler (1 pt)

### Delayed Recall

- Has to recall words with no cue.

<table>
<thead>
<tr>
<th>FACE</th>
<th>VELVET</th>
<th>CHURCH</th>
<th>DAISY</th>
<th>RED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Points for UNCUESED recall only: [ ]

### Orientation

- Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City

**TOTAL** [ ] /30

© Z. Nasreddine MD  
www.mocatest.org  
Normal ≥ 26 / 30  
Add 1 point if ≤ 12 yr edu
APPENDIX D ACCEPTANCE AND ACTION QUESTIONNAIRE-STIGMA

AAQ-S

Below you will find a list of statements. Please rate how true each statement is for you by selecting a number next to it. Use the scale below to make your choice.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>never true</td>
<td>very seldom true</td>
<td>seldom true</td>
<td>sometimes true</td>
<td>frequently true</td>
<td>almost always true</td>
<td>always true</td>
</tr>
</tbody>
</table>

1. My biases and prejudices affect how I interact with people from different backgrounds. 1 2 3 4 5 6 7

2. I feel that I am aware of my own biases. 1 2 3 4 5 6 7

3. My negative thoughts about others are never a problem in my life. 1 2 3 4 5 6 7

4. I need to reduce my negative thoughts about others in order to have good social interactions. 1 2 3 4 5 6 7

5. When I evaluate someone negatively, I am able to recognize that this is just a reaction, not an objective fact. 1 2 3 4 5 6 7

6. I stop doing things that are important to me when it involves someone I don’t like. 1 2 3 4 5 6 7

7. I have trouble letting go of my judgments of others. 1 2 3 4 5 6 7

8. I feel that my prejudicial thoughts are a significant barrier to me being culturally sensitive. 1 2 3 4 5 6 7

9. I have trouble not acting on my negative thoughts about others. 1 2 3 4 5 6 7

10. I am aware when judgments about others are passing through my mind. 1 2 3 4 5 6 7

11. It’s OK to have friends that I have negative thoughts about from time to time. 1 2 3 4 5 6 7

12. I don’t struggle with controlling my evaluations about others. 1 2 3 4 5 6 7

13. When I am having negative thoughts about others, I withdraw from people 1 2 3 4 5 6 7

14. When I’m talking with someone I don’t like, I’m aware of my evaluations of them. 1 2 3 4 5 6 7
15. When I have judgments about others, they are very intense.  1  2  3  4  5  6  7

16. When talking with someone I believe I should act according to how I feel about him/her, even if its negative.  1  2  3  4  5  6  7

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>never true</td>
<td>very seldom true</td>
<td>seldom true</td>
<td>sometimes true</td>
<td>frequently true</td>
<td>almost always true</td>
<td>always true</td>
</tr>
</tbody>
</table>

17. I'm good at noticing when I have a judgment of another person.  1  2  3  4  5  6  7

18. I rarely worry about getting my evaluations towards others under control.  1  2  3  4  5  6  7

19. I accept that I will sometimes have unpleasant thoughts about other people.  1  2  3  4  5  6  7

20. I often get caught up in my evaluations of what others are doing wrong.  1  2  3  4  5  6  7

21. The bad things I think about others must be true.  1  2  3  4  5  6  7
## APPENDIX E IMAGE OF AGING SCALE

**Directions:** I am interested in knowing when you think of **old people** in general (**not** including yourself), how much the following words match the images or pictures that you have. There are no right or wrong answers. After each word or phrase, please circle the number from 0 to 6 that best shows how well the word matches your image or picture of **old people** in general (**not** including yourself) with 0 being furthest from what you think and 6 being closest to what you think.

<table>
<thead>
<tr>
<th>Word</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. healthy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. wrinkled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. family-oriented</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. grumpy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. capable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. dying</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. active</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. senile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. positive outlook</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. given up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. well-groomed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. walks slowly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. alone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n. will-to-live</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o. helpless</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p. wise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>sick</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>r.</td>
<td>full of life</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
APPENDIX F SHORT FORM HEALTH SURVEY

These questions are about how you have been feeling during the past week. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past week...

SF-12 Health Survey

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. Answer each question by choosing just one answer. If you are unsure how to answer a question, please give the best answer you can.

1. In general, would you say your health is:
   □ 1 Excellent □ 2 Very good □ 3 Good □ 4 Fair □ 5 Poor

   The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

   2. Moderate activities such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.
       □ 1 YES, limited a lot □ 2 YES, limited a little □ 3 NO, not limited at all

   3. Climbing several flights of stairs.
       □ 1 YES, limited a lot □ 2 YES, limited a little □ 3 NO, not limited at all

   During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

       4. Accomplished less than you would like.
           □ 1 YES □ 2 NO

       5. Were limited in the kind of work or other activities.
           □ 1 YES □ 2 NO

   During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

       6. Accomplished less than you would like.
           □ 1 YES □ 2 NO

       7. Did work or activities less carefully than usual.
           □ 1 YES □ 2 NO

   During the past 4 weeks, how much pain interfered with your normal work (including work outside the home and housework)?

       □ 1 Not at all □ 2 A little bit □ 3 Moderately □ 4 Quite a bit □ 5 Extremely

   All of the time Most of the time A good bit of the time Some of the time A little of the time None of the time

   9. Have you felt calm & peaceful?
       □ 1 □ 2 □ 3 □ 4 □ 5 □ 6

   10. Did you have a lot of energy?
       □ 1 □ 2 □ 3 □ 4 □ 5 □ 6

   11. Have you felt down-hearted and blue?
       □ 1 □ 2 □ 3 □ 4 □ 5 □ 6

   12. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

       □ 1 All of the time □ 2 Most of the time □ 3 Some of the time □ 4 A little of the time □ 5 None of the time
<table>
<thead>
<tr>
<th>Patient name:</th>
<th>Date:</th>
<th>PCS:</th>
<th>MCS:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Visit type (circle one)
- Preop
- 6 week
- 3 month
- 6 month
- 12 month
- 24 month
- Other: ________
APPENDIX G QUALITY OF LIFE SCALES FOR NURSING HOMES

Measures, Indicators, & Improvement of Quality of Life in Nursing Homes
University of Minnesota
Quality of Life Resident Interview

Quality of Life Scales for Nursing Home Residents

Study Director, Rosalie A. Kane

CMS Project Officer: Mary Pratt
CMS Co-Project Officer: Karen Schoeneman

December 2003

These measures were developed and tested as part of the CMS project,
**Quality of Life Scales**

**Functional Competence Scale:** The next questions are about how easy it is for you to do things for yourself as much as you want.

<table>
<thead>
<tr>
<th>FC</th>
<th>Question</th>
<th>Some- Times</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Is it easy for you to get around in your room by yourself?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Can you easily reach the things that you need?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>If you are anywhere in the nursing home and need a bathroom, can you get to one quickly?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Can you easily reach your toilet articles and things that you want to use in your bathroom?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Do you do as much to take care of your own things and your room as you can and want?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
</tbody>
</table>

4 out of the 5 questions must be answered in first 6 columns to construct the scale. 1 DK/NR response may be imputed to domain score average. Score Range: Score range 20-5. A higher score is more positive.

**Privacy Scale:** The next questions are about privacy or lack of privacy.

<table>
<thead>
<tr>
<th>PRI</th>
<th>Question</th>
<th>Some- Oftentimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Can you find a place to be alone if you wish?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Can you make a private phone call?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>When you have a visitor, can you find a place to visit in private?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Can you be together in private with another resident (other than</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
</tr>
</tbody>
</table>
your roommate)?

<table>
<thead>
<tr>
<th>Question</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>NR/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Do the people who work here knock and wait for a reply before entering your room?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Note:** 4 out of the 5 questions must be answered in first 6 columns to construct the scale. 1 DK/NR response may be imputed to domain score average. Score range 20-5. A higher score is more positive.

**Dignity Scale: The next questions concern respect for your dignity.**

<table>
<thead>
<tr>
<th>DIG</th>
<th>Question</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>NR/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do staff here treat you politely?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Do you feel that you are treated with respect here?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Do staff here handle you gently while giving you care?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Do staff here respect your modesty?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Do staff take time to listen to you when you have something to say?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Note:** 4 out of the 5 questions must be answered in first 6 columns to construct the scale. 1 DK/NR response may be imputed to domain score average. Score Range: 20-5. A higher score is more positive.

<table>
<thead>
<tr>
<th>DIG</th>
<th>Question</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>NR/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do the days here seem too long to you?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1.5</td>
<td>3.8</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Note:** 4 out of the 6 questions must be answered in first 6 columns to construct the scale. 2 DK/NR responses may be imputed to domain score average. Score Range: 24-6. A higher score is more positive.

**Food Enjoyment Scale: The next three questions are about your eating experiences at (name of nursing home).**

<table>
<thead>
<tr>
<th>ENJ</th>
<th>Question</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>NR/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you like the food at (name of the facility)?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Do you enjoy mealtimes at (name of the facility)?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Can you get your favorite foods at (name of the facility)?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
All questions must be answered in first 6 columns to construct the scale. No imputing is allowed. Score Range: 12 to 3. A higher score is more positive.

Security Scale. *The next set of questions asks about how safe and secure you feel at (name of the facility).*

<table>
<thead>
<tr>
<th>SEC</th>
<th>Question</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
<th>Mostly Yes</th>
<th>Mostly No</th>
<th>DK</th>
<th>NR/REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you feel that your possessions are safe at this nursing home?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Do your clothes get lost or damaged in the laundry?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Do you feel confident that you can get help when you need it?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>If you do not feel well, can you get a nurse or doctor quickly?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3.8</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Do you ever feel afraid because of the way your or some other resident is treated?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1.5</td>
<td>3.8</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

4 out of the 5 questions must be answered in first 6 columns to construct the scale. 1 DK/NR response may be imputed to domain score average. Score Range: 20 to 5. Higher score is more positive.
APPENDIX H ACT PROTOCOL

ACCEPTANCE AND COMMITMENT THERAPY FOR DISTRESSING AGE-RELATED THOUGHTS

Adapted from:

Mindful Behavior Therapy and Psychophysiology Lab (MAPLab) Acceptance and Commitment Therapy for Work Stress Protocol

and the

Obesity Stigma and Weight Management Acceptance and Commitment Therapy Treatment Manual
Overview of Acceptance and Commitment Therapy Intervention Components

Session 1

- Discuss and develop rules about confidentiality and levels of disclosure
- Discuss thoughts related to aging/ being in a nursing home and how they are distressing
- Discuss how participant has been trying to get rid of and/or control those thoughts
- Discuss how those control strategies have worked
- Control is the problem: Polygraph/ love metaphor
  - Introduce willingness and acceptance as alternative to control-Quicksand metaphor and Clean versus dirty discomfort

Session 2

- Review distressing thoughts
- Review creative hopelessness
- Review acceptance as alternative to control
- Talk about the burden of trying to control/avoid thoughts
- Introduce simply noticing thoughts
  - Clouds in the sky
  - Index card exercise
- Discuss self as context: Chessboard or house

Session 3

- Review creative hopelessness, just noticing, acceptance, self as context
- Talk about defusion from thoughts
  - Milk milk milk and specific thoughts
  - Put this into self as context POV
- Willingness- Bob the mean neighbor
- Observer exercise

Session 4

- Review of last three sessions
- Pen in Hand
- Letting go of the struggle: Monster metaphor
- Master You Serve
- Attending Your Own Funeral
- Committed Action
- Summary and Follow-Up Reminder

Session 5

- Follow-up session: committed action result
Session 1
Introduction

-Overview of sessions
Before we begin, I would like to talk a little bit about what this intervention will be like. As you already know, this intervention consists of 4, 1-hour sessions. As you also know, this intervention is part of a larger study aimed at reducing distress in a nursing home setting. Therefore, it is of utmost importance that you not talk to other residents about what we’re doing here, or else it will be impossible to determine how effective this intervention is. As you may be aware, some people are going through this program now and some people later. If you talk about the content of this intervention, then they too will be receiving part of the intervention. Then we don’t know if the intervention is working, because we won’t have people to compare to that didn’t receive the intervention at the right time.

Confidentiality
We have a really unique opportunity here to work together both on the things that you struggle with and those things that are most important and valuable to you. I wanted to go over some basic confidentiality and other information to help you feel like this is a space where you can share and be open.

1) I commit to keeping the content of these workshops private. So, as a therapist, I will not disclose what you say to anyone outside of these sessions. If any information from these sessions is used in any report written about the study, all of the information will be kept anonymous and will not be linked to you in any way.

2) Commit to showing up psychologically when willing
   a. To the extent that you are willing to be actively engaged and present with the material, please do so. The level or content of disclosure is completely up to you, but “showing up” fully will help you get as much as possible out of this intervention.

3) Commit to the possibility [note: possibility] that this intervention could be transformational and facilitate a powerful shift in the way you view and live your life.

-------------------------------------
START OF ACT
What are some thoughts you have about aging or growing older? 
How do these thoughts apply to yourself?

What kinds of feelings do these thoughts provoke for you?
- Research has shown that these thoughts are highly correlated with what we normally think of as the negative effects of aging. In fact, they may be more highly correlated with these negative effects than aging itself.
  - Give examples
  - Explain how these thoughts can be learned in childhood and reinforced throughout lifetime.

How have you tried to deal with these thoughts and emotions?
- How have these strategies worked to get rid of negative thoughts about aging/yourself?
- [Car Example] For example, if your car isn’t running right, you take it to the repair shop to get fixed. Sometimes you take it to multiple repair people until one of them figures out the problem. Worst case, you get rid of it and get a new car.
  - Talk about how language allows us to do this, and it works really well for external threats, but not so well for internal ones

So what does this mean for people struggling with negative age-related thoughts about themselves?
- What really happens is that we age naturally and our bodies change with the years.
- When language gets thrown on top of that, you get “I’m sick, weak, I have no autonomy, others look down on me, think I’m useless, I’m unlovable”
- Feelings of sadness, depression, anxiety.
- Spend much time thinking or worrying a lot about being elderly, not being competent, what other people think of you.
And these thoughts, feelings, sensations, urges, etc… can come up at any time, without warning. Just part of being human and using language. Kind of a raw deal, huh?

---------------------------------------

CONTROL IS THE PROBLEM

Can we control thoughts? (Control is problem)
- [Exercise] Don’t think of a wheelchair (ACT Page 124)
- Research has shown that you may be able to suppress in short-term, but it soon appears more often and with more intensity
- When you try to not think of something, you create a verbal rule: “Don’t think of a wheelchair.” Problem is, that rule contains “wheelchair” in it, so it will tend to bring “wheelchair” to mind. Make sense?
- Polygraph metaphor
- Love metaphor
- Discuss
IN FLEXIBILITY

- Seems like control doesn’t work, but that’s what we try to do.
- To deal with difficult thoughts and feelings, you begin to live your life to accommodate our thoughts and feelings, your life becomes narrower and narrower, less flexible.
- We look for answers in the usual places- Fix the car
- Your life becomes increasingly more about trying to not think or feel a certain way, or not coming into contact with painful thoughts, emotions, bodily sensations, or memories
- But maybe what we need is to get outside the box a bit. Do something different, do something counter-intuitive.

The problem is in the language itself, the usual ways we have of relating to thoughts and feelings. Maybe we need something else.

The goal of this intervention is for you to create a more vital, workable life. This not about how to make you have less negative thoughts about aging and yourself, but rather how to approach your life in a more embracing, humane way even in the presence of those thoughts.

Discuss this

WILLINGNESS AS AN ALTERNATIVE STRATEGY

We’ve seen how trying to control our thoughts, feelings, and other products of our mind is not a reliable or even helpful strategy for reducing our problems. But, what is the alternative?

It’s willingness - willing to have an emotion or thought and not get rid of it, or alter it. If you are willing, then you can escape the inevitable consequences of control. However, if you refuse to have an emotion or thought, usually you’ve got it. The control strategy doesn’t work and this strategy itself results in an increase in the events it is designed to prevent or avoid. That is, the more you don’t want to be anxious, the more anxious you will probably become.

Discuss

CLEAN VERSUS DIRTY DISCOMFORT

Discuss

QUICKSAND METAPHOR

Discuss
Session 2:

Review information from Session 1: distressing thoughts, creative hopelessness, acceptance as alternative, move into willingness

Review Discussion Points
- **Feelings (including urges) are normal responses to life events.** We can’t control whether or not they come up, or when. Think of hearing a random song on the radio that takes you back to an old memory of high school or college. What are the numbers?
- **We are never going to get rid of stress, negative feelings, urges, or even intense positive feelings (which could spur wanting to eat too).** Life presents us with situations, and our thoughts/feelings/ and physiological responses to these situations are natural.
- **When we don’t allow ourselves to have whatever experiences we have, we get into problems**
- **Cycles of avoiding or trying to control our own experience**
- **This creates new problems and ultimately make the initial thought, feeling, sensation, craving, exacerbated or more important**
- **E.g. I feel bad, so I stay in my room, and I temporarily feel better, but worse over the long run**
- **Thoughts and feelings do not have to lead to action. They can be noticed for what they are. We can choose what to do based on other factors. We’ll get to that.**

**ACCEPTANCE**
- Accepting these experiences is helpful, deserved, and necessary. You really cannot escape your experience and you deserve to have permission to have it.
- What if it were the case that in order to live a vital, meaningful, and satisfying life you needed to give up trying to control your internal thoughts and feelings before you could move in the direction you want to go?
- We DO NOT mean tolerate, or resign yourself to
- We DO mean something like taking completely, without defense
- The opposite of effortful control
- There are things you can control: what you put in your body, how much sleep you get, etc…
- There are things you cannot: how you feel or what you think from moment to moment

Goals of acceptance is to invite all your experiences in, without struggling with them, like you are a big warehouse that can fit everything that shows up. Plenty of room.

*Discuss*

**STIGMATIZING SELF AND OTHERS**
- How easy it is, how automatic- Constantly doing the same thing with yourself
- The difference when we recognize the human being WE are. Not the stupid, useless, failure, shameful, etc… The complete and whole human being
- The constant, streaming, categorical, judgmental process is what WE live inside of with ourselves. Take a step back and watch it. Notice the burden we carry around.
- Can we make room for all that AND live the life we want, be the person we want?
• Sometimes our mind is not our friend!
• One important thing to learn from this is that becoming more aware of our thoughts and feelings can be important, so we can choose whether or not it is useful for us to attend to them/ engage them or not

Discuss

WILLINGNESS EXERCISE: JUST NOTICING

• Clouds in the Sky
  o Talk about how this exercise was for participant, things it brought up, etc.

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WILLINGNESS EXERCISE II: STRUGGLING WITH THOUGHTS

*Have participant write a distressing age-related thought on a notecard. Try to get rid of this thought, try to push it away. [R pushes back against it]. While you are doing this, try to move around the room. Still try to get rid of the stress. [Ask participant to do more things- e.g. talk to researcher, write his/her name on a different piece of paper, etc...] What happens? What was it like trying to do other tasks while struggling against the thought? Now, try it this way: [R: just have participant hold piece of paper without struggling]. Now, try to move around the room. [Have the participant try the same tasks as before].

What’s the difference? (Elicit responses.) In both cases you still had the thought. But, when you weren’t struggling with it, you were able to do what you wanted to do, be in the present moment, etc.

So, isn’t it true that you can have the thought as just a thought, and not have to struggle against it?

Discuss

SELF AS CONTEXT

• Chessboard/ House metaphor for self as context (ACT Page 190)
  • Have them generate thoughts and feelings, good and bad

Discuss
Session 3

Review concepts from first two sessions (creative hopelessness, acceptance, willingness, self as context)

Review Discussion Points

✓ Feelings (including urges) are normal responses to life events. We can’t control whether or not they come up, or when. Think of hearing a random song on the radio that takes you back to an old memory of high school or college. What are the numbers?

✓ We are never going to get rid of stress, negative feelings, urges, or even intense positive feelings (which could spur wanting to eat too). Life presents us with situations, and our thoughts/feelings/and physiological responses to these situations are natural.

✓ When we don’t allow ourselves to have whatever experiences we have, we get into problems

✓ Cycles of avoiding or trying to control our own experience

✓ This creates new problems and ultimately make the initial thought, feeling, sensation, craving, exacerbated or more important

✓ E.g. I feel bad, so I stay in my room, and I temporarily feel better, but worse over the long run

✓ Self as chessboard/ house

✓ Thoughts and feelings do not have to lead to action. They can be noticed for what they are. We can choose what to do based on other factors.

The mind chugs along- never stops (Discussion)

• The “word generating machine”

• Categorize, predict, explain, compare, worry, judge

• Long periods without noticing you are even thinking

• Like a fish swimming in water

• We take our thoughts as literal truths, sometimes threats to our well-being

• This is a bad deal, we just looked at thoughts as random, automatic, historical. Uh oh!

• When they are negative, and about self = Uh oh!

DEFUSION

• Milk, Milk, Milk” Exercise

• When the illusion shows up, looking solid, you are not actually experiencing the real thing. That is, thinking “incompetence” is not the same thing as being incompetent; saying milk isn’t the same as taking a sip of milk. In both cases, you are having a thought. Isn’t it possible to accept the thought as just a thought?

• Saying the word “milk” or “incompetence” doesn’t mean that milk or incompetence are near you. So, the problem isn’t the word incompetence, the problem is that you think the word is real, that it is not just an illusion, and so you struggle against it.

• What is a thought you’ve had about yourself that seems so real?

• We don’t notice that thoughts are thoughts. Almost never.

• Labeling what it is “I am having the thought that vs. I am X”
• Tie this in with willingness

BOB THE MEAN NEIGHBOR
• What this metaphor is about, of course, is all the feelings and memories and thoughts that just show up that you don’t like – they’re just more Bobs at the door. Can you choose to welcome them in, even though they came uninvited? If not, what is the party going to be like?
• What do you think about this? Do you have any similar experiences?
• If thoughts aren’t necessarily true or false, good or bad, we can be willing to have them without spending time and energy fighting them

OBSERVER EXERCISE
Discuss

PUTTING IT ALL TOGETHER
• What have you put between you and letting someone see you, and who you really are?
• What have you been hiding from, what has that cost you?
• Then what about you has to change?
  • Debriefing
  • Acceptance as a loving stance
  • Somehow you’re not ok? Broken?
• Link to: But we’re going to hang onto X, Y, and Z thoughts and feelings we have about ourselves. Make our life about them. Narrow our life?
  • Discuss
Session 4

Review of creative hopelessness, acceptance, willingness, defusion, self as context

Review Discussion Points
✓ Feelings (including urges) are normal responses to life events. We can’t control whether or not they come up, or when. Think of hearing a random song on the radio that takes you back to an old memory of high school or college. What are the numbers?
✓ We are never going to get rid of stress, negative feelings, urges, or even intense positive feelings (which could spur wanting to eat too). Life presents us with situations, and our thoughts/feelings/ and physiological responses to these situations are natural.
✓ When we don’t allow ourselves to have whatever experiences we have, we get into problems
✓ Cycles of avoiding or trying to control our own experience
✓ This creates new problems and ultimately make the initial thought, feeling, sensation, craving, exacerbated or more important
✓ E.g. I feel bad, so I stay in my room, and I temporarily feel better, but worse over the long run
✓ Self as chessboard/ house
✓ Thoughts and feelings do not have to lead to action. They can be noticed for what they are. We can choose what to do based on other factors.
✓ Thoughts are just thoughts, not good or bad, true or false.

PEN IN HAND
Discuss

LETTING GO OF THE STRUGGLE
• Monster metaphor
• Discuss

THE MASTERS YOU SERVE
Discuss

ATTENDING YOUR OWN FUNERAL
Discuss

LINK TO SELF-STIGMA
• This is not about feeding “being a good boy or girl”, “people will like me better”, “this should be important to good people”
• This is really just for you
- Take personal ownership of what you’re doing
- Rather than having another round of getting over your thoughts and feelings

LETTING GO OF THE STRUGGLE IN ORDER TO LIVE IN ACCORDANCE WITH VALUES

Now I’d like you to think about something you really value where there might be a discrepancy between that value and how you are currently living your life. So you could value being a good parent, but feel as though you are not living up to what you think a good parent should be. You could value other family relationships, health, recreation, being a good citizen or spirituality.

What you have been doing that is inconsistent with this value, what engaging in your struggle has cost you — whatever form it takes for you -how has it interfered in your life? Next, commit publicly to let go of the struggle and instead commit to do something else, something consistent with your valued path. I only want you to make such a commitment, if you are really prepared to choose to give up this struggle, to allow yourself to have experiences, even difficult ones, in the service of creating a valued life.

COMMITTED ACTION

What I value is __________________
What I have been doing is__________________
What it has cost me is_______________________
I’m through with that.
I am going to ____________________________ (clear, concrete, specific)

[prompt that the committed action should be something that can be completed in the next one week]

ENDING:
- Summary of past four weeks
  - Can’t control thoughts or feelings
  - Willingness and acceptance
  - Self as context
  - Defusion
  - Values-based living
- Thank participant for being part of the study
- Remind participant about two-week follow-up
Session 5
Follow-up

• How was committed action?
  o If it didn’t work, what were some reasons for it?
    ▪ Focus on how age-related negative perceptions can make it difficult to live a valued life
APPENDIX I INTEGRITY CHECKLIST

INTEGRITY CHECKLIST

1. SESSION 1

☐ Confidentiality and beginning information
☐ Discussion of thoughts about aging or growing older
☐ Discussion of how these thoughts apply to the self
☐ Feelings provoked by these thoughts
☐ Control strategies for these thoughts and emotions
☐ Don’t think about a wheelchair
☐ Polygraph metaphor
☐ Love metaphor
☐ Being inflexible in control strategies
☐ Fix the car
☐ Willingness as an alternative strategy
☐ Clean versus Dirty Discomfort
☐ Quicksand metaphor

2. SESSION 2

☐ Review of information from Session 1
☐ Acceptance is helpful, deserved, and necessary.
☐ Look into process of how we judge others automatically
☐ Apply those automatic judgements to self
☐ Clouds in the sky
☐ Notecard exercise
☐ Self as Context (can be done using chessboard, house, or something specific to participant)

3. SESSION 3

☐ Review from first two sessions
☐ Talk about how mind is always thinking
☐ Milk, Milk, Milk exercise
☐ Bob the Mean Neighbor
Observer Exercise
Put it all together

4. SESSION 4

Review of first three sessions
Pen in Hand
Letting Go of the Struggle (Monster Metaphor)
Masters you Serve
Attending Your Own Funeral
Link values to negative self-thoughts
Committed Action
APPENDIX J DAILY QUESTIONNAIRE FOR PARTICIPANTS

Daily Questionnaire

1. On a scale from 1 to 4, with 1 being “none at all” and 4 being “severe”, how would you rate the amount of pain or physical discomfort you felt today?

   1 2 3 4

   None at all  Severe

2. Thinking over all of the conversations you’ve had today, how meaningful would you rate them, on average?

   1 2 3 4

   Not at all  Extremely

3. How depressed did you feel today?

   1 2 3 4

   Not at all  Extremely

4. How anxious did you feel today?

   1 2 3 4

   Not at all  Extremely

5. How many events did you attend outside of your room today? __________
APPENDIX K IRB APPROVAL LETTER

DATE: February 24, 2017

TO: Mary Moeller
FROM: Bowling Green State University Institutional Review Board

PROJECT TITLE: [913519-5] Acceptance and Commitment Therapy for Negative Perceptions on Aging: A Proof of Concept Study

SUBMISSION TYPE: Revision

ACTION: APPROVED
APPROVAL DATE: February 21, 2017
EXPIRATION DATE: July 5, 2017
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of Revision materials for this project. The Bowling Green State University Institutional Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Modifications Approved:
(1.) Add Maja Taylor and Sonia Singh to the list of persons approved to work on the project.

(2.) Assign every participant to Group 1. This is less cumbersome for participants as their entire time commitment would last only 6 weeks instead of a potential maximum of 16 weeks.

(3.) The addition of offering checks as compensation, still for the same amount as the room decorations and gift cards and given at the same points along the protocol.

The final approved version of the consent document(s) is available as a published Board Document in the Review Details page. You must use the approved version of the consent document when obtaining consent from participants. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that you are responsible to conduct the study as approved by the IRB. If you seek to make any changes in your project activities or procedures, those modifications must be approved by this committee prior to initiation. Please use the modification request form for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must also be reported promptly to this office.

This approval expires on July 5, 2017. You will receive a continuing review notice before your project expires. If you wish to continue your work after the expiration date, your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date.
Good luck with your work. If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or orc@bgsu.edu. Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Institutional Review Board’s records.
APPENDIX L STAMPED IRB CONSENT FORM

Acceptance and Commitment Therapy for Negative Perceptions on Aging” Informed Consent Form

Mary Moeller, a clinical psychology student Psychology Department at Bowling Green State University, is the researcher responsible for this project. She will be overseen by Dr. William O’Brien, a clinical psychologist and faculty member in the Psychology Department at BGSU. This research study is designed to explore the effectiveness of an Acceptance and Commitment Therapy (ACT) intervention in decreasing the effects of negative perceptions on aging in the nursing home population. You must be at least 65 years of age to complete the study.

The primary benefit of this study is to lend research support for ACT in a nursing home population as well as explore the potential benefits of defusing or separating from negative thoughts about the aging process. Participants will be provided with a $10 gift card, check, or room decoration after completing the baseline assessments and after the completing the follow-up assessments.

As a participant in this study, you will be asked to complete two brief eligibility questionnaires. If your scores do not reach eligibility criteria, you will receive a $10 gift card, check, or room decoration for your time and will not complete the rest of the study. Your data will be kept on file on a password protected USB drive in a locked room, but it will not be used in any analyses or publications that may come out of this project. If you are eligible for further participation, you will be asked to complete several questionnaires that measure cognitive functioning, quality of life, psychological flexibility, negative thoughts on aging, and physical and psychological wellbeing, which will take approximately forty-five minutes to complete. These questionnaires will be completed once a week until the intervention process begins. Once the intervention begins, the researcher will meet with you for an hour once a week to discuss ACT-related
concepts and negative perceptions on aging. The questionnaires will be completed after each of the four therapy sessions and again at the final follow-up session. You will also be asked to complete a 5-question daily measure of physical comfort, meaningful conversations, mood, and social participation. The daily measure should take no more than five minutes to complete and should be filled out every day of the research project. The project will take 8 weeks to complete from the beginning of baseline to the end of the intervention, with one to two hours of time commitment asked of you per week.

Your participation is completely voluntary. You are free to withdraw from the study at any time. You may skip questions or not do a particular task or discontinue participation at any time without penalty. Choosing the discontinue will not affect your relationship with Bowling Green State University.

All information collected in this study is confidential. In order to protect your confidentiality, you will be assigned a unique identification number. Your responses to any of the study material will be associated with this identification number only. Any information linking your name to this identification number will only be accessible by the primary investigators of this study. All identifying information will be destroyed after the completion of this study. During the study, all records will be strictly safeguarded and kept in a locked office accessible only to the investigators of this study. The USB drive and the files with subject information will be protected by different secure passwords.

The risks inherent in this study are minimal. Due to the nature of the therapy, participants may be asked to think about upsetting things. These risks are minimalized by allowing participants to withdraw from the study should they no longer wish to participate, skip tasks that they do not wish to complete, and by the learning of new coping strategies that may be useful when dealing with these upsetting thoughts.

Should the results of the study be published in scientific journals, your anonymity will be assured. By participating in this study, you agree to
permit Bowling Green State University to compile and publish data at conclusion of the study. Should you choose to withdraw from the study, any data collected up to that point may be used in analyses. This data will still be kept anonymous and will not be tied to you in any way. Should you wish to remove your data upon withdrawal, simply inform the researcher and your data will not be used in any papers or analyses.

If any questions or concerns arise during the course of this study, you may contact the researcher at mmoelle@bgsu.edu or by phone at (419)-372-2301. Additionally, you may contact Dr. William O'Brien, the overseeing clinical psychologist, with questions about the study at wobrien@bgsu.edu. You may also contact the Chair, Institutional Review Board at Bowling Green State University at 419-372-7716 (orc@bgsu.edu) if you have any questions about your rights as a participant in this research.

Thank you for taking the time to read this document.

By signing this form you are indicating that you have read this document in full, have had all of your questions answered, and have agreed to participate in this study.

Participant Signature ___________________________ Date ___________________________