MANA PSYCHOLOGY™ FOR ALLEVIATING COGNITIVE DISORDERS

RELATED TO AGING

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**Abstract**

 Cognitive impairment in older adults has a variety of possible causes including medication side effects, metabolic and/or endocrine derangements, delirium due to intercurrent illness, depression, and dementia, with Alzheimer's dementia being most common (NIA Sep 26, 2014). Alzheimer disease (AD) and related disorders are a growing public health problem in the United States, with a prevalence ranging from 3% to 11% among people aged 65 years and older and from 25% to 47% among those aged older than 85 years (3,4). There are an estimated 5.3 million cases of dementia in the United States (5), and this number is expected to increase to 18.5 million by 2050 (Galvin, 2012). The number of those afflicted is increasing annually as a result of the aging population. Dementia leads to a high burden of suffering for patients, families, and society, with an annual estimated cost of $172 billion (Alzheimer's Association. 2010). These costs are amplified when one understands that the struggles associated with cognitive disorders affect not only the elderly patient but also their families.

 Assessment for cognitive impairment is now a required by primary care physicians (PCPs) as a component of the medicare annual wellness visit (Cordell, 2013). While there is not gold standard for diagnosing cognitive disorders in the elderly, one of the first steps in detection of cognitive impairment involves a conversation between a clinician and the patient and family members or other persons who can provide insight to changes the patient may not even recognize. Currently there are no disease-modifying therapies to slow or halt the deterioration of the brain cells in Alzheimer’s and no medications are specifically approved to treat behavioral and psychotic symptoms in older adults with dementia (National Institute on Aging, 2017). However, studies have shown that active medical management can and will significantly improve quality of life through all stages of the disease for diagnosed individuals and their caregivers ( Alzheimer’s Association, 2010). With limited treatment options, PCPs and family members primarily focus on creating coexisting conditions with coordination of care to maximize the quality of life for people with Alzheimer’s, dementia, and other related cognitive disorders. With limited options, researchers must be diligent to expand their ideas to new frontiers. While permanent medical solutions are most needed, perhaps we could better serve those in need by focusing our energy on new behavioral interventions to improve the day-to-day living experiences of our seniors who are affected by these cognitive disorders. Mana Gardening® On-The-Go Meditation combined with Mana Psychology™ seven simple mindset shifts proposes to improve the quality of life and possibly alleviate some depression experienced with caring for elderly individuals with cognitive disorders.

**With Limited Options Research Must Expand Its Focus**

 After many decades of research in cognitive disorders we still do not have a clear path to reverse or prevent cognitive decline seen in normal aging, thus with so many limited options we must expand our research focus. While PCPs recognize that the physical and emotional health of the primary caregiver and patient are both crucial in obtaining optimal care for cognitive disorders in the elderly, what more can we do? Caregivers often suffer from increased rates of depression and physical illness, and family physicians are starting to understand that they need to monitor regularly the health of the primary caregiver as well as that of the patient with AD (Cummings, 2002). Focusing on methods to improve the caregiver well-being often leads to the implementation of measures that not only delay institutionalization of the patient, but also minimize patient–caregiver stress. Many options have already been evaluated in an effort to consider the needs for increased emotional support in caring of these patients. The American Academy of Neurology and the American Association for Geriatric Psychiatry have emphasized the importance of recognizing the needs of the family and the caregivers as well as the patients, by encouraging family physicians to form partnerships with families who care for dementia patients (Doody, 2001). But what more can be done? What really is the ideal partnership we should be working to create? Clearly researchers must expand their focus beyond efforts to heal and prevent cognitive disorders, but they must also be called upon to identify evidence-based methods to evaluate existing and study new types of interventions for cognitive disorders seen in older patients.

 Studies show that interventions tailored to patients with dementia can improve quality of care, reduce unfavorable dementia-related behaviors, increase access to community services for both the patient and their caregivers, and result in less caregiver stress and depression (Callahan, 2006). Mindfulness practices have been proven suited for preventing and treating problems rooted in negative emotions, such as anxiety, depression, aggression, and stress-related health problems (Fredrickson, 2000). Thus coping methods that increase the stability of their family life prior to diagnosis and while caring for the patient may help to alleviate the compounding health-related problems surrounding the decline of cognitive skills for the senior patient.

Cognitive-based therapies and mindfulness practices offer a wide variety of therapeutic techniques that are well established in experimental psychology through evidence-based research. Cognitive-behavioral therapies (CBT) and mindfulness practices have yielded promising results in treating depression and anxiety-related disorders. More than 80% of patients with AD experience some form of behavioral symptoms such as anxiety, agitation, depression, and apathy during the course of the disease (Craig, 2005). Although these symptoms may be observed by the family physician, they are more often reported by the primary caregiver. Mana Psychology™ offers a novel On-The-Go Meditation that allows self-guided moments of relief and relaxation from stress while actively participating in the complexities of everyday life and may prove to be a cost-effective option in caring for elderly relative suffering from cognitive disorders. On-The-Go Meditation may offer relief for busy caregivers who have limited time. Mana Psychology™ has seen marked improvement in the needs of a caregiver and an elderly stroke patient by adapting five adapting simple mindset changes. Mana Psychology™ On-The-Go Meditation may offer relaxation and stress relief to lives of caregivers and our aging population.

**The Validity of Meditation and Mindfulness**

Meditation can be conceptualized as a family of complex emotional and attention-based regulatory training practices (Barnes, 2016). Recently, the therapeutic use of meditation, including mindfulness-based techniques, has become increasingly important in the treatment of physiological and psychological conditions (Ludwig & Kabat-Zinn, 2008). Research on meditation has shown that its practice can increase attention, calm emotional reactions, and induce positive cognitive and perceptual changes in multiple regions of the brain (Short, 2010). The frontal/prefrontal regions are most frequently activated during meditation, and this activation may be related to increased attention. Although, multiple other brain regions have also been associated with various meditation methods, changes in cortical thickness and structural differences in the brain have been found in long-term meditators (Kang, et al., 2013). Subsequent studies have confirmed that focal reductions in self-referential cortical midline regions are measurable in novice participants and that they are more marked and pervasive in those trained in meditative relaxation techniques.

In a recent Harvard University study, long-term meditators were found to have an increased amount of gray matter in the insula and sensory regions, the auditory and sensory cortex (Schulte, 2015). These regions are all linked to paying attention, so it stands to reason that your senses would be enhanced. These meditators also had more gray matter in the frontal cortex, which is associated with working memory and executive decision-making. However, perhaps the most profound findings were that these changes within the brain could be seen within only 8 weeks of meditation practice (Schulte, 2015).

 Mana Psychology™ and On-The-Go Meditation are empowerment concepts from the Mana Gardening® personal empowerment series and is based on a novel new approach to an ancient Hawaiian method of turning inward. With this method of always starting from within comes a simple way to release stress and cope with problems through moments of self-guided meditative relief (Kamalani & Shine, 2017). Mana Gardening® On-The-Go Meditation has been proposed for multiple federally funded military studies as it may be more suitable to the military lifestyle for its novel seconds of relief meditation methods and unique self-governed approach. It may also prove to be cost-effective in that it can be taught to groups of families in a relatively short period of time. This same lack of seclusion, space and free time that is problematic for caregivers who tend to the needs of the elderly, is also a problem for military families and thus On-The-Go Meditation may offer an adapatble alternative for those who cannot practice tradtional mediation.

**Strengthening Those Who Serve with On-The-Go Meditation**

The Mana Gardening® On-The-Go Meditation offers an integrative therapeutic approach by combining integrated cognitive, psychodynamic and experiential approach, with a novel approach to mindfulness meditation (Kamalani & Shine, 2017). Its goal is to offer instant relief from stress and positively change the way one feels. The method seeks to reduce drama by guiding participants to use inner visualization to identify problems as insignificant as possible and learn the skills to concisely identify a problem with the simplest achievable solution (Kamalani & Shine, 2017). In a recent proposed study, 48 individuals were to be randomly divided into groups of 4 and expected to attend three weekly 45-minute group sessions. All were to be given 20-minutes weekly reading assignments to read aloud, discuss and try on their own. On-The-Go Meditation proposes that the Mana Gardening® techniques provide the same relaxation response as other traditional forms of meditation, but can also be utilized while busy with normal day to day life needs and while actively participating in all subsequent life activities.

Participants would be guided through the steps required to use On-The-Go Meditation, use this technique as often as they can throughout the week, and return to briefly review and share their progress and or thoughts while using the method. Further in-depth studies were also proposed using medical, biochemical, epigenetic and psychological testing on all 48 subjects. Participants were to be instructed that testing is only to offer validation to whether On-The-Go Meditation induces a relaxation response for patients that can be compared to the Harvard University meditation study results. At recruitment, participants were to be instructed that they will personally explore a novel approach to meditation that does not require any additional time or changes to their normal, everyday lifestyle and can be practiced by the every member of the family that wishes to or is old enough to understand the guidance given to participating. Reasonable hope was to be given that the practice of this On-The-Go Meditation technique may be beneficial in providing relief for all forms of stress and anxiety and can positively affect their overall health and wellbeing. Aware and empowered, a person is more likely to be able to summon the actions that manifest reasonable hope (Kotze, 2015).

**Mana Pscyhology**™

**Mindfulness to Alleviate Cognitive Disorders in Elderly Patients**

 In caring for the elderly patient as well as the caregiver, Mana Psychology™ has identified seven key mindset changes that may offer a more positive foundational approach to the caregiver-patient relationship. Tested in a pilot study with a bi-thalamic stroke patient age 60 were the following seven points: 1. Acceptance that all conversations are new; 2. Validation that all memories have some truth; 3. Active efforts to re-building new old memories; 4. Continuing to offer opportunities to learn; 5. Refusing all negative labels; 6. Offering only concise achievable solutions; and 7. Safely taking space as needed. This pilot study subject experienced a bi-thalamic stroke at age 60. The first 72 hours after the stroke all vision, hearing and memories appeared lost but were spontaneously retained without any targeted medical intervention by day four. The subject was however unable to access or retain short term memories and easily became agitated, angry and depressed. These seven mindset changes were asked of all caregivers. In initiating a policy that all conversations were to be considered new, and no negative cycles were to be established in which blame or disappointment were displayed to the subject. Validation that all memories have some truth was an effort to encourage synaptic brain activity to recall information. Caregivers were told to always respond with, “Yes, that’s right.” And seek out something in the conversation that was accurate or true to continue with further dialogue.

 Active efforts to re-building new old memories was a creative effort to not ask if the subject remembered but rather to share those new stores of the past in an effort to lay down new old memories. Any effort by the subject to explore other mindfulness-based concepts such individually-initiated discussion of the past were seen as exposure therapy for strengthening their personal identity. Continuing to offer opportunities to learn and coordinated offering of music-based learning without conversations of what the subject had been able to do in the past were paramount. There was never any dialogue about how well he played guitar, or what he played previously. Instead there was a focus on, “Would you like to try and learn to play piano, guitar or ukulele?” When the subject questioned that he thought he had been able to play previously, this was met with excitement of, “Wow really? That’s great! Let’s try to learn this song together as it is all new to me.” Refusing to allow anyone to use negative labels was a key point. The subject was never discussed in terms of what he had been able to do before, nothing was ever seen as lost, there was no unable, disabled or stroke victim. This positive approach was affirming for everyone involved and quickly made the day to day approach seem easier by all.

 Offering only concise achievable solutions is a Mana Gardening® No Spin Power Tool approach that was reviewed and mandatory reading for all caregivers (Kamalani & Shine, 2017). This approach requires that all needs are reduced to one 5-7 word sentence and only discussed further if one can find an achievable 5-7 word, one sentence solution. In working with our stroke subject only the achievable solution was offered for a problem. There was never ever any dialogue about problem solving other than solution offering. Other Mana PsychologyTM techniques were never the focus as family members were encouraged to explore them on their own. Lastly, safely seeking space was a rule that was given to prevent anyone from ever feeling overwhelmed. This rule is simple. When feeling overwhelmed you simply state that you will be back soon and you will be nearby and then excuse yourself from the situation without discussion. This allowed time out and the subject himself soon caught on to this and would mimic this behavior as needed even though he was not told of what the caregivers were actually doing.

 Mana Psychology™ was developed to promote a greater sense of empowerment without feeding into the habit of emotional spinning out. Also offered were opportunites for visual role-playing (Kamalani & Shine, 2017) In this practice whenever the subject was playful or inqusitive, he was asked to play out what he thought should happen next or what he thought should have happened next. The benefits of role-play is a useful tool for self-improvement as it can be explored independently to create a positive meaning, a new identity, or embrace pride in your current identity (Mallot, 2015). Mana Psychology™ utilizes Mana Gardening® visualization techniques, to safely re-write or re-draw life images and memories as it offers a safe and personally-controlled form of exposure therapy. Visualization tools have a strong scientific support for being able to reduce symptom of stress (APA Presidential Task Force on Evidence-Based Practice, 2006). In 2012 the Institute of Medicine of the National Academies strongly endorsed and recognized the extensive research support behind exposure therapies.

**Evidence-based Science**

Further research is needed but one of the key problems that scientists and psychologists face is the question, how much of behavior is genetically predetermined? Although there is no doubt that our environment can influence our health and wellbeing, there is vast discord among health professionals in explaining why physical and mental health varies widely, even within families experiencing similar life paths. Combining epigenetic studies with mindfulness practices we may offer a new level of insight as to the questions around why within the same family not everyone will suffer from cognitive disabilities as they age.

Epigenetics is a scientific method that demonstrates the influence of environmental factors on the way that genetic DNA coding is expressed (Kiyimba, 2016). The term literally means ‘on top of’ genetics’ and, to be concise, epigenetics may offer us a pathway to identify when nature has taken precedence. Epigenetic changes are modifications of DNA, which occur without any alteration of the underlying DNA sequence, and can control whether a gene is turned ‘on’ or ‘off’. Identification of ‘on’ genes and the outcomes associated with them may soon yield a beyond-the-horizon approach to all forms of health care. Epigenetic sputum testing of elderly patients and their caregivers participating in On-The-Go Meditation practices may allow us to identify those at a higher risk for depression, as well as identifying those who respond better to meditative therapies.

Currently, clinical interviews are often complicated with cognitive disorder diagnosis. Therefore, clinicians are forced to rely on subjective reports. Although clinical history is a good start, such diagnoses would also benefit from reliable hard science data such as biomarkers, neuroimaging, psychophysiology, chemical assays and gene expression (Schulte, 2015). Every method of treatment, novel or not, deserves the diligence of a scientific study. Analyzing these proposed mindfulness options to design such a study requires examining the influences using multivariable analysis of test results and establishing a registry of caregivers and patients members who have utilized these techniques, to evaluate long-term benefits and outcomes. Therefore, a multi-variable, prospective study should be conducted on the results of these practices.

Using fMRI imaging and epigenetic tests to establish baseline measures parallels and adds to the Harvard University study with the least amount of intrusion. Whereas structural MRI conveys morphological information (e.g., local gray matter volume), functional MRI (fMRI) provides regional signals representing an indirect measure of synaptic activity-by-activity dependent changes in local hemodynamics (Logothetis & Wandell, 2004). Brain activation-level abnormalities have been shown to be persistent on fMRI despite normalization on behavioral (cognitive) measures (Chen, Johnston, Collie, McCrory, & Ptito, 2007), suggesting that fMRI may be more sensitive to the effects of dementia than more traditional cognitive measures. fMRI has been purported to show great promise as a clinical tool (Jantzen, 2010). Obtaining pre- and post- measures with fMRI images and sputum will allow analysis of the effectiveness of the therapy method and comparison against published data on formal meditation practices without subjecting any of the family members to intensive testing.

**Conclusion**

The main of objective of using Mana Psychology ™ and Mana Gardening® On-The-Go Meditation techniques is to assess its value for stress reduction and mindset change. Assessing the validity of this method will be characterized by state of the art testing and further examination of the interrelationships by multivariable review of test results. The aim is to find a way to incorporate meditation in a way that fits into the lives of individuals from young military dependents to combat soldiers. This approach should be thoroughly analyzed for its efficacy as a self-guided, cost-effective, approach to mediation and stress reduction that can be easily incorporated into any lifestyle. In a greater context, trying to move health care away from the burdensome complexities that surround pharmacologically-based health care may reduce the side effects seen in older patients. On-The-Go Meditation studies require relatively no infrastructure resources, and combine the expertise of behavioral health specialists and scientists to more effectively formalize strategies of preventative care and treatment management of patients that will continue to be exposed to cognitive risk factors seen in aging.

 The assessments of fMRI and epigenetic measures will increase understanding of some of the mechanisms involved in treating and perhaps identify indicators for stress relief, which correlate with traditional interventions to improve the quality of life care. Most of us lead lives that do not allow the level of scheduling, privacy, and solitude required to participate in current forms of meditative practices successfully. Standard practices of meditation are not practical for most people who do not have the luxury of 20 minutes, twice per day, scheduled and secluded meditation time. Mana Gardening® is a novel On-The-Go Meditation that allows instant access to self-guided moments of relief while actively participating in the complexities of life from high stress to everyday pressures. Adding the seven steps of Mana Psychology™ not only returned our test subject to a more vibrant version of his former self, it offered a sense of happiness to everyone involved in his daily routine of care. The good news for our subject is that he has successfully returned to being fully capable to care for himself independently and confidently which was well beyond the expectations of everyone involved in his care.

**References**

Alzheimer's Association. 2010 Alzheimer disease facts and figures. Alzheimer's & Dementia. Vol. 6. Available from: http://www.alz.org/documents\_custom/report\_alzfactsfigures2010.pdf. Accessed 8 December 2017

APA Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist, 61*, 271–285. doi: 10.1037/0003-066X.61.4.271

Barnes, V. A., Monto, A., Williams, J. J., & Rigg, J. L. (2016). Impact of transcendental meditation on psychotropic medication use among active duty military service members with anxiety and PTSD. *Military Medicine, 181* (1), 56-63.doi: 10.7205/MILMED-D-14-00333

Callahan, C.M., et al. Effectiveness of collaborative care for older adults with Alzheimer disease in primary care: a randomized controlled trial, JAMA, 295 (2006), pp. 2148-2157

Chen, J.K., Johnston, K.M., Collie, A., McCrory, P., & Ptito, A. (2007). A validation of the post- concussion symptom scale in the assessment of complex concussion using cognitive testing and functional MRI. *The Journal of Neurology, Neurosurgery, and Psychiatry, 78* (11), 1231-1238. doi: 10.1136/jnnp.2006.110395

Cordell CB, et al. Alzheimer's Association recommendations for operationalizing the detection of cognitive impairment during the Medicare Annual Wellness Visit in a primary care setting. Alzheimer’s Dement. 2013 March; 9(2):141-150.

Craig D, Mirakhur A, Hart DJ, McIlroy SP, Passmore AP. A cross-sectional study of neuropsychiatric symptoms in 435 patients with Alzheimer's disease. Am J Geriatric Psychiatry 2005; 13:460–8.

Cummings JL, Frank JC, Cherry D, et al. Guidelines for managing Alzheimer's disease: part I. Assessment. Am Fam Physician 2002; 65:2263–72.

Doody RS, Stevens JC, Beck C, et al. Practice parameter: management of dementia (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2001; 56:1154–66

Fredrickson, B. L. (2000). Cultivating positive emotions to optimize health and well-being. *Prevention & Treatment*, *3*(1), doi:10.1037/1522-3736.3.1.31a

Galvin JE and Sadowsky CH. Practical guidelines for the recognition and diagnosis of dementia. J Am Board Family Med. 2012; 25(3):367-382.

Institute of Medicine of the National Academies. (2012). Treatment for posttraumatic stress disorder in military and veteran populations*: Initial assessment.* Washington, DC: National Academies Press.

Jantzen, K. J. (2010). Functional magnetic resonance imaging of mild traumatic brain injury. *Journal of Head Trauma and Rehabilitation, 25* (4), 256-266. doi: 10.1097/HTR.0b013e3181e5477c

Kamalani, K.T., & Shine, M.L., (2017). Mana Gardening, Empower yourself and live a better life, Mana Gardening Institute, Hawaii

Kang, D.-H., Jo, H. J., Jung, W. H., Kim, S. H., Jung, Y.-H., Choi, C.-H., Kwon, J. S. (2013). The effect of meditation on brain structure: cortical thickness mapping and diffusion tensor imaging. Social Cognitive and Affective Neuroscience, 8(1), 27–33.

Kiyimba, N. (2016). Developmental trauma and the role of epigenetics. *Healthcare Counselling & Psychotherapy Journal*, *16*(4), 18-21.

Kotzé, M., Nel, P..*. The influence of trait-emotional intelligence on authentic leadership. SA*

 *Journal of Human Resource Management, 13, Nov. 2015. Available at: http://www.sajhrm.co.za/index.php/sajhrm/article/view/716. Accessed: 10 Dec. 2017.*

Logothetis, N. K. & Wandell, B. A. (2004). Interpreting the BOLD signal. *Annual Review Physiology, 66*, 735–769. doi: 10.1146/annurev.physiol.66.082602.092845

Ludwig, D. S. & Kabat-Zinn, J. (2008). Mindfulness in medicine. *The Journal of the American Medical Association, 300*(11), 1350-2. doi:

10.1001/jama.300.11.1350

Mana, Gardening, (2017). Retrieved from http://www.managardening.com/manapsychology.

McPherson S., and Schoephoester G. Screening for dementia in a primary care practice. Minn Med. 2012 Jan; 95(1):36-40.

National Institute on Aging, Assessing Cognitive Impairment in older Patients. <https://www.nia.nih.gov/health/assessing-cognitive-impairment-older-patients>. Accessed 10 December 2017

Schulte, B. (2015). Harvard neuroscientist: Meditation not only reduces stress, here’s how it changes your brain*.* [https://www.washingtonpost.com/news/inspired-life/wp/2015/05/26/harvard-neuroscientist-meditation-not-only-reduces-stress-it-literally-changes-your brain/ 1](https://www.washingtonpost.com/news/inspired-life/wp/2015/05/26/harvard-neuroscientist-meditation-not-only-reduces-stress-it-literally-changes-your%20brain/%201) Accessed 1 December 2017

Short, E. B., Kose, S., Mu, Q., Borckardt, J., Newberg, A., George, M. S., & Kozel, F. A. (2010). Regional brain activation during meditation shows time and practice effects: An exploratory fMRI study. *Evidence-Based Complementary and Alternative Medicine, 7*(1), 121-127. doi: 10.1093/ecam/nem163