

# Uses of therapeutic thematic arts programming, TTAP Method<sup>®</sup>, for enhanced cognitive and psychosocial functioning in the geriatric population

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## Abstract

Currently, there is a need for strength-based recreation therapy approaches which promote the retention of skills and abilities of the growing older adult population. This article introduces an emerging multimodal intervention: Therapeutic Thematic Arts Programming for Older Adults (TTAP Method<sup>®</sup>), an approach that provides stimulation to three distinct brain systems, encouraging brain wellness and neural regeneration, thereby providing a viable means for enhancing cognitive functioning in older adults. Research on TTAP Method<sup>®</sup> efficacy is currently being explored at Cornell University and previous pilot studies strongly indicate that the TTAP Method<sup>®</sup> may be an effective intervention for slowing the progression of mild cognitive impairment to Alzheimer's disease. TTAP Method<sup>®</sup> is person centered and culturally competent, and engages a variety of creative activities.

Key words: TTAP Method, Alzheimer's disease, cognitive functioning, psychosocial wellbeing, multimodal intervention, creative arts therapies

## Introduction

### Overview

The prevalence of mild cognitive impairment (MCI) in the general population is reported to be as high as 25 percent for adults of 65 years and older,<sup>1-5</sup> and the progression from MCI to Alzheimer's disease (AD) per year is reported to be approximately 12 to 14 percent.<sup>6,7</sup> Multimodal interventions (a variety of mixed interventions, stimulating all regions of the brain) have proven to be extremely successful in early stages of MCI/AD for decreasing symptoms.<sup>8,9</sup> Such interventions are designed to provide a wide variety of stimuli, positively affecting and increasing neuronal activity, responses, and plasticity.<sup>9,10</sup>

Therapeutic Thematic Arts Programming for Older Adults (TTAP Method<sup>®</sup>) method is a multimodal, art/recreation group therapy process that engages creative recreation activity within a nine step structure to inhibit the progression of MCI to AD.<sup>11</sup> The TTAP Method<sup>®</sup> maximizes interaction among participants, stimulates all aspects of brain functioning,

addresses social and emotional needs, and integrates opportunities for life review.<sup>11</sup> The TTAP Method<sup>®</sup> therefore provides the early intervention needed to assist older adults in retaining cognitive and psychosocial abilities.<sup>8,12-14</sup>

## Methodology

### Nine steps

By utilizing the nine steps, the caregiver, therapist, or health worker is facilitated in developing personalized programming. The TTAP Method<sup>®</sup>'s nine step intervention directs the focus of therapy on a proven factor helping cognition: the reinforcement and utilization of remaining strengths, such as accessing long-term memory, or controlling motor coordination.<sup>15</sup> The nine steps are as follows: group discussion, music/guided imagery, drawing/painting, sculpture, movement, poetry, food, photography, and finally a themed event.<sup>11</sup>

The second step is the most significant in assisting participants to identify their own personal needs.

**Table 1. TTAP Method© nine steps outlined\***

Step	Process	Stimulation	Brain region
1	Individual thought to group ideas	Linguistic	Broca's area
2	Group ideas to music/guided imagery	Musical/visual	Visual/auditory cortex
3	Music/guided imagery to 2D image	Visual	Temporal lobe
4	Image into 3D image/sculpture	Spatial	Parietal/occipital lobe
5	Sculpture into movement	Kinesthetic	Motor cortex
6	Movement into words/poetry/stories	Linguistic	Frontal lobe
7	Words into food for thought	Spatial	Sensory cortex
8	Food for thought into photography	Intrapersonal	Reticular formation
9	Photography to themed event	Interpersonal	Broca/Wernicke's area

\*Multiple regions of the brain are stimulated at any given time throughout multimodal interventions. However, the brain region listed is the focus of the corresponding step.<sup>11</sup>

Step 2 brings music, body relaxation, and meditation into the session allowing for a moment of introspection. Meditation has been linked to an increased likelihood of a later experience of “flow” in that it allows increased levels of concentration, creates complete absorption in the experience, and a loss in awareness of the external environment.<sup>16</sup> Table 1 shows the nine steps, their progression, the type of stimulation that each step provides to the participants, and the region of the brain stimulated throughout the TTAP Method©.

## Objectives

### *Stimulate optimal brain functioning*

Previous research on brain plasticity, neural regeneration, and the phenomena of cognitive reserve demonstrate that positive changes in neural activity can be activated by visual, auditory, and sensory stimulation.<sup>8,9,12-14,17-19</sup> During the TTAP Method©

program, participants are provided with visual, auditory, and sensory stimulation as well as stimulation to three distinct brain systems: the affective system, the strategic system, and the recognition system. Brain research now indicates that the brain can change in mass and density through increased stimulation in these three areas.<sup>19</sup>

The use of multiple forms of interaction is essential in the TTAP Method©. Blooms’ Taxonomy of Learning<sup>20-22</sup> is incorporated into the TTAP Method© approach, and each of the nine steps is designed and structured so as to stimulate the visual learner, the musical learner, linguistic learner, interpersonal learner, intrapersonal learner, kinesthetic learner, and spatial learner. Enhancing social interaction by stimulating all types of learners ensures a higher likelihood of full participation from each participant within the group experience and has a protective effect on the hippocampus and therefore decreases

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the likelihood that individuals with AD will show signs of further decline in language abilities and short-term memory.<sup>17-19,23,24</sup>

The integration of various artistic activities elicits an integration of higher cortical thinking (eg, planning, attentiveness, problem solving, and emotional investment in both the topic of discussion and in goal accomplishment) thereby promoting faster cognitive and emotional processing and facilitating learning and memory.<sup>10</sup> Guided imagery, synchronized with music, is one of the most unique and significant steps in the methodology in that it allows the individual to access positive long-term memory.<sup>11</sup> Guided imagery has also been shown to significantly decrease cortisol levels and thereby enhancing mood<sup>25</sup> and subsequent cognitive performance.<sup>26</sup>

### ***Maximizing interaction among participants***

Communication, in all forms, is a crucial aspect of social support as it serves in “maintaining or retaining feelings of connectedness to one’s self and to the larger community of peers, friends and family.”<sup>18</sup> The TTAP Method<sup>®</sup> engages dynamic interaction by incorporating avenues for both nonverbal and verbal communication in a group context which has shown to regulate functions within the cerebral cortex<sup>12,27,28</sup> promoting brain wellness and skill retention among older adults.<sup>17,19,29</sup>

As a result of the nine step structure, the TTAP Method<sup>®</sup> naturally increases the total time a participant spends in programming,<sup>11</sup> exposing the participant to longer levels of increased stimulation. By keeping people stimulated for longer periods of time in person centered recreational/art therapy, the TTAP Method<sup>®</sup> activates mental, physical, and social domains. By activating all of these domains, the TTAP Method<sup>®</sup> is protecting against cognitive decline and dementia.<sup>9,30,31</sup>

### ***Addressing social and emotional needs***

Studies show that when social and emotional needs are addressed, feelings of self worth, mood, and overall quality of life are enhanced.<sup>32,33</sup> The TTAP Method<sup>®</sup> thematic orientation formulates sessions to

meet the specific needs of persons with AD that include the exploration of feelings of loss, grief, and sadness as well as love, hope, and fortitude.<sup>31</sup> The TTAP Method<sup>®</sup> has been designed to address a range of social and emotional needs by engaging participants in individualized and person centered social involvements.<sup>11</sup>

Memory difficulties, specifically short term, are a defining feature of AD and are one of the central problems experienced on a daily basis.<sup>34-36</sup> For a person with early stage AD, memory losses can have a major impact on self-confidence and can lead to anxiety, depression, and withdrawal from activities.<sup>36,37</sup> Withdrawal can result in a general increase in symptoms including enhanced memory loss. This increase in symptoms beyond those attributable to the disease process is an example of what has been termed “excess disability.”<sup>38</sup> The TTAP Method<sup>®</sup> enhances feelings of self-worth, which has a direct correlation to motivation levels directed toward creating enhanced social support systems and thus decreasing the likelihood of withdrawal among participants.

Depression coupled with feelings of hopelessness can have a detrimental impact on cognitive functioning. Emotions directly affect cognition and therefore subsequent motor coordination, memory, self-esteem as well as the perception of one’s own health.<sup>32,38,39</sup> Cognitive evaluation tests show that cognitive performance is significantly impaired during depressive states<sup>40</sup> and 15 to 30 percent of individuals with AD have clinically significant levels of depression symptoms.<sup>33</sup> Successful depression treatment, through the use of multimodal interventions such as the TTAP Method<sup>®</sup>, has been correlated to significant alleviation of cognitive impairments and therefore an overall improvement in independent functioning.<sup>41,42</sup>

### ***Integrating opportunities for life review***

The TTAP Method<sup>®</sup> aims to elicit, during the group art/recreation therapy sessions, a process of life review which is a naturally occurring process<sup>43</sup> structured within the method in which the individual looks back on his or her life, reflecting on the past, and revisits positive events and unresolved difficulties

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and/or conflicts.<sup>44,45</sup> Reminiscence and life review as a therapeutic approach allows individuals to revisit profound life events, thus serving as a useful intervention for depression<sup>46</sup> and as a promising intervention among older adults with dementia.<sup>46-48</sup>

The TTAP Method<sup>®</sup> provides a structured and systematic approach to life review which has shown to help the older adult to adjust to the many life changes and challenges, positively affecting well-being.<sup>49-53</sup> Moreover, the TTAP Method<sup>®</sup> incorporates life review in successive steps<sup>11</sup> which has been shown to promote memory retention, perceived social values of self, decreased disorientation, reduced fear and anxiety, and improved self-esteem and social interaction.<sup>53</sup>

## Discussion

### *Recreation therapy through the TTAP Method<sup>®</sup>*

Charts within the TTAP Method<sup>®</sup> manual provide a means of documenting frequency of participation as well as the scope of treatment provided (ie, which of the nine steps was implemented and for how long). In Alders' research (Alders, submitted for publication), the use of graphs demonstrated the correlation between duration, scope, and frequency of TTAP Method<sup>®</sup> on functional abilities.

This is especially relevant given that the Centers for Medicare and Medicaid Services have recently revised the MDS 2.0 to the MDS 3.0,<sup>54</sup> to include recreation therapy as a treatment service. Information pertaining to frequency, duration, and scope of treatment is required for Recreation Therapy through the MDS 3.0 and the therapeutic service rendered must follow proven procedures to restore, remediate, or rehabilitate functional abilities such as those supported by neuroscience research.<sup>55</sup> The TTAP Method<sup>®</sup> gives order to therapy sessions and assimilates the listed MDS 3.0 requirements needed to achieve funding.<sup>11</sup>

Additionally, therapy session protocols outlined in the appendix of the TTAP Method<sup>®</sup> manual were designed according to the American Therapeutic Recreation Association practice guidelines.<sup>38</sup> Concepts from the Need-Driven Dementia-Compromised

Behavior Model (NDB)<sup>56</sup> and the Neurodevelopmental Sequencing Program (NDSP)<sup>57</sup> were incorporated into the theoretical foundations of the nine steps. Steps 2 (guided imagery/music/meditation for relaxation), step 5 (movement), and step 7 (food programming) parallel underpinnings of NDSP. By providing therapy interventions that facilitate all listed cognitive processing styles (eg, kinesthetic, intrapersonal, interpersonal),<sup>21</sup> the TTAP Method<sup>®</sup> aims to identify and meet a wide range of needs. In this way, the TTAP Method<sup>®</sup> structures a desired outcome process such as that described within the NDB.

### *Where it's used*

The TTAP Method<sup>®</sup> is being embraced and utilized with diverse multicultural populations in research in a wide variety of locations. It is increasingly being taught throughout the state of New York, including Manhattan, Westchester, Rockland, and northern New York in the Rochester area (Alders, submitted for publication). The TTAP Method<sup>®</sup> was featured as a half day course in the New York State Therapeutic Recreation Association conference in 2007, and as a paper presentation in 2008 and 2009. At the American Art Therapy Association conference in Ohio, 2008, the TTAP Method<sup>®</sup> was offered as a half day course. The newest research will be presented in March 2009 at the Society for Arts in Healthcare conference in Buffalo, NY. Additionally, the New York State Parks and Recreation is scheduling Upstate presentations in 2010.

Inquiries regarding the TTAP Method<sup>®</sup> have recently been sent by therapists in Mexico, New Zealand, Estonia, Canada, India, and other European countries. The method received its first Fulbright in 2007 to be taught in New Zealand, at the Victoria University in Australia, and to be presented as the Keynote in both countries (New Zealand and Australia) at the Alzheimer's Association conference. In 2008, the Finnish government requested through three separate universities that the TTAP Method<sup>®</sup> be taught and a certificate course be developed through a second Fulbright which was confirmed in January 2009.

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Research on the method is expanding through university programs. One recent investigation on the TTAP Method<sup>®</sup> took place at Nazareth College of Rochester with the Hispanic population. Findings from this study showed that cognitive performance scores were positively and significantly correlated to participation in TTAP Method<sup>®</sup> recreation/art therapy sessions (Alders, submitted for publication). Other research in Sparkhill, NY, on older adults who have AD or who have suffered from stroke demonstrate that TTAP Method enhances client experiences of wellness (Levine-Madori, submitted for publication). Furthermore, St. Thomas Aquinas College has developed two courses on the TTAP Method<sup>®</sup>, Therapeutic Recreation Research on the TTAP Method and Methods and Materials utilized in the TTAP Method, both will facilitate future research on the effects of the TTAP Method<sup>®</sup> on AD progression and symptom presentation.

Internationally recognized, Cornell University has generated funding for research on the TTAP Method<sup>®</sup> and the research process is currently in the data analysis phase. This investigation was designed as quasi-experimental pilot study in which eight subjects were recruited through the Cornell Weil Memory and Evaluation Services Center. Voluntarily participated in the 14-week treatment of the TTAP Method<sup>®</sup> for 90 minutes each week. Data were collected in the pilot study through pretests and post-tests which evaluated participants' memory, language recall, mood, self-esteem, self-efficacy, social support, and social engagement.

## Conclusion

The TTAP Method<sup>®</sup> is an innovative and viable recreation/art therapy method and is currently being researched as a viable means for enhancing cognitive reserve. Its structure was designed to enhance the efficiency of providing whole brain stimulation throughout therapy while making documentation of therapy procedures and outcomes easier for the recreational therapist. It is rapidly being incorporated into various research projects due to the fact that it lends itself to systematization, whereas at the same time

providing person centered individualized care to meet a wide range of needs. The TTAP Method<sup>®</sup> was developed out of current neuroscience research that demonstrates that the life experiences and activities that challenge the mind in a safe and socially validating way result in positive and continuous changes in the human brain. Therapeutic Thematic Arts Programming—the TTAP Method<sup>®</sup> incorporates activities that have shown to be emotionally meaningful and therapeutically stimulating. Stimulation of this sort has been shown in previous research to enhance cognitive reserve.<sup>55</sup>

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