

Creativity and dementia: Does artistic activity affect well-being beyond the art class?

Dementia

2015, Vol. 14(1) 27–46

© The Author(s) 2013

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1471301213488899

dem.sagepub.com

**Susan M. Gross, Deana Danilova, Michael A. Vandehey and
George M. Diekhoff**

Midwestern State University, USA

Abstract

The Alzheimer's Association's *Memories in the Making*[®] (MIM) art activity program is intended to enhance the well-being of individuals who are living with dementia. Previous evaluations of MIM have found that participants show benefits on several well-being domains measured by the *Greater Cincinnati Chapter Well-Being Observation Tool*[®]. The current study extended those findings by looking for evidence of carry-over effects beyond the temporal boundaries of MIM sessions. Additionally, this study evaluated key psychometric qualities of the assessment instrument. Seventy-six MIM participants with middle- to late-stage dementia were evaluated by interns and care facility staff at the beginning, middle and end of a 12-week MIM program. Interns focused on behavior within MIM sessions and staff rated functioning outside MIM sessions. Staff reported no significant changes in resident well-being across the 12-week program. Interns reported significant improvements from the beginning to middle and end of the program on five well-being domains. Psychometric analyses of the *Greater Cincinnati Chapter Well-Being Observation Tool*[®] identified weaknesses in inter-rater reliability and found that the instrument measures two orthogonal factors – interpreted as 'Well-Being' and 'Ill-Being' – not the seven domains claimed. Quantitative evidence for the effectiveness of MIM is ambiguous, but anecdotal observations indicate that the program is beneficial for some participants, if only fleetingly.

Keywords

art activity programs, creativity, dementia, quality of life, Greater Cincinnati Chapter Well-Being Observation Tool[®], Memories in the Making[®]

Corresponding author:

George M. Diekhoff, Department of Psychology, Midwestern State University, 3410 Taft Blvd., Wichita Falls, TX 76308, USA.

Email: george.diekhoff@mwsu.edu

Introduction

Alzheimer's disease (AD) is the most common type of dementia that progressively and permanently affects a person's cognitive, behavioral and functional skills (Demakis, 2007; Nowotny, Kwon, & Goate, 2001). AD is the sixth-leading cause of death in the United States and is the only cause of death among the top 10 that cannot be prevented, cured or slowed in its rate of progression. It is estimated that 5.4 million Americans are now living with AD, including 13 percent of those over age 65 and nearly 50% of those 85 and older. By 2050, 16 million Americans will suffer from AD (Basics of Alzheimer's Disease, n.d.). Internationally, "... there are an estimated 35.6 million people with dementia. This number will nearly double every 20 years, to an estimated 65.7 million in 2030, and 115.4 million in 2050" (Alzheimer's Disease International, n.d.). The elderly are a rapidly growing part of the population (Walker, Salek, & Bayer, 1998) and starting this year, more than 10,000 baby boomers a day will turn 65 in the United States. Internationally, 22% of the world's population will be over 60 by 2050 (Alzheimer's Disease International, n.d.). As these elders in high-income countries age, one in eight will develop AD, with low- and middle-income countries showing much higher incidence rates (Alzheimer's Disease International, n.d.).

Memories, life achievements and personal characteristics, all lost to AD, comprise our sense of identity, establish our intrinsic value and provide a foundation for our sense of well-being (Hoe & Thompson, 2010). "Who *are* we without memory? Is a *self* possible when the ability to construct narrative through memory is broken?" (Basting, 2003, p. 88). When a person connects with the past and integrates autobiographical memories into a meaningful narrative, he/she creates a unique sense of personal identity that affects quality of life (QOL), well-being and life satisfaction (Jetten, Haslam, Pugliese, Tonks, & Haslam, 2010). AD robs us of personal identity by destroying the autobiographical foundation upon which it is based. Autonomy, personhood and the state of being an individual are all lost to AD (Jetten et al., 2010; Kitwood, 1997a).

QOL and well-being

As it is increasingly recognized that AD is a long-term medical disability, finding ways to maximize QOL throughout the duration of the disease has become one of the focal points of recent research on dementia (Ettema et al., 2005). The QOL concept gained attention in the 1950s and 1960s and, though almost always described as multidimensional in nature, descriptions of these multiple dimensions are quite diverse. QOL includes one's physical health, the capacity to care for oneself, make decisions and engage in meaningful social interaction (Edelman, Fulton, Kuhn, & Chang, 2005). Pain level, depression, active involvement and mobility are also components of QOL (Maslow & Heck, 2005). Affective expression (positive and negative), caretaker dependency, the ability to communicate, participation in activities and the broad sense of general life satisfaction are elements of QOL listed by McKee, Houston, and Barnes (2002). Many authors (e.g. Ettema et al., 2005; Ja, 2012; Ready & Ott, 2003), upon reviewing the extensive QOL literature, have come to the same conclusion drawn by Peterson, Prasad, and Prasad (2010): "The most common thread connecting measurements of quality of life with dementia is that they are modeled after Lawton's constructs" (p. 130).

Lawton's (1983, 1991, 1994, 1997) work with QOL strongly influenced subsequent thinking in this area. He defined QOL as "the multidimensional evaluation, by both

intra-personal and social-normative criteria, of the person-environment system of the individual” (Lawton, 1991; p. 6). Lawton further suggested that QOL includes four main constituents: (a) behavioral competence – the capacity to engage physically with one’s environment in a successful manner that also implies the presence of functional cognitive capabilities; (b) environmental quality – living in an environment that provides physical and psychological comfort and support; (c) perceived QOL – “an individual’s subjective appraisal of the quality of his/her life” (Kinney & Rentz, 2005; p. 220) and (d) general psychological well-being – including “affect state, happiness, morale, life satisfaction, and self-esteem” (Kinney & Rentz, 2005, p. 220). Lawton placed special emphasis on measuring psychological well-being, since it includes both cognitive and affective evaluations of life and reflects the holistic outcome of the other components of QOL that occur within the context of the individual’s person–environment interaction (Simsek, 2011; Walker et al., 1998). As Lawton (1991) put it, “Psychological well-being. . .may be regarded as the ultimate outcome of a QOL model” (p. 356).

This important early work on the QOL construct notwithstanding, efforts to evaluate and measure the construct within the context of dementia are relatively recent, but meaningful measures have been developed using both self-report and proxy instruments (Banerjee et al., 2006; Hoe & Thompson, 2010; Walker et al., 1998). Hoe, Katona, Roch, and Livingston (2005) pointed out that, “The patient’s subjective ratings should be the gold standard for measuring QOL in dementia, but. . .observational ratings [are] of benefit for those patients with more severe dementia” (p. 131).

Ready and Ott (2003) provided a comparison of nine different QOL measures used in dementia studies, and 10 AD-specific measures are reviewed by Inouye, Pedrazzani, Pavarini, and Toyoda (2010). Perhaps the most thorough review of QOL measures, however, was prepared by Ja (2012) who sorted over 50 measures of QOL and related constructs into five categories: (a) activities of daily living in AD, (b) instrumental activities of daily living in AD, (c) generic questionnaires of QOL, (d) QOL questionnaires specific to AD and (e) questionnaires evaluating burden and QOL of caregivers. Ja’s (2012) two QOL categories alone contain 20 instruments – 10 generic and 10 specific to AD.

The many and varied approaches taken to assessing QOL and its components means that operational definitions of these constructs are somewhat test-specific. One is reminded of the conclusion drawn by the eminent historian of psychology Edwin Boring in a 1923 debate with columnist Walter Lippman. When pressed to define intelligence precisely, Boring responded, “Intelligence is what the intelligence test measures” (Hunt, 1995, p. 356). Likewise, to some extent we must recognize that, “QOL is what the QOL instrument measures”. It is important to remember this as we attempt to compare the results obtained in studies that have used different QOL measures.

Creative activity and dementia

AD is a disease with which individuals can live for many years and much effort has been devoted to finding ways of better managing the illness (Beard, 2011), including art activities and therapies (Allen & Killick, 2000; Beard, 2011; Schmitt & Frölich, 2007). Activity theory (Bedny & Meister, 1997; Engestrom, Mettinen, & Punamaki, 1999) proposes that individuals who are engaged in the world around them experience increased levels of psychological well-being and improved QOL. In recent years, this view has become very influential in the field

of dementia care. Therapeutic activities provide physical, mental and emotional stimulation to engender a sense of meaning, accomplishment and belonging (Hellen, 1992; Phinney, Chaudhury, & O'Connor, 2007; Tappen, 1997; Zachary, 1984). Currently, several categories of activity-based therapeutic intervention are available, including various art activities and art therapies (Hoe & Thompson, 2010). Proponents of art programs suggest that therapies that incorporate creative activity can enhance the mental states of individuals living with dementia, reduce behavior problems, enhance QOL and even slow mental decline. Caregivers benefit indirectly as well, as seen by improvements in their attitudes and morale.

For individuals with dementia, artistic creativity can provide a communications link that is not otherwise available, lessening the sense of alienation and isolation that accompanies dementia (Hannemann, 2006). Artistic activities can give individuals living with dementia a unique way to reflect upon and share their inner experiences (Basting, 2006). Allan and Killick (2000) point out that, "Communication is a key concept in improving life for people with dementia, and many persons with the condition experience serious problems with language. By providing a number of alternative means of expression (mostly nonverbal) the arts may be offering the pathways they desperately need" (p. 18). Art therapies and activities enhance the lives of seniors living with dementia in many ways, including improvements in sustained attention, self-esteem, personal satisfaction and morale, calmness and sociability (Allan & Killick, 2000; Gottlieb-Tanaka, Small, & Yassi, 2003; Hannemann, 2006; Kinney & Rentz, 2005; McFadden & Lunsman, 2009; Morley & Duncan, 2007; Rusted, Sheppard, & Walker, 2006). Additionally, artistic activity gives the artist an opportunity to exercise his or her power to weigh choices, make decisions and to act autonomously upon those decisions.

Art activities and therapies that encourage genuine, meaningful, empathetic and supportive social interactions and conversations, that respect participants' personhood, and in which facilitators join in as participants, rather than standing apart and above, are also consistent with the person-centered approach to dementia care espoused by Kitwood (Kitwood & Bredin, 1992). Kitwood does not deny the physiological bases of dementia, but emphasizes the role played by psychosocial factors in dementia and dementia care: "The dementing process is seen in dialectical terms, that is, the interaction of neurological impairment and interpersonal processes associated with a person" (Adams, 1996, p. 949). In Kitwood's view, the way an individual with dementia is treated by society at large and in the more immediate psychosocial environment, including during art therapy and art activity sessions, can affect dementia and sometimes even precipitate *rementia* – the spontaneous, though temporary, remission of dementia symptoms (Dewing, 2008).

Memories in the Making[®]

Memories in the Making[®] (MIM) is an art activity program that was designed specifically for individuals in the early and middle stages of dementia by California's Orange County Alzheimer's Association (Jenny & Oropeza, 1993; Morley & Duncan, 2007). The focus of the program is to provide a creative, expressive outlet through the use of visual art (*Memories in the Making[®]*, 2012). The purpose of MIM is to give participants: (a) an opportunity for enhanced sensory stimulation, (b) the pleasure of being involved in the creative process, (c) an enhanced sense of well-being and (d) an increase in self-esteem and QOL as a result of the creation of something valuable. MIM participants are

provided with watercolor or acrylic paints, brushes, and paper, and are encouraged by a facilitator to either copy a picture that is provided as a model, or to paint freestyle, with only as much assistance as is necessary to enable the artist to exercise his or her creative process. In turn, the art that is created is a tangible expression of the artist's experience that can speak volumes to families, professional caregivers and the public. It is not unusual for individuals with dementia to paint images based on memories from long ago. Thus, the painting not only manifests the essence of the artist at the present moment, but also communicates a remembered experience that can no longer be articulated in words (Memories in the Making®, 2012).

Previous research

Using Lawton's conceptualization of psychological well-being, research by Rentz (2002) examined whether participation in an art activity such as MIM can contribute to the well-being of individuals with various types of dementia. It was found that involvement in MIM can have a positive effect on psychological functioning while participants are actively engaged in the artistic activity, specifically in terms of improved engagement, expressions of pleasure and self-esteem. A follow-up study by Kinney and Rentz (2005) supported this finding by comparing traditional adult care center activities and MIM activities. Results showed that individuals who participated in the MIM program displayed greater interest, sustained attention, pleasure, self-esteem and normalcy during MIM activity sessions than did residents who participated in traditional, non-artistic activities.

Research focus

Previous evaluations of the efficacy of the MIM program focused on improvements in psychological well-being while participants were actively engaged in artistic activity. The present study extends that earlier work by evaluating MIM effects on seven domains of psychological well-being both during MIM sessions and beyond those sessions by including an evaluation of potential carry-over effects outside the temporal boundaries of MIM sessions. Additionally, this study looked for possible cumulative benefits of MIM participation by assessing participants' well-being at the beginning, middle and end of a 12-week MIM program and by correlating changes over time with levels of MIM participation. Finally, the study examined some of the key psychometric qualities of the *Greater Cincinnati Chapter Well-Being Observation Tool*® used to measure well-being in this study and in two previously published assessments of MIM from Rentz (2002) and Kinney and Rentz (2005).

Method

Participants

Residents diagnosed with AD and other dementias living in four long-term care facilities in Wichita Falls, Texas were invited to participate in the MIM art program. Seventy-six chose to attend one or more MIM art program sessions. Participants included 13 males (17.1%) and 63 females (82.9%), with a mean age of 84.28 years ($SD = 6.39$). Nine participants (11.8%) were never married, 14 (18.4%) were currently married, 46 (60.5%) were widowed and marital status information was missing for 7 (9.2%) participants. Of those

widowed, the mean time elapsed since the partner was deceased was 7.8 years ($SD = 0.72$). Thirty-three participants (43.4%) completed high school, 23 (30.3%) had some college education, and educational attainment data were missing for 20 participants (26.3%). The average length of residential care center stay was 2.45 years ($SD = 2.52$). Sample sizes reported in subsequent analyses vary as a result of scattered missing data and limitations on handling missing data imposed by statistical analysis software (SPSS, version 19.0). Care center administrators confirmed that nearly all participants were in the late-middle to advanced stages of dementia, consistent with their placement in a residential care facility (Beard, 2011).

Procedure

Participants attended between one and 12 weekly art classes (as they chose) patterned after the Alzheimer's Association's *Memories in the Making*[®] program. The average number of classes attended was 7.8 ($SD = 3.8$). Art classes were facilitated by junior, senior and graduate level university student interns with backgrounds in both psychology and art. Prior to program launch, interns attended a formal day-long training session conducted by a representative of the North Central Texas Chapter of the Alzheimer's Association tasked with establishing these programs throughout the catchment region. Training included an introduction to AD and dementia, a discussion of the theoretical rationale of the MIM program in the population of people with dementia, specific instructions on the implementation of the MIM program with an emphasis on the role of the facilitators, a display and discussion of art work produced by MIM participants, and a question-and-answer session. The same trainer made three site visits during the 12-week MIM program to review program execution. Other than encouraging interns to allow participants to "do their own thing," no major adjustments were necessary.

In a typical 60-minute MIM session, participants were provided with watercolor painting materials and were encouraged to either copy a picture provided for that day's session or to paint freestyle. Interns assisted participants by helping them get paint on their brushes and, when necessary, even guiding the resident's hand to begin the painting process (Craig & Killick, 2011; Morley & Duncan, 2007). Once painting activity was initiated in this manner, participants usually continued on their own if provided with verbal encouragement (Stewart, 2004). Residents were asked to title their paintings and were prompted to talk about memories the paintings stirred while they painted (Craig & Killick, 2011; Gottlieb-Tanaka et al., 2003; Morley & Duncan, 2007). Interns worked in pairs, with each intern assisting between six and eight residents at each of the four facilities involved. Interns worked with the same residents throughout the 12-week program to maximize their familiarity with their assigned residents. Interns kept unstructured journal notes following each session.

To evaluate the effects of MIM art activities on participant well-being, participants were rated on seven domains of well-being using 18 rating scales that comprise the *Greater Cincinnati Chapter Well-Being Observation Tool*[®]. This instrument was originally designed specifically for use in assessing MIM effectiveness across several domains of well-being and has been used in part or whole in two previously published evaluations of that program's effectiveness (Kinney and Rentz, 2005; Rentz, 2002). The seven domains of well-being assessed by this instrument and the rating scales associated with each domain are listed in Table 1. According to the authors of the instrument, the *Greater Cincinnati Chapter Well-Being Observation Tool*[®] uses behavioral descriptions to operationally define six domains of

Table 1. Domains of well-being and associated rating scales used in the Greater Cincinnati Chapter Well-Being Observation Tool[®].

Domain	Rating scales
1. Interest	<ul style="list-style-type: none"> a. Resident shows interest in others b. Without prompting, resident offers support of peers in any activity by making eye contact, smiling, looking toward the person or acknowledging the person verbally, one or all of these c. Resident acknowledges support from peers by eye contact, smile, verbalization, extending hand, one or all of these
2. Sustained Attention	<ul style="list-style-type: none"> a. While engaged outside the activity, the resident has sustained attention for a period of 10 min b. The resident requires verbal prompting or cueing to sustain attention (Note: This scale requires reverse-scoring) c. Resident initiates and engages in conversation with peers or staff and then returns to previous activity
3. Pleasure	<ul style="list-style-type: none"> a. Resident has relaxed body language, smiles and laughs b. Resident verbalizes a sense of pleasure with phrases, or in verbal expression of unintelligible phrases, or with facial expressions
4. Negative Affect	<ul style="list-style-type: none"> a. Resident exhibits anger b. Resident exhibits agitation c. Resident verbalizes feeling anxious (feels nervous, feels funny, word repetition)
5. Sadness	<ul style="list-style-type: none"> a. Resident appears to be sad b. Resident verbalizes feeling sad
6. Self-Esteem	<ul style="list-style-type: none"> a. Resident nonverbally expresses pride in accomplishments by smiling, nodding happily, tearfulness, clapping b. Resident verbally expresses satisfaction after completing a successful activity c. Resident verbally expresses pride through expressions of reminiscence
7. Normalcy	<ul style="list-style-type: none"> a. Resident verbally expresses feeling good about being in a group activity with positive statements as "I don't feel so alone" b. Resident nonverbally expresses social normalcy evidenced by one or all of the following: interest in others, sustained attention to task, relaxed body language; if there is an affective reaction, that reaction does not escalate or repeat (such as a word, phrase or gesture)

Note: All scales are on five points, anchored as follows: 0 = *Never*; 1 = *Rarely*; 2 = *Some of the Time*; 3 = *Most of the Time*; 4 = *Always*.

well-being that they identified in Lawton's conceptualization of well-being and his work assessing affective states in people with AD. In addition, Kinney and Rentz (2005) added a set of additional indicators of a seventh domain of well-being, *Normalcy* that was suggested by work done by Gwyther (1997) with persons with early- and middle-stage dementias. All domains of well-being are measured by observer ratings of the frequency of occurrence of domain-relevant behaviors on five-point Likert-type scales: (0 = *Never*,

1 = *Rarely*, 2 = *Some of the Time*, 3 = *Most of the Time*, 4 = *Always*). Some domains are measured by averaging two rating scales; most are measured by averaging three rating scales (after reverse-scoring item 2b in the *Sustained Attention* domain). Higher scores reflect higher participant functioning on the domains of *Interest*, *Sustained Attention*, *Pleasure*, *Self-Esteem* and *Normalcy*; lower scores represent higher functioning on the domains of *Negative Affect* and *Sadness*. Prior to program launch, interns and staff members involved in the present study spent approximately 30 min training in the use of the instrument, including discussions of the intended meanings of the rating scales and clarifying scale anchors. In addition, the senior author of the study was always available to answer questions about the use of the instrument.

Assessments were completed both by interns, focusing on resident functioning during MIM art sessions (Phillips, Reid-Arndt, & Pak, 2010; Rusted et al., 2006), and by care facility staff members, focusing on the functioning of residents in the broader context of life in the care facility outside the confines of the MIM art sessions. Interns completed the *Greater Cincinnati Chapter Well-Being Observation Tool*® assessments once during each of three MIM sessions – the first, sixth and twelfth. Staff members completed the instrument to evaluate MIM participants once on or about on each of the same days as interns, but outside the confines of the MIM sessions and at times that were convenient to them. Consequently, intern ratings reflected participant functioning during MIM art activity sessions and staff ratings reflected functioning outside those sessions, across a wider range of times and contexts.

Results

Inter-rater reliability assessment

Kinney and Rentz (2005) developed the *Greater Cincinnati Chapter Well-Being Observation Tool*® for their evaluation of MIM effectiveness based on preliminary work using a similar instrument by Rentz (2002). However, neither study reported extensively on the instrument's psychometric qualities. Kinney and Rentz (2005) used the Kappa coefficient of concordance to evaluate inter-rater agreement between two trained observers across all 18 rating scales that comprise the *Greater Cincinnati Chapter Well-Being Observation Tool*®. They reported an average Kappa coefficient value of 0.65 across the five individuals whose well-being was evaluated, a value indicating moderate to substantial inter-rater agreement (Landis & Koch, 1977). Only full-scale reliability was evaluated; no inter-rater reliability assessments were performed for the well-being domain subscales of the instrument and no other psychometric evaluations were reported.

The instrument's inter-rater reliability was evaluated here in a separate pilot study. Twelve long-term care facility residents (three from each of the four participating facilities) who were identified as likely future MIM participants were rated on each of the seven domains of well-being by two staff members at their facilities. Both staff members were familiar with dementia and with the residents they were asked to rate. Pearson correlations between these two sets of ratings provided a measure of inter-rater agreement. Inter-rater reliability correlations were calculated separately for each of the seven domain subscales and are reported here with one-tailed significance levels: *Interest* ($r=0.681$, $df=10$, $p=0.007$), *Sustained Attention* ($r=0.588$, $df=10$, $p=0.022$), *Pleasure* ($r=0.904$, $df=10$, $p<0.001$), *Negative Affect* ($r=0.416$, $df=10$, $p=0.089$), *Sadness* ($r=0.507$, $df=10$, $p=0.046$), *Self-Esteem* ($r=0.803$, $df=10$, $p=0.001$) and *Normalcy* ($r=0.442$, $df=10$, $p=0.075$).

Although five of seven subscales showed statistically significant inter-rater reliability correlations, several of those correlations were lower than 0.70, the value generally taken to indicate acceptable levels of agreement between two raters (Saal, Downey, & Lahey, 1980). Full-scale inter-rater reliability was also evaluated by correlating the two staff observers' full-scale scores for the 12 residents. These full-scale well-being scores were created by summing ratings on the *Interest, Sustained Attention, Pleasure, Self-Esteem* and *Normalcy* subscales, then subtracting ratings for the *Negative Affect and Sadness* subscales. The full-scale inter-rater reliability correlation was $r=0.63$, $df=10$, $p=0.014$. No corresponding inter-rater reliability assessments were done to evaluate agreement among MIM interns as the interns had no opportunity for contact with participants prior to the launch of the MIM program. Also, there was no a priori reason to assume any difference between trained interns and staff in the ability to use the *Greater Cincinnati Chapter Well-Being Observation Tool*® in a consistent fashion. Although the inter-rater reliability characteristics of the instrument were marginal, the *Greater Cincinnati Chapter Well-Being Observation Tool*® was used in all subsequent evaluations of MIM program effectiveness in order to facilitate comparisons between the results of this study and those of the two previous evaluations of MIM that used the instrument (Kinney & Rentz, 2005; Rentz, 2002).

Factor structure of the Greater Cincinnati Chapter Well-Being Observation Tool®

The presence of substantial correlations among several of the domains of well-being measured by the *Greater Cincinnati Chapter Well-Being Observation Tool*® suggested that a more formal examination of the factor structure of the instrument be undertaken. Varimax-rotated principle components analyses were used to examine six matrices of correlations among the seven well-being domain subscales: for data from interns at the (a) beginning, (b) middle and (c) end of the program, and for data from staff at the (d) beginning, (e) middle and (f) end of the program. The six solutions were nearly identical and the results of all six are well illustrated by looking at any one of them. Presented here are the results of the analysis of correlations among the seven well-being subscales of the *Greater Cincinnati Chapter Well-Being Observation Tool*® using staff ratings of well-being of 57 MIM participants collected at the end of the MIM program.

Two factors with eigenvalues of 1.0 or greater were extracted that explained 77.39% of the variance in the seven well-being domain subscales. The pattern of rotated factor loadings shown in Table 2 led one of the reviewers of this article to suggest a factor interpretation as follows: Factor I represents subscales that measure "Well-Being" (*Interest, Sustained Attention, Pleasure, Self-Esteem* and *Normalcy*), and Factor II represents subscales that measure "Ill-Being" (*Negative Affect* and *Sadness*). The average correlation among the five subscales that loaded strongly on Factor I (Well-Being) was $r=0.65$, $df=55$, $p<0.001$, and the two subscales representing Factor II (Ill-Being) showed a correlation of $r=0.77$, $df=55$, $p<0.001$. The strong correlations among subscales representing the two factors and the consistent factor structures seen across all six correlation matrices analyzed are indicative of a stable factor solution (Diekhoff, 1992).

This two-factor solution indicates that, rather than measuring seven well-being domains, the *Greater Cincinnati Chapter Well-Being Observation Tool*® actually measures only two relatively independent underlying well-being domains – Well-Being and Ill-Being. Although the results of the factor analysis pointed to using two well-being domain subscales rather than seven, all subsequent analyses reported here were performed using scores on all seven

Table 2. Varimax-rotated factor structure of the Greater Cincinnati Chapter Well-Being Observation Tool [©].

Domain	Factor I	Factor II	Communalities
<i>Interest</i>	0.855	0.051	0.734
<i>Sustained Attention</i>	0.858	−0.040	0.738
<i>Pleasure</i>	0.853	−0.129	0.744
<i>Negative Affect</i>	0.056	0.926	0.860
<i>Sadness</i>	−0.019	0.945	0.893
<i>Self-Esteem</i>	0.744	0.199	0.593
<i>Normalcy</i>	0.925	0.023	0.856
Eigenvalues	2.88	1.80	

Table 3. Seven domains of well-being rated by interns and staff at beginning, middle and end of 12-week MIM program.

Domain	Intern ratings									Staff ratings								
	Beginning			Middle			End			Beginning			Middle			End		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
1. Interest	40	1.49	1.00	40	1.93	0.82	40	1.49	1.00	40	2.53	0.87	40	2.46	0.88	40	2.52	0.76
2. Sustained Attention	41	1.73	1.03	41	2.30	1.01	41	2.14	0.98	41	2.10	0.89	41	2.12	0.74	41	2.07	0.93
3. Pleasure	41	1.56	1.06	41	2.00	0.83	41	2.26	1.10	41	2.40	0.89	41	2.44	0.79	41	2.49	0.65
4. Negative Affect	39	0.30	0.60	39	0.49	0.58	39	0.38	0.57	39	1.46	0.78	39	1.48	0.75	39	1.35	0.74
5. Sadness	40	0.33	0.53	40	0.49	0.55	40	0.35	0.55	40	1.06	0.71	40	1.19	0.74	40	0.98	0.61
6. Self-Esteem	39	0.94	1.03	39	1.38	1.01	39	1.50	0.77	39	2.11	0.97	39	1.91	0.79	39	1.99	0.83
7. Normalcy	40	0.59	0.65	40	1.25	0.82	40	1.49	1.09	40	1.73	1.03	40	1.61	0.84	40	1.61	0.76

Notes: All domains were rated on a 0–4 scale. On *Interest*, *Sustained Attention*, *Pleasure*, *Self-Esteem* and *Normalcy*, higher scores indicate higher levels of well-being. On *Negative Affect* and *Sadness*, lower scores indicate higher levels of well-being. Sample sizes were limited by the statistical requirement of the repeated-measures ANOVA that only those cases are included for analysis that provide complete data, i.e. across both sources (Intern Ratings and Staff Ratings) and across all measurement episodes (Beginning, Middle and End). Sample sizes vary from one domain to the next as a result of scattered missing data.

well-being domains in the interest of facilitating comparison to previously published MIM evaluations.

Changes over time in intern and staff ratings of well-being

Descriptive statistics on the seven well-being domains as rated by interns and staff at the beginning, middle and end of the MIM program are provided in Table 3. These data were analyzed using a series of seven 2 × 3 analysis of variances (ANOVAs), one for each of the seven domains of well-being. Both factors in these ANOVAs were repeated measures

Table 4. ANOVA results examining effects of Rating Source, Time and the Source \times Time interaction effect on seven domains of well-being.

Domain	Rating Source main effect			Time main effect			Rating Source \times Time interaction effect		
	F	df	p	F	df	p	F	df	p
Interest	37.93	1, 39	<0.001	6.36	2, 78	0.003	6.58	2, 78	0.002
Sustained Attention	0.12	1, 40	0.736	5.24	2, 80	0.007	4.48	2, 80	0.014
Pleasure	24.16	1, 40	<0.001	3.17	2, 80	<0.001	4.17	2, 80	0.019
Negative Affect	78.71	1, 38	<0.001	1.48	2, 76	0.235	0.22	2, 76	0.447
Sadness	34.10	1, 39	<0.001	3.76	2, 78	0.027	0.28	2, 78	0.756
Self Esteem	28.48	1, 38	<0.001	2.07	2, 76	0.133	6.44	2, 76	0.003
Normalcy	35.55	1, 39	<0.001	9.80	2, 78	<0.001	13.41	2, 78	<0.001

(i.e. within subjects): Rating Source (Staff Ratings and Intern Ratings) and Time (Beginning, Middle and End measurement episodes). Table 4 summarizes the results of these ANOVAs. Although data were collected from 76 long-term care facility residents, sample sizes in Tables 3 and 4 are noticeably smaller than this due to the requirement that repeated-measures ANOVAs include only cases for whom *all* data are available. In these analyses, then, only those participants were included for whom ratings were available from both staff and interns at all three measurement episodes.

In any factorial ANOVA, the presence of a significant interaction effect precludes any simple interpretation of main effects. An interaction effect, by definition, means that the effect of one factor (that factor's main effect) is conditional on the level of the other factor. As a consequence, an interaction effect takes priority over main effects in interpreting the results of factorial ANOVAs (Diekhoff, 1996). In the present study, all factorial ANOVAs that identified significant improvements in well-being over the course of the MIM program (a main effect of Time) also found significant Source \times Time interaction effects. Consequently, those interaction effects are the focus here: Patterns of changes over time in ratings of participant well-being (on the domains of *Interest*, *Sustained Attention*, *Pleasure*, *Self-Esteem* and *Normalcy*) were different depending on whether those ratings came from interns or staff.

Staff ratings over time. Staff ratings of participant well-being were based on a broad sampling of behavior outside the MIM art activity sessions. These staff ratings are presented in Table 5 along with the results of repeated-measures one-way ANOVAs used to evaluate the statistical significance of changes over time in staff ratings (only) of well-being. Table 5 includes data from all participants for whom staff ratings at all three measurement episodes were available. Missing intern ratings did not cause participant data to be excluded from the analysis, so samples sizes are somewhat larger in this examination of staff ratings than was true for the previously cited factorial ANOVA in which both staff and intern ratings were examined. Table 5 shows that care facility staff reported no significant changes on any well-being domain over the course of the MIM program.

Intern ratings over time. Intern ratings of participant well-being were based on observations of participants during the relatively limited periods of time that the residents were occupied in

Table 5. Changes over time in staff ratings of participant well-being.

Domain	Beginning			Middle			End			Significance		
	N	M	SD	N	M	SD	N	M	SD	F	df	p
Interest	49	2.56	0.86	49	2.46	0.85	49	2.48	0.79	0.65	2, 96	0.527
Sustained Attention	49	2.13	0.40	49	2.12	0.72	49	2.03	0.94	0.76	2, 96	0.471
Pleasure	49	2.42	0.89	49	2.41	0.78	49	2.44	0.70	0.04	2, 96	0.961
Negative Affect	49	1.51	0.77	49	1.50	0.74	49	1.31	0.74	2.11	2, 96	0.127
Sadness	49	1.09	0.75	49	1.20	0.72	49	0.98	0.65	2.27	2, 96	0.109
Self-Esteem	48	2.10	0.96	48	1.90	0.75	48	2.08	1.30	1.08	2, 94	0.342
Normalcy	48	1.72	0.99	48	1.63	0.82	48	1.56	0.78	0.91	2, 94	0.405

Table 6. Changes over time in intern ratings of participant well-being.

Domain	Beginning			Middle			End			Significance		
	N	M	SD	N	M	SD	N	M	SD	F	df	p
Interest	46	1.49	0.97	46	1.91	0.84	46	2.12	0.94	14.51	2, 90	<0.001
Sustained Attention	47	1.72	1.03	47	2.25	1.00	47	2.13	0.96	6.73	2, 92	0.002
Pleasure	47	1.54	1.04	47	1.99	0.81	47	2.20	1.07	12.67	2, 92	<0.001
Negative Affect	46	0.33	0.58	46	0.55	0.63	46	0.41	0.58	2.25	2, 90	0.111
Sadness	46	0.37	0.56	46	0.55	0.66	46	0.41	0.64	2.44	2, 90	0.093
Self-Esteem	46	0.96	1.01	46	1.38	0.98	46	1.45	0.76	6.41	2, 90	0.002
Normalcy	46	0.58	0.67	46	1.23	0.86	46	1.47	1.14	24.19	2, 90	<0.001

MIM art activities and reflect participant functioning during these activity sessions. Intern ratings of well-being, along with the results of repeated-measures one-way ANOVAs examining changes over time in intern ratings, are presented in Table 6. Sample sizes are again slightly elevated here compared to sample sizes in the previously cited factorial ANOVA, since participants needed only to have intern ratings at all three measurement episodes to be included in the analysis; missing staff ratings did not cause a participant to be excluded from the analysis. Table 6 shows that interns reported significant improvements over time on five out of seven domains of well-being: *Interest*, *Sustained Attention*, *Pleasure*, *Self-Esteem* and *Normalcy*. This finding is in marked contrast to staff ratings that showed no changes over time.

Table 7 summarizes the results of post-hoc *t*-tests that were used to determine when, during the course of the 12-week program, the largest improvements in intern-reported functioning occurred. Sample sizes are again elevated in Table 7 relative to sample sizes reported in previous analyses, because a participant needed only to have data recorded from *two* measurement episodes to be included in these *t*-tests, not all *three* measurement episodes as in previous analyses. Table 7 provides both exact significance levels (*p*) and also significance levels adjusted using the Bonferroni procedure (Warner, 2007) to achieve a 0.05 Type I error rate across the set of 15 post-hoc *t*-tests (shown in Table 7 as *Adj. p*). Table 7 shows that participants displayed statistically significant or near-significant improvements from the beginning of the program to the middle of the program and from

Table 7. Post-hoc comparisons of intern rating changes over time.

Domain	Time	N	M	Significance				
				SD	t	df	p	Adj. p
Interest	Beginning	54	1.49	1.01	3.17	53	0.003	0.045
	Middle	54	1.85	0.89				
	Beginning	48	1.49	1.00	4.17	47	<0.001	<0.015
	End	48	2.12	0.94				
	Middle	50	1.92	0.87	2.03	49	0.048	0.720
	End	50	2.13	1.01				
Sustained Attention	Beginning	55	1.70	1.03	2.82	54	0.007	0.105
	Middle	55	2.15	1.04				
	Beginning	49	1.70	1.04	2.98	48	0.005	0.075
	End	49	2.14	0.96				
	Middle	50	2.26	1.01	0.54	49	0.594	1.00
	End	50	2.19	0.99				
Pleasure	Beginning	55	2.19	0.99	3.51	54	0.001	0.015
	Middle	55	1.50	1.08				
	Beginning	49	1.95	0.81	4.45	48	<0.001	<0.015
	End	49	1.54	1.04				
	Middle	50	2.18	1.06	1.75	49	0.086	1.00
	End	50	2.01	−0.85				
Self- Esteem	Beginning	54	0.94	0.99	2.89	53	0.006	0.090
	Middle	54	1.35	0.93				
	Beginning	48	0.97	1.00	3.10	47	0.003	0.045
	End	48	1.45	0.75				
	Middle	49	1.38	1.01	0.78	48	0.442	1.00
	End	49	1.47	0.79				
Normalcy	Beginning	54	0.59	0.72	5.27	53	<0.001	<0.015
	Middle	54	1.23	0.87				
	Beginning	48	0.56	0.66	6.06	47	<0.001	<0.015
	End	48	1.44	1.12				
	Middle	49	1.20	0.84	1.97	48	0.054	0.810
	End	49	1.47	1.14				

Note: 'Adj. p' values are significance levels adjusted using the Bonferroni procedure so as to achieve a 0.05 Type I error rate across all 15 t-tests.

program beginning to program end on *Interest*, *Sustained Attention*, *Pleasure*, *Self-Esteem* and *Normalcy*. Improvements from program middle to program end were not statistically significant. As noted previously, there were no significant changes over time on *Negative Affect* or *Sadness*. Therefore, intern-reported improvements in participant well-being occurred quickly after program initiation, from program beginning to program middle. These improvements then held more or less constant until the end of the program.

Treatment–benefit correlations. In the absence of a true experimental research design, the case for a causal connection between a treatment and the effect of that treatment can be supported (though not proven) in a study like this one by showing that the amount of treatment received by program participants is correlated with the amount of change

subsequently displayed by those participants. In this study, the number of MIM sessions attended by participants provides a measure of the amount of treatment received, and intern-reported changes in participants' well-being from program beginning to program end provide a measure of benefits. Treatment–benefit correlations for the seven domains of well-being were all low and statistically nonsignificant, ranging from -0.17 to 0.14 . There was essentially no relationship between the amount of treatment received and long-term benefits derived over the course of the 12-week MIM program.

Discussion

This study adds to a slowly growing body of needed research on visual art programs among individuals living with dementia (Morley & Duncan, 2007), especially Alzheimer's Association's *Memories in the Making*[®] program. Seventy-six residents of four Wichita Falls, Texas long-term care facilities with middle- to advanced-stage AD and other dementias participated in a 12-week MIM watercolor program. Participants in MIM were evaluated using the *Greater Cincinnati Chapter Well-Being Observation Tool*[®] to assess the effects of art activity on seven domains of well-being.

A psychometric evaluation of this instrument found acceptable levels of inter-rater reliability ($r \geq 0.70$) on three of the seven domain subscales (*Interest*, *Pleasure* and *Self Esteem*). Full-scale inter-rater reliability was marginal ($r = 0.63$). Inter-rater reliability correlations below 0.70 can indicate any of a number of problems, for example: (a) observers do not understand exactly what they are being asked to rate, (b) observers are being asked to rate inferred traits rather than directly observable behaviors, (c) the rating scale points are insufficiently anchored or poorly defined, so that different raters are using the scale differently, (d) too few rating scales are feeding each subscale being measured, thus constituting an inadequately small and unreliable sample of the population of potential scales, (e) observers are not fully engaged in the rating task and are careless as a result or (f) observers are individually reliable, but have honest disagreements about the degree to which the residents being evaluated display the attributes being rated (Nunnally & Bernstein, 1994). These findings suggest that additional work on the instrument would be useful to make the rating scales clearer and more objective and to anchor rating scale points more carefully. A larger number of scales contributing to each well-being domain subscale score would likely improve reliability, as would more thorough training of observers in the use of the instrument.

A factor analysis of the instrument found that two factors explained nearly 80% of the variance in the seven well-being domain subscales. Five domains loaded on one factor (*Interest*, *Sustained Attention*, *Pleasure*, *Self-Esteem* and *Normalcy*), interpreted as measuring 'Well-Being'. Two domains (*Negative Affect* and *Sadness*) loaded on the second, orthogonal factor, suggesting an interpretation of 'Ill-Being'. Kinney and Rentz (2005) cautioned that the subscale structure of the *Greater Cincinnati Chapter Well-Being Observation Tool*[®] is somewhat questionable and specifically called for additional studies of the *Normalcy* subscale, stating that '...the domain of normalcy is not a construct that has been supported in the literature. As such, operationalization of this domain must be reviewed carefully and additional empirical evidence presented to assure that normalcy is independent of the other domains of well-being' (p. 226). Our factor analysis indicates that only two domains of well-being – 'Well-Being' and 'Ill-Being' – are actually assessed by the instrument, not seven, as intended by the instrument's authors, and that *Normalcy* is

substantially correlated with other subscales that load strongly on the 'Well-Being' factor. Based on this finding, those who use the *Greater Cincinnati Chapter Well-Being Observation Tool*® in future work may want to consider using two subscale scores rather than seven.

Intern ratings of MIM participant well-being based on behavior during MIM sessions showed statistically significant improvements on five domains of well-being (all measuring the "Well-Being" factor described above) from the beginning to middle of the MIM program. In contrast, care facility staff ratings of well-being, based on observations outside the MIM sessions, showed no significant changes across the 12 weeks of the MIM program. If the data can be taken at face value, the intern ratings suggest that participation in the MIM program enhances several aspects of well-being over a period of several weeks in patients with dementia. Staff ratings, however, suggest that the positive effects noted by interns during MIM sessions do not extend far beyond the temporal boundaries of the art sessions, consistent with conclusions drawn by Allan and Killick (2000), Beard (2011) and Rusted et al. (2006).

There are other explanations of the data, however, because it is possible that staff and intern ratings cannot be taken entirely at face value. Interns may have reported what they *wanted* to see – improvements in residents' functioning that would justify their 12 weeks' time and effort in working with the participants. This explanation is made less likely, however, by the fact that intern ratings failed to increase appreciably from the middle to final assessment episodes. If improvements from beginning to middle assessment periods were motivated merely by the interns' need to see that their efforts were fruitful, would not they report similar, continued improvements in participants' functioning from the middle to end of the program?

It is also possible that intern-reported improvements in participant well-being were not a function of real changes in participant functioning, but were instead a manifestation of intern habituation to the discomforting and sometimes bizarre behaviors that accompany AD. This explanation proposes that the discomfort that accompanied the interns' first exposure to AD caused their first ratings of resident well-being to be spuriously low. The higher ratings given by interns at the mid-point of the program simply reflected the interns' habituation to the symptoms of the disease by that time. This habituation explanation is consistent with the lack of changes seen over time in the ratings from staff members who were already habituated to the behavioral manifestations of dementia when the MIM program began.

Whose assessments of treatment effectiveness were correct? Those of the staff, who saw no changes in resident well-being, but whose ratings did not focus on behaviors during MIM sessions? Or those of the interns, whose observations during MIM sessions led them to report gains in participant well-being from the beginning to middle and end of the MIM program, but whose ratings may have reflected wishful thinking and/or habituation to the symptoms of AD?

Establishing an unambiguous cause-and-effect connection between a treatment (like MIM) and an outcome (like improved well-being) is challenging even when complex experimental designs with multiple control groups are feasible. Nothing approaching that level of experimental sophistication was possible in this study. No type of no-treatment or alternative-treatment control group was available in this situation. In the absence of true experimental design options, showing that changes in outcome variables over time are correlated with amounts of treatment exposure can support the case that the treatment was causally related to the outcome, but no such correlation was seen here between the

amount of MIM participation (i.e. number of sessions) and improvement on any domain of well-being.

The effort to evaluate MIM effectiveness was further complicated in this study by the fact that the program was designed for higher functioning individuals than those who participated here. For example, individuals living with mild dementia are capable of using depth, proportion, correct colors and detail in their work. Moderate dementia limits ability with color choice and creating representational figures or forms. Scribbling and random use of color is expected with people in the later stages of dementia and motivation to participate may be non-existent (Stewart, 2004). "Neurological deterioration in the frontal lobes in AD inhibits motivation and self-expression and low-level skills (ones not practiced over life) are often the first to deteriorate" (Rylatt, 2012, p. 44). All of this notwithstanding, Craig and Killick (2011) remind us that imagination is not about logic or being factual; it is about expressing oneself in the moment.

Quantifying the benefits of art programs and therapies for persons living with dementia is difficult and this may be one reason relatively few studies exist in this area (Morley & Duncan, 2007). Self-reports, probably the most valid source of information about subjective well-being, are largely unavailable from those with AD and other dementias, especially in the middle and later stages. Consequently, well-being must be inferred by an external observer based on subjective interpretations of subtle behaviors. The questionable psychometric properties of the *Greater Cincinnati Chapter Well-Being Observation Tool*,[©] used here to guide those observations and inferences, further exacerbated the difficulty of measuring well-being, and the use of different observers to evaluate well-being within MIM sessions (interns) and outside those sessions (staff) created a confounding that made the unambiguous interpretation of results impossible. Future work in this area would benefit from the use of: (a) highly trained observers who are familiar and comfortable with dementia and thoroughly trained in the assessment process, (b) evaluating one study participant at a time, (c) using an extensive collection of psychometrically sound instruments, (d) to more thoroughly evaluate behavior samples, ideally from video recordings and (e) taken at frequent and regular intervals both during and following MIM sessions.

In the face of ambiguous support for the effectiveness of the MIM program coming from our quantitative analyses, we turned to the qualitative evidence gathered during our weekly interactions with the residents. Journal entries written by the interns at the conclusion of each session were insufficient for any deep qualitative analysis, but were certainly more sensitive to subtle and fleeting program benefits than the psychometrically challenged rating scales that fed our quantitative analyses. Indeed, in these journal entries we found abundant subjective data to confirm the benefits of MIM activities that were seen in the interns' rating scale data. Kitwood (1997b), in arguing the merits of subjective data in studies of dementia put it this way, "I would argue. . .that we are far better equipped for this kind of inquiry if we make a bold and wholehearted venture into intersubjectivity. Our findings must, of course, be compatible with data collected by strictly empiricist methods, but to be constrained by such methods would be a pointless abnegation" (p. 13).

Hazel, one of our participants, missed only one session, but rarely spoke and sometimes fell asleep as she worked. At 97 years of age, she was in the advanced stages of AD, and her paintings were often just blobs of color. However, on the last day of the project, Hazel amazed the interns with her painting. She had filled the pages with words such as "Thank You" and "Big Boy," painted in a variety of colors. When asked to title the art, she responded, "They are just words." When asked what was different about this art project,

Hazel replied “I feel right in my mind today.” Another participant, Joe, was a retired Air Force pilot who shared a room with his wife at one care center. He repeatedly asked how to spell words and then would return to his painting with the intent of copying the words down. When asked why he was painting words, he replied “I don’t want to lose them again.” He always asked how to spell his wife’s name.

It is a challenge to assess quantitatively the well-being benefits of programs such as MIM, particularly carry-over effects. However, the value of the program was obvious to anyone who spent more than a few minutes observing participants during MIM sessions. There is clear anecdotal support for the effectiveness of the program in elevating participants’ transitory feelings of well-being, so much so that administrators in all four care facilities that participated in this project were sufficiently impressed with what they observed that they incorporated MIM classes into their weekly activity schedules. MIM, and programs like it, provide those living with AD a sense of involvement, gratification and contentment that they would not have otherwise, if only in-the-moment.

References

- Adams, T. (1996). Kitwood’s approach to dementia and dementia care: A critical but appreciative review. *Journal of Advanced Nursing*, 23, 948–953.
- Allen, K., & Killick, J. (2000). Undiminished possibility: The arts in dementia care. *Journal of Dementia Care*, 8, 16–18.
- Alzheimer’s Disease International (n.d.). *Dementia statistics*. Retrieved from <http://www.alz.co.uk/research/statistics>
- Banerjee, S., Smith, S. C., Lamping, D. L., Harwood, R. H., Foley, B., Smith, P., . . . Knapp, M. (2006). Quality of life in dementia: More than just cognition. An analysis of associations with quality of life in dementia. *Journal of Neurology, Neurosurgery, and Psychiatry*, 77, 147–148.
- Basics of Alzheimer’s disease.(n.d.). *Basics of Alzheimer’s disease: What it is and what you can do*. Retrieved from http://www.alz.org/national/documents/brochure_basicsofalz_low.pdf
- Basting, A. D. (2003). Looking back from loss: Vies of the self in Alzheimer’s disease. *Journal of Aging Studies*, 17, 87–99.
- Basting, A. D. (2006). Arts in dementia care: ‘This is not the end. . . it’s the end of this chapter.’ *Generations*, 30, 16–20.
- Beard, R. L. (2011). Art therapies and dementia care: A systematic review. *Dementia*, 11, 633–656.
- Bedny, G., & Meister, D. (1997). *The Russian theory of activity: Current applications to design and learning*. East Sussex, UK: Psychology Press.
- Craig, C., & Killick, J. (2011). Why creativity and dementia go together. *Journal of Dementia Care*, 19, 20–22.
- Demakis, G. J. (2007). Disability in Alzheimer’s disease: Causes, consequences, and economic considerations. *Journal of Health and Human Services Administration*, 30, 292–305.
- Dewing, J. (2008). Personhood and dementia: Revisiting Tom Kitwood’s ideas. *International Journal of Older People Nursing*, 3, 3–13.
- Diekhoff, G. M. (1992). *Statistics for the social and behavioral sciences: Univariate, bivariate, and multivariate*. Dubuque, IA: Wm. C. Brown.
- Diekhoff, G. M. (1996). *Basic statistics for the social and behavioral sciences*. Upper Saddle River, NJ: Prentice-Hall.
- Edelman, P., Fulton, B., Kuhn, D., & Chang, C. (2005). A comparison of three methods of measuring dementia-specific quality of life: Perspectives of residents, staff, and observers. *The Gerontologist*, 45, 27–36.
- Engstrom, Y., Mettinen, R., & Punamaki, R. (1999). *Perspectives on activity theory*. Cambridge, UK: Cambridge University Press.

- Ettema, T. P., Droes, R., de Lange, J., Ooms, M. E., Mellenbergh, G. J., & Ribbe, M. W. (2005). The concept of quality of life in dementia in the different stages of the disease. *International Psychogeriatrics*, 17, 353–370.
- Gottlieb-Tanaka, D., Small, J., & Yassi, A. (2003). A programme of creative expression activities for seniors with dementia. *Dementia*, 2, 127–133.
- Gwyther, L. (1997). The perspective of the person with Alzheimer disease: Which outcomes matter in early to middle stages of dementia? *Alzheimer Disease and Associated Disorders*, 11, 18–24.
- Hannemann, B. T. (2006). Creativity with dementia patients. *Gerontology*, 52, 59–65.
- Hellen, C. R. (1992). *Alzheimer's disease: Activity-focused care*. Boston, MA: Butterworth-Heinemann.
- Hoe, J., Katona, C., Roch, B., & Livingston, G. (2005). Use of the QOL-AD for measuring quality of life in people with severe dementia—the LASER-AD study. *Age and Ageing*, 34, 130–135.
- Hoe, J., & Thompson, R. (2010). Promoting positive approaches to dementia care in nursing. *Nursing Standard*, 25, 48–55.
- Hunt, E. (1995). The role of intelligence in modern society. *American Scientist*, 83, 356–369.
- Inouye, K., Pedrazzani, E. S., Pavarini, S. C. I., & Toyoda, C. Y. (2010). Quality of life of elderly with Alzheimer's disease: A comparative study between the patient's and the caregiver's report. *Revista Latino-Americana de Enfermagem*, 18, 26–32.
- Ja, O. (2012). Activities of daily living and quality of life in Alzheimer disease. *Journal of Medicine and Life*, 5, 162–167.
- Jenny, S., & Oropeza, M. (1993). *Memories in the making: A program of creative art expression for Alzheimer patients*. Irvine, CA: Alzheimer's Association of Orange County.
- Jetten, J., Haslam, C., Pugliese, C., Tonks, J., & Haslam, S. A. (2010). Declining autobiographical memory and the loss of identity: Effects on well-being. *Journal of Clinical and Experimental Neuropsychology*, 32, 408–416.
- Kinney, J. M., & Rentz, C. A. (2005). Observed well-being among individuals with dementia: Memories in the Making®, an art program, versus other structured activity. *American Journal of Alzheimer's Disease and Other Dementias*, 20, 220–227.
- Kitwood, T. (1997a). *Dementia reconsidered: The person comes first*. Berkshire, UK: Open University Press.
- Kitwood, T. (1997b). The experience of dementia. *Ageing and Mental Health*, 1, 13–22.
- Kitwood, T., & Bredin, K. (1992). Towards a theory of dementia care, personhood, and well-being. *Ageing and Society*, 12, 269–287.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159–174.
- Lawton, M. P. (1983). Environment and other determinants of well-being in older people. *Gerontologist*, 23, 349–357.
- Lawton, M. P. (1991). A multidimensional view of quality of life in frail elders. In J. E. Birren, et al. (Eds), *The concept and measurement of quality of life in the frail elderly* (pp. 3–27). San Diego, CA: Academic Press.
- Lawton, M. P. (1994). Quality of life in Alzheimer disease. *Alzheimer Disease and Associated Disorders*, 8, 138–150.
- Lawton, M. P. (1997). Assessing quality of life in Alzheimer disease research. *Alzheimer Disease and Associated Disorders*, 11, 91–99.
- Maslow, K., & Heck, E. (2005). Dementia care and quality of life in assisted living and nursing homes: Perspectives of the Alzheimer's Association. *The Gerontologist*, 45, 8–10.
- McFadden, S. H., & Lunsman, M. (2009). Arts involvement and spirituality as sources of well-being in older people. *Journal of Religion, Spirituality & Aging*, 21, 330–343.
- McKee, K. J., Houston, D. M., & Barnes, S. (2002). Methods for assessing quality of life and well-being in frail older people. *Psychology and Health*, 17, 737–751.
- Memories in the Making®. (2012). *Memories in the Making®*. Retrieved from http://www.alz.org/indiana/in_my_community_16012.asp.

- Morley, T., & Duncan, A. C. (2007). Recovered memories: An arts program designed for patients with dementia. In D. B. Arrington (Ed.). *Art, angst, and trauma: Right brain interventions with developmental issues*. Springfield, IL: Charles C Thomas.
- Nowotny, P., Kwon, J. M., & Goate, A. M. (2001). Alzheimer's disease. *Encyclopedia of life sciences*. Retrieved from <http://www.els.net/WileyCDA/ElsArticle/refId-a0000228.html>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw Hill.
- Peterson, C. B., Prasad, N. R., & Prasad, R. (2010). Framework for dementia quality of life assessment with assistive technology intervention. *Proceedings of the 7th IASTED International Conference on Biomedical Engineering*, February 2010, Innsbruck, Austria.
- Phillips, L. J., Reid-Arndt, S. A., & Pak, Y. (2010). Effects of a creative expression intervention on emotions, communication, and quality of life in persons with dementia. *Nursing Research*, 59, 417–425.
- Phinney, A., Chaudhury, H., & O'Connor, D. L. (2007). Doing as much as I can do: The meaning of activity for people with dementia. *Aging & Mental Health*, 11, 384–393.
- Ready, R. E., & Ott, B. R. (2003). Quality of life measures for dementia. *Health and Quality of Life Outcomes*, 1, 1–11.
- Rentz, C. A. (2002). Memories in the Making[®]: Outcome-based evaluation of an art program for individuals with dementing illnesses. *American Journal of Alzheimer's Disease and Other Dementias*, 17, 175–181.
- Rusted, J., Sheppard, L., & Waller, D. (2006). A multi-centre randomized control group trial on the use of art therapy for older people with dementia. *Group Analysis*, 39, 517–536.
- Rylatt, P. (2012). The benefits of creative therapy for people with dementia. *Nursing Standard*, 26, 42–47.
- Saal, F. E., Downey, R. G., & Lahey, M. A. (1980). Rating the ratings: Assessing the psychometric quality of rating data. *Psychological Bulletin*, 88, 413–428.
- Schmitt, B., & Frölich, L. (2007). Kreative therapiemansätze in der Behandlung von Demenzen-eine systematische Übersicht (creative therapy options for patients with dementia-a systematic review). *Fortschritte der Neurologie-Psychiatrie*, 75, 699–707.
- Simsek, O. F. (2011). An intentional model of emotional well-being: The development and initial validation of a measure of subjective well-being. *Journal of Happiness Studies*, 12, 421–442.
- Stewart, E. G. (2004). Art therapy and neuroscience blend: Working with patients who have dementia. *Art Therapy: Journal of the American Art Therapy Association*, 21, 148–155.
- Tappen, R. (1997). *Interventions for Alzheimer's disease: A caregiver's complete reference*. Baltimore, MD: Health Professions.
- Walker, M. D., Salek, S. S., & Bayer, A. J. (1998). A review of quality of life in Alzheimer's disease. *Pharmacoeconomics*, 14, 499–530.
- Warner, R. (2007). *Applied Statistics: From bivariate through multivariate techniques*. Thousand Oaks, CA: Sage.
- Zachary, R. (1984). Day care within an institution. *Physical and Occupational Therapy in Geriatrics*, 3, 61–67.

Susan M. Gross, MA, is an LPC intern and Geriatric Therapist in the GeriPsych Unit of Bowie Memorial Hospital in Bowie, TX, USA. She is interested in providing mental health assistance to the elderly and to caregivers whose loved ones have Alzheimer's.

Deana Danilova, MA, is a doctoral student in Counseling Psychology at Texas Woman's University in Denton, TX, USA. Her research interests include body image, eating disorders, and men and masculinity.

Michael A. Vandehey, PhD, is a licensed psychologist and Professor of Psychology at Midwestern State University in Wichita Falls, TX, USA. His research interests include intrapersonal dynamics across various domains, including family, career and online.

George M. Diekhoff, PhD, is Professor and Chair of the Department of Psychology at Midwestern State University in Wichita Falls, TX, USA. He is interested in applied psychological research and program evaluation.