The Effectiveness
of Geropsychological Treatment
in Improving Pain, Depression, Behavioral
Disturbances, Functional Disability,
and Health Care Utilization
in Long-Term Care

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ABSTRACT. Geropsychological interventions have become a necessary component of quality long-term care (LTC) designed to address residents' co-morbidities involving emotional, functional, and behavioral difficulties. However, there are few empirical studies of the efficacy of comprehensive geropsychological treatment in LTC. This two-part study was conducted to investigate the impact of Multimodal Cognitive-Behavioral Therapy (MCBT) for the treatment of pain, depression, behavioral dysfunction, functional disability, and health care utilization in a sample of cognitively impaired LTC residents who were suffering from persistent pain. In Study 1, forty-four consecutive new patients received

a comprehensive psychological evaluation, eight sessions of cognitive-behavioral therapy, and follow-up psychological evaluation over a five-week period. Analyses indicated that patients exhibited significant reductions in pain, activity interference due to pain, emotional distress due to pain, depression, and significant increases in most activities of daily living. They also exhibited significant reductions in the intensity, frequency, and duration of their behavioral disturbances, but not the number of behavioral disturbances. In Study 2, as a follow-up to Study 1, a retrospective chart review was conducted to compare the treatment group with a matched-control group on post-treatment health care utilization. Comparisons between the two groups on Minimum Data Set (MDS) ratings indicated that the treatment group required significantly fewer physician visits and change orders than the control group. Implications of these collective findings are that geropsychological treatment is likely to improve certain aspects of residents' quality of life in LTC. Further research and development of assessment instruments that are designed specifically for the LTC population would enhance the outcome measurement procedures currently in place in LTC settings. doi:10.1300/ J018v30n03_02 *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworth press.com> Website: <http://www.HaworthPress.com> © 2007 by The Haworth Press, Inc. All rights reserved.]*

Successful psychotherapy in long-term care (LTC) facilities must include interdisciplinary assessment and management of co-morbidities–multiple illnesses and associated psychiatric disorders including dysfunctional behaviors that interfere with activities of daily living (ADL) and medical care (Cipher & Clifford, 2004; Ferrell, Ferrell, & Rivera, 1995; Hay, Rodriquez, & Franson, 1998). By definition, people live in LTC facilities because they are unable to live independently due to medical and psychological conditions. All LTC residents suffer from at least one chronic medical condition that, in some way, limits their functional capacity or requires daily medical/nursing care. Studies indicate that 50-90% of LTC residents suffer from disabling dementia (Burgio, 1996; Davis, Buckwalter, & Burgio, 1997). About 50% suffer from chronic or intermittent pain that limits activities of daily living (Cipher & Clifford, 2004; Bressler, Keyes, Rochon, & Badley, 1999; Harkins, Price, & Bush, 1994). Ten to 50% suffer from psychiatric illness, and 64-83% will exhibit behavioral disturbances associated with the above conditions (Allen-Burge,

Stevens, & Burgio, 1999; Cipher & Clifford, 2004; Swearer, Drachman, O'Donnel & Mitchell, 1988; Zimmer, Watson, & Treat, 1984).

There are clinical papers and case reports detailing the psychotherapeutic treatment of emotional distress, chronic pain, functional capacity, and behavioral disturbances in LTC (Nordhus, VandenBos, Berg, & Fromholt, 1998). There has been some research conducted on the effectiveness of psychotherapy (including cognitive-behavioral therapies) on the alleviation of depression among the independent, ambulatory elderly, the results of which were generally supportive of psychological treatments (Thompson & Gallagher, 1984; Thompson, Gallagher, & Breckenridge, 1987; Gatz, Fiske, Fox, Kaskle, Kasl-Godley, McCallum, & Wetherell, 1998; Thompson, Coon, Gallagher-Thompson, Sommer, & Koin, 2001). The cognitive-behavioral treatment of depression (Teri & Gallagher-Thompson, 1991) and anxiety (Koder, 1998) with cognitively impaired elderly has been described and supported with selected case studies. Moreover, the psychotherapeutic treatment of behavioral disturbances triggered by dementia, such as physical and verbal aggression, has been reviewed by Mintzer, Hoernig, and Mirski (1998) and Allen-Burge et al. (1999).

The transition of empirical psychotherapeutic treatment outcome research from the independent ambulatory population to the LTC population has not yet been made. Although there have been a handful of studies that have examined the efficacy of psychotherapy in alleviating depression in the elderly (Gatz et al., 1998; Thompson et al., 1987), the efficacy of geropsychological treatment in improving the broader spectrum of general functioning (e.g., pain, emotional distress, functional capacity) in LTC has not been empirically studied.

The purpose of the current studies was to examine the efficacy of geropsychological treatment with LTC residents who were cognitively impaired and experiencing persistent pain. These studies focused on the improvement of activities of daily living, pain and pain tolerance, emotional distress, behavioral disturbances, and health care utilization. The first study examined changes from pre-treatment to post-treatment in a group of LTC residents with mild or moderate dementia and persistent pain who received geropsychological cognitive-behavioral treatment, using instruments designed specifically for residents exhibiting emotional distress, pain behaviors, and/or behavioral disturbances in LTC. The second study was a retrospective chart review that incorporated a matched-control methodology and compared the treatment group with a matched-control group on post-treatment health care utilization using items from the MDS 2.0.

METHOD: STUDY 1

Power analyses using PASS 2000 (Hintze, 2001) indicated that n = 18 subjects were required for our analyses to maintain adequate power (.80) using α = .05 and d = .50 for the repeated measures design of Study 1. The study sample consisted of 44 residents living in a total of three long-term care facilities in the Dallas, Texas area. This sample consisted of consecutive patient referrals from attending physicians to a clinical geropsychologist working within an interdisciplinary team at one of three Skilled Nursing Facilities (SNF). Inclusion criteria included chronic or daily pain that interfered with ADL or rehabilitation/restorative care, a medical order, a signed informed consent, a disabling illness requiring prolonged (> 60 days) SNF care or LTC, at least one psychiatric disorder that involved depression, anxiety, and/or behavioral disturbance that was severe enough to disrupt and/or interfere with ADL/rehabilitation/restorative care, and a mild to moderate dementia diagnosis. All residents in the study had at least moderately severe short-term memory impairment (Neurobehavioral Cognitive Status Examination (NCSE) Memory Scale score of five or lower). The mild cognitive impairment group had NCSE scores of six or higher on the Orientation Scale and three or higher on Abstract Reasoning Scale (see NCSE description in the following sections). Exclusion criteria included a lack of cognitive impairment, severe cognitive impairment (e.g., severe global aphasia; NCSE score of two or lower on the Language Comprehension and Reasoning–Judgment Scales), dangerous aggressive behaviors, acute medical condition (e.g., urinary tract infection), and the presence of any new psychotropic medications (within one month of referral).

Seventy-four percent of the residents in the sample were female, and the average age was 82 years (SD = 9.3). The sample was predominantly Caucasian (87%), followed by Hispanic American (11%) and African American (2%). One hundred percent of the sample reported persistent pain (pain experienced most of the day) and/or recurrent pain (pain experienced most days of the week). Residents were suffering from more than two chronic medical conditions on average ($\overline{X}$ = 2.5, SD = 1.8), the most common condition being hypertension (51%), followed by coronary artery disease (34%), cerebral vascular damage (24%), diabetes (22%), congestive heart failure (22%), atrial fibrillation (21%), chronic obstructive pulmonary disease (17%), kidney disease (15%), and cancer (15%). The majority of the residents presented with moderate cognitive impairment levels (59%) and the rest were mildly impaired (41%) as indicated by the NCSE.

Measures

The Geriatric Multidimensional Pain and Illness Inventory (GMPI; Clifford, Cipher, & Roper, 2005). The GMPI is a 12-item instrument designed to assess pain, pain tolerance, and associated functional, social, and emotional consequences in LTC residents. The first item is, "How bad is your pain or illness right now?" Other items include, "How much have you suffered because of your pain or illness this last week?," and "How irritable have you been this last week because of your pain or illness?" All items are rated on a 10-point scale, with each point associated with specific behavioral criteria. The scaling of the items is behaviorally oriented because the GMPI is rated by a clinician who can only rate based on what the rater and the staff members can *observe*. The GMPI has been evidenced to have high convergent validity (r = .88) and high internal consistency (α = .88), and test-retest reliabilities for the three subscales have ranged from .62 to .96. (Clifford et al., 2005). Higher values are indicative of higher levels of pain, pain tolerance, and/or higher levels of functional/social/emotional difficulties.

Geriatric Depression Scale (GDS; Yesavage, Brink, & Rose, 1983). The shortened (15-item) version of the GDS that assesses depression was standardized specifically for the elderly population. An example item is "Do you think it is wonderful to be alive?" Questions were read to the respondents who answered each item with either "yes" or "no." The 15-item version has been shown to have good inter-rater reliability, with values ranging from .70 to .87 (Van Marwijk, Wallace, De Bock, Hermans, Kaptein, & Mulder, 1995). Higher GDS values are indicative of greater levels of depression. It should be noted that the GDS was normed with a cognitively intact population, therefore, this study sample's responses should not be directly compared with published GDS norms.

Psychosocial Resistance to Activities of Daily Living Index (PRADLI; Clifford, Cipher, & Roper, 2003). The PRADLI is an eight-item clinically rated instrument that assesses the resident's level of functional independence and cooperation with eight psychosocially related activities of daily living (ADLs). The eight domains are: Out of bed time, Eating Habits, Dressing, Toileting, Bathing, Medical Compliance, Restorative Care, and Social/Recreational Activities. These items are rated on a seven-pronged scale, with one representing the lowest levels of independence and cooperation, and seven representing the highest levels of independence and cooperation. The PRADLI has been evidenced to

have high internal consistency (α = .88) and high convergent validity (from .95 to .98; Clifford et al., 2003).

Nonbehavioral Cognitive Status Examination (NCSE; Kiernan, Mueller, Langston, & Van Dyke, 1987). The NCSE is a clinician-administered examination of impairment in orientation, verbal repetition, verbal comprehension, naming, attention span, short-term memory, constructional ability, social judgment, abstraction, and calculation. The NCSE subscales were designed to comprehensively assess cognitive functioning, and were originally developed to overcome weaknesses of other brief instruments such as the Mini Mental State Examination. Higher values are indicative of higher levels of cognitive functioning; lower values are indicative of impairment. The NCSE subscales have high internal consistency (α = .89) and convergent validity (r = .84), and have been evidenced to have a low false-negative rate (Schwamm, Van Dyke, Kiernam, Merrin, & Mueller, 1987). Sixty-three percent of this study sample scored within the "moderately impaired" range of cognitive functioning on the NCSE, and 37% scored within the "mildly impaired" range of cognitive functioning.

Geriatric Level of Dysfunction Scale (GLDS; Clifford, Cipher, & Roper, 2005). The GLDS is a clinician-rated instrument that assesses the average intensity, frequency, duration, and number (count) of each of 19 possible dysfunctional behaviors, including agitation, verbal aggression, withdrawal, and physical aggression. All ratings were made on a seven-pronged scale. For the rating of intensity, lower numbers represented lower intensity of the behavioral dysfunctions, where 1 = Tolerable, with ratings progressing to mildly distressing, moderately distressing, disruptive to self or others, interfering in medical care, possible danger to self of others, and immediate danger to self or others (= 7). For the rating of frequency, lower numbers represented the lower frequencies of behavior, where 1 = < twice per month, progressing to once per week, 2-6 times per week, once a day, few times per day, several times per day, and continuous (= 7). For the rating of duration, lower numbers represented less total time per day of behavioral dysfunction, where 1 = 1 to 2 minutes, progressing to ≤ 30 minutes, ≤ one hour, ≤ 2 hours per day, ≤ 4 hours per day, ≤ 6 hours per day, and > 6 hours per day (= 7). These ratings have been evidenced to have excellent internal consistency (alpha = .96). Test-retest coefficients have ranged from .86 to .94 among three independent raters (Clifford et al., 2005).

Procedure

The GMPI, PRADLI, GDS, NCSE, and GLDS were a part of a comprehensive psychological evaluation that was administered by one of two licensed clinical geropsychologists. These instruments were also administered five weeks after the initial evaluation. The instruments were verbally administered, and feedback from the LTC staff was considered during the rating of the GMPI, PRADLI, and GLDS items. All assessment and treatment procedures were billed under Medicare Part B and over 90% of patients had supplemental insurance.

Before geropsychological treatment began, the psychologist consulted with the resident, family members, and relevant medical, nursing, rehabilitation, and dietary staff in order to prioritize treatment goals. Common treatment goals included: behavioral pain management, stabilization of depressed or anxious/irritable mood, increased compliance with medical/rehabilitation plan, improved ADL compliance, increased activity levels, weight maintenance (motivation to eat), decreased family conflict, dysfunction or distress, adjustment to difficult roommate, adjustment to recent physical disabilities or limitations, improved cognitive functioning associated with analgesic and psychotropic side effects, and decreased frequency of inappropriate behaviors.

The residents in Study 1 received an average of 7.95 (SD = 4.95) geropsychological sessions over a five-week period. The geropsychological treatment was cognitive-behavioral and conducted within an emotionally warm interpersonal relationship with residents and their involved families.

Standardized Multimodal Cognitive-Behavioral Therapy (MCBT₁). Three doctoral-level clinical psychologists provided standardized MCBT. Our Standardized Multimodal Cognitive-Behavioral Therapy started with a comprehensive evaluation (Cipher & Clifford, 2004), which assessed presenting problems, medical, and psychosocial histories, current dysfunctional behaviors (Clifford et al., 2005), level of dementia or cognitive impairment (Reisberg et al., 1999), level of cooperation with ADLs (Clifford et al., 2003), emotional distress, pain and other noxious medical symptoms (Clifford et al., 2005), current social support systems, the resident's perceptions of self, their situation, and their future; and most importantly historical motivational themes and current desired outcomes. With the help from the family and others involved in the resident's life, the MCBT psychologist used validation techniques (Feil, 1993) to establish warm interpersonal rapport with the resident. Early treatment sessions focused on establishing motivating themes and values which

were congruent with the resident's psychosocial history, for example, being independent, moral, hardworking, a leader, friendly, loving, a good homemaker, productive, a good example to others, a good neighbor, a dependable helper, being present, supportive, being well groomed, being fun loving, being at home, organized, on a good schedule, being a good parent, a good spouse, a good teacher, a good worker, a loving or compassionate religious person (use their religious affiliation–Jewish, Christian, etc.), a loyal religious person, an active religious person, a non-quitter, being willing to do the "right" or "loving" thing even if doing the right thing was not pleasant. These positive themes and values became the motivational basis for interdisciplinary (family and health care staff) facilitation of behavioral change. Historically congruent themes were repeatedly used to facilitate the resident's reappraisal of his or his or her situation which was resulting in problematic pain/illness behaviors, mood disturbances, or interpersonal difficulties with caregivers or family members. The more advanced the resident's level of dementia, the more overtly behavioral and directive the therapy became, but the therapist always validated the resident's experience (Feil, 1993), and then cognitively restructured appraisals with *warm* persuasive suggestions using the resident's historical themes or values to motivate desired behaviors.

When appropriate, the MCBT provider worked collaboratively with CNAs, family members, and other health care providers in order to facilitate increased cooperation with rehabilitation therapies and necessary ADLs. They also worked one-on-one with the residents in order to establish a warm emotional relationship that formed the basis for therapeutic social reinforcement and facilitation of cooperation with therapies or ADLs at the end of the cognitive-behavioral sessions. Like other health care treatments, this MCBT model was self-correcting–if one technique did not work, another was tried, until several techniques (that are 30-40% effective at any given time) were developed and established as part of the resident's interdisciplinary care plan. MCBT addressed multiple problems and attempted to relieve parallel and interacting difficulties. It attempted to ameliorate the disorder and presented symptoms while also improving the resident's general level of functioning in the LTC facility (Seligman, 1995).

Therapists in this study utilized structured evaluations, session notes and follow-up evaluations. Both structured and individualized treatment plans and interdisciplinary care plans were utilized. Copies of these forms are available upon request to the authors.

RESULTS: STUDY 1

Descriptive statistics for the GMPI revealed that patients reported an average of 5.6 (out of possible 10 points) in pain severity experienced at the time of evaluation, 6 in pain severity experienced in the past week, and 6.5 in "suffering" due to the pain (see Table 1). Patients reported a lack of support by family members and moderate levels of loneliness as evidenced by the GMPI Social Support subscale (higher numbers indicate less support). Participant scores on the GMPI Emotional Distress subscale and the Geriatric Depression Scale indicated that on average, patients had high levels of anxiety and irritability due to pain, and were mildly depressed at the time of evaluation.

TABLE 1. Descriptive Statistics for the GMPI Subscales, GLDS Behavioral Disturbances, and GDS, Pre- and Post-Treatment

GMPI Subscale		Mean	SD	F value
Overall pain levels: GMPI	Pre-treatment	5.05	2.16	12.99*
	Post-treatment	3.42	1.80	
Activity interference: GMPI	Pre-treatment	6.45	2.14	39.16*
	Post-treatment	4.37	1.58	
Emotional distress: GMPI	Pre-treatment	5.58	1.69	59.96*
	Post-treatment	3.36	1.23	
GLDS average behavioral intensity	Pre-treatment	4.19	0.88	22.73*
	Post-treatment	2.96	1.09	
GLDS average behavioral frequency	Pre-treatment	6.03	1.12	53.34*
	Post-treatment	3.72	1.68	
GLDS average behavioral duration	Pre-treatment	6.59	0.57	83.38*
	Post-treatment	3.92	1.72	
GLDS total number of behavioral disturbances	Pre-treatment	3.09	1.99	1.64
	Post-treatment	3.48	1.93	
Geriatric depression scale	Pre-treatment	7.26	3.97	14.12*
	Post-treatment	5.17	3.17	

*$F_{.99}$ (1,43) = 7.28.

Descriptive statistics for the PRADLI revealed that patients required most assistance with bathing ($\overline{X}$ = 2.98 out of 7 points), followed by social/recreational activities ($\overline{X}$ = 3.43) ,and toileting ($\overline{X}$ = 3.81; see Table 2) at the time of evaluation. Across all behavioral disturbances exhibited by each resident, the average duration was 6.59 (> 6 hours per day) at the time of evaluation. The average frequency of each resident's behavioral disturbances was 6.03 (several times per day), and the average intensity was 4.19. Residents exhibited an average of approximately three behavioral disturbances ($\overline{X}$ = 3.09; see Table 1).

Repeated measures MANOVAs were computed for residents' scores on the GMPI, PRADLI, GDS, and behavioral disturbances at pre-treatment and at post-treatment. Analyses indicated that, by and large, residents' levels of pain, resistance to activities of daily living, depression, and behavioral disturbances significantly decreased from pre- to

TABLE 2. Descriptive Statistics for the PRADLI Items, Pre-Treatment and Post-Treatment

PRADLI Item		Mean	SD	F value
PRADLI: Up time	Pre-treatment	4.89	1.74	16.63**
	Post-treatment	5.91	1.41	
PRADLI: Eating habits	Pre-treatment	5.50	0.99	12.63**
	Post-treatment	6.19	1.06	
PRADLI: Dressing	Pre-treatment	4.07	1.72	14.67**
	Post-treatment	4.81	1.69	
PRADLI: Toileting	Pre-treatment	3.81	1.81	5.68*
	Post-treatment	4.52	1.88	
PRADLI: Bathing	Pre-treatment	2.98	1.32	4.72*
	Post-treatment	3.42	1.38	
PRADLI: Medical compliance	Pre-treatment	5.65	1.02	0
	Post-treatment	5.65	1.17	
PRADLI: Restorative care	Pre-treatment	4.09	1.52	32.32**
	Post-treatment	5.51	1.64	
PRADLI: Social/recreational	Pre-treatment	3.43	1.65	6.01*
	Post-treatment	4.17	1.50	

*$F_{.95}(1,43)$ = 4.07; ** $F_{.99}(1,43)$ = 7.28.

post-treatment. As shown in Table 2, residents' scores on every item significantly improved from pre- to post-treatment, with the exception of Medical Compliance item from the PRADLI. Residents' intensity, frequency, and duration of behavioral disturbances significantly decreased from pre- to post-treatment. However, the actual number of behavioral disturbances did not significantly change (see Table 1).

STUDY 2

Given the findings from Study 1, a retrospective chart review was conducted in order to select a control group that would be matched to the treatment group. Minimum Data Set records (see MDS description in the following sections) were obtained from both groups, in order to compare the groups on post-treatment health care utilization. Seventy-nine percent (n = 35) of the residents in the sample from Study 1 comprised the treatment group in Study 2. Nine residents from Study 1 did not have complete MDS records on file. Power analyses using PASS 2000 (Hintze, 2001) indicated that n = 34 subjects were required for the analyses to maintain adequate power (.80) using $\alpha = .05$ and $d = .50$ for the matched-control design of Study 2.

After gaining IRB approval, the electronic medical record data were obtained from approximately 175 males and females over the age of 65 years who were residing in the same three LTC facilities as in Study 1. These residents' data were used to select the matched "no-treatment" comparison group. Variables identified as being important were selected to match each treated patient to each control patient. This set of variables consisted of, in order of theoretical importance: age, gender, ethnicity, education level, dementia level (short-term and long-term memory), and functional capacity (bowel and bladder continence), in that order. Subsequently, 35 patients from the comparison group that were the closest "matches" in terms of those variables were selected and used as the matched-control group. Thirty-three out of the 35 pairs were exact matches, meaning that the pair had the exact same values for the eight matching variables. Two sets of MDS data were obtained, one set for each pair at the MDS evaluation immediately prior to geropsychological treatment, and the other set for each pair approximately two months following that evaluation date ($\overline{X}$ days = 42.5, SD = 26). The three LTC facilities had the same standard operating procedures.

Measure

Minimum Data Set 2.0 (MDS) (Morris, Hawes, & Fries, 1990). The MDS is a federally mandated instrument in all Medicare and Medicaid certified LTC facilities. It consists of items that assess functional capacity across many domains. The Medical Needs: MDS Section P, Special Treatments, and Procedures portion was used for analysis of health care utilization from pre- to post-treatment. This section contains four items that record the number of days that the resident was admitted into the hospital or emergency room since the time of last assessment, and the number of physician visits and order changes made in the last 14 days. In addition, eight items from the MDS were used for the matching procedure: gender of resident, ethnicity, education level, short-term memory rating, long-term memory rating, cognitive decision skills, bowel continence, and bladder continence.

RESULTS: STUDY 2

Descriptive statistics for the MDS Section P are shown in Table 3. The average number of hospital stays decreased slightly for the treatment group ($\overline{X}$ difference = .25) and also for the control group ($\overline{X}$ difference = .11) over the two-month period. The average number of emergency room visits decreased slightly for the treatment group ($\overline{X}$ difference = .13) and increased slightly for the control group ($\overline{X}$ difference = .06). The average number of physician visits decreased for the treatment group ($\overline{X}$ difference = 1.00) and increased for the control group ($\overline{X}$ difference = 1.06; Cohen's d = 1.07). The average number of physician change orders

TABLE 3. Descriptive Statistics for the MDS Section P: Procedures Items

MDS Item	Treatment Group				Matched Control Group			
	Baseline		Post-Treatment		Baseline		Post-Treatment	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
P5: Hospital stays	0.58	0.50	0.33	0.49	0.77	0.43	0.66	0.48
P6: Emergency room visits	0.13	0.34	0.00	0.00	0.19	0.40	0.25	0.44
P7: Physician visits	2.12	1.93	1.12	0.89	1.74	1.99	2.80	2.77
P8: Physician orders	3.03	2.31	2.24	2.41	3.37	2.16	4.57	2.64

decreased for the treatment group ($\overline{X}$ difference = .72) and increased for the control group ($\overline{X}$ difference = 1.20; Cohen's d = .88).

Residual improvement scores were created for each of the residents' pre- and post-treatment data points of the four utilization items. Wilcoxen's signed-rank tests for matched pairs were computed for each pairs of improvement scores. The groups did not significantly differ on number of hospital stays since the time of last assessment ($Z = -.59$, ns), nor did they significantly differ on number of emergency room visits since the time of last assessment ($Z = -1.41$, ns). However, the groups significantly differed on the number of days that the physician had examined the resident (in the last 14 days), and the number of days that the attending physician changed the resident's orders (in the last 14 days). The treatment group had significantly larger reductions on scores for these two variables from pre-treatment to post-treatment, as compared with the matched-control group ($Z = -3.479$, p = .001; $Z = -2.341$, p = .01, respectively).

DISCUSSION

The purpose of these two preliminary studies was to investigate the effectiveness of geropsychological treatment in improving pain, depression, behavioral disturbances, and functional disability, and reducing health care utilization in a sample of LTC residents suffering from medical and psychiatric co-morbidities, mild to moderate dementia, chronic pain, depression, and behavioral dysfunction. The first study focused on a group of residents who received five weeks of geropsychological treatment, incorporating assessments that included instruments specifically tailored toward residents exhibiting cognitive impairment, emotional distress, pain, and/or behavioral disturbances. Analyses revealed that on average, residents significantly improved in most outcome variables. Moreover, most of these improvements reflected an entire standard deviation unit of change from pre- to post-treatment, revealing both statistical and clinical significance. The second study compared utilization from the MDS 2.0 between the group from Study 1 and a matched-control group over a two-month period. Analyses revealed that the group receiving geropsychological treatment exhibited significantly larger reductions in the number of physician examinations and number of change orders.

These studies provide preliminary evidence that cognitively impaired residents in LTC who are suffering from chronic pain and psychiatric co-morbidities can benefit from cognitive-behavioral interventions. The findings add to the existing literature that supports the use of cognitive-behavioral interventions in the demented elderly (Koder, 1998; Teri & Gallagher-Thompson, 1991; Gatz et al., 1998; Thompson et al., 2001) for alleviating depression and emotional distress. The findings also support the use of structured multimodal cognitive-behavioral interventions with LTC residents who are experiencing multiple problems–dementia, persistent pain, chronic illness, and emotional distress. Moreover, it appears that such treatment is effective in improving a multitude of problems–pain, compliance with ADLs, behavioral disturbances, and depression. Therefore, our findings indicate that studies of cognitive-behavioral interventions in LTC need not focus on one outcome variable, such as depression, pain, or anxiety, but rather can study the effectiveness of MCBT in improving the general functioning of residents who suffer from parallel and interacting difficulties, including psychiatric disorders, noxious medical symptoms, and associated dysfunctional behaviors.

Study 1 incorporated several components of the "ideal efficacy study" of psychotherapy as defined by Seligman (1995)–treatment was prescribed in a manual with detailed interventions, each resident received weekly sessions (one to two per week) for one month, and target outcomes were specifically operationalized. On the other hand, according to Seligman's (1995) criteria, Study 1 also incorporated components of the "effectiveness study" of psychotherapy, in that: (1) the number of sessions was not fixed but adjusted to specific needs and capacities of the resident, (2) many parallel and interacting problems were addressed simultaneously, (3) general improvement of the resident in LTC was a primary goal along with amelioration of a disorder and presenting symptoms, and (4) therapists were able to use a multimodal approach, which is very indicative of real life psychotherapy in LTC. This sample is very indicative of "real life" geropsychological care in LTC, meaning that the study sample had multiple medical and psychological problems. While our MCBT was incorporated into a manual, it was also very inclusive (comprehensive) of several types of interventions shown to be effective in treating specific conditions. Our manual's inclusion of multiple techniques allowed the therapist to "self-correct" and "individualize" the application of several cognitive-behavioral techniques (as needed) that effectively and measurably improve the general functioning of the resident (Lichtenberg et al., 1998; Seligman, 1995).

Study 1 suggests that meaningful changes in pain and pain tolerance, depression, behavioral disturbances, and functional disability can be accomplished in four to five weeks with one to two sessions per week of cognitive-behavioral therapy. At the same time, these studies were limited by this short period of observation. The LTC environment is clinically very fluid, and the resident's medical and psychiatric needs change often over the course of 3-12 months, which is normal for residents with chronic conditions. Future studies with longer duration will need to control for these fluctuations while providing therapy for longer periods until improvement "levels-out" or plateaus (as in other rehabilitation therapies). It is recommended that future studies incorporate a flexible, evidence-based approach to the administration of cognitive-behavioral therapy where treatment plans are adjusted to the resident's fluctuating acute and chronic needs while demonstrating measurable improvements or maintenance of outcome variables over a one to two-year period.

There were several other limitations associated with these studies. First, 100% of this study sample was experiencing persistent pain. The inclusion criteria of persistent or daily pain were motivated by the authors' desire to test the sensitivity and utility of the GMPI to MCBT interventions. However, because residents without persistent or daily pain were not included in this study, the generalization of findings to residents without pain may not be appropriate. Second, it was not possible to administer the GMPI, PRADLI, GDS, and NCSE to the control group. Therefore, the two groups could not be compared using the psychometric data in Study 2. This means that the residents' improvements could also be attributed to the passage of time, regression to the mean, or nonspecific factors associated with interpersonal interactions. Third, although the MDS contains behavioral and mood items, they are generally acknowledged to have low reliability and validity (Lawton, Casten, Parmelee, Van Haitsma, Corn, & Kleban, 1998). Lawton and colleagues (1998) found that validity indices for Section E ranged from .15 to .26, indicating very limited utility of those items, as opposed to the validity coefficients for functional items such as the ADL scores, which were much higher ($r = .79$). Thus, the study was limited in the extent to which the MDS items could reveal improvements in variables indicative of mood, psychosocial issues, and behavioral disturbances. Fourth, the resources to use blind evaluators were not available to collect outcome data in Study 1. Because the geropsychologists for this study administered all outcome assessments (as is possible with any outcome study that does not use blind evaluation methodology) there is a possibility that the outcome assessments were influenced by the interdisciplinary team's desire

for the residents to improve. Finally, the retrospective methodology used in Study 2 precluded the ability to control the treatment environments and incorporate the same assessment schedules for every resident, thereby potentially weakening the internal and external validity of the study.

The following agenda for future geropsychological outcome studies in LTC is recommended:

1. Blind evaluators should be incorporated to perform less biased assessments
2. Prospective, controlled methodology
3. In the case of matching procedures, residents in the treatment group who are receiving cognitive-behavioral treatment should be carefully linked to their "control" counterparts
4. The use of empirically validated instruments such as the GMPI, PRADLI, GLDS, and GDS in both treatment *and* control groups, administered by well-trained clinicians, is recommended in order to accurately assess residents' current emotional, functional, and behavioral state.

In conclusion, the results of Study 1 and 2 collectively support the utility of a comprehensive and inclusive geropsychological cognitive-behavioral therapy for LTC residents suffering from medical and psychiatric conditions involving mild to moderate dementia, chronic pain, and emotional, functional, and/or behavioral difficulties. Findings from Study 1 indicate that residents exhibited significant improvements in pain and pain tolerance, depression, behavioral disturbances, and functional disability over a relatively short treatment span. Findings from Study 2 indicate that residents receiving geropsychological treatment may require less physician visits and change orders after such treatment. Future research focusing on predictive models of outcome, in addition to studies incorporating controlled, multi-site methodologies, will further contribute to the refinement of geropsychological interventions for LTC residents with mild to moderate dementia.

NOTE

1. For information on how to obtain a full copy of our MCBT manual, see the link called "MBW Institute–Manual" on the home page of www.mindbodywellnesspc.com.

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