

# Psychosocial Interventions for Older Adults with Dementia and Their Caregivers

Linda Teri<sup>1</sup>, Glenise McKenzie<sup>2</sup>, and Christina A. Coulter<sup>3</sup>

<sup>1</sup>University of Washington School of Nursing, Psychosocial & Community Health, Seattle, WA, USA <sup>2</sup>Oregon Health & Science University School of Nursing, Ashland, OR, USA <sup>3</sup>University of Washington School of Nursing, Biobehavioral Nursing & Health Systems, Seattle, WA, USA

## OUTLINE

<b>Introduction</b>	<b>448</b>	Rationale and Theory	464
<i>Person-Centered Interventions</i>	449	Studies	464
Rationale and Theory	449	<i>Social Enhancement</i>	464
Studies	449	Rationale and Theory	464
<i>PA Interventions</i>	449	Studies	464
Rationale and Theory	449	<b>Translation and Implementation of</b>	
Studies	463	<b>Psychosocial Approaches</b>	<b>464</b>
<i>Caregiver Training Interventions</i>	463	<b>Discussion</b>	<b>466</b>
Rationale and Theory	463	<b>References</b>	<b>468</b>
Studies	463		
<i>Emotion-Focused Interventions</i>	464		

## INTRODUCTION

Dementia, now referred to as a “major neurocognitive disorder” is characterized by multiple cognitive deficits, including memory impairment that significantly and adversely affects social and occupational functioning (American Psychiatric Association, 2013). Although this most current definition does not address the plethora of behavioral problems that beset the individual with dementia and with which the caregiver must cope, such problems have been known to exist since the original article by Alois Alzheimer (Dahm, 2006). Behavioral issues typically dominate the challenges of caring for a person with dementia (PWD), increase rates of morbidity and mortality for both the PWD and their caregiver, and are associated with long-term care placement and escalating health care costs (Hurd, Martorell, & Langa, 2013).

Effective treatment of behavioral problems in PWD still eludes us. Although most often treated pharmacologically, such treatment is not without risk and a number of professional organizations (including the American Psychiatric Association and American Geriatrics Society) strongly advocate using environmental and non-pharmacological approaches before engaging in pharmacotherapy (Schneider, Dagerman, & Insel, 2005). Indeed, the use of typical and atypical antipsychotic medications to manage such problems offers little more than established placebo rates and carry with it significant cardiovascular risk and elevated rates of morbidity and mortality in elderly patients (Gareri, De Fazio, Manfredi, & De Sarro, 2013). Therefore, focusing on psychosocial treatments of behavioral problems in PWD is essential if we are to improve the quality of life (QOL) and care for both the PWD and their caregiver, as well as reduce the ever-growing financial and emotional burden of this disease on affected individuals, their caregivers, and our larger society.

For the purposes of this review, we used the terms: (i) “behavioral problems” to encompass the range of challenges experienced by PWD and their familial and formal caregivers and (ii) “psychosocial interventions” to include any intervention that “emphasizes psychological or social factors rather than biological factors” (Ruddy & House, 2005). Psychosocial interventions targeting the behaviors of the PWD and interventions aimed at improving skills and/or coping of the caregiver related to these behaviors were both included in recognition of the interactive and synergistic features that frequently occur when providing care for a PWD.

To maximize the potential of this chapter to move the field of dementia care and research forward and provide an opportunity for investigators to determine critical areas of future research as well as allow practitioners to engage in evidence-based clinical care, we included only studies that met Administration on Aging (AoA) criteria of intermediate level evidence based (published in a peer-reviewed journal and proven effective with older adult populations using a control condition and provide some basis for translation/implementation by community-level organizations). We also only included studies that were published in English language journals within the past 10 years with a primary focus on PWD behavioral and/or caregiver outcomes; encompassed the array of settings (e.g., private home, congregate care) and the diversity of providers (familial and formal: both professional and nonprofessional), working with PWD and addressed the problems common among PWD (such as depression, agitation) and their caregivers (depression, burden, etc.). We excluded studies that did not provide sufficient details about the intervention; used non-validated, idiosyncratic measures; involved sample sizes fewer than ten individuals per cell; focused on cognitive remediation or with cognition as primary outcomes (because they are addressed elsewhere in this volume); and were included in the last

*Handbook* chapter (Knight & Losada, 2011). Using these criteria, we identified five predominant psychosocial approaches: person-centered (addressing unmet needs, providing meaningful activity, individualized reminiscence,  $N = 16$ ); physical activity (PA, aerobic, strength and flexibility training,  $N = 15$ ), caregiver training (skill building for staff and family,  $N = 28$ ), emotion-focused (CBT, support and counseling,  $N = 19$ ), and social enhancement (music, games and animal-assisted,  $N = 14$ ).

Table 23.1 provides a summary of all of the studies reviewed here; it provides the primary focus of the interventions and key methodological characteristics, including the study design, sample characteristics and duration of study; setting and country in which the study took place; intervention procedures, and control conditions. It should be noted that cataloging these study characteristics was based upon our interpretation of information provided in the published articles. Some studies provided insufficient detail for us to be completely confident that we captured all treatment components. In many cases, more than one approach and more than one target were included in a single study. Consequently, we had to make decisions regarding where a given study “belonged.” Information in the table should be viewed as a guide, not definitive. Any errors in categorization are ours. In the text of this chapter, we summarize areas of commonality, differences, and critical findings across these studies rather than abstract individual study characteristics, due to the number of studies and page limitations as well as to maximize readers’ understanding of current trends and future directions.

## Person-Centered Interventions

### ***Rationale and Theory***

Person-centered care practices focused on assuring and maintaining individuality, choice, respect, independence, and a sense of

community for individuals across settings. The interventions included in this category were diverse, however they shared a common theme of adapting and individualizing activities, approaches, and/or care based on the background, unmet needs and/or functional abilities/strengths of the PWD. Three types of interventions were evident: (i) activities adapted to support the PWD (self-identify and respect); (ii) reminiscence individualized to the PWD and (iii) multidisciplinary assessment and planning to address unmet needs (physical, emotional and social) of the PWD.

### ***Studies***

Patient-centered interventions demonstrated significant improvements in mood and behavioral outcomes for the PWD and in some cases improvement in burden and QOL for their family caregiver. Each study included an assessment component aimed at identification of preferences, unmet needs and/or functional level of the PWD upon which treatment was based. All but one of the studies were conducted in residential settings. Two that compared psychosocial and pharmacological interventions reported similar findings in improved behavioral and affective outcomes, with psychosocial interventions offering the advantage of little to no adverse side effects, medication interactions and decreased costs of primary care visits. Reminiscence-based studies reported either modest or neutral improvements in social engagement and mood for the PWD with one reporting increased anxiety for family caregivers. Recent reviews also noted the limited number of effectiveness studies on reminiscence with PWD (Cotelli, Manenti, & Zanetti, 2012).

## PA Interventions

### ***Rationale and Theory***

Stimulated by the growing body of evidence supporting the association of cognitive

TABLE 23.1 Psychosocial Intervention Trials

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
<b>PERSON CENTERED</b>			
<b>Needs-based activities</b>			
Gitlin et al., 2008	RCT (N = 60 dyads) Treatment = TAP Control = none	Home (US)	Tailored Activity Program (TAP)—Occupational therapy intervention with activities determined by functional testing – OT – 6 home visits (90 min each) and 2 (15-min) telephone contact over 4 months
Phillips, Reid-Arndt & Pak, 2010	Quasi-experimental repeated measures (N = 56) Treatment = Storytelling Control = Usual care	LTC-4 SNF and 2 AL (US)	“TimeSlips”—group creative storytelling, not reliant on accurate memory – “facilitator” (not otherwise described) – 6-week treatment period, twice weekly 1-h sessions
Richards, Beck, O’Sullivan & Shue, 2005	RCT (N = 139) Treatment = ISAI Control = Usual care	SNF (US)	Individualized social activity intervention (ISAI) – Certified Recreation specialists – 1–2h of ISAI daily in 15–30-min increments for 21 consecutive days
Kolanowski, Litaker, Buettner, Moeller, & Costa, 2011	Randomized double-blind clinical trial (N = 128) Treatment A = Functional Treatment B = Personality Treatment C = Functional and Personality Control = Active control	Community-based nursing homes (US)	Needs driven – activities adjusted based on functional level and personality style – Nurses and facility staff – 20 min twice per day (morning and afternoon) 5 days each week for 3 weeks
<b>Reminiscence</b>			
Serrani Azcurra, 2012	RCT (N = 135) Treatment = Life-story Active control = Counseling Passive control = Informal social activity	SNF (Argentina)	Life-story approach – Clinical psychologists – Bi-weekly 1-h sessions for 12 weeks
Lai, Chi & Kayser-Jones, 2004	RCT (N = 101) Treatment = Life story Attention control = Friendly discussion Control = Usual care	SNF (China)	Life story – Social workers and OT – Weekly 30-min sessions for 6 weeks

Politis et al., 2004	RCT (N = 37) Treatment = 1-on-1 reminiscence activities Control = 1-on-1 with activity therapist	Dementia Care unit (US)	Kit-based activities for dementia in LTC – Activity therapist – Three times a week for 30 min, over 4 weeks
Wang, 2007	RCT (N = 102) Treatment = Reminiscence Control = Usual care	SNF (Taiwan)	Group reminiscence therapy – Master’s level nurses who attended 32-h training in the intervention – 8 weekly 60-min sessions
Woods et al., 2012	Pragmatic RCT (N = 350) Treatment = REMCARE Control = Usual care	SNF (UK)	REMCARE – Trained facilitators – Weekly for 12 weeks, followed by monthly maintenance sessions for 7 months

---

**Unmet needs**

Ballard et al., 2009	Secondary analysis of a sub-group (N = 318) Treatment = “BPST” Control = None	LTC (UK)	“Brief psychosocial therapy” [BPST]—Social interaction, personalized music, or removal of environmental trigger – chosen for the person based on assessment. – Research nurses or undergraduate psychology students – Weekly sessions (1 h to 15 min each) for 4 weeks
Bird, Jones, Korten, & Smithers, 2007	Naturalistic case-control repeated measures (N = 33) Treatment = Causality-focus Control = Usual care	Residential facilities (Australia)	Identification of Behavior “cause”—Needs based, “Causality-focused approach”—behavior occurs based on physical, medical or psychosocial reason – Nurse and psychologist – 5-month trial period; variable frequency
Chenoweth et al., 2009	RCT cluster (N = 324) Treatment A = PCC Treatment B = DCM Control = Usual care	Residential facilities (Australia)	Person-centered care (PCC) or dementia-care mapping (DCM) – Trained care staff and managers – 4 months of implementation of each care strategy
Cohen-Mansfield, Thein, Marx, Dakheel-Ali, & Freedman, 2012	RCT (N = 125) Treatment = TREA Control = Placebo inservice with staff	SNF (US)	Treatment Routes for Exploring Agitation (TREA)—specifics of the treatment were chosen to fit the need, past identity, preferences, and abilities – Research assistants – 2 weeks
Davison, Hudgson, McCabe, George, & Buchanan, 2007	Pre post (N = 31) Treatment = Behavior therapy Control = None	Psychogeriatric unit (Australia)	Multicomponent intensive behavior therapy based on assessment of individual—“needs deficit” and plan based on appropriate way to meet unmet needs – Psychiatric nurses and psychologists – Duration ranged from 47 to 231 days, with a median time of 90 days

(Continued)

TABLE 23.1 (Contd)

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
Low et al., 2013	RCT randomized at site level (N = 398, 35 SNF) Treatment = SMILE Control = Usual care	SNF (Australia)	SMILE-Sydney Multisite Intervention of ElderClowns; humor therapy – Trained clowns and trained staff – 9–12 weekly sessions
Orrell et al., 2007	RCT (N = 192) Treatment = Intervention Control = Usual care	Care homes (UK)	Intervention to identify and address unmet needs – Key staff member with consultation by a mental health nurse and clinical psychologist – 20-week intervention
<b>PHYSICAL ACTIVITY</b>			
Group			
Aman & Thomas, 2009	Prospective comparative (N = 40) Treatment = Structured exercise Control = None	Memory Care Unit (US)	Structured aerobic and resistance exercise program – Interventionist not described – 30 min 3x weekly for 3 weeks
Conradsson, Littbrand, Lindelof, Gustafson, & Rosendahl, 2010	RCT cluster (N = 191) Treatment = HIFE Control = OT directed activities group	Residential facilities (Sweden)	High-intensity functional exercise (HIFE): Designed by physical therapists, 41 structured, weight-bearing exercises designed to increase functionality – OT/PT – 45-min sessions, 5 sessions in each 2-week period for 13 weeks
Edwards et al., 2008	Pilot pre-post (N = 36) Treatment = Chair exercises Control = None	SNF memory care units (US)	Chair-based exercises – Exercise physiologist – 30 min 3x weekly for 12 weeks
Fan & Chen, 2011	Quasi-experimental (N = 59) Treatment = Silver Yoga program Control = Not described	Residential facilities (Taiwan)	Silver Yoga-yoga program designed for older adults – “certified SY instructors” – 3x per week, 55 min each time for 12 weeks
Hokkenen, 2009	RCT (N = 29) Treatment = DMT Control = Placebo social group	Residential facilities (Finland)	Dance/movement therapy – Interventionist not described – 9 weekly sessions 30–45 min each
Pitkälä et al., 2013	RCT (N = 210) Treatment A = Group exercise at adult day care Treatment B = Home-based individual exercise Control = Usual care	Community (Finland)	FINALEX-multi, focus on endurance, balance, strength training, and functional exercises – Physiotherapists – 1 h of training/exercise 2x week for 1 year. Mean exercise time was 1 h/day

Rolland et al., 2007	RCT (N = 134) Treatment = Structured exercise program Control = Usual care	SNF (France)	Structured Group Exercise program—Aerobic, strength, flexibility, and balance (walking was at least half) – OT – 1-h afternoon sessions 2x weekly for 12 months
Stella et al., 2011	RCT (N = 32) Treatment = Group exercise program in community sites Control = Usual care	Community (Brazil)	Structured exercise program at a center 3 times weekly for 60 min – “Expert in physical education” – 60 min 3x weekly for 6 months
Van de Winckel et al., 2004	RCT (N = 25) Treatment = Daily group musical exercise Control = Conversation	Gero-Psych units (Belgium)	Music-based exercise – “Exercise therapist” – Daily 30 min sessions for 3 months

---

**Individual**

Eggermont et al., 2010	RCT (N = 112) Treatment = Daily walking Control = Social visit	SNF (Netherlands)	Walking – Student research assistant – 30-min sessions 5x weekly for 6 weeks
McCurry et al., 2011	RCT (N = 132) A = Walking B = Bright light C = Both Control = Contact	Community (US)	Walking and bright light – Master’s level health care professional – 8 week treatment period
Roach et al., 2011	RCT (N = 82) Treatment A = Functional exercise Active control = Supervised walking Control = Conversation	LTC (US)	Activity-specific exercise focusing on functional activities – Not specifically stated – 30 min 5x weekly for 16 weeks
Steinberg et al., 2009	RCT (N = 27) Treatment = Instruction in exercise program and goals for Cg to complete with PWD Control = Home safety visits and recording of activity	Community (US)	Home-based exercise program delivered by family Cg with aerobic (walking), strength (resistance bands and ankle weights), balance and flexibility. – Exercise physiologist – Cg given exercise goals for PWD to equal 5 activities per week

(Continued)

TABLE 23.1 (Contd)

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
Teri et al., 2003	RCT (N = 153) Treatment = RDAD Control = Usual care	Community (US)	Reducing Disability in Alzheimer’s Disease (RDAD)—Exercise component included aerobic/endurance, strength training, balance, and flexibility with goal of 30 min/day. Behavior management component included ABCs, education, and pleasant events. – Healthcare professionals experienced in dementia care – 1-h sessions, 2x weekly for 3 weeks, weekly for 4 weeks, EoW for 4 weeks, with follow-up visits monthly after
Williams & Tappen, 2008	Repeated measures quasi-experimental with random assignment (N = 45) A = Comprehensive exercise program B = Supervised walking C = Equivalent time conversation	SNF (US)	Comprehensive individual exercise with strength, balance, and flexibility exercises, walking. – Graduate nursing or PT students – 30 min 5x weekly for 16 weeks
<b>CAREGIVER TRAINING</b>			
<b>Caregiver focused</b>			
Belle et al., 2006	RCT (N = 642) Treatment = REACH Control = Information packet and limited phone “check-in”	Community (US)	REACH: Specialized one-on-one education and support for informal caregivers – “Certified interventionists with at least a Bachelor’s degree” – 6 months with 12 sessions with the interventionist and 5 support group calls
Burgio, Stevens, Guy, Roth, & Haley, 2003	RCT (N = 118) Treatment = STC Control = Minimal support intervention	Community (US)	Skills Training Condition (STC): Three foci-behavioral management techniques, problem-solving to increase self-care, social engagement and pleasant events, and cognitive restructuring – “REACH interventionist” – 12 months beginning with a group workshop followed by 16 in-home visits over 12 months
Davis, Burgio, Buckwalter, & Weaver, 2004	RCT (N = 61) Treatment A = In-home training Treatment B = Telephone training Control = Friendly call	Community (US)	Caregiver support-in home versus telephone – “Trained staff interventionists” – Weekly intervention sessions for 45–60 min for 12 weeks



Farran et al., 2004	RCT (N = 272) Treatment = Caregiver Skill Building (CSB) Control = Information and Support Oriented (ISO)	Community (US)	Comparison of skill building and support – Extensively trained professional staff (nurses, social workers) with geriatric experience – 5 group sessions, 7 individual phone contacts, 2 group boosters, and as needed phone contact for 12 months
Finkel et al., 2007	RCT (N = 36) Treatment = Ecare Control = Printed information	Community (US)	Ecare: An online psycho-educational program for family caregivers of PWD (based on REACH) – “Technology (online)-based intervention” – 6 months with 2 in-home visits and 12 screen phone encounters
Finnema et al., 2005	RCT (N = 146) Treatment = Emotion-oriented care Control = Usual care	SNF (Netherlands)	Integrated emotion-oriented care—Individualized care plans and bios-training staff in empathetic communication skills 24/7 – “Nursing assistants trained in emotion-oriented care” – 7 days spread over 7 months, with “homework”
Gavrilova et al., 2009	RCT (N = 60) Treatment = Cg education and training Control = Usual care	Community (Russia)	Caregiver training and support—In person focusing on dementia assessment, education, and training regarding addressing BPSD – Multi-purpose health worker – 5 weekly 30-min sessions
Gitlin, Winter, Dennis, Hodgson, & Hauck, 2010a,2010b	RCT (N = 209) Treatment = COPE Control = Limited attention	Community (US)	Care of PWD in their Environments (COPE) – Occupational therapist and nurse team – 10 sessions with OT and 2 sessions with a nurse over 4 months
Gitlin, Winter et al., 2003	RCT (N = 190) Treatment = HES program Control = Usual care	Community (US)	Home Environmental Skill Building (HES) – Occupational therapists trained in REACH protocols – Five 90-min home visits and one 30-min over 6 months
Gitlin et al., 2010a,2010b	RCT (N = 272) Treatment = ACT Control = Usual care	Community (US)	Advanced Caregiver Training (ACT) – Occupational therapist and nurse team – 16-week active phase of 9 OT sessions, 2 nursing sessions – maintenance phase of 16–24 weeks of 3 brief OT phone contacts to reinforce treatment
Gonyea, O'Connor, & Boyle, 2006	RCT (N = 80) Treatment = Project CARE Control = “Standard” psycho-educational group	Community (US)	Project CARE (multi-session training)—Behavioral training—skills training— for Family Cg with primary outcomes for Cg. – “Therapists trained in the intervention” – 90-min group sessions 1x/week for 5 weeks
Graff et al., 2007	RCT (N = 135) Treatment = In-home OT Control = Not specified	Community (Netherlands)	In-home OT: Training for caregivers regarding activity and environmental adjustments – Occupational therapists – 10 1-h sessions over 5 weeks

(Continued)

TABLE 23.1 (Contd)

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
Hepburn, Lewis, Tornatore, Sherman, & Bremer, 2007	RCT multi-site (N = 52) Treatment = SAVVY Cg Control = Waitlist	Community (US)	SAVVY Caregiver: Training program for informal caregivers in the community focusing on skills, knowledge, and outlook – “Persons with educational or clinical background in family caregiving and dementia” – 6 2-h sessions
Huang, Shyu, Chen, Chen, & Lin, 2003	Pilot (N = 48) Treatment = Caregiver training Control = Social contact only	Community (Taiwan)	Training of family caregivers of PWDs in behavior, environmental, and stress reduction – Gerontological research nurses – Initial 2–3-h training followed by another 2–3-h visit the following week
<b>PWD Focused</b>			
Huang et al., 2013	RCT (N = 129) Treatment = Home-training Control = Information only	Community (Taiwan)	Individualized training of family caregivers of PWDs in behavioral and environmental strategies. – Gerontological research nurses – Initial 2–3-h training with care manual followed by another 2–3-h visit the following week with follow-up phone calls after and then monthly during follow-up
Karlin et al., 2013	Pilot (N = 64) Treatment = STAR Control = None	LTC (US)	STAR-VA: Staff Training in Assisted Living Residences focusing on behavioral principles for direct care workers. – Doctoral level mental health provider – Initial training workshop with clinicians over 2.5 days. And weekly follow-up consult phone calls 90 min, for 6 months
Kurz et al., 2010	RCT multi-site (N=292) Treatment = Education and skill training Control = Not described	Community (Germany)	Informal caregiver training focusing on knowledge building and individual problem solving – Psychologists or social workers – 7 bi-weekly group sessions 90 min each, then 6 bi-monthly refresher meetings over 15 months
Liddle et al., 2012	RCT (N=29) Treatment = Training DVD Control = Usual care	Community (Australia)	DVD training program using memory and communication strategies – DVD – Two 45-min baseline trainings, provision of the DVD
Martín-Carrasco et al., 2009	RCT (N=115) Treatment = PIP Control = Usual care	Community (Spain)	PIP—Psycho-educational Intervention Program—individual training – Clinical psychologist, nurse, or social worker – 8 individual sessions for 90 min approximately every 1–2 weeks, over 4 months

Martín-Carrasco et al., 2013	RCT (N = 238) Treatment = Group PIP Control = Usual care	Community (Spain)	PIP—Psycho-educational Intervention Program—group training – Clinical psychologist, nurse, or social worker – Bi-weekly 7 group sessions of 90–120 min
McCurry, Gibbons, Logsdon, Vitiello, & Teri, 2005	RCT (N = 36) Treatment = NITE-AD Control = Contact control	Community (US)	NITE-AD: Program for informal caregivers focusing on knowledge, sleep hygiene principles, and behavioral management – Geropsychologist – Six 1-h in-home sessions over 2 months
McCurry, LaFazia, Pike, Logsdon, & Teri, 2012	RCT (N = 47) Treatment = SEP Control = Usual care	Adult Family Home (US)	Sleep Education Program (SEP) – Master’s level gerontological social worker – 4 weekly workshops delivered to AFH staff
Moniz-Cook et al., 2008	RCT pragmatic (N = 113) Treatment = Training in home Control = Usual care	Community (UK)	Psychosocial education and support to decrease behavioral symptoms – Community mental health nurse – 4 consecutive weekly in-home visits and follow-up as needed over 18 months
Moore et al., 2013	RCT (N = 100) Treatment = PEP Control = Information and support	Community (US)	Pleasant Events Program (PEP) – Master’s level mental health clinicians – 4 in-home 1-h therapy sessions with 2 follow-up phone calls after the tx
Teri, McCurry et al., 2005	RCT (N = 95) Treatment = STAR-C Control = Usual care	Community (US)	STAR-C—Training of community consultants to provide skills and behavior management for informal caregivers in the community – Clinical geropsychologists – 8 weekly sessions followed by 4 monthly phone calls
Teri, Huda et al., 2005	RCT (N = 120) Treatment = STAR Control = Usual care	LTC (US)	STAR: Staff Training in Assisted Living Residences, dementia-specific behavioral management and skill building for direct care workers – Clinical psychologist and nurse – 2 half-day workshops and 4 individual sessions
Ulstein, Sandvik, Wyller, & Engedal, 2007	RCT (N = 171) Treatment = Education Control = Usual care	Community (Norway)	Psycho-educational program re: Dementia and structured problem-solving – Physicians (geriatricians and psychiatrists) – 4.5 months, initial 3-h session, then 6 group 2-h sessions
Visser et al., 2008	RCT (N = 52 Staff; N = 76 PWD) Treatment = Education Placebo = Peer support Control = Usual training	Residential facilities (Australia)	Formal caregiver education – Not specifically stated – 8 sessions delivered twice weekly for 90 min

(Continued)

TABLE 23.1 (Contd)

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
<b>EMOTION FOCUSED</b>			
<b>Cognitive behavior therapy</b>			
Akkerman & Otswald, 2004	RCT (N = 38) Treatment = CBT Control = Wait-list	Community (US)	Group CBT for anxiety management – Psychologist – 9 weekly sessions for 2 h
Coon, Thompson, Steffen, Sorocco, & Gallagher-Thompson, 2003	RCT (N = 169) A = Depression management B = Anger management Control = Wait-list	Community (US)	Small group workshops using cognitive behavioral, assertiveness training, and goal setting – Trained facilitators – 8 weekly 2-h workshops and 2 boosters at 1 and 2 months
Fialho, Köenig, Santos, Barbosa, & Caramelli, 2012	Pre-post (N = 40) Treatment = CBT Control = None	Community (Brazil)	Group CBT—Training of Social Skills (TSS) – Neuropsychologist and OTs – 8 weekly 2h sessions
Gallagher-Thompson & Coon, 2007	RCT (N = 55) Treatment = IHBMP Control = Telephone support	Community (US)	In-home behavioral management program (IHBMP) modified for Chinese caregivers – Chinese health and mental health professionals – 6 modules delivered in 1 or 2–90-min sessions
Márquez-González, Losada, Izal, Pérez-Rojo, & Montorio, 2007	RCT (N = 74) Treatment = MDTC Control = Wait-list	Community (Spain)	Group Intervention—The Modification Of Dysfunctional Thoughts Associated With Caregiving (MDTC) modified for Spanish caregivers (based on Gallagher-Thompson) – Psychologists – 8 weekly 2-h sessions
<b>Counseling</b>			
Burns et al., 2005	RCT (N = 40) Treatment = IPT Control = Usual care	Community (UK)	IPT adapted for PWD (early stage) – Psychotherapist – 6 weekly 50-min sessions
Cheston, Jones, & Gilliard, 2003	Pre-post (N = 42) Treatment = Psychotherapy Control = None	Community (UK)	Dementia Voice Group Psychotherapy Project—For PWD; focused on underlying emotional significance of group discussions – Psychologist with experience co-facilitator – 10 weekly 90-min sessions

Eisdorfer et al., 2003	RCT (N = 225) A = SET B = SET + CTIS Control = Telephone-delivered minimal support	Community (US)	SET (Structural Ecosystems Therapy) (family therapy) and CTIS (Computer-Telephone Integrated System) (technology-based supportive services)—A REACH site. Included Spanish translation for Cuban Americans. – “Therapists” – SET—4 weekly sessions, 4 bi-weekly sessions and 6 monthly sessions (60–90-min sessions over a total of 12 months). In SET + CTIS—Telephone counseling was used in the last 6 months
Mittelman, Roth, Haley, & Zarit, 2004	RCT (N = 406) Treatment = Enhanced counseling and support Control = Usual care	Community (US)	Enhanced Counseling and Support—Individual and family counseling for first 4 months; support groups; telephone support with counselors. – “Counselors” – 6 sessions over 4 months, followed by weekly support groups (“indefinitely”), and “continuous” availability of phone counseling
Mittelman, Haley, Clay, & Roth, 2006	RCT (N = 406) Treatment = Enhanced counseling and support Control = Usual care	Community (US)	Enhanced counseling and support for spouses. – Same as above (same sample and intervention; different outcome measure reported)
Mittelman, Brodaty, Wallen, & Burns, 2008	RCT (N = 158) A = Counseling + Donepezil B = Counseling + Telephone Support + Donepezil Control = Donepezil	Community (US & UK & Australia)	Counseling and support intervention combined with cholinesterase inhibitor therapy (Donepezil). – Counselor – 5 sessions within 3 months
Tappen & Williams, 2009	RCT (N = 30) Treatment = Therapeutic conversation Control = Usual care	LTC (US)	Therapeutic conversation—Modified counseling approach for the PWD (moderate to late). Sharing of concerns and feelings. – Trained graduate nursing student – 30-min sessions 3 times a week for 16 weeks

---

#### Caregiver support

Gallagher-Thompson et al., 2003	RCT (N = 213) Treatment = Coping with caregiving Control = Enhanced support group	Community (US)	Coping with Caregiving (Psychoeducation) compared with Enhanced Caregiving (Support), tailored for Anglo and Latino caregivers—groups – Trained interventionists – 10 weekly 2-h sessions, then 8 monthly boosters
Andren, and Elmståhl, 2008	Quasi-experimental pre-post design with control—not randomized (N = 308) Treatment = Education and support Control = No intervention	Community (Sweden)	Group psychosocial therapy to develop and apply skills and knowledge – Geriatric RN, trained group leaders – 5 weeks of group education (2-h sessions once a week) followed by group support (90-min sessions, every other week for 3 months)

(Continued)

TABLE 23.1 (Contd)

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
Dröes, Meiland, Schmitz, & van Tilburg, 2004	Multi-site controlled trial ( <i>N</i> = 112) Treatment = MCSP Control = Regular day care	Community/ daycare (Netherlands)	Meeting Centres Support Programme (MCSP)—PWD and caregiver both supported by one professional staff member – Social club 3 days a week for PWD; 8–10 informational and a bi-weekly discussion groups for caregivers; duration of 6 months
Mahoney, Tarlow, & Jones, 2003	RCT ( <i>N</i> = 100) Treatment = TLC Control = No treatment	Community (Netherlands)	Telephone Linked Care (TLC)—Computer-mediated automated interactive support intervention for caregivers. REACH site. – Research assistant trained Cg on use of TLC – Access to system for a 12-month period
Nobili et al., 2004	Pilot RCT ( <i>N</i> = 69) Treatment = Structured support Control = Day care only	Community (Italy)	Structured support and information for family Cg delivered in their home – Psychologist and OT – One home visit: psychologist visited 60 min, OT visited 90 min
Senanarong et al., 2004	Parallel group intervention ( <i>N</i> = 50) Treatment = Counseling Control = Usual care	Community (Thailand)	Group counseling and support for non-professional Cg – Two nurses (leader and co-leader) – 45-min session every 6–8 weeks for 6 months
Winter & Gitlin, 2006	RCT ( <i>N</i> = 103) Treatment = Support group Control = No treatment	Community (US)	Telephone support group for female Cg – Trained social workers – 1-h session, weekly for 6 months
<b>SOCIAL ENHANCEMENT</b>			
<b>Music</b>			
Choi, Lee, Cheong, & Lee, 2009	Non-randomized control comparison ( <i>N</i> = 20) Treatment = Music Control = Usual care	LTC (South Korea)	Group Music intervention—Active participation, singing, song writing making and playing instruments. – Certified professional music therapists – 50-min sessions 3 times a week for 5 weeks
Cooke, Moyle, Shum, Harrison, & Murfield, 2010a,2010b	Randomized cross-over trial ( <i>N</i> = 47) Treatment = Music Control = Reading group	Residential facilities (Australia)	Live group music program and singing for 30 min with 10 min of prerecorded instrumental music. – 2 musicians – 40-min sessions 3 times a week for 8 weeks
Cooke et al., 2010a,2010b	Randomized cross-over trial ( <i>N</i> = 47) Treatment = Music Control = Reading group	Residential facilities (Australia)	Live group music and singing – Same as above (same sample and intervention; different outcome measure reported)

Guétin et al., 2009	Randomized, controlled, blinded, comparative, single-center study ( $N = 30$ ) Treatment = Music Control = Reading activity	SNF (France)	Individual receptive music therapy, musical style chosen by patient; music streamed via headphones. – Headphones and taped music – 20-min sessions weekly for 16 weeks
Hicks-Moore, 2005	Quasi-experimental ( $N = 30$ ) Treatment = Mealtime music Control = None	LTC (US)	Relaxing taped music played during mealtime – DVD – Evening mealtime every day in weeks 2 and 4. No music during meal weeks 1 and 3.
Holmes, Knights, Dean, Hodkinson, & Hopkins, 2006	RCT ( $N = 32$ ) A = Live music B = Pre-recorded music Control = Silence	SNF (UK)	Passive listening to live music – Musicians and DVD – One 90 min session with each condition (live, pre-recorded and silence) lasting 30 min.
Ledger & Baker, 2007	Non-randomized control comparison ( $N = 45$ ) Treatment = Group music Control = Standard care	SNF (Australia)	Group music therapy—Active requesting and singing songs, playing instruments, discussing feelings – Qualified music therapists – 30–45-min weekly sessions for at least 42 weeks in 1 year
Raglio et al., 2008	RCT ( $N = 59$ ) Treatment = Music therapy Control = Educational and entertainment activities	SNF (Italy)	Music therapy (MT)—Nonverbal MT—using both rhythmical and melodic instruments – MNusic therapist – 30 MT sessions (30 min/session) within 16 weeks
Sung, Chang, Lee, & Lee, 2006	RCT ( $N = 36$ ) Treatment = Music Control = Usual care	SNF (Taiwan)	Group music with movement—Pre-recorded familiar and preferred music designed to help participants move their body – Nursing researcher and 2 research assistants – 30-min sessions, 2 times a week for 4 weeks
Sung, Chang & Lee, 2010	RCT ( $N = 60$ ) Treatment = Music Control = Usual care	SNF (Taiwan)	Group music with percussion instruments, pre-recorded familiar and preferred music – Trained research assistants – 30-min sessions, 2 times a week for 6 weeks
Svansdottir & Snaedal, 2006	Case-control ( $N = 38$ ) Treatment = Group music Control = “No change in care”	SNF (Iceland)	Group music therapy—Singing collection of songs (familiar to Icelanders) through twice, discussions between songs – Qualified music therapist – 30-min sessions, 3 times a week for 6 weeks

(Continued)

TABLE 23.1 (Contd)

Citation	Study design: (sample size) (control)	Setting (country)	Intervention components
			– Interventionist – Duration & frequency
<b>Animal</b>			
Richeson, 2003	Pilot quasi-experimental time-series design within subject ( $N = 15$ ) Treatment = AAT Control = None	SNF (US)	Animal-Assisted Therapy (AAT)—Group visits with therapy dog, active interaction with dog and discussion of memories and feelings – Therapeutic recreation staff, therapy dog and dog handler – 1 h Mon–Friday at change of shift for 3 weeks (15 total sessions)
<b>Therapeutic games</b>			
Cohen, Firth, Biddle, Lloyd Lewis and Simmens, 2008	Single group, within-subject design ( $N = 33$ ) Treatment = Game Control 1 = Typical visit Control 2 = Visit with review of a magazine	SNF (US)	“Making Memories Together”—Cards made by family and friends, game to be played by family members and the PWD strength-based approach – Family and friends of PWD – Sequence of all three conditions over one 30-min session (during family visit)
Hatakeyama et al., 2010	Pilot randomized trial ( $N = 28$ ) Treatment = Personalized video Control = Random scenes from nature	LTC (Japan)	Personalized digital videos of family pictures and greetings from family members. – DVD – 15-min video shown 1 time a day for 4 weeks

Bx, Behavior; Cg, caregiver; RCT, randomized controlled trial; BPSD, behavioral and psychological symptoms of dementia; SNF, skilled nursing facility; AL, assisted living; LTC, long-term care; OT, occupational therapy; PT, physical therapy.



and functional status with physical health and activity (Burns, Anderson, Smith, & Donnelly, 2008; Erickson & Kramer, 2009) these studies investigated the effectiveness of physical activity interventions to reduce the physical disability and associated behavioral problems experienced by PWDs.

### **Studies**

The majority of these studies targeted the PWD and were conducted in long-term care settings and in groups. Of the five studies conducted in the community, four utilized the staff caregivers as a facilitator of the intervention (McCurry et al., 2011; Pitkala, Savikko, Poysti, Strandberg, & Laakkonen, 2013; Steinberg, Leoutsakos, Podewils, & Lyketsos, 2009; Teri et al., 2003) and one evaluated the impact on the family caregiver (Steinberg et al., 2009). Most programs were comprehensive incorporating aerobic/endurance exercise with strength/balance activities; these interventions, such as the Finnish Alzheimer Disease Exercise Trial (FINALEX) and the Reducing Disability in Alzheimer's Disease (RDAD) intervention (Teri et al., 2003) focused on preserving physical function and improving affect by engaging the PWD in daily exercise. Both yielded significant benefits in physical function (Aman & Thomas, 2009; Pitkala et al., 2013; Roach, Tappen, Kirk-Sanchez, Williams, & Loewenstein, 2011; Rolland et al., 2007; Teri et al., 2003), and improved mood (Edwards, Gardiner, Ritchie, Baldwin, & Sands, 2008; Stella et al., 2011; Teri et al., 2003; Williams & Tappen, 2008). Studies that involved a single activity, such as walking, dance, or yoga demonstrated fewer significant improvements than comprehensive programs; with neither dance nor walking interventions reporting significant outcomes on sleep, behavior, or mood (Eggermont, Blankevoort, & Scherder, 2010; Hokkanen et al., 2008; McCurry et al., 2011; Van de Winckel, Feys, De Weerd, & Dom, 2004).

## **Caregiver Training Interventions**

### ***Rationale and Theory***

Caregiving training interventions targeted family, formal or informal caregivers and focused primarily on improving their understanding of dementia, increasing their skills for managing common dementia-related behaviors, and decreasing their own levels of burden and stress.

### **Studies**

The majority of these programs were delivered individually; others employed either a hybrid of group and individual sessions or solely group format. Content ranged from focusing solely on family caregiver stress and coping while others focused on skills more directly related to caring for the PWD. The latter included behavioral modification strategies, education about dementia and the disease process, training to address environmental adjustments/adaptations and safety, pleasant events, problem-solving skills, communication, and recognizing physical symptoms. Content aimed at improving the caregivers coping skills included techniques to address stress or burden, strategies to self-manage mood, methods to improve social or support engagement, cognitive restructuring processes, and self-care monitoring.

Of all the areas addressed in this review, caregiver programs were the most plentiful and varied. The most successful caregiver interventions were specific in the content covered and tailored to the method or site in which treatment was provided; multi-component programs were individualized to the needs of the dyad and content focused on caregiving skills, such as behavioral problem-solving, environmental adaptations, and communication reported better outcomes than those providing just information and/or support alone (Ayalon, Gum, Feliciano, & Arean, 2006; Brodaty, Green,

& Koschera, 2003; Logsdon, McCurry, & Teri, 2007a, 2007b; Olazaran et al., 2010; Parker, Mills, & Abbey, 2008).

## Emotion-Focused Interventions

### *Rationale and Theory*

These programs focused on enhancing caregiver skill in managing their own feelings of anger, depression, and associated problems with the assumption that if the caregiver is calmer, his/her own well-being and care for the PWD will improve.

### *Studies*

These studies utilized one or more of three strategies; cognitive-behavioral therapy (CBT), counseling-based and/or caregiver support. The majority focused on the family caregivers and reported significant reductions in caregiver anxiety, strain/burden and mood, and in PWD mood and behavioral problems; one reported a reduction in nursing home placement. The two studies that focused on counseling interventions for the PWD had promising but inconsistent results. Interventions with longer duration had more positive outcomes compared to shorter-duration interventions.

## Social Enhancement

### *Rationale and Theory*

These approaches focused on engaging the individual with dementia in social activity using modalities that may hold meaning and be pleasant for them; they hypothesized that mental health and QOL outcomes will improve based on distracting attention from negative thoughts and by decreasing social isolation.

### *Studies*

A variety of components (music, animal-assisted therapies, and games) were investigated. Music was most often studied ( $N=10$ )

either in groups or individually, using passive and active participation. Findings were mixed (and conclusions limited by the relatively small sample size and design of these studies) but there appears to be modest support for decreasing agitation, depression, and anxiety and increasing social engagement. A number of recent reviews support these conclusions (Wall & Duffy, 2010); including a recent meta-analysis that suggested music therapy may increase QOL for the PWD (Vasionyte & Madison, 2013).

## TRANSLATION AND IMPLEMENTATION OF PSYCHOSOCIAL APPROACHES

The future of psychosocial treatments—and the true potential of research in this area to impact clinical care—is dependent upon the ability of these programs to appeal to providers and consumers in “real” community settings, to adjust to changing health care needs and financing demands, and demonstrate continued clinical effectiveness. Despite the array of programs reviewed here and their strong evidence for efficacy, the majority are not well known outside the academic community and “the majority of older adults with dementia do not receive appropriate treatment” (Chapman, Williams, Strine, Anda, & Moore, 2006). Therefore, we now highlight two programs that have systematically extended their reach beyond the initial controlled trials, have published on their experiences with translation and therefore provide an opportunity to address the challenges and opportunities afforded by this translational work.

The first exemplar includes programs developed and evaluated as part of a series of treatment protocols called the Seattle Protocols (Teri, Logsdon & McCurry, 2005) and selected for translation by a number of different community agencies: Reducing Disability in Alzheimer’s Disease (RDAD) (Teri et al., 2003); Staff Training

in Assisted-living Residences (STAR) (Teri, Huda, Gibbons, Young, & van Leynseele, 2005); and STAR-Community Consultants (STAR-C) (Teri, McCurry, Logsdon, & Gibbons, 2005). The focus of each of these programs was on training family or formal caregivers to improve care and reduce the behavioral problems and depression of PWD. Strategies incorporated to facilitate translation of RDAD (Teri et al., 2003), STAR-VA (Karlin, Visnic, McGee, & Teri, 2014), and STAR-C (Teri, McCurry et al., 2005) into the community settings provide a glimpse into the complexity involved and included: (i) clearly connecting rationale for protocols to observed clinical needs; (ii) broadening criteria for inclusion of diverse clinical populations; (iii) systematic yet flexible treatment manuals; (iv) clinically relevant measures of outcomes; (v) procedures for assessment of treatment fidelity; and (vi) thoughtful selection of staff/practitioners for initial training (Teri et al., 2012). The Ohio Department on Aging collaborated with seven Alzheimer's Association Chapters to implement RDAD and successfully enrolled 630 families during a 4-year replication study (Primetica, Menne, Bollin, Teri, & Molea, 2013). The agencies involved in translation of RDAD reported positive experiences for family caregivers and identified factors for ongoing sustainability which included: (i) understanding and interest of the community members; (ii) agency readiness and willingness to adopt an evidence-based program; and (iii) establishing funding sources to sustain the program. Similarly STAR-C was chosen for implementation in three counties by the Oregon Department of Human Services in collaboration with two Area Agencies on Aging and the Oregon Chapter of the Alzheimer's Association (Teri et al., 2012). Initial reports of trainers and caregivers were positive and provided evidence of successful translation. Challenges to sustainability were identified and included: (i) how to maintain integrity and effectiveness as programs evolve to meet agency and

caregiver needs; (ii) what the minimum data needed to track integrity and effectiveness was; and (iii) what ongoing training was necessary to maintain skills and quality of services. In the final example, STAR was selected by the US Department of Veterans Affairs (VA) health care systems for implementation in their Community Living Centers (CLCs) across the country (Karlin et al., 2013). Working closely with the STAR developer (L. Teri), a taskforce was assembled to modify STAR to meet the particular needs of VA residents and the VA care system. Modifications included tailoring the program to the Mental Health Providers (clinical psychologists) that provide the majority of mental health care to veterans in CLCs and detailing the specific VA structures and policies to insure successful implementation. This program, STAR-VA, was then tested across 24 CLCs with significantly positive clinical outcomes and successful implementation reports obtained. STAR-VA was then expanded to include twice as many VA sites with additional data and modifications made to facilitate scaling up across the VA nationally. This program is currently underway. The reported challenges in many of these sites involved the complexity of introducing a new program in an already overburdened system of care as well as establishing close ties with other health care team members essential to providing good patient care.

The second exemplar of an evidence-based psychosocial intervention translated into clinical practice settings is a group of interventions from Resources for Enhancing Alzheimer's Caregiver Health II (REACH II). REACH II included education, skills training, and support in the person's home and additional support was provided by telephone with the goal of reducing depression and improving QOL for family caregivers and avoiding nursing home placement for the PWD (Stevens, Lancer, Smith, Allen, & McGhee, 2009; Stevens, Smith, Trickett, & McGhee, 2012). REACH II was selected for translation into community

agencies in eight states (Maslow, 2012). Stevens et al (2009, 2012) reported on adapting REACH II components into the community (using trained community volunteers) and in a large hospital and primary care clinic (in collaboration with the Central Texas Area Agency on Aging and delivered by Master's prepared counselors). Strategies to improve translation of REACH II into community settings included delivery by telephone only; use of a computer application to deliver treatment; development of additional modules requested by the settings; and development of systematic outreach and marketing plans (Maslow, 2012). Barriers to sustainability included: (i) recruitment and attrition of enrollees; (ii) ongoing training fidelity; and (iii) lack of cost-effectiveness data (pre- and post-intervention).

The researchers in both the above exemplars (Seattle Protocols and REACH II) have been successful in translating research-based protocols into "real-world" settings. They have experienced similar overarching challenges that require active problem-solving when evidence-based programs are adopted by community and agency settings. The successes and challenges of these programs were reflected in a recent summary looking at challenges to translation of non-pharmacological treatments that addressed six overarching issues: (i) generally there is no third-party payer reimbursement; (ii) recruitment of people with dementia and family caregivers that meet enrollment criteria can be difficult (and may need to be more inclusive than the original clinical trial allowed); (iii) community providers who can deliver the evidence-based treatment as intended may be difficult to find; (iv) concerns of when (and if) it is acceptable to incorporate site-specific accommodations and innovations into an evidence-based treatment without conducting a new clinical trial to establish/confirm efficacy of changes; and (v) issues of how to maintain treatment fidelity when delivery is taken over by community providers (Maslow, 2012). In summary,

these early reports on translating evidence-based psychosocial programs were encouraging and established that such translation is not only possible but highly desirable. They also highlighted the need for careful assessment and candid discussions of what is working (and not working) to facilitate the effective translation of more evidence-based programs.

The need for moving these (and other evidence-based) programs into the community is essential. Closing the gap between what is efficacious in a closely monitored clinical trial and "what works" in the real world of a clinical practice is critical for improving the care and experiences of the PWD and their caregivers.

## DISCUSSION

---

The growth of research in the psychosocial treatment of behavioral problems in dementia has grown exponentially in the past 10 years. In 2007, 14 studies in this area were identified (Logsdon et al., 2007b). This review revealed 154 studies which, when restricted to those studies that met our criteria, still yielded 98 studies.

The studies included in this review met high standards of clinical utility and, in general, provided positive empirical evidence. Each met AoA intermediate-level evidence-based criteria and was published within the past 10 years with a primary focus on patient behavioral and/or familial or formal caregiver outcomes. We included studies that encompassed the array of settings providing care for PWD (e.g., private home, long-term care) as well as the diversity of providers (family, professional and nonprofessional staff) and common problems among PWD (such as depression, agitation, general behavioral problems) and among their family or formal caregivers (depression and burden).

Five types of psychosocial treatments were identified: person-centered (16 studies), PA (15

studies), caregiver training (28 studies), emotion-focused (19 studies), and social-enhancement (14 studies). This plethora of psychosocial treatments was diverse in every conceivable way: theories were often not identified but, when they were, they included communication, social learning, person–environment fit, stress and adaptation; the focus of treatment was either the PWD or their caregivers, or both; the location and method of delivery ranged from individually in private homes to in groups and remotely in classrooms, primary care offices, and online; sample sizes ranged from 15 to 642 and, although including both males and females, they were predominately female Caucasians; the measures utilized encompassed a variety of care-recipient and caregiver domains and included (but were not limited to) behavioral problems, emotional distress, burden, depression, and functional limitations. Despite this diversity, the findings from these studies were encouragingly consistent: psychosocial treatments were effective in reducing the behavioral problems common among PWD and the distress and emotional burden experienced by their family or formal caregivers.

Of course, not all psychosocial programs were equal. The most effective interventions were multimodal in scope: they individualized care plans and systematically trained caregivers in a comprehensive set of skills including communication, behavior management, problem-solving, and environmental adaptations. Such programs yielded significant improvements (based on assessment of problems as well as strengths, needs, and preferences of the PWD) for both the PWD (reduced behavioral disturbances, improved mood and sleep patterns, increased social engagement, improved QOL) and for their caregiver (decreased burden and increased QOL). Interventions that incorporated PA with this multimodal skill building were few, but those that did had consistent and significant impact on PWD functional status, behavioral problems, and mood,

and on caregiver ratings of burden. Few social engagement studies met our criteria for inclusion: those that did suggested that the introduction of music, games, and animals into the PWD's environment had a positive impact for the PWD (decreasing agitation, depression, anxiety and increasing social engagement). Furthermore, what little data existed on consumer satisfaction or agency response indicated that the programs scaled out into the community were well received.

The richness of this diversity of treatment and the consistency of results offer significant promise for programs that can be tailored to the individual needs of individuals and agencies seeking to improve the care of PWD. Unfortunately, a number of limitations still plague this field. First and foremost, is the lack of significant research funding. Medication trials have been able to enroll thousands of subjects, due in no small part, to abundant funding. It is unusual for psychosocial research programs to include more than 100 subjects and even then, they are often divided across two or more treatment conditions, minimizing the ability to detect differences or determining the characteristics of subjects most likely to benefit. Second, with notable exceptions, the representation of minority and underserved ethnic groups in these studies is abysmal. Research investigating whether these programs work in different groups and developing new programs tailored to different groups is urgently needed. By necessity, we restricted this review to publications in English. However, dementia is a growing burden across the world with current projections indicating an “exponential” growth in developing countries, and a continuing linear increase in wealthy, developed countries (Abbott, 2011). The need for global research is clear. Third, the very nature of psychosocial interventions requires considerable up-front effort to insure standardized and easy-to-employ treatment manuals and provider training techniques. Very few programs

engaged in this rigor or provided sufficient details to illuminate the exact nature of the implementation phase of their program (notable exceptions include work discussed in our translation section).

Some study characteristics were both limitations and strengths that pointed to important directions for future studies. In many of the studies reviewed here, subjects resided in the community or long-term care (LTC) settings, thus accurately representing the population of PWD and caregivers seen in such settings. Unfortunately, this also generates significant heterogeneity so that attrition was often an issue and variability in outcomes served to sometimes obscure determinations regarding the characteristics of those most likely to improve. In many of these studies, initial developers of these programs were the investigators who continued to move the field (and their respective program) forward. While this affords the strength of uniformity and (in many cases) excellence, it is limited in scope. New investigators must subject these “established” programs to new questions and increased rigor. Are these programs effective only under the framework of established teams? Can they survive under other leadership and scrutiny?

This last issue ties directly to the need for evidence-based psychosocial programs to be scaled up. As this review demonstrates, we now have evidence-based psychosocial programs with proven excellent outcomes. Unfortunately, as we have already stated, very few of these programs have been scaled up or offered in the community using rigorous translational or dissemination science methodology. The most effective of these programs need to be moved out into the community to improve care and move the field forward. Agencies and researchers need to collaborate closely to establish systematic structures for ongoing quality improvement, evaluation, and policies to enable sustainability.

The need for translation is probably the single most important issue that faces both

researchers and clinicians. We have psychosocial programs that work. How do we get them into the field? How do we pay for them? Psychosocial programs are considerably less expensive than long-term care and potentially more effective and less restrictive than pharmacological management (Jones, Edwards, & Hounsome, 2012; Knapp, Lemmi, & Romeo, 2013). Without the strong arm of pharmaceutical companies to move these treatments “out” they will continue to be underutilized, leading to increased costs, both financial and emotional for our older adults with dementia, their caregivers, and our health care system.

## References

- Abbott, A. (2011). Dementia: A problem for our age. *Nature*, 475(7355), S2–S4.
- Akkerman, R. L., & Ostwald, S. K. (2004). Reducing anxiety in Alzheimer’s disease family caregivers: The effectiveness of a nine-week cognitive-behavioral intervention. *American Journal of Alzheimer’s Disease and Other Dementias*, 19(2), 117–123.
- Aman, E., & Thomas, D. R. (2009). Supervised exercise to reduce agitation in severely cognitively impaired persons. *Journal of the American Medical Directors Association*, 10(4), 271–276.
- American Psychiatric Association, (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Andrén, S., & Elmståhl, S. (2008). Effective psychosocial intervention for family caregivers lengthens time elapsed before nursing home placement of individuals with dementia: A five-year follow-up study. *International Psychogeriatrics/IPA*, 20(6), 1177–1192.
- Ayalon, L., Gum, A. M., Feliciano, L., & Arian, P. A. (2006). Effectiveness of nonpharmacological interventions for the management of neuropsychiatric symptoms in patients with dementia: A systematic review. *Archives of Internal Medicine*, 166(20), 2182–2188.
- Ballard, C., Brown, R., Fossey, J., Douglas, S., Bradley, P., Hancock, J., et al. (2009). Brief psychosocial therapy for the treatment of agitation in Alzheimer disease (the CALM-AD trial). *The American Journal of Geriatric Psychiatry*, 17(9), 726–733.
- Belle, S. H., Burgio, L., Burns, R., Coon, D., Czaja, S. J., Gallagher-Thompson, D., et al. (2006). Enhancing the quality of life of dementia caregivers from different ethnic or racial groups: A randomized, controlled trial. *Annals of Internal Medicine*, 145(10), 727–738.

- Bird, M., Jones, R. H., Korten, A., & Smithers, H. (2007). A controlled trial of a predominantly psychosocial approach to BPSD: Treating causality. *International Psychogeriatrics*, 19(5), 874–891.
- Brodaty, H., Green, A., & Koschera, A. (2003). Meta-analysis of psychosocial interventions for caregivers of people with dementia. *Journal of the American Geriatrics Society*, 51(5), 657–664.
- Burgio, L., Stevens, A., Guy, D., Roth, D. L., & Haley, W. E. (2003). Impact of two psychosocial interventions on white and African American family caregivers of individuals with dementia. *Gerontologist*, 43(4), 568–579.
- Burns, A., Guthrie, E., Marino-Francis, F., Busby, C., Morris, J., Russell, E., et al. (2005). Brief psychotherapy in Alzheimer's disease: Randomised controlled trial. *The British Journal of Psychiatry: The Journal of Mental Science*, 187, 143–147.
- Burns, J. M., Anderson, H. S., Smith, H. J., & Donnelly, J. E. (2008). Cardiorespiratory fitness in early-stage Alzheimer disease. *Alzheimer Disease and Associated Disorders*, 22(1), 39–46.
- Chapman, D. P., Williams, S. M., Strine, T. W., Anda, R. F., & Moore, M. J. (2006). Dementia and its implications for public health. Preventing Chronic Disease, CDC. Retrieved from <[http://www.cdc.gov/pcd/issues/2006/apr/05\\_0167.htm](http://www.cdc.gov/pcd/issues/2006/apr/05_0167.htm)>.
- Chenoweth, L., King, M. T., Jeon, Y. H., Brodaty, H., Stein-Parbury, J., Norman, R., et al. (2009). Caring for Aged Dementia Care Resident Study (CADRES) of person-centred care, dementia-care mapping, and usual care in dementia: A cluster-randomised trial. *Lancet Neurology*, 8(4), 317–325.
- Cheston, R., Jones, K., & Gilliard, J. (2003). Group psychotherapy and people with dementia. *Aging & Mental Health*, 7(6), 452–461.
- Choi, A. N., Lee, M. S., Cheong, K. J., & Lee, J. S. (2009). Effects of group music intervention on behavioral and psychological symptoms in patients with dementia: A pilot-controlled trial. *The International Journal of Neuroscience*, 119(4), 471–481.
- Cohen, G. D., Firth, K. M., Biddle, S., Lloyd Lewis, M. J., & Simmens, S. (2008). The first therapeutic game specifically designed and evaluated for Alzheimer's disease. *American Journal of Alzheimer's Disease and other Dementias*, 23(6), 540–551.
- Cohen-Mansfield, J., Thein, K., Marx, M. S., Dakheel-Ali, M., & Freedman, L. (2012). Efficacy of nonpharmacologic interventions for agitation in advanced dementia: A randomized, placebo-controlled trial. *The Journal of Clinical Psychiatry*, 73(9), 1255–1261.
- Conradsson, M., Littbrand, H., Lindelof, N., Gustafson, Y., & Rosendahl, E. (2010). Effects of a high-intensity functional exercise programme on depressive symptoms and psychological well-being among older people living in residential care facilities: A cluster-randomized controlled trial. *Aging & Mental Health*, 14(5), 565–576.
- Cooke, M., Moyle, W., Shum, D., Harrison, S., & Murfield, J. (2010a). A randomized controlled trial exploring the effect of music on quality of life and depression in older people with dementia. *Journal of Health Psychology*, 15(5), 765–776.
- Cooke, M. L., Moyle, W., Shum, D. H., Harrison, S. D., & Murfield, J. E. (2010b). A randomized controlled trial exploring the effect of music on agitated behaviours and anxiety in older people with dementia. *Aging & Mental Health*, 14(8), 905–916.
- Coon, D. W., Thompson, L., Steffen, A., Sorocco, K., & Gallagher-Thompson, D. (2003). Anger and depression management: Psychoeducational skill training interventions for women caregivers of a relative with dementia. *Gerontologist*, 43(5), 678–689.
- Cotelli, M., Manenti, R., & Zanetti, O. (2012). Reminiscence therapy in dementia: A review. *Maturitas*, 72(3), 203–205.
- Dahm, R. (2006). Alzheimer's discovery. *Current Biology*, 16(21), R906–R910.
- Davis, L., Burgio, L., Buckwalter, K., & Weaver, M. (2004). A comparison of in-home and telephone-based skill training interventions with caregivers of persons with dementia. *Journal of Mental Health and Aging*, 10(1), 31–44.
- Davison, T. E., Hudgson, C., McCabe, M. P., George, K., & Buchanan, G. (2007). An individualized psychosocial approach for "treatment resistant" behavioral symptoms of dementia among aged care residents. *International Psychogeriatrics*, 19(5), 859–873.
- Van de Winkel, A., Feys, H., De Weerd, W., & Dom, R. (2004). Cognitive and behavioural effects of music-based exercises in patients with dementia. *Clinical Rehabilitation*, 18(3), 253–260.
- Dröes, R. M., Meiland, F., Schmitz, M., & van Tilburg, W. (2004). Effect of combined support for people with dementia and carers versus regular day care on behaviour and mood of persons with dementia: Results from a multi-centre implementation study. *International Journal of Geriatric Psychiatry*, 19(7), 673–684.
- Edwards, N., Gardiner, M., Ritchie, D. M., Baldwin, K., & Sands, L. (2008). Effect of exercise on negative affect in residents in special care units with moderate to severe dementia. *Alzheimer Disease and Associated Disorders*, 22(4), 362–368.
- Eggermont, L. H., Blankevoort, C. G., & Scherder, E. J. (2010). Walking and night-time restlessness in mild-to-moderate dementia: A randomized controlled trial. *Age and Ageing*, 39(6), 746–749.
- Eisdorfer, C., Czaja, S. J., Loewenstein, D. A., Rubert, M. P., Argüelles, S., Mitrani, V. B., et al. (2003). The effect of

- a family therapy and technology-based intervention on caregiver depression. *Gerontologist*, 43(4), 521–531.
- Erickson, K. I., & Kramer, A. F. (2009). Aerobic exercise effects on cognitive and neural plasticity in older adults. *British Journal of Sports Medicine*, 43(1), 22–24.
- Fan, J. T., & Chen, K. M. (2011). Using silver yoga exercises to promote physical and mental health of elders with dementia in long-term care facilities. *International Psychogeriatrics/IPA*, 23(8), 1222–1230.
- Farran, C., Gilley, D., McCann, J., Bienias, J., Lindeman, D., & Evans, D. (2004). Psychosocial interventions to reduce depressive symptoms of dementia caregivers: A randomized clinical trial comparing two approaches. *Journal of Mental Health and Aging*, 10(4), 14.
- Fialho, P. P., Köenig, A. M., Santos, M. D., Barbosa, M. T., & Caramelli, P. (2012). Positive effects of a cognitive-behavioral intervention program for family caregivers of demented elderly. *Arquivos de Neuro-Psiquiatria*, 70(10), 786–792.
- Finkel, S., Czaja, S. J., Schulz, R., Martinovich, Z., Harris, C., & Pezzuto, D. (2007). E-care: A telecommunications technology intervention for family caregivers of dementia patients. *The American Journal of Geriatric Psychiatry*, 15(5), 443–448.
- Finnema, E., Dröes, R. M., Ettema, T., Ooms, M., Adèr, H., Ribbe, M., et al. (2005). The effect of integrated emotion-oriented care versus usual care on elderly persons with dementia in the nursing home and on nursing assistants: A randomized clinical trial. *International Journal of Geriatric Psychiatry*, 20(4), 330–343.
- Gallagher-Thompson, D., & Coon, D. W. (2007). Evidence-based psychological treatments for distress in family caregivers of older adults. *Psychology and Aging*, 22(1), 37–51.
- Gallagher-Thompson, D., Coon, D. W., Solano, N., Ambler, C., Rabinowitz, Y., & Thompson, L. W. (2003). Change in indices of distress among Latino and Anglo female caregivers of elderly relatives with dementia: Site-specific results from the REACH national collaborative study. *Gerontologist*, 43(4), 580–591.
- Gareri, P., De Fazio, P., Manfredi, V. G., & De Sarro, G. (2013). Use and safety of antipsychotics in behavioral disorders in elderly people with dementia. *Journal of Clinical Psychopharmacology*, 34(1), 109–123.
- Gavrilova, S. I., Ferri, C. P., Mikhaylova, N., Sokolova, O., Banerjee, S., & Prince, M. (2009). Helping carers to care—the 10/66 dementia research group’s randomized control trial of a caregiver intervention in Russia. *International Journal of Geriatric Psychiatry*, 24(4), 347–354.
- Gitlin, L. N., Winter, L., Burke, J., Chernett, N., Dennis, M. P., & Hauck, W. W. (2008). Tailored activities to manage neuropsychiatric behaviors in persons with dementia and reduce caregiver burden: A randomized pilot study. *The American Journal of Geriatric Psychiatry*, 16(3), 229–239.
- Gitlin, L. N., Winter, L., Corcoran, M., Dennis, M. P., Schinfeld, S., & Hauck, W. W. (2003). Effects of the home environmental skill-building program on the caregiver-care recipient dyad: 6-month outcomes from the Philadelphia REACH Initiative. *Gerontologist*, 43(4), 532–546.
- Gitlin, L. N., Winter, L., Dennis, M. P., Hodgson, N., & Hauck, W. W. (2010a). A biobehavioral home-based intervention and the well-being of patients with dementia and their caregivers: The COPE randomized trial. *JAMA*, 304(9), 983–991.
- Gitlin, L. N., Winter, L., Dennis, M. P., Hodgson, N., & Hauck, W. W. (2010b). Targeting and managing behavioral symptoms in individuals with dementia: A randomized trial of a nonpharmacological intervention. *Journal of the American Geriatrics Society*, 58(8), 1465–1474.
- Gonyea, J. G., O’Connor, M. K., & Boyle, P. A. (2006). Project CARE: A randomized controlled trial of a behavioral intervention group for Alzheimer’s disease caregivers. *Gerontologist*, 46(6), 827–832.
- Graff, M. J., Vernooij-Dassen, M. J., Thijssen, M., Dekker, J., Hoefnagels, W. H., & Olderkert, M. G. (2007). Effects of community occupational therapy on quality of life, mood, and health status in dementia patients and their caregivers: A randomized controlled trial. *The Journals of Gerontology Series A, Biological Sciences and Medical Sciences*, 62(9), 1002–1009.
- Guétin, S., Portet, F., Picot, M. C., Pommier, C., Messaoudi, M., Djabelkir, L., et al. (2009). Effect of music therapy on anxiety and depression in patients with Alzheimer’s type dementia: Randomised, controlled study. *Dementia and Geriatric Cognitive Disorders*, 28(1), 36–46.
- Hatakeyama, R., Fukushima, K., Fukuoka, Y., Satoh, A., Kudoh, H., Fujii, M., et al. (2010). Personal home made digital video disk for patients with behavioral psychological symptoms of dementia. *Geriatrics & Gerontology International*, 10(3), 272–274.
- Hepburn, K., Lewis, M., Tornatore, J., Sherman, C. W., & Bremer, K. L. (2007). The Savvy Caregiver program: The demonstrated effectiveness of a transportable dementia caregiver psychoeducation program. *Journal of Gerontological Nursing*, 33(3), 30–36.
- Hicks-Moore, S. L. (2005). Relaxing music at mealtime in nursing homes: Effects on agitated patients with dementia. *Journal of Gerontological Nursing*, 31(12), 26–32.
- Hokkanen, L., Rantala, L., Remes, A. M., Harkonen, B., Viramo, P., & Winblad, I. (2008). Dance and movement therapeutic methods in management of dementia: A randomized, controlled study. *Journal of the American Geriatrics Society*, 56(4), 771–772.



- Holmes, C., Knights, A., Dean, C., Hodkinson, S., & Hopkins, V. (2006). Keep music live: Music and the alleviation of apathy in dementia subjects. *International Psychogeriatrics/IPA*, 18(4), 623–630.
- Huang, H. L., Kuo, L. M., Chen, Y. S., Liang, J., Chiu, Y. C., Chen, S. T., et al. (2013). A home-based training program improves caregivers' skills and dementia patients' aggressive behaviors: A randomized controlled trial. *The American Journal of Geriatric Psychiatry*, 21(11), 1060–1070.
- Huang, H. L., Shyu, Y. I., Chen, M. C., Chen, S. T., & Lin, L. C. (2003). A pilot study on a home-based caregiver training program for improving caregiver self-efficacy and decreasing the behavioral problems of elders with dementia in Taiwan. *International Journal of Geriatric Psychiatry*, 18(4), 337–345.
- Hurd, M. D., Martorell, P., & Langa, K. M. (2013). Monetary costs of dementia in the United States. *New England Journal of Medicine*, 369(5), 489–490.
- Jones, C., Edwards, R. T., & Hounsome, B. (2012). A systematic review of the cost-effectiveness of interventions for supporting informal caregivers of people with dementia residing in the community. *International Psychogeriatrics*, 24(1), 6–18.
- Karlin, B. E., Visnic, S., McGee, J., & Teri, L. (2014). Results from the multisite implementation of STAR-VA: A multicomponent psychosocial intervention for managing challenging dementia-related behaviors of veterans. *Psychological Services*, 11(2), 200–208.
- Karlin, B. E., Visnic, S., Shealy McGee, J., & Teri, L. (2013). Results from the multisite implementation of STAR-VA: A multicomponent psychosocial intervention for managing challenging dementia-related behaviors of veterans. *Psychological Services* Advance online publication.
- Knapp, M., Lemmi, V., & Romeo, R. (2013). Dementia care costs and outcomes: A systematic review. *International Journal of Geriatric Psychiatry*, 28(6), 551–561.
- Knight, G. B., & Losada, A. (2011). Family care-giving for cognitively or physically frail older adults: Theory, research and practice. In K. W. Schaie & S. L. W. Willis (Eds.), *Handbook of the psychology of aging* (pp. 353–366) (7th ed.). San Diego, CA: Academic Press.
- Kolanowski, A., Litaker, M., Buettner, L., Moeller, J., & Costa, P. T. (2011). A randomized clinical trial of theory-based activities for the behavioral symptoms of dementia in nursing home residents. *Journal of the American Geriatrics Society*, 59(6), 1032–1041.
- Kurz, A., Wagenpfeil, S., Hallauer, J., Schneider-Schelte, H., Jansen, S., & AENEAS Study. (2010). Evaluation of a brief educational program for dementia carers: The AENEAS study. *International Journal of Geriatric Psychiatry*, 25(8), 861–869.
- Lai, C. K., Chi, I., & Kayser-Jones, J. (2004). A randomized controlled trial of a specific reminiscence approach to promote the well-being of nursing home residents with dementia. *International Psychogeriatrics*, 16(1), 33–49.
- Ledger, A. J., & Baker, F. A. (2007). An investigation of long-term effects of group music therapy on agitation levels of people with Alzheimer's Disease. *Ageing & Mental Health*, 11(3), 330–338.
- Liddle, J., Smith-Conway, E. R., Baker, R., Angwin, A. J., Gallois, C., Copland, D. A., et al. (2012). Memory and communication support strategies in dementia: Effect of a training program for informal caregivers. *International Psychogeriatrics*, 24(12), 1927–1942.
- Logsdon, R. G., McCurry, S. M., & Teri, L. (2007a). Evidence-based interventions to improve quality of life for individuals with dementia. *Alzheimer's Care Today*, 8(4), 309–318.
- Logsdon, R. G., McCurry, S. M., & Teri, L. (2007b). Evidence-based psychological treatments for disruptive behaviors in individuals with dementia. *Psychology and Aging*, 22(1), 28–36.
- Low, L. F., Brodaty, H., Goodenough, B., Spitzer, P., Bell, J. P., Fleming, R., et al. (2013). The Sydney Multisite Intervention of LaughterBosses and ElderClowns (SMILE) study: Cluster randomised trial of humour therapy in nursing homes. *BMJ Open*, 3(1)
- Mahoney, D. F., Tarlow, B. J., & Jones, R. N. (2003). Effects of an automated telephone support system on caregiver burden and anxiety: Findings from the REACH for TLC intervention study. *Gerontologist*, 43(4), 556–567.
- Márquez-González, M., Losada, A., Izal, M., Pérez-Rojo, G., & Montorio, I. (2007). Modification of dysfunctional thoughts about caregiving in dementia family caregivers: Description and outcomes of an intervention programme. *Ageing & Mental Health*, 11(6), 616–625.
- Martín-Carrasco, M., Domínguez-Panchón, A. I., González-Fraile, E., Muñoz-Hermoso, P., Ballesteros, J., & Group, T. E. (2013). Effectiveness of a psychoeducational intervention group program in the reduction of the burden experienced by caregivers of patients with dementia: The EDUCA-II Randomized Trial. *Alzheimer Disease and Associated Disorders*
- Martín-Carrasco, M., Martín, M. F., Valero, C. P., Millán, P. R., García, C. I., Montalbán, S. R., et al. (2009). Effectiveness of a psychoeducational intervention program in the reduction of caregiver burden in Alzheimer's disease patients' caregivers. *International Journal of Geriatric Psychiatry*, 24(5), 489–499.
- Maslow, K. (2012). *Translating innovation to impact: Evidence-based interventions to support people with Alzheimer's disease and their caregivers at home and in the community. A White Paper*. Washington, DC: Alliance for Aging Research, U.S. Administration on Aging, &

- MetLife Foundation. Retrieved from <[http://www.aoa.gov/AoA\\_Programs/HPW/Alz\\_Grants/docs/TranslatingInnovationtoImpactAlzheimersDisease.pdf](http://www.aoa.gov/AoA_Programs/HPW/Alz_Grants/docs/TranslatingInnovationtoImpactAlzheimersDisease.pdf)>.
- McCurry, S. M., Gibbons, L. E., Logsdon, R. G., Vitiello, M. V., & Teri, L. (2005). Nighttime insomnia treatment and education for Alzheimer's disease: A randomized, controlled trial. *Journal of the American Geriatrics Society*, 53(5), 793–802.
- McCurry, S. M., LaFazia, D. M., Pike, K. C., Logsdon, R. G., & Teri, L. (2012). Development and evaluation of a sleep education program for older adults with dementia living in adult family homes. *The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry*, 20(6), 494–504.
- McCurry, S. M., Pike, K. C., Vitiello, M. V., Logsdon, R. G., Larson, E. B., & Teri, L. (2011). Increasing walking and bright light exposure to improve sleep in community-dwelling persons with Alzheimer's disease: Results of a randomized, controlled trial. *Journal of the American Geriatrics Society*, 59(8), 1393–1402.
- Mittelman, M. S., Brodaty, H., Wallen, A. S., & Burns, A. (2008). A three-country randomized controlled trial of a psychosocial intervention for caregivers combined with pharmacological treatment for patients with Alzheimer disease: Effects on caregiver depression. *The American Journal of Geriatric Psychiatry*, 16(11), 893–904.
- Mittelman, M. S., Haley, W. E., Clay, O. J., & Roth, D. L. (2006). Improving caregiver well-being delays nursing home placement of patients with Alzheimer disease. *Neurology*, 67(9), 1592–1599.
- Mittelman, M. S., Roth, D. L., Haley, W. E., & Zarit, S. H. (2004). Effects of a caregiver intervention on negative caregiver appraisals of behavior problems in patients with Alzheimer's disease: Results of a randomized trial. *The Journals Of Gerontology Series B, Psychological Sciences and Social Sciences*, 59(1), P27–P34.
- Moniz-Cook, E., Elston, C., Gardiner, E., Agar, S., Silver, M., Win, T., et al. (2008). Can training community mental health nurses to support family carers reduce behavioural problems in dementia? An exploratory pragmatic randomised controlled trial. *International Journal of Geriatric Psychiatry*, 23(2), 185–191.
- Moore, R. C., Chattillion, E. A., Ceglowski, J., Ho, J., von Känel, R., Mills, P. J., et al. (2013). A randomized clinical trial of Behavioral Activation (BA) therapy for improving psychological and physical health in dementia caregivers: Results of the Pleasant Events Program (PEP). *Behaviour Research and Therapy*, 51(10), 623–632.
- Nobili, A., Riva, E., Tettamanti, M., Lucca, U., Liscio, M., Petrucci, B., et al. (2004). The effect of a structured intervention on caregivers of patients with dementia and problem behaviors: A randomized controlled pilot study. *Alzheimer Disease and Associated Disorders*, 18(2), 75–82.
- Olazaran, J., Reisberg, B., Clare, L., Cruz, I., Pena-Casanova, J., Del Ser, T., et al. (2010). Nonpharmacological therapies in Alzheimer's disease: A systematic review of efficacy. *Dementia and Geriatric Cognitive Disorders*, 30(2), 161–178.
- Orrell, M., Hancock, G., Hoe, J., Woods, B., Livingston, G., & Challis, D. (2007). A cluster randomised controlled trial to reduce the unmet needs of people with dementia living in residential care. *International Journal of Geriatric Psychiatry*, 22(11), 1127–1134.
- Parker, D., Mills, S., & Abbey, J. (2008). Effectiveness of interventions that assist caregivers to support people with dementia living in the community: A systematic review. *International Journal of Evidence-based Healthcare*, 6(2), 137–172.
- 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(6), 417–425.
- Pitkala, K., Savikko, N., Poysti, M., Strandberg, T., & Laakkonen, M. L. (2013). Efficacy of physical exercise intervention on mobility and physical functioning in older people with dementia: A systematic review. *Experimental Gerontology*, 48(1), 85–93.
- Pitkälä, K. H., Pöysti, M. M., Laakkonen, M. L., Tilvis, R. S., Savikko, N., Kautiainen, H., et al. (2013). Effects of the Finnish Alzheimer disease exercise trial (FINALEX): A randomized controlled trial. *JAMA Internal Medicine*, 173(10), 894–901.
- Politis, A. M., Vozzella, S., Mayer, L. S., Onyike, C. U., Baker, A. S., & Lyketsos, C. G. (2004). A randomized, controlled, clinical trial of activity therapy for apathy in patients with dementia residing in long-term care. *International Journal of Geriatric Psychiatry*, 19(11), 1087–1094.
- Primetica, B., Menne, H.L., Bollin, S., Teri, L., & Molea, M. (2013). Evidence-based program replication: Translational activities, experiences, and challenges. *Journal of Gerontological Social Work*, Advance online publication. <<http://jag.sagepub.com/content/early/2013/2011/2008/0733464813508888.full.pdf+html>>.
- Raglio, A., Bellelli, G., Traficante, D., Gianotti, M., Ubezio, M. C., Villani, D., et al. (2008). Efficacy of music therapy in the treatment of behavioral and psychiatric symptoms of dementia. *Alzheimer Disease and Associated Disorders*, 22(2), 158–162.
- Richards, K. C., Beck, C., O'Sullivan, P. S., & Shue, V. M. (2005). Effect of individualized social activity on sleep in nursing home residents with dementia. *Journal of the American Geriatrics Society*, 53(9), 1510–1517.
- Richeson, N. E. (2003). Effects of animal-assisted therapy on agitated behaviors and social interactions of older adults with dementia. *American Journal of Alzheimer's Disease and Other Dementias*, 18(6), 353–358.

- Roach, K. E., Tappen, R. M., Kirk-Sanchez, N., Williams, C. L., & Loewenstein, D. (2011). A randomized controlled trial of an activity specific exercise program for individuals with Alzheimer disease in long-term care settings. *Journal of Geriatric Physical Therapy, 34*(2), 50–56.
- Rolland, Y., Pillard, F., Klapouszczak, A., Reynish, E., Thomas, D., Andrieu, S., et al. (2007). Exercise program for nursing home residents with Alzheimer's disease: A 1-year randomized, controlled trial. *Journal of the American Geriatrics Society, 55*(2), 158–165.
- Ruddy, R., & House, A. (2005). Psychosocial interventions for conversion disorder. *The Cochrane Database of Systematic Reviews*(4), CD005331.
- Schneider, L. S., Dagerman, K. S., & Insel, P. (2005). Risk of death with atypical antipsychotic drug treatment for dementia. *JAMA, 294*(15), 1934–1943.
- Senanarong, V., Jamjumras, P., Harmphadungkit, K., Klubwongs, M., Udomphantharak, S., Pongvarin, N., et al. (2004). A counseling intervention for caregivers: Effect on neuropsychiatric symptoms. *International Journal of Geriatric Psychiatry, 19*(8), 781–788.
- Serrani Azcurra, D. J. (2012). A reminiscence program intervention to improve the quality of life of long-term care residents with Alzheimer's disease: A randomized controlled trial. *Revista Brasileira de Psiquiatria (Sao Paulo, Brazil: 1999), 34*(4), 422–433.
- Steinberg, M., Leoutsakos, J. M., Podewils, L. J., & Lyketsos, C. G. (2009). Evaluation of a home-based exercise program in the treatment of Alzheimer's disease: The Maximizing Independence in Dementia (MIND) study. *International Journal of Geriatric Psychiatry, 24*(7), 680–685.
- Stella, F., Canonici, A. P., Gobbi, S., Galduroz, R. F., Cação Jde, C., & Gobbi, L. T. (2011). Attenuation of neuropsychiatric symptoms and caregiver burden in Alzheimer's disease by motor intervention: A controlled trial. *Clinics (Sao Paulo), 66*(8), 1353–1360.
- Stevens, A. B., Lancer, K., Smith, E. R., Allen, L., & McGhee, R. (2009). Engaging communities in evidence-based interventions for dementia caregivers. *Family & Community Health, 32*(1 Suppl.), S83–S92.
- Stevens, A. B., Smith, E. R., Trickett, L. R., & McGhee, R. (2012). Implementing an evidence-based caregiver intervention within an integrated healthcare system. *Translational Behavioral Medicine, 2*(2), 218–227.
- Sung, H. C., Chang, A. M., & Lee, W. L. (2010). A preferred music listening intervention to reduce anxiety in older adults with dementia in nursing homes. *Journal of Clinical Nursing, 19*(7–8), 1056–1064.
- Sung, H. C., Chang, S. M., Lee, W. L., & Lee, M. S. (2006). The effects of group music with movement intervention on agitated behaviours of institutionalized elders with dementia in Taiwan. *Complementary Therapies in Medicine, 14*(2), 113–119.
- Svansdottir, H. B., & Snaedal, J. (2006). Music therapy in moderate and severe dementia of Alzheimer's type: A case-control study. *International Psychogeriatrics/IPA, 18*(4), 613–621.
- Tappen, R. M., & Williams, C. L. (2009). Therapeutic conversation to improve mood in nursing home residents with Alzheimer's disease. *Research Gerontological Nursing, 2*(4), 267–275.
- Teri, L., Gibbons, L. E., McCurry, S. M., Logsdon, R. G., Buchner, D. M., Barlow, W. E., et al. (2003). Exercise plus behavioral management in patients with Alzheimer disease: A randomized controlled trial. *JAMA, 290*(15), 2015–2022.
- Teri, L., Huda, P., Gibbons, L., Young, H., & van Leynseele, J. (2005). STAR: A dementia-specific training program for staff in assisted living residences. *Gerontologist, 45*(5), 686–693.
- Teri, L., Logsdon, R. G., & McCurry, S. M. (2005). The Seattle Protocols: Advances in behavioral treatment of Alzheimer's disease. In B. Vellas, L. J. Fitten, B. Winblad, H. Feldman, M. Grundman, & E. Giacobini (Eds.), *Research and practice in Alzheimer's disease and cognitive decline* (Vol. 10, pp. 153–158). Paris: Serdi Publisher.
- Teri, L., McCurry, S. M., Logsdon, R., & Gibbons, L. E. (2005). Training community consultants to help family members improve dementia care: A randomized controlled trial. *Gerontologist, 45*(6), 802–811.
- Teri, L., McKenzie, G., Logsdon, R. G., McCurry, S. M., Bollin, S., Mead, J., et al. (2012). Translation of two evidence-based programs for training families to improve care of persons with dementia. *Gerontologist, 52*(4), 352–459.
- Ulstein, I. D., Sandvik, L., Wyller, T. B., & Engedal, K. (2007). A one-year randomized controlled psychosocial intervention study among family carers of dementia patients—effects on patients and carers. *Dementia and Geriatric Cognitive Disorders, 24*(6), 469–475.
- Vasionyte, I., & Madison, G. (2013). Musical intervention for patients with dementia: A meta-analysis. *Journal of Clinical Nursing, 22*(9–10), 1203–1216.
- Visser, S. M., McCabe, M. P., Hudgson, C., Buchanan, G., Davison, T. E., & George, K. (2008). Managing behavioural symptoms of dementia: Effectiveness of staff education and peer support. *Aging & Mental Health, 12*(1), 47–55.
- Wall, M., & Duffy, A. (2010). The effects of music therapy for older people with dementia. *British Journal of Nursing, 19*(2), 108–113.
- Wang, J. J. (2007). Group reminiscence therapy for cognitive and affective function of demented elderly in Taiwan. *International Journal of Geriatric Psychiatry, 22*(12), 1235–1240.

- Williams, C. L., & Tappen, R. M. (2008). Exercise training for depressed older adults with Alzheimer's disease. *Aging & Mental Health, 12*(1), 72–80.
- Winter, L., & Gitlin, L. N. (2006). Evaluation of a telephone-based support group intervention for female caregivers of community-dwelling individuals with dementia. *American Journal of Alzheimer's Disease and other Dementias, 21*(6), 391–397.
- Woods, R. T., Bruce, E., Edwards, R. T., Elvish, R., Hoare, Z., Hounsome, B., et al. (2012). REMCARE: Reminiscence groups for people with dementia and their family caregivers—effectiveness and cost-effectiveness pragmatic multicentre randomised trial. *Health Technology Assessment (Winchester, England), 16*(48), v–xv. 1–116.