

Cost-Effectiveness of Social Work Services in Aging: An Updated Systematic Review

Research on Social Work Practice
2016, Vol. 26(6) 653-667
© The Author(s) 2014
Reprints and permission:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1049731514563578
rsw.sagepub.com



Victoria M. Rizzo¹ and Jeannine M. Rowe²

Abstract

Objectives: This study examines the impact of social work interventions in aging on quality of life (QOL) and cost outcomes in four categories (health, mental health, geriatric evaluation and management, and caregiving). **Methods:** Systematic review methods are employed. Databases were searched for articles published in English between 2004 and 2012 that report outcomes of social work interventions for aging individuals (age \geq 50) and/or their caregivers/families. Of the 464 identified articles, 45 representing 42 studies met inclusion criteria. **Results:** Seventy-one percent of the studies report significant QOL outcomes. Twenty-one studies include cost outcomes, with 15 (71.4%) documenting significant cost savings. Twelve (80%) of the studies reporting significant cost outcomes examine social work interventions in health, including care coordination and end-of-life/palliative care. **Conclusion:** The findings suggest that social work interventions in aging have a positive and significant impact on QOL and cost outcomes. Applications for social work practice and research are discussed.

Keywords

social work cost-effectiveness, evidence-based social work, gerontological social work, social work and ACA

Background

In 2006, the authors published a systematic review of social work interventions in aging with a focus on cost outcomes and cost-effectiveness. The specific aim of this research was to build a case for the modification of Medicare/Medicaid reimbursement structures for social work services for older adults. The systematic review, which included 40 articles that reported the results of 34 outcome studies published between 1987 and 2003, suggested that social work interventions can have a positive impact on the quality of life (QOL) of older adults as well as their health care costs and health care services utilization. However, only a third of the studies included cost outcomes. Therefore, the authors recommended that (1) social work intervention researchers include cost outcomes in interventions studies and (2) doctoral students and junior faculty receive specialized training in the use of cost-effectiveness methodology (Rizzo & Rowe, 2006).

Since the publication of the original article, three important events have occurred that prompted the authors to conduct an update of their systematic review of the literature. First, in 2008, The Institute of Medicine (IOM) report entitled, *Retooling for an Aging America: Building the Health Care Work Force* was published (Committee on the Future Health Care Workforce for Older Americans—Institute of Medicine, 2008). This report was important to the social work profession because it identified (1) social workers as critical members of the geriatric workforce; (2) a significant shortage of social workers, both scholars and practitioners, to address the needs

of older Americans now and in the future; and (3) a decline in the number of bachelor of social work and master of social work–accredited programs that offer courses and specializations in gerontology. The report called for enhanced geriatric competence of the general workforce as well as increased recruitment and retention of geriatric specialists, including social workers. The report also called for the implementation of innovative, interdisciplinary models of care to meet the needs of the aging population.

Second, in 2010, the most significant health care policy since the creation of Medicare and Medicaid in 1965 was signed in to law by President Obama: The Patient Protection and Affordable Care Act (ACA; “Patient Protection and Affordable Care Act,” 2010). The signature piece of the ACA is “the individual mandate,” which requires all Americans to purchase health insurance or pay a fine. However, in terms of demonstrating the evidence and efficacy of social work interventions in aging, Section 3021 of ACA, which established the Center for Medicare and Medicaid Innovation (CMMI) as

¹Department of Social Work, College of Community & Public Affairs, Binghamton University, Binghamton, NY, USA

²Department of Social Work, University of Wisconsin–Whitewater, Whitewater, WI, USA

Corresponding Author:

Victoria M. Rizzo, Department of Social Work, College of Community & Public Affairs, Binghamton University, P.O. Box 6000, Binghamton, NY 13905, USA.
Email: vrizzo@binghamton.edu

Section 1115A of the Social Security Act, is a critical piece of this law. The mission of CMMI is “to quickly identify, test and spread delivery models and payment models to help providers improve care while reducing costs” in the health care system (CMMI, 2014). Building on the 2008 IOM report, ACA, and by extension CMMI, also calls for innovative models of care to address the needs of the most vulnerable older adults: the dual eligibles (individuals who receive both Medicare and Medicaid benefits). The funding available through CMMI has the potential to provide social work researchers with the opportunity to test models of care for older adults that include social work and examine the unique contribution of social work in improving quality of care while reducing costs.

Third, in 2014, the Geriatric Social Work Initiative (GSWI) was completed. Funded by the John A. Hartford Foundation, the aim of GSWI was to “increase the competence of social workers to improve the care and well-being of older adults and their families” (GSWI, 2014). GSWI used innovative strategies aimed at (1) educating students to specialize in geriatrics, (2) recruit students to specialize in geriatrics, and (3) support academic social workers to conduct research and teach in geriatrics. Furthermore, GSWI (2014) supported social work programs to cultivate academic leaders in gerontological education and research and transform social work education at its core through leadership.

The IOM report, the ACA, and GSWI, all provide support for the development, implementation, and testing of social work interventions in aging with specific attention to cost-effectiveness and QOL outcomes in different ways. The IOM report calls for increased training of geriatric social workers to meet the needs of our aging population. However, policy makers, payers (i.e., Medicare and Medicaid), and organizations serving older adults are unlikely to identify social workers as important, reimbursable providers of services without rigorous research evidence that demonstrates the efficacy and cost-effectiveness of interventions in aging that are delivered by social workers or include social workers.

The ACA, which established CMMI, clearly calls for the development of efficacious and cost-effective interventions that should include social workers. Yet, in the first two CMMI calls for proposals, social workers were not specifically named as professionals who could be included as team members in proposed interventions to be tested. In conversations between representatives of the Centers for Medicare and Medicaid (CMS) and national leaders representing social work, CMS has consistently provided feedback indicating that more evidence of the efficacy and cost-effectiveness of social work interventions is needed to strengthen the case for social work services in aging and health care.

One goal of the GSWI was to train social work scholars to conduct rigorous research in aging. Through the Hartford Geriatric Scholars Program, more than 100 scholars have been funded to conduct research at the intersection of gerontology and social work. Given the need for studies that examine the efficacy and cost-effectiveness of social work interventions in aging, and the funding of scholars through GSWI, we are

hopeful that more social work scholars are conducting intervention studies that include cost outcomes. These observations regarding the importance of research that demonstrates the cost-effectiveness of social work interventions in aging, coupled with the fact that our last review included literature published up to 2003, prompted the authors to conduct an update of their original systematic review to answer the following questions:

Research Question 1: What is the current knowledge of the efficacy and cost-effectiveness of social work interventions in aging? How is the current knowledge the same/different from the results of the first systematic review?

Research Question 2: Does the current empirical evidence demonstrate the unique contribution of social work to the efficacy and efficiency of interventions in aging?

Research Question 3: Using the current empirical evidence, can the social work profession make a convincing argument to policy makers about the importance of social work interventions in aging under ACA? In other words, does the current literature provide the empirical evidence the social work profession needs to make the case for more flexible Medicare/Medicaid reimbursement of social work services?

Method

The authors used the Cochrane Intervention Reviews guidelines to conduct the systematic review (Chandler, Churchill, Higgins, Lasserson, & Tovey, 2012). MEDLINE, Social Work abstracts, PsychInfo, Cinahl, SocIndex fulltext, and the Evidence-Database on Aging Care databases were searched for articles published in English between January 1, 2004, and December 31, 2012, that reported effectiveness, efficacy, and/or cost-effectiveness of social work services in aging. The following key terms were used for the search: evidence-based practice, managed care, managed Medicaid, case management, care management, care coordination, coordinated care, medical home, cost outcomes, cost-benefits, medicine, health care, community-based, home care, long-term care, effectiveness, efficacy, quality of life, functional outcomes, outcome measures, hospitals, nursing homes, transitions in care, cost-effectiveness, behavioral health, hospitalization, reinstitution, discharge planning, transition teams, accountable care organizations, care transitions, patient centered medical home, mental health, depression, substance abuse, dementia, Alzheimer’s disease, and chronic illness. Each of these key words was qualified with the following phrases to limit our search: social work and . . . , social work practice and . . . , geriatric social work and . . . , social work practice in aging . . . , or social work intervention. Articles were included if they (a) evaluated an intervention in which social workers were an integral part of the intervention, (b) the target sample populations included aging individuals (age \geq 50) and/or their caregivers/families, and

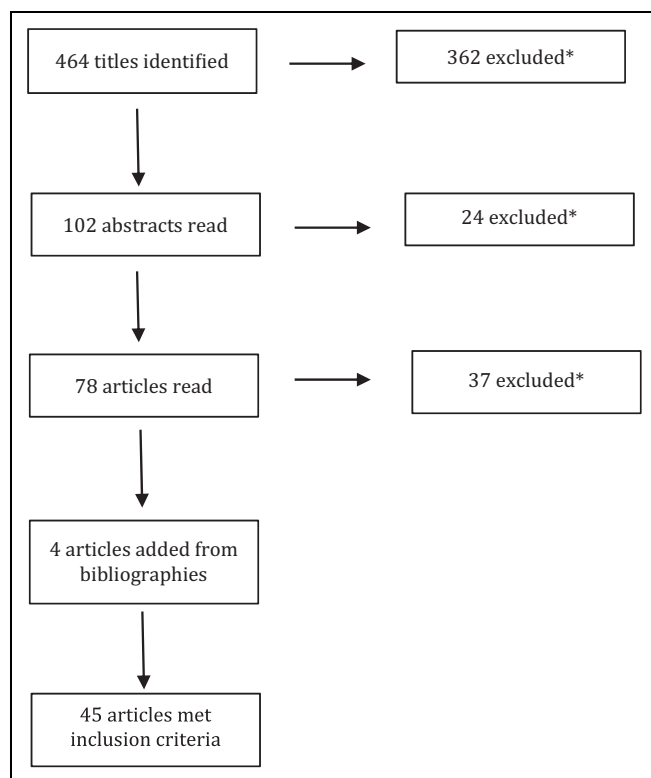


Figure 1. Article search. *Failed to meet inclusion criteria.

(c) the target outcome variables were related to cost-effectiveness and/or QOL.

Searches of the databases identified 464 citations. Based on their titles, 102 appeared to be relevant to the goals of this study. The authors read the abstracts of these 102 articles to assess eligibility criteria described previously. During review of the 102 abstracts, 24 articles were discarded. Each of the authors then reviewed a portion of the articles that appeared to meet inclusion criteria (V.M.R. = 44 articles; and J.M.R. = 34 articles). Thirty-seven articles that did not meet the inclusion criteria were removed during the review of articles. Included in these excluded articles were five systematic reviews/meta-analyses. These articles were not included in this study because (1) the vast majority of the articles/studies included in the systematic reviews/meta-analyses were published prior to the search date parameters for this current systematic review and (2) the reviews did not focus specifically on social work interventions but rather on gerontological interventions that did not necessarily include social workers. However, three of the four articles added to this study as a result of the review of the 78 articles were from the bibliographies of two of the reviews. The fourth article added was identified in the bibliography of a relevant study. This process resulted in a total of 45 articles that met full inclusion criteria (see Figure 1).

Next, the articles ($n = 45$) were summarized by constructing four tables that organized the articles by intervention areas: (1) health with subcategories (care coordination, end-of-life/palliative care, transitions in care, and disease management), (2) mental health, (3) geriatric evaluation and

management (GEM), and (4) caregiving. For each article, the authors, date of publication, methods, sample characteristics, social work interventions examined, and outcomes were identified in the tables. Tables 1–4 present the summaries of the articles by intervention category. Meta-analysis, a systematic method used to examine the quantitative estimate of the overall effect of a particular intervention or variable on a defined outcome using pooled data from many clinical trials (Haidich, 2010), was not utilized in the systematic review due to significant variation in the interventions and defined outcomes revealed in Tables 1–4.

Results

Total Sample of Outcome Studies

A total of 45 articles that reported the results of 42 outcome studies of social work interventions in aging were reviewed (Alexopoulos et al., 2009; Alkema, Wilber, Shannon, & Allen, 2007; Altfeld, Pavle, Rosenberg, & Shure, 2012; Bellantonio et al., 2008; Botsford & Rule, 2004; Brumley et al., 2007; Cabness, Miller, & Flowers, 2006; Chang, Jackson, Bullman, & Cobbs, 2009; Claiborne, 2006a, 2006b; Counsell et al., 2007; Counsell, Callahan, Tu, Stump, & Arling, 2009; Dobrof et al., 2006; Ell, Unützer, et al., 2007; Ell, Vourekis, Lee, & Xie, 2007; Engelhardt, McClive-Reed, et al., 2006; Engelhardt et al., 2009; Engelhardt, Toseland, Gao, & Banks, 2006; Enguñanos & Jamison, 2006; Faul et al., 2009; Gallo et al., 2007; Gellis et al., 2008; Hanson, Reynolds, Henderson, & Pickard, 2005; Holland et al., 2005; Ingersoll-Dayton, Campbell, & Ha, 2009; Johnson & Stadel, 2007; London, McSkimming, Drew, Quinn, & Carney, 2005; Miller et al., 2007; Morrison et al., 2005; Mukamel et al., 2006; Newcomer, Kang, & Graham, 2006; Oslin et al., 2004; Phelan, Williams, Penninx, LoGerfo, & Leveille, 2004; Phibbs et al., 2006; Prior, Bahret, Allen, & Pasupuleti, 2012; Rabow, Dibble, Pantilat, & McPhee, 2004; Rao, Hsieh, Feussner, & Cohen, 2005; Reese & Raymer, 2004; Rizzo, 2006; Shannon, Wilber, & Allen, 2006; Sirey, Hannon, D'Angelo, & Knies, 2012; Stock, Mahoney, Reece, & Cesario, 2008; Stock, Reece, & Cesario, 2004; Toseland & Smith, 2006; Vickrey et al., 2006).

The 42 research studies fell in to one of the four intervention categories: (1) health ($n = 27$; 64.2%), including care coordination/case management/care management ($n = 12$; articles/9 studies; 21.4%), end-of-life/palliative care ($n = 10$ articles/studies; 23.8%), transitions in care ($n = 4$ articles/studies; 9.5%), and disease management/other ($n = 4$ articles/studies; 9.5%); (2) mental health ($n = 7$ articles/studies; 16.7%); (3) GEM ($n = 5$ articles/studies; 12%); and (4) caregiving ($n = 3$ articles/studies; 7.1%). In the literature review, particular attention was given to the inclusion of cost outcomes or proxy cost outcomes¹ in the evaluations of the interventions examined (see Tables 5 and 6).

Total outcomes. Approximately 88% ($n = 37$) of the 42 studies reported at least one positive and significant QOL or cost/proxy

Table 1. Outcome Studies of Social Work Practice in Aging—Health Category.

Investigators	Methods	Sample	Interventions	Outcomes
Care coordination (<i>n</i> = 12)				
Alkema, Wilber, Shannon, and Allen (2007)	RCT	781 adults aged 65+ enrolled in Medicare managed care plan who had high health care utilization in the previous year	Care Advocate Program	1. Mortality*
Chang, Jackson, Bullman, and Cobbs (2009)	Retrospective case record review	183 VAMC patients aged 36 to 95 (mean = 73.6) enrolled in HBPC who were unable to come to medical center due to chronic illness, had limitations in at least 2 ADLs, and resided within 35 miles of VAMC	Interdisciplinary HBPC	1. Hospital admissions** 2. Hospital days** 3. ED visits**
Claiborne (2006a, 2006b), two articles	RCT	28 poststroke adults aged 65+ and without severe cognitive impairment who discharged from physical rehabilitation hospital	Social work care coordination	1. QOL (physical) 2. QOL (mental health)* 3. Depression* 4. Treatment adherence* 5. Social service needs 6. Outpatient reimbursement** 7. Inpatient reimbursement 8. ED reimbursement** 9. Total reimbursement**
Counsell et al. (2007); Counsell, Callahan, Tu, Stump, and Arling (2009), two articles	RCT	951 adults aged 65+ who had a primary care visit in last 12 months; income less than 200% of FPL (qualify for Medicaid); English primary language	GRACE	1. Depression severity* 2. Process of care* 3. Quality of care* 4. HRQOL* 5. ADL status 6. ED visits** 7. Hospital admissions** 8. Health care costs** 9. Patient satisfaction with care*
Ell, Vourlekis, Lee, and Xie (2007)	RCT	204 low-income minority women aged 40 to 79 with abnormal mammogram	SAFe Program	1. Timely adherence to follow-up* 2. Participant satisfaction
Prior, Bahret, Allen, and Pasupuleti (2012)	Cross-sectional design	193 low-income clients aged 55+ with repeated ED visits or hospital visits	Comprehensive home-based management	1. Hospital readmissions** 2. ED visits** 3. QOL—financial concerns* 4. QOL—satisfaction with social support* 5. QOL—coping mechanisms* 6. Depression symptoms* 7. Anxiety symptoms* 8. Isolation*
Rizzo (2006)	Retrospective cross-sectional design	233 poststroke patients (90% aged 60+) participating in an inpatient acute rehabilitation stroke program	Usual care social work services	1. Total hospital charges** 2. Efficient use of rehabilitation services**
Shannon, Wilber, and Allen (2006)	RCT	823 adults aged 65+ who were enrolled for a minimum of 1 year in a Medicare-risk health plan and met risk criteria not explained in the article	Care advocate program	1. Primary care and specialist physician services** 2. Hospital admissions** 3. Hospital days 4. ED visits
Stock, Mahoney, Reece, and Cesario (2008); Stock, Reece, and Cesario (2004), two articles	RCT	1,307 adults aged 66+, who have Medicare as primary payer and received care from a physician in the 12 months before the intervention	Chronic care model	1. HRQOL* 2. Physical function*

(continued)

Table 1. (continued)

Investigators	Methods	Sample	Interventions	Outcomes
End-of-life/palliative care (<i>n</i> = 10) Brumley et al. (2007)	RCT	298 patients diagnosed with chronic disease (mean age = 74), life expectancy \leq 12 months, and visited ED/hospital in past year	IHPC	<ol style="list-style-type: none"> 1. ED visits** 2. Hospital Admissions** 3. Skills nursing facility days 4. Home health and palliative visits 5. Palliative physician home visits 6. Days of hospice care 7. Health care costs** 8. Patient satisfaction with care* 9. Site of death*
Engelhardt et al. (2009)	RCT	532 Kaiser Permanente members aged 21 to 99 (mean age = 66) diagnosed with advanced cancer, ESRD, CHF, or COPD	AICCP	<ol style="list-style-type: none"> 1. HRQOL* 2. Patient satisfaction with care* 3. Advance Care Planning* 4. Hospital admissions**
Engelhardt, McClive-Reed, et al. (2006)	RCT	275 adults aged 18 > (majority aged 60+) diagnosed with COPD, CHF, or cancer	AICCP	<ol style="list-style-type: none"> 1. Effectiveness of patient-provider communication 2. Patient satisfaction with care* 3. Advance care planning* 4. Health care costs**
Hanson, Reynolds, Henderson, and Pickard (2005)	Quasi-experimental	458 nursing home patients aged 22 to 102 (mean age = 80), recruited from 9 sites	Quality improvement training program	<ol style="list-style-type: none"> 1. Hospice enrollment* 2. Pain assessment* 3. Pain treatment* 4. Advance care planning*
Johnson and Stadel (2007)	Quasi-experimental	54 elective treatment orthopedic surgical patients aged 28–82 (mean age = 64)	Health care proxy (HCP) education program	<ol style="list-style-type: none"> 1. Number of HCPs completed*
London, McSkimming, Drew, Quinn, and Carney (2005)	Preexperimental	295 patients and family members aged 24 to 100 (mean age = 71.4) receiving care at one of 11 sites	CALL	<ol style="list-style-type: none"> 1. HRQOL* 2. Bereavement (Families) 3. Hospital admissions**
Miller et al. (2007)	RCT	115 patients (86% aged 50+) with advanced cancer undergoing radiation therapy	Multidisciplinary advanced illness intervention	<ol style="list-style-type: none"> 1. QOL*
Morrison et al. (2005)	RCT	139 newly admitted long-term care residents in a nursing home aged 65–102 (mean age = 86.5)	Multicomponent advance care planning	<ol style="list-style-type: none"> 1. Documentation of treatment preferences in advance directives*
Rabow, Dibble, Pantilat, and McPhee (2004)	RCT	90 patients with average age of 67 years, believed to have life expectancy of 1 to 5 years and not yet ready for hospice	Comprehensive care team	<ol style="list-style-type: none"> 1. Functional status 2. Shortness of breath* 3. Pain 4. Sleep patterns 5. Anxiety symptoms* 6. Depression symptoms 7. Spiritual well-being* 8. QOL 9. Patient satisfaction with care 10. Multidimensional care planning 11. Medical care visits** 12. Total costs of care
Reese and Raymer (2004)	Retrospective case record Review	66 hospice providers, and 330 Medicare patient cases	None	<ol style="list-style-type: none"> 1. Medical services 2. Hospice costs 3. Patient outcomes
Transitions in care (<i>n</i> = 4) Altfeld, Pavle, Rosenberg, and Shure (2012)	Preexperimental design	315 older adults	The Bridge Model	<ol style="list-style-type: none"> 1. Hospital readmission rates** 2. Patient satisfaction with care* 3. Administrator satisfaction with care*

(continued)

Table 1. (continued)

Investigators	Methods	Sample	Interventions	Outcomes
Bellantonio et al. (2008)	RCT	101 older adults with average age of 82 years, who relocated to assisted living	Multidisciplinary team intervention	1. Time to permanent relocation to nursing facility 2. Time to (ED) visits 3. Time to hospitalizations 4. Mortality
Mukamel et al. (2006)	Cross-sectional design	3,401 new PACE enrollees with average age of 77.6 years from 26 sites	PACE	1. Health outcomes (3 months)* 2. Health outcomes (12 months)* 3. Mortality 4. Urinary incontinence*
Newcomer, Kang, and Graham (2006)	RCT	62 adults aged 60+ living in a freestanding nursing home or hospital	PACT	1. Discharge rate 2. Length of stay
Disease management (<i>n</i> = 4)				
Cabness, Miller, and Flowers (2006)	Quasi-experimental	23 patients with ESRD aged 30 to 84 (mean age = 73)	CBT for ESRD	1. Depression* 2. Perceived social support* 3. QOL* 4. Patient satisfaction survey
Holland et al. (2005)	RCT	504 individuals aged 65+ diagnosed with a chronic health condition	Health Matters Program	1. Aerobic activity* 2. Stretching activity* 3. Social/role activities 4. Health/role limitations 5. Self-reported health status 6. ADL/IADL limitations 7. Pain 8. Fatigue 9. Shortness of breath 10. Communication with physicians 11. Depression symptoms* 12. Anxiety symptoms 13. Medication use 14. Health care costs
Phelan, Williams, Penninx, LoGerfo, and Leveille (2004)	RCT	201 adults aged 70+ with 1 or more chronic conditions	Health Enhancement Program	1. ADLs/disability level* 2. Health status 3. Physical activity
Vickrey et al. (2006)	RCT	408 Medicare patients aged 65+, diagnosed with dementia and their paired 408 informal caregivers aged 65+	Dementia guideline-based care management	1. Adherence to guidelines* 2. Knowledge of dementia 3. Mastery, confidence, social support* 4. Patient HRQOL* 5. Caregiver HRQOL 6. Quality of care

Note. *n* = 27. RCT = randomized controlled trial; VAMC = Veterans Administration Medical Center; HBPC = home-based primary care program; ED = emergency department; ADL = activity of daily living; QOL = quality of life; FPL = federal poverty level; GRACE = Geriatric Resources for Assessment and Care of Elders; HRQOL = health-related quality of life; SAFe = Screening Adherence Follow-up Program; IHPC = In-home Palliative Care Program; ESRD = end-stage renal disease; CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease; AICCP = Advanced Illness Coordinated Care Program; HCP = health care proxy; CALL = Comprehensive, Adaptable, Life-Affirming, Longitudinal Care; PACE = Program of All-Inclusive Care for the Elderly; PACT = Providing Assistant to Caregivers in Transition; CBT = cognitive behavioral therapy; IADL = instrumental activity of daily living.
*Significant HRQOL/QOL outcomes. **significant cost/proxy cost outcomes.

cost outcome. Approximately 12% (*n* = 5) of the 42 studies reported no significant quantitative findings for QOL or cost/proxy cost outcomes (see Tables 5 and 6 for studies that are not identified with an “*” or a “†”).

QOL outcomes. Of the 42 studies, 33 (78.6%) included QOL outcomes. Seventy-one percent (*n* = 30) of the studies reported at least one positive and significant outcome that was associated

with improving the QOL of intervention participants, including but not limited to, general health status, symptoms of depression, overall mental health status, functional status, and decreased mortality (see studies identified with an “*” in Tables 5 and 6). Eleven studies (26.2%) reported significant and positive outcomes related to treatment planning, advance care planning, and/or treatment adherence (see studies identified with an “*” for these outcomes in Tables 1, 2, and 4). Five

Table 2. Outcome Studies of Social Work Practice in Aging—Mental Health Category.

Investigators	Methods	Sample	Interventions	Outcomes
Alexopoulos et al. (2009)	RCT	599 adults aged 60+ screened for depression in primary care settings	PROSPECT	1. Suicidal ideation* 2. Course of depression* 3. Treatment response* 4. Remission*
Ell, Unützer, et al. (2007)	RCT	311 adults aged 65+ receiving homecare who screened positive for depression and negative for cognitive impairment	EUC or HOPE-D	1. Symptoms of depression* 2. Depression severity* 3. Treatment response 4. HRQOL* 5. Health services utilization
Gallo et al. (2007)	RCT	1,226 English-speaking adults aged 60+ years, diagnosed with major, minor, or no depression at baseline, and MMSE scores \geq 18	PROSPECT	1. Risk of death*
Gellis et al. (2008)	RCT	68 adults aged 65+ receiving homecare and met <i>DSM-IV</i> criteria for minor depression and HRSD score \geq 11	Problem-solving therapy	1. Depressed mood* 2. Quality of life 3. Problem solving* 4. Patient satisfaction*
Ingersoll-Dayton, Campbell, and Ha (2009)	Quasi-experimental	20 participants aged 57 to 82 with emotional hurt or need for forgiveness	Forgiveness group	1. Self-reported health* 2. Social support 3. Anxiety 4. Depression* 5. Changes in forgiveness*
Oslin et al. (2004)	RCT	2,637 veterans aged 60+ admitted for a medical/surgical problem at a VAMC and present symptoms of anxiety and depression and at risk for drinking	UPBEAT	1. Self-reported health status 2. Symptoms of depression 3. Symptoms of anxiety 4. At risk for drinking
Sirey, Hannon, D'Angelo, and Knies (2012)	Preexperimental	43 adults aged 60+ and older receiving home delivered meals, and receiving treatment for depression	ACTIVATE	1. Intensification of depression treatment*

Note. $n = 7$. RCT = randomized controlled trial; PROSPECT = Prevention of Suicide in Primary Care Elderly; EUC = enhanced usual care; HOPE-D = Homecare to Overcome Problems of Elders with Depression; HRQOL = health-related quality of life; MMSE = Mini-Mental Status Exam; *DSM-IV* = *Diagnostic and Statistical Manual*, fourth edition; HRSD = Hamilton Rating Scale for Depression; VAMC = Veterans Administration Medical Center; UPBEAT = Unified Psychogeriatric Biopsychosocial Evaluation and Treatment; ACTIVATE = A Community Treatment Intervention Advancing Active Treatment in the Elderly.

*Significant HRQOL/QOL outcomes.

studies (11.9%) reported significant and positive outcomes for patient and/or administrator satisfaction with care (see studies identified with an “*” for these outcomes in Table 1). Three (9%) of the 33 studies that examined QOL outcomes reported no significant quantitative findings (see Tables 5 and 6).

Cost/proxy cost outcomes. Of the 42 studies, 21 (50%) included cost outcomes measures. Of these studies, 4 (19.1%) used

direct costs (i.e., hospital charges) as an outcome measure, 10 (47.6%) used proxy cost measures, and 7 (33.3%) used both types of cost outcomes measurement (see studies identified with a “2” and/or “3” in Tables 5 and 6). Fifteen of the articles (71.4%) in three of the four intervention categories (health, $n = 12$; GEM, $n = 2$, and caregiving, $n = 1$) reported positive and significant cost/proxy cost outcomes findings for the following: (1) decrease in hospital admissions/readmissions (see studies

Table 3. Outcome Studies of Social Work Practice in Aging—GEM Category.

Investigators	Methods	Sample	Interventions	Outcomes
Engelhardt, McClive-Reed, et al. (2006)	RCT	160 male veterans aged 55+ and above average users of outpatient VA services	GEM	1. Inpatient health care utilization** 2. Outpatient health care utilization** 3. Total health care costs** 4. Survival
Enguídanos and Jamison (2006)	RCT	451 Kaiser Permanente members aged 65+	GCM	1. Cognitive status 2. Depression 3. Functioning 4. Caregiver availability/adequacy 5. Caregiver burden* 6. Caregiver reaction to patient behaviors 7. Patient satisfaction with services 8. Service use data
Faul et al. (2009)	Quasi-experimental	73 community-dwelling adults aged 70 to 84 (mean age = 76)	GEMS	1. Self-efficacy* 2. Self-rated health status* 3. Functional status* 4. Physical mobility* 5. Mental health* 6. Support networks 7. Physical environment*
Phibbs et al. (2006)	RCT	1,388 adults aged 65+ and hospitalized at one of 11 VAMC	GEMU and GEMC	1. Acute/long-term care use** 2. Nursing home (# of days)** 3. Nursing home costs**
Rao, Hsieh, Feussner, and Cohen (2005)	RCT	99 VA inpatients aged 65+ residing on a medical/surgical ward with expected length of stay of 2+ days	GEM	1. Survival 2. HRQOL* 3. Functional status 4. IADLs 5. Self-reported health care utilization 6. Self-reported health care costs

Note. $n = 5$. RCT = randomized controlled trial; GEM = Geriatric Evaluation and Management; VA = Veterans Administration; GCM = Geriatric Care Management; GEMS = Geriatric Evaluation and Self-management Services; VAMC = Veterans Administration Medical Center; GEMU = inpatient GEM; GEMC = outpatient geriatric clinic care; HRQOL = health-related quality of life; IADL = instrumental activity of daily living.

*Significant HRQOL/QOL outcomes. **Significant cost/proxy cost outcomes.

Table 4. Outcome Studies of Social Work Practice in Aging—Caregiving Category.

Investigators	Methods	Sample	Interventions	Outcomes
Botsford and Rule (2004)	RCT	27 mothers aged 49 to 82 (mean age = 64) with children aged 23 years** who have an intellectual disability diagnosis, live with mother, and have no permanency plan	Psychoeducation Group	1. Knowledge/awareness of resources for permanency planning* 2. Competence and confidence to plan* 3. Appraisals of the planning process 4. Intermediate planning behaviors 5. Residential and legal planning
Dobrof et al. (2006)	Retrospective case record review	169 caregivers aged 19 to 98 (majority aged 60+)	CAPP	1. Satisfactory discharge 2. Emotional coping 3. Collaboration 4. Contacts with provider 5. Completion of advance directives 6. Assistance with financial 7. Assistance with legal 8. Support group attendance
Toseland and Smith (2006)	RCT	105 spouse caregiver/care recipient dyads aged 55+	HEP	1. Outpatient costs** 2. Inpatient costs 3. ED costs 4. Drug costs 5. Total health care costs**

Note. $n = 3$. RCT = randomized controlled trial; CAPP = Caregivers and Professional Partnership Caregiver Resource Center; HEP = Health Education Program; ED = emergency department.

*Significant HRQOL/QOL outcomes. **significant cost/proxy cost outcomes.

Table 5. Outcome Studies of Social Work Practice in Aging—Health.

Investigators	Interventions
Care coordination	
Alkema et al. (2007) ^{1,*}	Care Advocate Program
Chang, Jackson, Bullman, and Cobbs (2009) ^{3,**}	Interdisciplinary HBPC
Claiborne (2006a, 2006b) ^{1,2,*,**}	Social work care coordination
Counsell et al. (2007); Counsell, Callahan, Tu, Stump, and Arling (2009) ^{1,2,3,*,**}	GRACE
Ell, Vourlekis, Lee, and Xie (2007)*	SAFe Program
Prior, Bahret, Allen, and Pasupuleti (2012) ^{1,3,*,**}	Comprehensive home-based management
Rizzo (2006) ^{2,3,*,**}	Usual care social work services
Shannon, Wilber, and Allen (2006) ^{3,*,**}	Care Advocate Program
Stock, Reece, and Cesario (2004); Stock, Mahoney, Reece, and Cesario (2008) ^{1,*}	Chronic care
End-of-life/palliative care	
Brumley et al. (2007) ^{1,2,3,*,**}	IHPC
Engelhardt et al. (2009) ^{1,3,*,**}	AICCP
Engelhardt, McClive-Reed, et al. (2006) ^{1,2,*,**}	AICCP
Hanson, Reynolds, Henderson, and Pickard (2005) ^{1,*}	Quality Improvement Training Program
Johnson and Stadel (2007) ^{1,*}	Health Care Proxy Education Program
London, McSkimming, Drew, Quinn, and Carney (2005) ^{1,3,*,**}	CALL
Miller et al. (2007) ^{1,*}	Multidisciplinary advanced illness intervention
Morrison et al. (2005) ^{1,*}	Multicomponent advance care planning
Rabow, Dibble, Pantilat, and McPhee (2004) ^{1,2,3,*,**}	Comprehensive care team
Reese and Raymer (2004)	None
Transitions in care	
Altfeld, Pavle, Rosenberg, and Shure (2012) ^{1,3,*,**}	The Bridge Model
Bellantonio et al. (2008) ^{1,3}	Multidisciplinary team intervention
Mukamel et al. (2006) ^{1,*}	PACE
Newcomer, Kang, and Graham (2006) ³	PACT
Disease management	
Cabness, Miller, and Flowers (2006) ^{1,*}	CBT for ESRD
Holland et al. (2005) ^{1,2,3,*}	Health Matters Program
Phelan, Williams, Penninx, LoGerfo, and Leveille (2004) ^{1,*}	Health Enhancement Program
Vickrey et al. (2006) ^{1,*}	Dementia guideline-based care management

Note. *n* = 27. HBPC = home-based primary care; GRACE = Geriatric Resources for Assessment and Care of Elders; SAFe Program = Screening Adherence Follow-Up Program; IHPC = In-Home Palliative Care Program; AICCP = Advanced Illness Coordinated Care Program; CALL = Comprehensive, Adaptable, Life-affirming, Longitudinal Care; PACE = Program of All-Inclusive Care for the Elderly; PACT = Providing Assistance to Caregivers in Transition; CBT = cognitive behavioral therapy; ESRD = end-stage renal disease; 1 = health-related quality of life (HRQOL)/quality of life (QOL) measures/outcomes; 2 = cost measures/outcomes; 3 = proxy cost measures/outcomes. *Significant HRQOL/QOL outcomes. **Significant cost/proxy cost outcomes.

Table 6. Outcome Studies of Social Work Practice in Aging—Mental Health, GEM, Caregiving.

Investigators	Interventions
Mental health	
Alexopoulos et al. (2009) ^{1,*}	PROSPECT
Ell, Unützer, et al. (2007) ^{1,3,*}	EUC or HOPE-D
Gallo et al. (2007) ^{1,*}	PROSPECT
Gellis et al. (2008) ^{1,*}	Problem-solving therapy
Ingersoll-Dayton, Campbell, and Ha (2009) ^{1,*}	Forgiveness group
Oslin et al. (2004) ¹	UPBEAT
Sirey, Hannon, D'Angelo, and Knies (2012) ^{1,*}	ACTIVATE
Geriatric evaluation and management (GEM)	
Engelhardt, McClive-Reed, et al. (2006) ^{2,3,*,**}	GEM
Enguídanos and Jamison (2006) ^{1,3,*}	Geriatric Care Management
Faul et al. (2009) ^{1,*}	GEMS
Phibbs et al. (2006) ^{2,3,*,**}	GEMU and GEMC
Rao, Hsieh, Feussner, and Cohen (2005) ^{1,2,*}	GEM
Caregiving	
Botsford and Rule (2004) ^{1,*}	Psychoeducational group
Dobrof et al. (2006) ¹	CAPP
Toseland and Smith (2006) ^{2,*,**}	HEP

Note. *n* = 15. PROSPECT = Prevention of Suicide in Primary Care Elderly Collaborative Trial; EUC = Enhanced Usual Care; HOPE-D = Homecare to Overcome Problems of Elders with Depression; UPBEAT = Unified Psychogeriatric Biopsychosocial Evaluation and Treatment; ACTIVATE = A Community Treatment Intervention Advancing Active Treatment in the Elderly; GEM = Geriatric Evaluation and Management; GEMS = Geriatric Evaluation and Self-management Services; GEMU = inpatient GEM; GEMC = outpatient geriatric clinic care; CAPP = Caregivers and Professional Partnership Resource Center; HEP = Health Education Program; HRQOL = health-related quality of life; QOL = quality of life. 1 = health-related quality of life (HRQOL)/quality of life (QOL) measures/outcomes; 2 = cost measures/outcomes; 3 = proxy cost measures/outcomes.

*Significant HRQOL/QOL outcomes. **Significant cost/proxy cost outcomes.

identified with a “***” for this outcome in Table 1), (2) decrease in hospital/nursing home days (see studies identified with a “***” for this outcome in Tables 1 and 3), (3) decrease in costs of care/reimbursement (see studies identified with a “***” for this outcome in Tables 1, 3, and 4), (4) decrease in emergency department (ED) visits/medical visits (see studies identified with an “***” for this outcome in Table 1), and (5) efficient use of rehabilitation services (see study identified with a “***” for this outcome in Table 1). Six (28.6%) of the 21 studies that examined cost/proxy cost outcomes reported no significant quantitative findings (see Tables 5 and 6).

Cost Outcomes by Intervention Category

In order to more fully understand the available evidence for the cost-effectiveness of social work interventions in aging, we further examined the cost-effectiveness portion of our analysis by intervention category. Of the 42 studies we reviewed, 15 reported positive and significant cost/proxy cost outcomes with the vast majority (*n* = 12) of the intervention studies focused in health: care coordination (*n* = 6), end-of-

life/palliative care ($n = 5$), and transitions in care ($n = 1$). Studies of care coordination interventions reported significant cost/proxy cost outcomes for a decrease in (1) hospital admissions/readmissions, (2) hospital/nursing home days, (3) costs of care/reimbursement, (4) ED visits, and (5) an increase in the efficient use of rehabilitation services (see care coordination studies identified with a “***” for these outcomes in Table 1).

Three of the care coordination studies that examined interventions delivered in primary care/outpatient settings each reported three separate, significant cost/proxy cost outcomes. Chang, Jackson, Bullman, and Cobbs (2009) conducted a cross-sectional retrospective review of electronic medical records for veterans receiving an interdisciplinary home-based primary care (HBPC) program that included social workers as members of the team. Patients enrolled in the HBPC for at least 6 months had fewer ED visits, fewer hospital admissions, and shorter lengths of stay (number of hospital days) when compared to veterans who did not receive the intervention. Claiborne (2006a, 2006b) reported significant decreases in outpatient reimbursement, ED reimbursement, and total reimbursement for services provided to poststroke patients in an outpatient rehabilitation setting when compared to their counterparts who did not receive care coordination. This finding suggests that patients who received the intervention used fewer outpatient, ED, and total services than their usual care counterparts. Finally, Counsell and colleagues (2007) and Counsell, Callahan, Tu, Stump, and Arling (2009) conducted a randomized controlled trial of the Geriatric Resources and Care of Elders (GRACE) intervention, which was delivered by nurse/social worker teams, with patients from six primary care practices. The results of the study revealed that patients in the GRACE group had significantly lower hospital admissions, ED visits, and health care costs when compared to patients in usual care.

Five studies in the end-of-life/palliative care category reported significant cost/proxy cost outcomes including decreased (1) ED visits, (2) hospital admissions, (3) health care costs, and (4) medical care visits (see end-of-life/palliative care studies identified with a “***” for these outcomes in Table 1). One of the studies revealed that the intervention positively and significantly impacted three separate cost outcomes. Brumley and colleagues (2007) studied an interdisciplinary in-home palliative care program that included social workers as members of the team. Patients who received the intervention had significantly lower rates of ED visits and hospital admissions as well as lower health care costs when compared to patients in usual care. In the transitions in care category, a study of the Bridge Model, which is delivered by social workers, reported a significant decrease in hospital readmission rates for patients who received the intervention (Altfeld et al., 2012).

None of the mental health intervention studies reported significant cost/proxy cost outcomes. In fact, a study conducted by Ell, Unützer, et al. (2007) was the only study that examined proxy cost outcomes (health care utilization; see Table 2). The outcomes studies including cost/proxy cost outcomes for GEM ($n = 2$) revealed a significant decrease in (1) outpatient and

inpatient health care utilization, (2) total health care costs, and (3) long-term care use/nursing home days/nursing home costs for the intervention groups when compared to the usual care groups. The studies conducted by Engelhardt and colleagues (Engelhardt, McClive-Reed, et al., 2006; Engelhardt, Toseland, et al., 2006) and Phibbs and colleagues (2006) each reported three separate positive and significant cost/proxy cost outcomes (see studies identified with a “***” for these outcomes in Table 3).

One article in the GEM intervention category (Toseland & Smith, 2006) reported significant and positive outcomes for outpatient costs and total health care costs for spouse caregiver/care recipient dyads who received a Health Education Program reported significant and positive outcomes for outpatient costs and total health care costs when compared to their counterparts in usual care.

Discussion and Application to Social Work

The results provide important information and address the three research questions posed by the authors. The findings also have specific application to social work practice, research, and education.

1. What is the current knowledge of the efficacy and cost-effectiveness of social work interventions in aging? How is the current knowledge the same/different from the results of the first systematic review? Taken together, the results of the 42 studies suggest that social work interventions can positively and significantly impact health care costs and the use of health services as well as the QOL for older Americans. The results revealed that the number of published outcome studies that include social work has increased by 8.1% since our last systematic review. It is important to note that our last review spanned publications over 16 years (1987–2003), while this current review includes published articles over 9 years (2004–2012). Furthermore, the majority of studies (64.3%) in this current systematic review examined health interventions (care coordination/case management/care management, end-of-life/palliative care/advanced illness, transitions in cares, and disease management) while caregiving, specifically GEM, and health outcome studies were prominent in the original systematic review. This change is likely a reflection of shifting funding priorities that have been influenced by the IOM report (Committee on the Future Health Care Workforce for Older Americans—Institute of Medicine, 2008), the cost and fragmentation of care, which led to the call for health care reform and the passage of ACA (“Patient Protection and Affordable Care Act,” 2010) and the GSWI (GSWI, 2014).

In our previous systematic review, only 33% ($n = 14$) of the outcome studies included cost outcomes and/or focused on cost effectiveness with approximately 64% ($n = 9$) of these studies using direct costs in their analyses. Our review of the literature revealed that there has been an increase in the percentage of outcome studies that include cost outcomes. Twenty-one of the 42 studies we reviewed included cost/proxy cost outcomes,

which is 50% of the studies reviewed. The number of studies including direct costs, however, has decreased from 64.3% in the original review to 33.3% in the current review.

Strikingly absent from the current cost-effectiveness evidence are findings that social work mental health interventions are cost-effective. This is a significant research gap that needs to be addressed, given that (1) social workers provide one quarter of all mental health counseling to Americans with a diagnosable mental illness and often are the only providers in rural areas (Social Work Reinvestment Initiative, 2009); (2) 20% of adults aged 55 and older have a mental health diagnosis, such as depression or anxiety (U.S. Department of Health and Human Services, 1999); and (3) mental health issues have a significant and negative impact on health outcomes and health care costs for older adults (Unützer et al., 2009). In the ACA, coverage of mental health services is 1 of the 10 essential benefits that must be included in every health insurance plan, meaning that mental health parity is embedded in ACA ("Patient Protection and Affordable Care Act," 2010). However, mental health services coverage under Medicare remains less than adequate. In order to ensure adequate mental health coverage under Medicare and Medicaid (for dual eligibles), social work researchers and practitioners need to be able to demonstrate that mental health interventions delivered by social workers can have an impact on health care outcomes and health care costs for older adults.

2. Does the current empirical evidence demonstrate the unique contribution of social work to the efficacy and efficiency of interventions in aging? Although the articles included in this systematic review identify social workers as part of the intervention team, and in some cases, the role of the social worker is described, only three studies specifically focused on the social workers' unique and/or additive contributions in the intervention. One of the studies actually examined the specific contributions of social work in a hospice setting and the impact of these contributions on costs per patient, costs of pain management, and costs of home care, and nursing home placement (Reese & Raymer, 2004). A second study described the social worker's role in a multidisciplinary intervention (Miller et al., 2007). And, the last study mentioned the social worker's communications with the medical team as a possible reason for reductions in hospital admissions and shorter lengths of stay in the hospital (Chang et al., 2009).

Important to note is the fact that the authors excluded two articles that were published in social work journals because social workers were never identified as the interventionists in the articles (Li, Morrow-Howell, & Proctor, 2004; Montgomery, Kwak, & Rowe, 2011). A third article that reported the findings of a study that the authors knew used social workers as interventionists was excluded for the same reason (Montgomery, Kwak, Kosloski, & O'Connell Valuch, 2011). A fourth article (Bielaszka-DuVernay, 2011), a cross-sectional study of patients in one Medicaid managed care plan who received care coordination delivered by social workers in primary care settings, was excluded because the author did not identify the ages of the study participants.

Representatives from the CMS have reported to leaders in the social work profession that there is not enough evidence to demonstrate the efficacy and cost-effectiveness of social work interventions in aging. In order to build this evidence, it is imperative that social workers, and especially social work researchers, specifically identify social workers as interventionists in all studies in which they are delivering the interventions solely or as members of an interdisciplinary team as well as the ages of the individuals receiving the interventions. In order to make a case for the importance of social workers in the aging services field, we must be able to identify the specific and/or additive contribution of social workers in multidisciplinary interventions and social work-only interventions AND connect these contributions specifically to outcomes. Without this evidence, we are unable to make the case that social workers provide older adults with certain services that are not provided by others, such as nurses, public health specialists, patient navigators, or peer advocates. We are also unable to argue that it is inappropriate to hire paraprofessionals (i.e., peer counselors and patient navigators) and professionals (i.e., community health workers and public health specialists) to perform jobs typically done by social workers.

3. Can the social work profession make a convincing argument to policy makers about the importance of social work interventions in aging using the current empirical evidence under ACA? In other words, does the current literature provide the empirical evidence the social work profession needs to make the case for more flexible Medicare/Medicaid reimbursement of social work services? The answer to this question is complex. Although this review suggests that social work interventions can have a positive and significant impact on QOL and cost outcomes, the differential impact of the social work contribution is not easily identifiable because (1) the social worker is part of a team and the specific contributions of social work are not defined and (2) the impact of the social work contribution is not measured separately making it difficult to argue that the "social work" contribution is part of the reason for the outcome.

We have made several observations while conducting this review that require further discussion. First, there is much less intervention/applied research in the gerontological social work literature when compared to other health professions, such as nursing (Davis, 2004; Raveis, Gardner, Berkman, & Harootyan, 2010). This may be related to larger/systemic issues: (a) doctoral preparation to conduct intervention research; in their content analysis of 252 social work doctoral dissertations, Horton and Hawkins (2010) found that only 13.49% of dissertations focused on intervention research; (b) tenure-track faculty need publications; applied research takes time so there may be little value in pursuing applied research. Tenure-track faculty may focus on pushing out large numbers of papers, which can be achieved by using secondary data analysis; and (c) scarcity of funding for such research, especially in the area of aging, when compared to other populations and social problems. Without intervention/applied research, the gerontological social work profession is in trouble. Other research focused on intervention studies of social work in aging have also

recommended a need for more intervention/applied research and funding to conduct such research (Morrow-Howell, Burnette, & Chen, 2005; Mullen & Shuluk, 2011). Doctors must demonstrate effectiveness of interventions. Social workers need to demonstrate effectiveness of their work too in order to become players at the table, especially in the ACA environment.

The call by IOM to increase the number of geriatric social workers and expand innovative interdisciplinary models to meet the needs of the older adult population as well as the mission of CCMI to “test” delivery models underscores the need for more applied/intervention research in the gerontological social work field. Without evidence, the social work profession is at risk of being viewed as “soft” and not deserving of funding/reimbursement. To address this issue will require academic administrators to provide tenure-track faculty members with opportunities and support to conduct applied/intervention research.

Second, the current literature fails to include studies that examine the differential impacts (i.e., social workers vs. nonsocial worker) of social work interventions (Rubin & Parrish, 2012). In his editorial to celebrate 20 years of *Research on Social Work Practice*, Thyer (2010) eloquently discusses how the journal has raised the bar for social work publishing and has had an impact on the social work field. However, the scarcity of the social work interventions in aging literature that examines the differential and/or additive impacts of social work fails to support what Rubin and Parrish (2012) call “superiority of social work” in the field (p. 309). To fully understand the contributions of social workers, it is important to examine their role—whether independently as deliverers of interventions or as part of multidisciplinary teams.

Finally, professional development training is needed to educate practicing social workers, so they can see the “value” of applied/intervention research in practice as well as academia (Dyeson, 2005; Proctor & Rosen, 2008). It is a matter of survival for social work practitioners and researchers. To advance this agenda, institutions and organizations should offer professional development trainings to build awareness and increase the knowledge base regarding the value of applied research and the benefits it provides to organizations and the profession as a whole. This training would need to focus on building stronger partnerships between organizations serving older adults and university researchers and faculty members. The development of these partnerships would offer greater opportunities for social work faculty to work with community partners. Second, partnerships would support social work and social service agencies in documenting the effectiveness of their work.

One national example of an initiative to create and support the partnerships we envision is the John A. Hartford Foundation’s Change AGENTS Initiative. The Change AGENTS Initiative is “an interdisciplinary effort to leverage the Foundation’s powerful network, help its scholars and grantees learn from and support one another, and work directly on changes in practice and service delivery that improve the health of older Americans” (Hartford Foundation, 2014). This initiative for previously funded Hartford Foundation grantees,

including social work faculty, provides significant support and opportunities for social workers in the academy to partner with social workers and other health/mental health professionals as well as organizations serving older adults to not only improve the health of older adults but also change the social service and health care systems charged with meeting their needs.

In conclusion, this updated systematic review of social work interventions in aging with a focus on cost outcomes and cost-effectiveness suggests that social work interventions are both efficacious and efficient. However, the literature to date provides little information about the unique contribution of social work, as it relates to QOL and health care cost outcomes for older adults, especially in interdisciplinary interventions. ACA, CMMI, and the John A. Hartford Foundation’s Change AGENTS initiative provide significant opportunities for social work researchers in partnership with organizations, and social work practitioners serving older adults, to conduct studies to document the unique contribution of social work interventions to QOL and cost outcomes for older adults.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Note

1. Proxy cost outcomes are defined as measures that can be linked to cost outcomes (i.e., 30-day readmission rates and health care utilization rates) and/or measures for which costs could be calculated (i.e., number of nursing home days).

References

References marked with an asterisk indicate studies included in the meta-analysis.

- *Alexopoulos, G. S., Reynolds, C. F., 3rd, Bruce, M. L., Katz, I. R., Raue, P. J., Mulsant, B. H., . . . Ten Have, T. (2009). Reducing suicidal ideation and depression in older primary care patients: 24-month outcomes of the PROSPECT study. *American Journal of Psychiatry*, *166*, 882–890. doi:10.1176/appi.ajp.2009.08121779
- *Alkema, G. E., Wilber, K. H., Shannon, G. R., & Allen, D. (2007). Reduced mortality: The unexpected impact of a telephone-based care management intervention for older adults in managed care. *Health Services Research*, *42*, 1632–1650. doi:10.1111/j.1475-6773.2006.00668.x
- *Altfeld, S., Pavle, K., Rosenberg, W., & Shure, I. (2012). Integrating care across settings: The Illinois transitional care consortium’s bridge model. *Generations*, *36*, 98–101. Retrieved from <http://asaging.org/generations-journal-american-society-aging>
- *Bellantonio, S., Kenny, A. M., Fortinsky, R. H., Kleppinger, A., Robison, J., Gruman, C., . . . Trella, P. M. (2008). Efficacy of a geriatrics team intervention for residents in dementia-specific assisted living facilities: Effect on unanticipated transitions.

- Journal of the American Geriatrics Society*, 56, 523–528. doi:10.1111/j.1532-5415.2007.01591.x
- Bielaszka-DuVernay, C. (2011). Improving the coordination of care for Medicaid beneficiaries in Pennsylvania. *Health Affairs*, 30, 426–430. doi:10.1377/hlthaff.2010.1298
- *Botsford, A. L., & Rule, D. (2004). Evaluation of a group intervention to assist aging parents with permanency planning for an adult offspring with special needs. *Social Work*, 49, 423–431. doi:10.1093/sw/49.3.423
- *Brumley, R., Enguidanos, S., Jamison, P., Seitz, R., Morgenstern, N., Saito, S., . . . Gonzalez, J. (2007). Increased satisfaction with care and lower costs: Results of a randomized trial of in-home palliative care. *Journal of the American Geriatrics Society*, 55, 993–1000. doi:10.1111/j.1532-5415.2007.01234.x
- *Cabness, J., Miller, C., & Flowers, K. (2006). Promoting resilience in ESRD: Evaluation of a group cognitive-behavioral intervention for patients on hemodialysis. *Journal of Nephrology Social Work*, 25, 30–36. Retrieved from <http://www.kidney.org/professionals/cnsw/jnswonline/index.cfm>
- Center for Medicare and Medicaid Innovation. (2014). CMS Innovation Center. Retrieved July 7, 2014, from www.innovations.cms.gov
- Chandler, J., Churchill, R., Higgins, J., Lasserson, T., & Tovey, D. (2012). Methodological standards for the conduct of new Cochrane intervention reviews, version 2.2. Retrieved July 1, 2013, from <http://www.editorial-unit.cochrane.org/mecir>
- *Chang, C., Jackson, S. S., Bullman, T. A., & Cobbs, E. L. (2009). Impact of a home-based primary care program in an urban Veterans Affairs medical center. *Journal of the American Medical Directors Association*, 10, 133–137. doi:10.1016/j.jamda.2008.08.002
- *Claiborne, N. (2006a). Effectiveness of a care coordination model for stroke survivors: A randomized study. *Health & Social Work*, 31, 87–96. doi:10.1093/hs/31.2.87
- *Claiborne, N. (2006b). Efficiency of a care coordination model: A randomized study with stroke patients. *Research on Social Work Practice*, 16, 57–66. doi:10.1177/1049731505276076
- Committee on the Future Health Care Workforce for Older Americans—Institute of Medicine. (2008). *Retooling for an aging America: Building the health care workforce*. Washington, DC: The National Academies Press.
- *Counsell, S. R., Callahan, C. M., Clark, D. O., Tu, W., Buttar, A. B., Stump, T. E., & Ricketts, G. D. (2007). Geriatric care management for low-income seniors: A randomized controlled trial. *JAMA*, 298, 2623–2633. doi:10.1001/jama.298.22.2623
- *Counsell, S. R., Callahan, C. M., Tu, W., Stump, T. E., & Arling, G. W. (2009). Cost analysis of the geriatric resources for assessment and care of elders care management intervention. *Journal of the American Geriatrics Society*, 57, 1420–1426. doi:10.1111/j.1532-5415.2009.02383.x
- Davis, C. (2004). Hospital social work: Are we conducting the right type of research? *Social Work in Health Care*, 38, 67–79. doi:10.1300/J010v38n03_04
- *Dobrof, J., Ebenstein, H., Dodd, S., Epstein, I., Christ, G., & Blacker, S. (2006). Caregivers and professionals partnership caregiver resource center: Assessing a hospital support program for family caregivers. *Journal of Palliative Medicine*, 9, 196–205. doi:10.1089/jpm.2006.9.196
- Dyeson, T. B. (2005). Home health social work: Obstacles to evidence-based practice. *Home Health Care Management & Practice*, 17, 316–319.
- *Ell, K., Unützer, J., Aranda, M., Gibbs, N. E., Lee, P., & Xie, B. (2007). Managing depression in home health care: A randomized clinical trial. *Home Health Care Services Quarterly*, 26, 81–104. doi:10.1300/J027v26n03_05
- *Ell, K., Vourlekis, B., Lee, P. J., & Xie, B. (2007). Patient navigation and case management following an abnormal mammogram: A randomized clinical trial. *Preventive Medicine*, 44, 26–33. doi:10.1016/j.ypmed.2006.08.001
- *Engelhardt, J. B., McClive-Reed, K. P., Toseland, R. W., Smith, T. L., Larson, D. G., & Tobin, D. R. (2006). Effects of a program for coordinated care of advanced illness on patients, surrogates, and healthcare costs: A randomized trial. *American Journal of Managed Care*, 12, 93–100. Retrieved from <http://www.ajmc.com/publications>
- *Engelhardt, J. B., Rizzo, V. M., Penna, R. D. D., Feigenbaum, P. A., Kirkland, K. A., Nicholson, J. S., . . . Tobin, D. R. (2009). Effectiveness of care coordination and health counseling in advancing illness. *American Journal of Managed Care*, 15, 817–825. Retrieved from <http://www.ajmc.com/publications>
- *Engelhardt, J. B., Toseland, R. W., Gao, J., & Banks, S. (2006). Long-term effects of outpatient geriatric evaluation and management on health care utilization, cost, and survival. *Research on Social Work Practice*, 16, 20–27. doi:10.1177/1049731505276047
- *Enguidanos, S. M., & Jamison, P. M. (2006). Moving from tacit knowledge to evidence-based practice: The Kaiser permanente community partners study. *Home Health Care Services Quarterly*, 25, 13–31. doi:10.1300/J027v25n01_02
- *Faul, A. C., Yankeelov, P. A., Rowan, N., Gillette, P. D., Nicholas, L. D., Borders, K., . . . Wiegand, M. (2009). Impact on geriatric assessment and self-management support on community-dwelling older adults with chronic illnesses. *Journal of Gerontological Social Work*, 52, 230–249. doi:10.1080/01634370802609288
- *Gallo, J. J., Bogner, H. R., Morales, K. H., Post, E. P., Lin, J. Y., & Bruce, M. L. (2007). The effect of a primary care practice-based depression intervention on mortality in older adults: A randomized trial. *Annals of Internal Medicine*, 146, 689–698. doi:10.7326/0003-4819-146-10-200705150-00002
- *Gellis, Z. D., McGinty, J., Tierney, L., Jordan, C., Burton, J., & Misener, E. (2008). Randomized controlled trial of problem-solving therapy for minor depression in home care. *Research on Social Work Practice*, 18, 596–606. doi:10.1177/1049731507309821
- Geriatric Social Work Initiative. (2014). Hartford National center on gerontological social work excellence. Retrieved July 1, 2014, from <http://www.gswi.org>
- Haidich, A. (2010). Meta-analysis in medical research. *Hippokratia*, 14, 2–10. Retrieved from <http://www.hippokratia.gr/>
- *Hanson, L. C., Reynolds, K. S., Henderson, M., & Pickard, C. G. (2005). A quality improvement intervention to increase palliative care in nursing homes. *Journal of Palliative Medicine*, 8, 576–584. doi:10.1089/jpm.2005.8.576
- Hartford Foundation. (2014). The John A. Hartford foundation: Working to improve the health of older Americans. Retrieved July 1, 2014, from <http://www.jhartfound.org>

- *Holland, S. K., Greenberg, J., Tidwell, L., Malone, J., Mullan, J., & Newcomer, R. (2005). Community-based health coaching, exercise, and health service utilization. *Journal of Aging & Health, 17*, 697–716. doi:10.1177/0898264305277959
- Horton, E. G., & Hawkins, M. (2010). A content analysis of intervention research in social work doctoral dissertations. *Journal of Evidence-Based Social Work, 7*, 377–386. doi:10.1080/15433710903344066
- *Ingersoll-Dayton, B., Campbell, R., & Ha, J. (2009). Enhancing forgiveness: A group intervention for the elderly. *Journal of Gerontological Social Work, 52*, 2–16. doi:10.1080/01634370802561901
- *Johnson, Y., & Stadel, V. (2007). Completion of advance directives: Do social work preadmission interviews make a difference? *Research on Social Work Practice, 17*, 686–696. doi:10.1177/1049731506299011
- Li, H., Morrow-Howell, N., & Proctor, E. K. (2004). Post-acute home care and hospital readmission of elderly patients with congestive heart failure. *Health & Social Work, 29*, 275–285. doi:10.1093/hsw/29.4.275
- *London, M., McSkimming, S., Drew, N., Quinn, C., & Carney, B. (2005). Evaluation of a comprehensive, adaptable, life-affirming, longitudinal (CALL) palliative care project. *Journal of Palliative Medicine, 8*, 1214–1225. doi:10.1089/jpm.2005.8.1214
- *Miller, J. J., Frost, M. H., Rummans, T. A., Huschka, M., Atherton, P., Brown, P., . . . Clark, M. M. (2007). Role of a medical social worker in improving quality of life for patients with advanced cancer with a structured multidisciplinary intervention. *Journal of Psychosocial Oncology, 25*, 105–119. doi:10.1300/J077v25n04_07
- Montgomery, R. J. V., Kwak, J., Kosloski, K., & O'Connell Valuch, K. (2011). Effects of the TCARE[®] intervention on caregiver burden and depressive symptoms: Preliminary findings from a randomized controlled study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 66B*, 640–647. doi:10.1093/geronb/gbr088
- Montgomery, R. J. V., Kwak, J., & Rowe, J. M. (2011). Advancing social work practice with family caregivers [Group E-caregiving]. *Indian Journal of Gerontology, 25*, 553–575. Retrieved from <http://www.gerontologyindia.com/journal.htm>
- *Morrison, R. S., Chichin, E., Carter, J., Burack, O., Lantz, M., & Meier, D. E. (2005). The effect of a social work intervention to enhance advance care planning documentation in the nursing home [Group D-end of life/palliative care/advanced illness]. *Journal of the American Geriatrics Society, 53*, 290–294. doi:10.1111/j.1532-5415.2005.53116.x
- Morrow-Howell, N., Burnette, D., & Chen, L. (2005). Research priorities for gerontological social work: Researcher and practitioner perspectives. *Social Work Research, 29*, 231–242. doi:10.1093/swr/29.4.231
- *Mukamel, D. B., Temkin-Greener, H., Delavan, R., Peterson, D. R., Gross, D., Kunitz, S., & Williams, T. F. (2006). Team performance and risk-adjusted health outcomes in the program of all-inclusive care for the elderly (PACE). *Gerontologist, 46*, 227–237. doi:10.1093/geront/46.2.227
- Mullen, E. J., & Shuluk, J. (2011). Outcomes of social work intervention in the context of evidence-based practice. *Journal of Social Work, 11*, 49–63. doi:10.1177/1468017310381309
- *Newcomer, R., Kang, T., & Graham, C. (2006). Outcomes in a nursing home transition case-management program targeting new admissions. *Gerontologist, 46*, 385–390. doi:10.1093/geront/46.3.385
- *Oslin, D. W., Thompson, R., Kallan, M. J., TenHave, T., Blow, F. C., Bastani, R., . . . Jarvik, L. (2004). Treatment effects from UPBEAT: A randomized trial of care management for behavioral health problems in hospitalized elderly patients. *Journal of Geriatric Psychiatry and Neurology, 17*, 99–106. doi:10.1177/0891988703262539
- Patient Protection and Affordable Care Act, P.L. 111-148 C.F.R. (2010).
- *Phelan, E. A., Williams, B., Penninx, B. W. J., LoGerfo, J. P., & Leveille, S. G. (2004). Activities of daily living function and disability in older adults in a randomized trial of the health enhancement program. *Journals of Gerontology Series A: Biological Sciences & Medical Sciences, 59A*, 838–843. doi:10.1093/gerona/59.8.M838
- *Phibbs, C. S., Holty, J. E., Goldstein, M. K., Garber, A. M., Wang, Y., Feussner, J. R., & Cohen, H. J. (2006). The effect of geriatrics evaluation and management on nursing home use and health care costs: Results from a randomized trial. *Medical Care, 44*, 91–95. Retrieved from <http://journals.lww.com>
- *Prior, M. K., Bahret, B. A., Allen, R. I., & Pasupuleti, S. (2012). The efficacy of a senior outreach program in the reduction of hospital readmissions and emergency departments visits among chronically ill seniors. *Social Work in Health Care, 51*, 345–360. doi:10.1080/00981389.2011.644103
- Proctor, E. K., & Rosen, A. (2008). From knowledge production to implementation: Research challenges and imperatives. *Research on Social Work Practice, 18*, 285–291. doi:10.1177/1049731507302263
- *Rabow, M. W., Dibble, S. L., Pantilat, S. Z., & McPhee, S. J. (2004). The comprehensive care team: A controlled trial of outpatient palliative medicine consultation. *Archives of Internal Medicine, 164*, 83–91. doi:10.1001/archinte.164.1.83
- *Rao, A. V., Hsieh, F., Feussner, J. R., & Cohen, H. J. (2005). Geriatric evaluation and management units in the care of the frail elderly cancer patient. *Journals of Gerontology Series A: Biological Sciences & Medical Sciences, 60A*, 798–803. doi:10.1093/gerona/60.6.798
- Raveis, V. H., Gardner, D. S., Berkman, B., & Harootyan, L. (2010). Linking the NIH strategic plan to the research agenda for social workers in health and aging. *Journal of Gerontological Social Work, 53*, 77–93. doi:10.1080/01634370903361953
- *Reese, D. J., & Raymer, M. (2004). Relationships between social work involvement and hospice outcomes: Results of the National Hospice Social Work Survey. *Social Work, 49*, 415–422. doi:10.1093/sw/49.3.415
- *Rizzo, V. M. (2006). Social work support services for stroke patients: Interventions and outcomes. *Social Work in Health Care, 43*, 33–56. doi:10.1300/J010v43n01_03
- Rizzo, V. M., & Rowe, J. M. (2006). Studies of the cost-effectiveness of social work services in aging: A review of the Literature. *Research on Social Work Practice, 16*, 67–73. doi:10.1177/1049731505276080
- Rubin, A., & Parrish, D. E. (2012). Comparing social worker and non-social worker outcomes: A research review. *Social Work, 57*, 309–320. doi:10.1093/sw/sws015

- *Shannon, G. R., Wilber, K. H., & Allen, D. (2006). Reductions in costly healthcare service utilization: Findings from the care advocate program. *Journal of the American Geriatrics Society, 54*, 1102–1107. doi:10.1111/j.1532-5415.2006.00799.x
- *Sirey, J., Hannon, C., D'Angelo, D., & Knies, K. (2012). A community treatment intervention advancing active treatment in the elderly (ACTIVATE): A pilot study. *Journal of Gerontological Social Work, 55*, 382–391. doi:10.1080/01634372.2011.644029
- Social Work Reinvestment Initiative. (2009). Social Work Reinvestment Act. Retrieved July 1, 2014, from <http://www.socialwork-reinvestment.org/2009/Aboutus.html>
- *Stock, R., Mahoney, E. R., Reece, D., & Cesario, L. (2008). Developing a senior healthcare practice using the chronic care model: Effect on physical function and health-related quality of life. *Journal of the American Geriatrics Society, 56*, 1342–1348. doi:10.1111/j.1532-5415.2008.01763.x
- *Stock, R., Reece, D., & Cesario, L. (2004). Developing a comprehensive interdisciplinary senior healthcare practice. *Journal of the American Geriatrics Society, 52*, 2128–2133. doi:10.1111/j.1532-5415.2004.52576.x
- Thyer, B. (2010). Twenty years of publishing research on social work practice. *Research on Social Work Practice, 20*, 5–10. doi:10.1177/1049731509347885
- *Toseland, R. W., & Smith, T. L. (2006). The impact of a caregiver health education program on health care costs. *Research on Social Work Practice, 16*, 9–19. doi:10.1177/1049731505276045
- Unützer, J., Schoenbaum, M., Katon, W. J., Fan, M. Y., Pincus, H. A., Hogan, D., & Taylor, J. (2009). Healthcare costs associated with depression in medically ill fee-for-service Medicare participants. *Journal of the American Geriatrics Society, 57*, 506–510. doi:10.1111/j.1532-5415.2008.02134.x
- U.S. Department of Health and Human Services. (1999). Mental health: A report of the Surgeon General. Retrieved June 1, 2014, from <http://profiles.nlm.nih.gov/ps/access/NNBBHS.pdf>
- *Vickrey, B. G., Mittman, B. S., Connor, K. I., Pearson, M. L., Della Penna, R. D., Ganiats, T. G., . . . Lee, M. (2006). The effect of a disease management intervention on quality and outcomes of dementia care: A randomized, controlled trial. *Annals of Internal Medicine, 145*, 713–726. doi:10.7326/0003-4819-145-10-200611210-00004