

**Studies of the Efficacy and Cost-effectiveness
Of
Social Work Services in Aging:
A Report Commissioned by the National Leadership Coalition**

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Introduction

In the United States the population of Americans aged 65 years and older is growing rapidly creating an increased need for social workers. Between 1980 and 2000, the population of people aged 100 years and older tripled; people aged 85 years and older doubled; and the people aged 65 years and older grew by 36 percent. Currently, the fastest growing population is frail elders over the age of 85 years (Administration on Aging, 2002). Known for their expertise in mental health services and case management provision, the demand for social workers will continue to increase as the aging population increases because they possess the skills necessary to help aging individuals cope with the myriad of mental and physical health issues associated with aging. However, the present reimbursement structures of Medicare and Medicaid present significant access barriers for aging individuals seeking social work services. Furthermore, these structures discourage social workers from working with the elderly. In order to advocate with policy makers for changes in the current reimbursement structures of social work services, members of the social work profession must provide empirical evidence of the efficacy and cost effectiveness of social work services in aging. This paper reports the results of a comprehensive review of the literature, including gray literature, dissertation abstracts, and conference highlights to identify what has been reported about the efficacy and cost-effectiveness of social work practice in aging.

Background

Recognizing the future need for highly trained geriatric social workers, and the current shortage of social workers choosing geriatric social work as their specialty area, as well as recognizing the existing and problematic reimbursement structures for social work services, the National Association of Deans and Directors of Schools of Social Work (NADD) and the New

York Academy of Medicine (NYAM) have undertaken a National Coalition Leadership Initiative to further advance the development of social work expertise in working with aging adults and their families (National Leadership Coalition, 2002). As a part of this initiative the National Leadership Coalition, an ad hoc group comprised of individuals representing major stakeholders in the field of social work, was formed in 2002. This group identified four major objectives for their work: 1) to clarify the current and future supply and demand for social workers; 2) to make explicit the cost-effectiveness of social work services to respond the government question regarding the efficacy of social work services; 3) to link the knowledge of effectiveness to a public message regarding social work; and 4) to align social work funding for social work education and training with the social work effectiveness data (National Leadership Coalition, 2003). Then, they developed a work plan and task teams to move these objectives forward. The literature review conducted for this report was commissioned by the National Leadership Coalition to address objective two.

Methodology

Literature Search: All articles, gray literature, dissertation abstracts and conference proceedings included in this review were written in English within the past fifteen years. We conducted our search of the literature in three phases with the help of the librarians at the New York Academy of Medicine Library. In the first phase, we searched the literature to identify previous literature reviews and meta-analyses of the efficacy and cost-effectiveness of social work services. In the second phase, we searched the literature to identify all outcome studies of the efficacy and cost-effectiveness of social work services in aging. In the third phase, we expanded our search to other specialty areas of social work practice, including child welfare,

mental health, substance abuse, and health, to more fully understand how social work researchers in other areas of social work practice are examining the cost-effectiveness of their interventions.

We searched Medline, Social Work Abstracts, PsycInfo, and social sciences databases to ensure that we captured all the available literature focused on aging. We used the following key terms in phases one and two of the search: evidence based practice, managed care, managed Medicaid, case management, cost outcomes, cost benefits, medicine, health care, community-based, home care, long term care, effectiveness, efficacy, quality of life, functional outcomes, outcome measures, hospital, and nursing homes. We qualified each of these keywords with the following phrases to limit our search: “social work and...” social work practice and...” or ‘geriatric social work and...’. For our search in phase three, we used different search terms for each specialty area of practice. For child welfare we used the terms: child welfare case management; child welfare and client outcomes; cost outcomes and child welfare; and evidence based practice and child welfare. For mental health services we used the terms: evidence based practice, mental health and social work; cost outcomes and mental health treatment; and mental health case management and cost-effectiveness. For substance abuse we used the terms: evidence based practice and substance abuse; and cost outcomes and substance abuse treatment. To capture literature in any of these areas, we also used combined keywords: social work practice and cost outcomes; social work practice and cost-effectiveness; human services research and social work practice; and social work practice and client efficacy.

Organization of the Information: We took several steps to organize the review of the literature. First, we organized the articles by type: literature reviews/meta-analyses; outcome studies of social work practice in aging; and studies of the cost-effectiveness of interventions in child welfare, dual diagnosis, health, mental health, and substance abuse. Second, we

summarized the articles as we reviewed them by constructing a table for each type of article. For each article, we identified the authors, the methods, the sample, the social work interventions examined, the measures used, and the outcomes. We also identified the topic area of the article and created topic categories to organize the articles in each table. Third, we wrote detailed abstracts of each article highlighting its focus on cost outcomes and aging whenever appropriate. These abstracts are available as an annotated bibliography from the New York Academy of Medicine website: www.nyam.org (Rizzo & Rowe, 2003).

Findings

We reviewed a total of 83 articles: 17 (21%) were literature reviews/meta-analyses; 40 (48%) were outcomes studies of social work services in aging; and 26 (31%) were articles about cost outcomes in other areas of social work practice. We will discuss the findings of our review by article type.

Literature Reviews/Meta-analyses: In order to maximize our use of the existing literature, we started by reviewing previous meta-analyses and literature reviews of the efficacy of social work practice. Of the 17 articles we reviewed, 41 percent (N = 7) focused specifically on social work interventions and 59 percent (N = 10) focused on psychosocial interventions in general. Each of these articles is summarized in Table 1. Three of the social work specific literature reviews identified aging as a category of intervention studies examined (Gremier & Gorey, 1998; Reid & Fortune, in press; Reid, Fortune, & Kenaley, 2002). Five percent of the studies reviewed by Reid and colleagues (2002; in press) evaluated social work interventions with aging individuals. Gremier and Gorey (1998) conducted a meta-analysis of conference proceedings that reported the findings of the effectiveness of gerontological social work interventions in volumes 30 to 36 of *The Gerontologist*.

None of the seven literature reviews focused on social work interventions specifically discussed the cost outcomes of the studies reviewed. However, three of the articles indirectly mentioned cost outcomes. In her position paper about the importance of evaluating social work interventions, Cheetham (1992) reported that she always links cost analyses of the interventions she evaluates with the analyses of the efficacy of the interventions. She cautioned against reporting the costs of social work interventions without reporting their link to effectiveness because the impact of the value added as a result of the interventions may be lost if their cost-effectiveness cannot be established. Auslander (2000), in her review of the health care literature, stated that the current social work research evaluating interventions in health care do not link maintenance outcomes, such as length of stay and health care utilization, with psychosocial outcomes. This link between maintenance outcomes and psychosocial outcomes can make a strong argument for the provision and reimbursement of social work services. Although Gremier and Gorey (1998) do not discuss cost outcomes in their review, several of the conference proceedings listed for Toseland and colleagues are from studies that measure the cost outcomes of social work interventions.

Since we located only seven literature reviews/meta-analyses of social work interventions, we expanded our review to include reviews of psychosocial interventions in general. In these articles, the interventions examined were not specific to social work. Of the ten articles we reviewed, one included interventions in gerontology (Knight, Lutzky, & Macofsky-Urban, 1993), four included the cost outcomes of the studies reviewed and/or made some conclusions about the cost outcomes of the interventions examined (Bower et al., 2002; Rubin, 1992; Sobel, 1995; Solomon, 1992) and four included both (Applegate, Deyo, Kramer, & Meehan, 1991; Stuck, Siu, Wieland, Adams, & Rubenstein, 1993; Toseland & McCallion, 1997;

Trabucchi, 1999). The most common cost outcomes evaluated were hospitalizations, nursing home placement, and use of health care services. In a review of randomized controlled trials (RCTs) of Geriatric Evaluation and Management (GEM), the authors concluded that GEM interventions have a positive impact on mortality, rates of hospitalization and institutionalization, and physical function (Applegate et al., 1991). The authors of this review recommended that future studies examine the cost of outpatient GEM, and the cost-effectiveness of the inpatient GEM unit for Medicare reimbursement purposes. In a separate meta-analysis of 28 RCTS of GEM, the authors concluded that the evidence indicates that GEM increases survival rates, increases physical function, and decreases hospital admissions (Stuck et al., 1993). Finally, Toseland and McCallion (1997) reviewed the caregiver intervention literature in the latter half of the Twentieth Century and identified caregiver studies with significant cost outcomes (Mittelman et al., 1993; Peak, Toseland, & Banks, 1995), which are presented in Table 2. Taken together, these reviews of outcome studies of psychosocial interventions make a strong case for their cost-effectiveness.

In yet another review of case management interventions for the mentally ill, Solomon (1992) concluded that the available evidence suggests that case management interventions decrease the rates of re-hospitalization and lengths of hospital stay for the mentally ill patients receiving them. Thus, the cost-effectiveness of psychosocial interventions has been demonstrated based on these literature reviews in gerontology and other areas. In his position paper, Sobel (1995) eloquently argued that the empirical evidence to date suggests that psychosocial interventions increase the health of those who receive them while at the same time decreasing these same individuals' health care costs. His argument based on the available evidence is that psychosocial interventions should be included as standard medical treatment.

Despite the empirical evidence that psychosocial interventions can be cost-effective and have a positive impact on quality of life outcomes, the literature reviews/meta-analyses of social work intervention research suggest that studies of the efficacy of social work practice have not evaluated cost outcomes for the interventions evaluated. However, the authors of these articles have recognized this gap in the empirical literature and have recommended that cost outcomes and evaluations of cost-effectiveness be included in empirical studies of social work practice in the future (Auslander, 2000; Cheetham, 1992).

Outcome Studies of Social Work Practice in Aging: In an effort to better understand social work services in aging and their cost-effectiveness at the individual, organizational, and societal levels, in phase two we conducted a review of 40 articles that reported the results of 34 separate outcome studies of social work services in aging. Articles were selected for inclusion in phase two of this literature review if they (1) evaluated an intervention in which social workers were an integral part of the intervention (individually or as part of a multidisciplinary team), and (2) the target sample populations included aging individuals and/or their caregivers/families.

The 34 research projects fell into one of four intervention categories: Caregiving (37.5%; N = 15); Health (25%; N = 10); Geriatric Evaluation and Management (20%; N = 8); and General (17.5%; N = 7). In our review of this literature, we paid particular attention to the inclusion of cost outcomes in the evaluations of the intervention(s) examined. Summaries of these research projects are included in Table 2. An overwhelming 82.3 percent (N = 28) of the research projects identified at least one positive outcome that was associated with improving the quality of life of those individuals who received the social work intervention evaluated.

On the other hand, less than one-third (20.6%; N=13) of the research projects included cost measures and reported cost outcomes for their studies. These projects were in the areas of

caregiving (N = 4), health (N = 5), and Geriatric Evaluation and Management (N = 4). Three studies provided empirical evidence of the efficacy and cost-effectiveness of social work services with older adults who are caregivers. The findings of an evaluation of the Caregiver Support Project (CPS), a social work support group intervention for spouse caregivers of frail elderly veterans, revealed that the health care costs for the care recipients whose caregivers were in the treatment group were significantly lower (\$7, 500) when compared to the health care costs of the care recipients whose caregivers were receiving usual care (Peak et al., 1995). The investigators of two independent multi-component caregiver support group projects, which targeted both caregiver/care recipient pairs, reported a reduction in nursing home placement rates for individuals receiving the interventions when compared to those receiving usual care (Mittleman, et al., 1993; Montgomery and Borgatta, 1989). In each of the studies, the findings suggested that the interventions also had at least one other positive outcome on quality of life, physical function or health status for caregivers and/or care recipients.

Four studies reviewed in the health also found significant cost savings and improved quality of life for older adults. Rizzo (2003) retrospectively evaluated the social work support services provided to stroke patients participating in an inpatient physical rehabilitation program. The results suggested that high levels of informational support services, such as stroke education and family teaching, provided by social workers had a significant and positive impact on total hospital charges. Individuals who received higher levels of these services had lower total hospital charges than individuals who received lower levels of these same services. In another outcome study, Claiborne (2003) examined a care coordination model designed for stroke patients immediately following discharge from an inpatient physical rehabilitation program. The preliminary results suggested that individuals participating in the care coordination program had

increased outpatient medical visits and better medical adherence when compared to their counterparts who did not participate in the program, but instead received usual care. Those receiving treatment also had decreased emergency department visits and inpatient admissions when compared to their usual care counterparts.

Ponto and Berg (1992) examined a program that provided social work services, on a 24-hour, seven-day-a week basis in an urban hospital's emergency department . Using cost-benefit analysis, the results indicated that the program operated at a marginal cost to the hospital. Providing on-call social work services not only decreased the demands on other emergency department team members in the hospital, but it also facilitated more expedient client referrals for appropriate community resources. The decreased demands on the health care system saved costs to the hospital, community, patient, and family system. Rosen et al. (1999) examined a proactive social work services model. Results revealed that patients who received the intervention had fewer emergency department visits and hospitalizations than those in usual care. Each of these studies also found at least one significant outcome on quality of life, physical function or emotional measures. Taken together, these studies in the area of social work practice and health provide some preliminary evidence that social work services in aging and health may be cost-effective.

Lastly, we identified four evaluation studies of geriatric evaluation and management (GEM) that reported significant cost savings and improvement in the quality of life for older adults. A multi-disciplinary GEM intervention study that targeted frail older adults reduced hospital admissions by 39 percent and produced a 25 percent cost reduction in overall treatment costs, including hospital and nursing care for patients receiving GEM when compared to patients receiving usual care (Williams, Williams, Zimmer, Hall, & Podgorski, 1987). In another study,

Boult and colleagues (Boult, Boult, Ebbitt, Luptak, & Kane, 1994) reported that the results of an interdisciplinary GEM intervention that targeted frail elderly suggested that Medicare recipients who received GEM used emergency rooms 60 percent less than usual care subjects and had a 63 percent less rate of nursing home placement. The findings of another GEM study that targeted Medicare recipients aged 70 and over suggested that the GEM approach shifted utilization and Medicare expenditures from inpatient services to home health care services (Rubin, 1992). Finally, the results of a GEM intervention with elderly veterans revealed significant positive improvements in eight of eleven quality of life outcome variables (Burns, 2000). These findings are not only monetarily significant in that they support cost savings to the community, hospitals, Medicare, and the healthcare system as a whole, but they also support the efficacy of social work interventions in improving the quality of life for older adults.

The findings of our literature review in phase two were similar to those of phase one in that few of the studies included rigorous cost analyses and discussions of the link between cost outcomes and psychosocial outcomes. Of the 13 studies that included costs in phase two, 61.5 percent (N = 8) directly used costs, such as total hospital charges and the cost of doctors' visits, as outcome measures. The remaining 37.5 percent (N = 5) used outcome measures that could be linked to cost outcomes, such as medication adherence, or outcome measures for which costs could be calculated, such as nursing home placement or length of stay. However, the authors did not discuss these outcomes in terms of cost-effectiveness, calculate costs for these outcomes, or link them to other psychosocial outcomes. Lastly, the outcome studies of social work services in aging that evaluate costs are narrowly focused on aging individuals who are physically and cognitively impaired, or sick. This narrow focus on health care and aging may be due to the fact

that cost data is more likely to be more readily available in health care systems because services are billed for.

Interventions in Child Welfare, Dual Diagnosis, Health, Mental Health, & Substance Abuse: Given the narrow focus of the outcomes studies of social work services in aging that include cost outcomes, in phase three of this literature review, we identified several other areas of social work practice that might inform our development of cost-effectiveness research in the area of aging and social work practice. Given the purpose of this phase of the literature review, we focused on the (1) cost analysis methods used, (2) cost measures used, and (3) the identification of social work practice or social workers in the delivery of the intervention in our review of the literature (see table 3 for a summary of the results).

Of the 26 articles we reviewed, 8 percent (N = 2) were in child welfare; 15 percent (N = 4) were in dual diagnosis; 31 percent (N = 8) were in health; 15 percent (N = 4) were in mental health; and 31 percent (N = 8) were in substance abuse. In the area of child welfare neither of the two articles was a study that included cost outcomes. Instead, they were position papers. Newman & Roberts (1997) argued for the use of randomized controlled trials (RCTs) to evaluate the effectiveness of social work interventions in child care practice. Unfortunately, these authors do not mention costs as possible measures in these RCTS nor do they discuss the importance of providing empirical evidence of the cost-effectiveness of social work interventions in child welfare. On the other hand, Plotnick & Deppman (1999) argued specifically for the use of cost-benefit analysis (CBA) in evaluations of child abuse prevention and intervention programs. The authors pointed out that to date evaluations have not utilized CBA as defined by economists. This article provided an excellent overview of CBA and how it can be applied to child abuse prevention and intervention programs.

The rest of the articles reviewed were outcome studies that included costs or literature reviews of such studies. Interestingly, social workers were identified as having a role in the interventions examined in very few cases. None of the articles reviewed in the areas of mental health and substance abuse even mentioned social work despite the fact that social workers are the major providers of services in these areas. Despite the obvious lack of an examination of social work interventions in these areas, these outcomes studies provided the most detailed descriptions of cost analysis methods and the methods and databases used to calculate the cost of services, and reports of their cost savings in dollar terms. Overall, the most often used method of analysis was cost-effectiveness analysis (CEA), which previously has been identified as the most appropriate method to evaluate the economic impact of social work interventions (Holosko, Dobrowolsky, & Feit, 1989, 1990). As a group, these articles provide good examples of studies examining the cost-effectiveness of psychosocial interventions.

Only one of the four articles reviewed in the area of dual diagnosis mentioned social workers as one group of professionals delivering the interventions, but this was the extent of the focus on social work (Clark et al., 1998). As the mental health and substance abuse articles, these included detailed descriptions of the cost analysis methods. On the other hand, half (4 out of 8) of the articles in the area of health examined social work interventions specifically and included evaluations of cost-effectiveness (Ell, 2003; Keehn, Roglitz, & Bowden, 1994; Reese & Raymer, 2003; Sullivan et al., 2002). This finding is consistent with those in the other two phases of this literature review which also revealed that outcome studies of social work practice in aging tend to be focused on health and aging. In phases one and two of this literature review, the interventions in this area also tended to be more likely to include evaluations of cost-effectiveness.

Of these studies we reviewed in the area of health, one emerged as the best example of a study examining the efficacy and cost-effectiveness of a social work intervention. This study, the National Cooperative Inner-city Asthma study, should be used as the gold standard for future outcomes studies in our field as we begin to use empirical data to make the case for the reimbursement of social work services with policy makers. Sullivan and colleagues (Evans, Gergen, Mitchell, & al., 1999; Sullivan et al., 2002) used the CEA methodology outlined by the United States Public Health Services panel on cost-effectiveness in health and medicine (United States Department of Health and Human Services Public Health Services (USDHHS/PHS), 2001) to evaluate an asthma intervention for children. The intervention was implemented by MSW-level social workers and this is clearly described in the article. The investigators used direct medical costs (days in the hospital, ICU visits, respiratory department visits, and unscheduled clinic visits) and morbidity measures (rate of scheduled and unscheduled clinic visits, rate of hospitalization, inpatient physician visits, ED visits, and ICU visits) to evaluate cost-effectiveness.

The findings revealed that the intervention significantly reduced asthma symptoms at an increase in cost of \$245 for the treatment group when compared to the usual care group in year one. In year two, there were no added costs and the average increase in cost per symptom free day gained was \$9.20. However, the intervention was cost saving for the three strata of high risk children with increasing asthma severity. For these children, the intervention was most effective and reduced the total cost of medical care. Sullivan and colleagues (2003) have provided us with the best model for examining the cost effectiveness of social work practice because they used rigorous CEA methodology; they described the intervention and the involvement of social workers in the detail necessary for replication; and most importantly, they linked the extra cost of

the intervention with the efficacy of the intervention for inner-city children with the severest asthma symptoms. This connection makes a strong argument for the reimbursement of these services despite their extra cost.

Discussion

This report was commissioned by the National Coalition Leadership to make explicit the current knowledge of the cost-effectiveness of social work services, identify current gaps in the literature, promote a research agenda based on the identified knowledge gaps, and assure that the knowledge gaps identified address payers', such as Medicare and Medicaid, needs to understand the value of social work services in aging. The literature reviews/meta-analyses in phase one helped us identify the first gap in our knowledge of the cost-effectiveness of social work. Generally, outcomes studies do not evaluate the cost-effectiveness of social work practice. This is clear because few of the articles reviewed mentioned cost outcomes or their importance to our understanding of the efficacy of social work practice.

In phase two of the literature review, however, we discovered that outcomes studies of social work services in aging, especially in the area of health and aging, have examined cost outcomes with significant and positive results. The empirical evidence we described in the areas of GEM, health and caregiving clearly demonstrated that social work interventions can positively impact health care costs and the use of health care services as well as the quality of life for older Americans. Taken together this evidence provides strong support for reexamining the current reimbursement structures for social work services under Medicare and Medicaid. However, the gaps this phase of the review helped us identify were the narrow focus of studies of the cost-effectiveness of social work services in aging as well as a lack of rigorous cost analysis methods that are clearly described.

Phase three of our review helped us identify the most appropriate methodology for the cost-effectiveness of social work practice: cost-effectiveness analysis. It also helped us identify that current outcome studies in social work lack rigorous cost analyses and explanations of them; they tend to report cost outcomes or “value added” separately. This weakens our ability to argue for the provision of services with much value added that are not cost-effective. In order to argue convincingly for changes in reimbursement structures for social work services in aging, we need to conduct rigorous cost-effectiveness analyses that also examine value added outcomes that are important to policymakers, aging individuals, and payers. More rigorous and convincing evidence will build upon the current small, but encouraging, body of evidence, which suggests that social work services are cost-effective.

Recommendations

In order to move the cost-effectiveness research agenda forward in the area of social work services in aging, we need to do the following:

- 1) Promote a research agenda for the cost-effectiveness of social work practice by encouraging social work journals to include studies of cost-effectiveness as part of their intervention research agenda and articles that educate use about cost analysis methodologies;
- 2) Encourage social work researchers, educators, administrators, and practitioners to use cost-effectiveness methodology in evaluations of their work;
- 3) Educate social workers in the use of the rigorous cost-effectiveness analyses as outlined by the United States Department of Human Services, Public Health Service (2001);
- 4) Link cost-effectiveness and efficacy outcomes in discussion of evaluations of social work practice to strengthen our argument for changes in the current reimbursement structure for social workers;

5) Meet with policy makers and major stakeholders to present evidence that social work services are essential to the health and well-being of aging individuals. This evidence can be used to not only acquire reimbursement for our services, but it can be used to secure education dollars to train social workers at advanced levels.

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