Chapter 5
Diabetes Treatments
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With the aging of many countries, physical inactivity, and growing rates of obesity, there has been a dramatic rise in the incidence of diabetes. Diabetes and its treatment is a holistic and dynamic experience, shaping many aspects of a person’s life and well-being. From lacerated fingers, blood sugar irritability, and regimented meal times to incapacitating glucose lows, vision impairment, and erectile problems, diabetes becomes a daily factor of life. These and other consequences influence the performance of social roles, requiring accommodation by employers and changes in family routines. For instance, operating vehicles or aircraft, habits of skipping meals, pickup games of basketball with grandkids, or spontaneous fishing trips alone—all require some form of change or limitation. Managing this condition demands considerable lifestyle adjustments, some by choice (diet, exercise, stress management) and others by necessity (insulin injections, renal dialysis treatment, rehab after an amputation). Emotionally, people must cope with a chronic, progressive, debilitating disease that typically reduces life expectancy by 15 years. In essence, diabetes adds additional complications and barriers to living. With holistic treatment and adequate resources, however, it can be a source of strength and a motivating factor for health improvement. Despite the biopsychosocial nature of this chronic disease, medications tend to be the principal intervention among medical professionals. Pharmacological treatment, though, does not assist with the psychosocial consequences of this disease nor the required lifestyle changes to achieve adequate blood sugar control.

Epidemiologically, diabetes morbidity is highest among lower socioeconomic, minority, and older populations, which are groups already at risk for other biopsychosocial challenges (Centers for Disease Control & Prevention [CDC], 2005). Hence, it is likely that many of the clients who frequent social work practice have diabetes themselves or care for someone who does. Unfortunately, social work practice and research involvement with this disease is limited. Social work clinicians make up less than 1% of registered diabetes professionals. Considering the psychological, social, and familial effects, social workers have remarkable potential to make a difference in the lives of people living with diabetes (DeCoster, 2001). Over the past 15 years, diabetes researchers and clinicians have begun to develop interventions addressing the psychosocial aspects of diabetes. The majority of these interventions fall within the knowledge base and clinical abilities of social work practitioners. This paper systematically reviewed psychosocial intervention studies with older adults, identifying and summarizing treatment protocols.

DEMOGRAPHICS/PREVALENCE

The increase in life expectancy throughout the world is changing the age demographics of populations. Currently in the United States, adults
65 and older comprise 13% (36 million) of its citizens, and it is expected that the number of older adults will nearly double by 2030 to 20% (71.5 million) of the population (He, Sengupta, Velkoff, & DeBarros, 2004). Although this aging trend will stabilize thereafter, adults 85 and older will increase from 4.2 million in 2000 to nearly 21 million by 2050 (Horiiuchi, 2000; Oeppen & Vaupel, 2002).

One consequence of aging is an increase in the incidence of chronic diseases. The likelihood of being diagnosed with diabetes increases as people age. Among adults 20-39 years of age the incidence of diabetes is 2.2%, 9.9% among 40-59 year-olds, rising to 18.3% among those 60 years of age and older. Including pre-diabetes raises the count to 40%, or nearly 17 million elders who are diagnosed or at greater potential for a diagnosis of diabetes (American Diabetes Association [ADA], 2005). When considering gender and racial differences, the rates tend to increase for minority women. Between the ages of 65 and 74, 32% of African American and 29.8% of American Indian and Alaskan Native women are diagnosed with diabetes (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDKD], 1998; National Center for Health Statistics [NCHS] & CDC, 2005). An exception, 34% of Hispanic males in this same age range have diabetes, in comparison to 28% Hispanic women (NCHS & CDC, 2005).

Nonetheless, the epidemic of diabetes among seniors is multifactorial in etiology (Goldberg & Coon, 1987). Nearly 30% of adults in the United States are clinically obese, with a body mass index of 30 or more (NCHS, 2005). Obesity, especially abdominal obesity, increases the risk for diabetes, which is an effect that is even more pronounced among older adults (Bray, 1992). As Catalano, Bergman, and Ader state (2005) “…youth affords significant protection against obesity-induced insulin resistance” (p. 11). Coinciding with obesity, 40% of adults are physically inactive, a trend that increases with age, climbing to over 60% of adults 75 and older (Lethbridge-Cejku & Vickerie, 2005). According to LaMonte, Blair, and Church (2005) “…the most proximal behavioral cause of insulin resistance is physical inactivity…” (p. 1205). Together, obesity and inactivity are significantly associated with diabetes and other comorbid conditions (Sullivan, Morrato, Ghushchyan, & Wyatt, 2005). Hence, an aging body compounds the effects of obesity and physical inactivity in the onset of diabetes among older adults.

NATURE OF THE PROBLEM

Diabetes mellitus is a series of endocrine disorders affecting tens of millions of Americans. There are essentially four classifications: gestational, pre-diabetes, Type 1, and Type II. Gestational diabetes occurs during pregnancy and involves abnormal glucose tolerance, i.e., blood sugars rise higher than normal and decrease to normal levels slower than usual. Insulin is either not produced, or body cells do not respond to the insulin that is produced. Normal glucose tolerance typically returns after childbirth. Recently, experts acknowledged a condition called pre-diabetes, which is elevated blood glucose levels that are above normal levels (fasting plasma glucose between 100-125 mg/dl; higher would justify a diabetes diagnosis). Depending on the test used to diagnosis it, this condition is also referred to as impaired glucose tolerance or impaired fasting glucose (IGT, IFG). IGT/IFG affects an estimated 41 million adults in the United States and places them at greater risk for diabetes and cardiovascular disease (ADA, 2005). Eventually, many with gestational or pre-diabetes will convert to Type 1 or Type II diabetes. Type 1 diabetes is the most frequent childhood chronic disease, although the majority with this disease are adults. The pancreas ceases insulin production, requiring insulin injections to live. Once referred to as juvenile diabetes, advances in treatment have extended the once limited life expectancies to well-beyond 60-70 years of age. Type II diabetes accounts for 95% of all diagnoses. Either the pancreas produces insufficient amounts of insulin, or the body’s cells become insulin resistant. Elevated blood sugars harden and scar blood vessels allowing cholesterol deposits to collect, and elevate blood pressure, thus destroying micro-vascular systems feeding optic, gastrointestinal, and peripheral nerve endings, as well as overworking the kidneys in their effort to remove the blood sugars.

Risk Factors, Diagnosis, and Treatment

Risk factors for diabetes include obesity, giving birth to an infant weighing greater than nine pounds, family history, being of African-American, Native-American, or Hispanic ancestries, and being 65 years of age or older. The signs and symptoms of diabetes include unexpected and rapid weight loss or gain, light headedness, fatigue, poor concentration, increased thirst and urination, blurred vision, and personality changes such as anxiousness or irritability. Physicians diagnose diabetes after two fasting plasma glucose tests equal to or greater than 126 mg/dl or a single oral glucose tolerance test result of 200 mg/dl or
higher (ADA, 2005). The majority of adults learn that they have diabetes during routine physicals or community health screenings.

Diabetes treatment seeks to maintain glucose levels to as close to normal ranges as possible (70-130 mg/dl, glycosylated hemoglobin, and A1C [average blood sugar level for past 3 months] -7% or less), an approach proven to prevent or delay short- and long-term consequences of disease progression (ADA, 1999; Cerveny, Leder, & Weart, 1998; The Diabetes Control and Complications Trial [DCCT], 1993; Herman & Eastman, 1998). Typically, treatment plans involve a combination of pharmacological and lifestyle changes including diet, physical activity, and stress management (ADA, 1999; Davidson, Davidson, & Richard, 1998; DeCoste, 2001). As most people know, achieving these lifestyle changes is quite difficult regardless of age. Diabetes education, normally taught by diabetes nurse educators, is the approach typically used to help patients make these changes. The results have been less than promising, unfortunately, as evidenced by continued poor control and proliferation of diabetes complications (Clement, 1995; Glasgow & Eaking, 1996; Peters et al., 1996; Van den Arend et al., 2000). In response, experts are calling for new approaches to diabetes treatment, especially in regards to behavioral and lifestyle change (for a review see DeCoste, 2001). According to Williams and Zeldman (2002), “…if diabetes self-management education is to become more effective, interventions need to be theory-based, to increase patient involvement in their care, and to encompass a broader array of evidence-based outcomes” (p. 151).

CONSEQUENCES OF THE PROBLEM

Diabetes has been found to be a precipitating factor for the onset and progression of other acute and chronic health conditions such as heart attacks, strokes, hypertension, kidney failure, and Alzheimer's disease (National Institute of Diabetes and Digestive and Kidney Diseases, NIDDK, 2004). Traditional diabetes medical treatment efforts are unable to keep pace with these growing numbers and, to some extent, are found to be recurrently ineffective, as evidenced by poor glycemic control among most elders and rising rates of complications (Clement, 1995; Glasgow & Eaking, 1996; Peters et al., 1996; Van den Arend et al., 2000; Williams & Zeldman, 2002). Ultimately, diabetes reduces life expectancy by 15 years and is the sixth cause of death in the United States (Kochanek, Murphy, Anderson, & Scott, 2004; NIDDK, 2004). Direct health care costs for treating diabetes reached $92 billion dollars in 2002 alone (ADA, 2005). Older adults with diabetes consume more long-term care resources, are placed in nursing homes at an earlier age, and use adult day services more so than those without diabetes (Ahmed, Allman, & DeLong, 2003; Balkrishnan et al., 2003). Health-care systems, policymakers, and practitioners are searching for more useful and cost-effective methods to address this emerging diabetes epidemic among elders.

One promising treatment is islet transplantation which generates new pancreatic cells to produce insulin when it is successful (McCarthy, 2000). Unfortunately, this intervention is in the early stages of development, is available in only a select few communities, and requires remarkable glycemic control prior to transplantation and immune-suppressant treatment afterwards. New medication advances such as Symlin, an injectable medication to help control blood sugar for adults with type I and type II diabetes, Glimepiride (Amaryl), Repaglinide (Prandin), Acarbose (Precose) and miglitol (Glycet) also show promise (United States Food and Drug Administration, FDA, 2005). Insulin pumps offer convenience and greater precision in glucose management, delivering precise dosages of insulin via a small catheter, simulating a more natural release without repeated injections. In addition to these medical and pharmacological advances, interventions using or targeting psychosocial elements of this disease are emerging at a greater rate.

Only in the recent past have diabetes experts recognized the importance of psychosocial factors in the control of diabetes among older adults. As Funnell and Merritt note (1993), older adults “…experience unique challenges because of the physical and functional changes that may be imposed by the aging process and the prevalence of multiple chronic illnesses and complications” (p. 45). For instance, insufficient family and social support, dementia, depression, low income, access to health care, continuing multiple caregiving roles, low utilization of specialty diabetes care providers—all have been found to be significant psychosocial factors in diabetes management among older adults (Bell et al., 2005; Connell, 1991; Funnell & Merritt, 1993, 1998; Lloyd, Wing, Orchard, & Becker, 1993; Samuel-Hodge, Skelly, Headen, & Carter-Edwards, 2005; Sinclair, Girling, & Bayer, 2000; Wen, Shepherd, & Parchman, 2004). Recent psychosocial treatments show promise as effective approaches for changing health and lifestyle behaviors, blood glucose (glycemic) control, and delaying costly and harmful micro-macro vascular damage. Importantly, these non-medical approaches
use less invasive and relatively inexpensive methods capable of reaching more of this affected aged population. Beyond physiologic benefits, many of these treatments improve psychological and social quality of life and well-being as well. As with any treatment innovation, much of the efforts concentrate on exploratory research, basic knowledge construction, theory development, and pilot testing intervention protocols. The quality of work in this area is mixed, requiring a close review to extract those approaches suitable for practice. Although two previous reviews of evidence-based practice in diabetes self-care exist (Norris, Engelgau, & Narayan, 2001; Sarkisian et al., 2003), neither specifically addressed interventions targeting older adults (aged 60 years or more) nor concentrated on psychosocial approaches. The purpose of this study is to systematically review psychosocial intervention studies focused on older adults, and to identify and summarize treatment protocols.

**REVIEW OF EMPIRICAL LITERATURE**

This study systematically identified, reviewed, and summarized psychosocial interventions for older adults living with diabetes. Adopting methods used in a previous intervention review (DeCoster & Cummings, 2005), four steps were followed: define study inclusion criteria, systematically search literature, identify types of interventions and outcomes, then review significant outcomes.

This project’s inclusion criteria were evidence-based psychosocial intervention studies addressing some aspect of diabetes, published in English language peer-reviewed scientific journals sometime over the past 20 years (1985-2005). The target population was older adults, defined as predominately 60 years of age or older. For the systematic literature search, the researcher conducted a boolean search of six electronic databases (CINAHL, nursing and allied health, Medline, ProQuest, PsychInfo, Social Service Abstracts, and Sociological Abstracts). After trial searches using various combinations of terms, the following keywords were used in both singular and plural tenses: diabetes and older adults or elders or seniors. From this first list, article titles were reviewed for duplicates and ineligible titles, e.g., studies clearly focused only on pathophysiology or pharmacology. After this second listing of titles, abstracts were read to further eliminate ineligible studies, those focused on basic or descriptive research only. Papers were then read from this third list and included if they met these criteria: (1) Paper included totally, or in-part, a psychosocial oriented intervention; (2) Intervention was considered within the domain of social work practice knowledge or skill; and (3) Researchers empirically evaluated the intervention, with outcome measures included. The remaining 17 eligible studies were then summarized and analyzed (see Table 1 for a review).

The 17 studies are organized into one of three methods of intervention category: group, individual, or classroom.

**Group Interventions**

A half-dozen studies employed group-based intervention methods to improve such things as problem-solving skills, support, or commitment to personal change. Alley and Brown (2002) implemented an ongoing, open-ended, problem-solving support group (n = 18) for older members of a Kaiser Permanente health maintenance organization. Constructed and implemented by social workers, this one-year pilot program was based on the task-centered group work model, with participants as experts, and also incorporated social support and education. To evaluate the intervention, they used a single survey administered after 12 months during one of the twice-monthly regular meetings. Fourteen respondents uniformly reported improved problem-solving skills. The study lacked more objective assessment instruments but did show unanimous positive feedback from participants and self-reported improvements in diabetes self-management.

DeCoster and George (2005) pilot-tested a peer-lead, community-based, self-help group, termed the Diabetes Club. Founded on an empowerment theoretical approach and using evidence-based methods, meetings typically focused on problem-solving, resource sharing, mutual support, and assessment of diabetes management progress. Held at a senior activity center in Fayetteville, Arkansas, Club members directed group content and activities, purposefully assuming greater control of meetings with a graduated reduction in professional involvement. Using a quasi pre-post test design, social work researchers re-administered baseline measures at six months for the convenience sample of 13 participants. Findings revealed significant improvements in efficacy, self-care behaviors, and glycemic control.

A self-directed support group was added to an existing six-session diabetes program for veterans in North Chicago by Gilden, Hendryx, Clar, Casia, and Singh (1992). Facilitated by a social worker, monthly group sessions focused on coping skills, continuing education, discussions, and organized social activities. Researchers used a non-randomized, pre-post test before and after the education component, then after the support-group. Intervention and control groups were matched by
age and duration of diabetes. Eleven veterans received both education and the 18-month support group, twelve received only education and delayed entry into the support group condition, and a third group of eight served as a control group, receiving neither treatment. At two years, elders receiving the combined education/support group showed significant improvements in diabetes knowledge, quality of life, depression, and A1C levels.

Pratt, Wilson, Leklem, and Kingsley (1987) conducted a peer support/nutritional education group among Oregon elders (n = 79) with diabetes. A registered dietician taught eight weekly diet education classes with two additional sessions at one and two months after the initial series. Intervention sites, not individual subjects, were randomly assigned to one of three conditions (quasi-experimental design): education and peer support, education only, or control. The peer support group included a support group following the didactic lessons. The support groups encouraged peer interactions, sharing experiences, normalization, group problem-solving, positive reinforcement, and personal goal setting. Using a pre-post test design, participants in the education-peer support condition showed a significant reduction in weight at the end of the eight-week intervention, then a slight, but insignificant gain, at 16 weeks. Self-reported feeling of emotional support also increased for the support group condition.

A psychoeducational therapy group for older adults with vision loss was evaluated by Trozzolino, Thompson, Tansman, and Azen (2003). The researchers tested this 12-week program by randomly assigning 48 clients in Birmingham, Alabama, to treatment or control conditions. The intervention consisted of one group session on basic diabetes self-care, one on diet, and 10 on cognitive-behavioral factors related to treatment adherence (e.g., attitude, assertiveness, relationships with providers, social support), emotion, and coping styles. From a pre-post design, the intervention produced significant improvements in A1C levels, diabetes knowledge, and reduced diabetes related stressors.

Psychologists White, Carnahan, Nugent, Iwaoa, and Dodson (1986) compared a group management intervention with a traditional advice-education program among 41 veterans with obesity and diabetes in Arizona. Patients randomly assigned to the treatment met for 10 one-hour sessions in the first month, biweekly sessions during the second, then monthly for the remaining period in this six-month study. Based on reference group theory that relies heavily on the group process, a therapeutic group management process was implemented that focused on diet and exercise change. Founded on past research showing success at group decision-making and diet change, subjects assessed progress, shared ideas, advice,
and support. After three months, a significant decline in serum glucose and A1C was found for the intervention group. At six months, this decline did not continue, however, neither did these values increase for the intervention group as they did for the comparison group.

**Individual Interventions**

Five projects employed individual intervention methods in case management efforts, promotion of general treatment adherence, or specifically with setting dietary goals. Chumbler, Mann, Wu, Schmid, and Kobb (2004) tested care coordination using distance monitoring equipment (home-telehealth) with 226 male veterans living in rural areas of North Florida and South Georgia. All subjects had a chronic illness and one-third had diabetes. Participants used one of three analog phone-line devices: (1) hand-held in-home messaging device requiring daily user inputs to a series of disease management questions; (2) audio-video telemonitor with biometric monitoring of blood pressure, heart rate, weight, oxygen saturation, and heart and lung sounds; and (3) videophone without monitoring capability. Care coordinators assessed patients at different intervals, depending on the assigned device. The study used a “case-control design” (p. 132), randomly assigning 111 to one of the three treatment conditions and 115 to the control condition. Comparisons of baseline and 12-month scores revealed significant improvements in instrumental activities of daily living, activities of daily living, and motor and cognitive functional independence for the treatment (telehealth) group. In a telephone survey at one year, 97% of home-telehealth participants wanted to continue, the majority reporting that technology was easy to use, made them feel more secure, and was helpful in managing their disease.

Durso, Wendel, Letzt, Lefkowitz, Kaseman, and Seifert (2003) promoted medication and self-care adherence among seven older adults with type II diabetes with a web-based telecommunications system. These researchers used a proprietary program (Personal Diabetes Management System, PDMS, by Adherence Technologies) to send automated interactive messages concerning key self-care behaviors, and diabetes education, and containing prompts to call care providers at a scheduled time. Researchers programmed the system through a web-based interface and received health data via cellular or home phone. Participants received a cellular phone, and were instructed in its use and PDMS during a dedicated clinic visit with additional help provided as needed. Pre-post test results after the three-month trial revealed improvements in diabetes knowledge, A1C levels, and body-mass indexes for half of the group.

In 1997, Glasgow, La Chance, Tooher, Brown, Hampson, and Riddle tested a brief intervention targeting diet behaviors among 206 older clients, most with type II diabetes, at an internal medicine clinic in Oregon. In a single session, clinic patients randomly assigned to the treatment condition (n = 108) completed a computer assessment on diet barriers, met with a counselor to discuss goal setting and problem-solving, and then received dietary self-help materials. The control group (n = 98) received only usual medical care. At 12 months, treatment group participants showed significant improvements in food habits, calories consumed per day, percent of calories from fat, and serum cholesterol levels.

Tu, McDaniel, and Gay (1993) assessed a post-education telephone follow-up program for older adults after completion of an inpatient diabetes program. Subjects (n = 15) randomly assigned to the treatment condition were telephoned 24-48 hours after discharge from a Birmingham, Alabama, hospital and then weekly for three weeks to assess diabetes self-care knowledge and practices. The control group (n = 12) received a follow-up call six-weeks post-discharge and usual medical care. Using a pre-post design, data obtained at six weeks showed significant improvements in self-blood glucose monitoring, prescription adherence, self-care knowledge and activities for the treatment group but not for those in the control condition.

Targeting depression in older patients across 18 primary care clinics, Williams et al. (2004) randomly assigned 417 diabetes patients to test a depression care management program. The intervention group received a 20-minute educational video, booklet, and met with a “depression care manager” (p. 1017), either a nurse or psychologist. In individual sessions the care managers completed a psychosocial history, reviewed treatment options (medications or psychotherapy), and followed up with a treatment team. Following regimen protocols (IMPACT), antidepressants or a series of six to eight structured psychotherapy sessions that focused on problem-solving were administered, but diabetes self-care was not addressed in the program. On average, patients had nine in-person sessions and six telephone contacts with the care manager. The comparison group received usual medical care. Trained interviewers surveyed subjects by telephone at three, six, and 12 months. Depression and overall functional impairment (physical and emotional health) both improved across all time periods for diabetes patients in the treatment.
group with no significant improvements found for patients in the control condition.

**Classes**

Six projects used a traditional classroom approach to provide culturally sensitive training, diet problem-solving, or promote physical activity. Gilliland, Azen, Perez, and Carter (2002) conducted a nonrandomized community-based life-style intervention for older Native Americans ($n = 104$). Conducted at Indian Health Service clinics in New Mexico, sites were assigned to one of three conditions: family and friends intervention, one-on-one intervention, or control, delayed intervention. The researchers presented culturally appropriate diabetes education and skill building activities to both intervention arms, adding a social support component to the family and friends condition. A diabetes mentor led five sessions at six-week intervals, using a narrative, story telling, educational approach. At one year, all groups showed increases in A1C, which is an unwanted rise in three-month blood sugar levels. This change suggests a decline in glycemic control, yet increases for the intervention groups were not statistically significant. No other improvements were found for intervention conditions, either separately or combined.

From prior research with focus groups, Glasgow, Toobert, Hampson, Brown, Lewinsohn, and Donnelly (1992) developed and tested their Sixty Something diabetes self-management program in Eugene, Oregon. One-hundred and two community dwelling older adults were randomly assigned to immediate or delayed intervention conditions. Instructors addressed problem-solving skills related to diet and exercise behaviors in eight weekly classes. Classes then met at two follow-up sessions in two-week intervals, selecting self-care topics to review. Trained exercise leaders conducted two exercise sessions during the eighth week, but only 60% attended. At six months, the immediate intervention group showed a significant decrease in calories consumed per day and percent of calories from fat, and an increase in minutes of physical activities. They also had significant weight loss and improvement in A1C and problem-solving skills. None of these outcomes were seen in patients assigned to the control condition.

Kocher, Smith, and Bernard (2001) tested a community-based intervention to increase activity levels among urban living American Indian elders ($n = 22$) in Oklahoma. Sixteen were randomly assigned to a 40-minute mobility and flexibility class which met two days a week for six weeks. The remaining six subjects served as a non-exercise control group, agreeing not to participate in any exercise programs during the course of the project. Ten class participants completed the treatment program, attending eight of 12 classes. Significant post-intervention improvements were found in self-reported feelings about appearance, chore-based and dedicated exercised activities, and in physical and emotional health. The participants also showed significant reductions in blood pressure and respirations. No improvements were found for control subjects.

A weight management program for older adults in rural, underserved communities was pilot tested by Mayer-Davis et al. (2001) in South Carolina. Participants ($n = 28$) were randomly selected from a primary care organization's registry of diabetes patients to complete the Pounds Off with Empowerment (POWER) program. The POWER program used evidence-based strategies to reduce fat and caloric intake and to increase physical activity and was comprised of an eight-week program with weekly training meetings. Two meetings were one-on-one sessions, with the remainder structured as group sessions. Treatment participants also completed diet/physical activity self-monitoring logs. Participants were randomly assigned to complete this intensive lifestyle intervention or to a control group condition. Formal evaluation, including pre-post session knowledge tests and a satisfaction survey, was conducted after each session. No differences were found between conditions and all patients showed significant reductions in weight, body mass index, and fasting blood glucose levels.

Miller, Edwards, Kissling, and Sanville (2002) investigated the effectiveness of a nutritional intervention specifically designed for older adults. A total of 98 subjects in North Carolina were randomly assigned to control or treatment conditions. The intervention consisted of theory-based diabetes education modules using an adult learning instructional approach that incorporated activities, insight, and personal goal setting. Ten weekly sessions were held, each lasting between one-and-a-half to two hours. Using a pre-post test design, researchers found significant improvement in blood sugar levels (fasting blood sugar, A1C) and cholesterol levels after completion of the intervention for the experiment but not the control group.

Ridgeway, Harvil, Harvil, Falin, Forester, and Gose (1999) developed a practical education/behavior modification program, consisting of classes taught in a primary care clinic in East Tennessee. The one-and-a-half hour monthly behavior/education classes were held for six months, using a standardized diabetes education program, titled Life
Skills. At these classes, patients were updated on their weight, blood pressure, and laboratory results. Diabetes educators held one-on-one sessions, personalizing diet and exercise prescriptions, setting goals, and establishing behavioral contracts. Physicians provided input on patient needs and demonstrated support by brief appearances at some monthly meetings. Fifty-six patients were randomly assigned to either the intervention or control condition. At the end of the classes (6 months) the treatment group showed significant improvements in fasting blood glucose and cholesterol levels, A1C, and diabetes knowledge. However, six-month post-intervention found that these improvements continued only for weight. Researchers noted no improvements for the control group.

**TREATMENT SUMMARY**

Slightly over fifty percent (58%, 10) of the studies used education or task groups to deploy psychosocial treatment. Over one-third (41%, 7) utilized individual modalities (e.g., care management, follow-up sessions, personal diabetes goal setting) in combination with group methods. Three studies used traditional didactic approaches. Intervention modalities did not appear to influence success. Interventions ranged from computer-assisted diabetes self-care assessment and feedback, food label education and physical activity/exercise programs to varying levels of care management, brief structured psychotherapy, group decision-making and problem-solving. Examining the intervention focus for the 17 reviewed studies, results indicate that a fourth (24%, 10) concentrated on continuity of care issues such as managing patient diabetes self-care, soliciting patient self-monitored outcomes (e.g., self-blood glucose testing, diet, weight), reinforcing contracted diabetes life-style plans/goals, or offering ongoing diabetic technical support and guidance. A fifth (21%, 10) focused on diabetes training such as teaching diabetes self-care knowledge or skills. Psychological support was the third most frequent focus (21%, 9), typically via small self-help or peer support groups. Considering the academic disciplines of the primary authors, a third (29%, 5) of the studies were conducted primarily by medicine, followed by psychology (23%, 4), then geriatrics/gerontology and social work (12%, 2 for each). Nursing, rehabilitation, public health, and exercise physiology each contributed one eligible study. Many interventions were interdisciplinary and relied on additional psychosocial paradigms and knowledge bases beyond those within their professional discipline.

Although only two studies were from social work (Alley & Brown, 2002; DeCoster & George, 2005), many of the interventions were within the scope of social work knowledge and skills for undergraduate and graduate level practitioners. Interventions commonly relied on basic group facilitation skills, case/care management, active listening, age sensitive training techniques, task-centered methods, and some psychoanalytic capabilities. As far as diabetic knowledge, six (Chumbler et al., 2004; Gilden et al., 1992; Glasgow et al., 1992; Glasgow et al., 1997; Miller et al., 2001; and Trozzolino et al., 2003) require basic training in diabetes self-care, which is easily obtained by observing a reputable diabetes patient training program lasting 4-5 days or by studying clinical guidelines. Four (Durso et al., 2002; Gilliland et al., 2002; Pratt et al., 1987; and Tu, McDaniel, & Gay 1993) interventions could be conducted conjointly with a registered dietician or certified diabetes educator, the latter of which could be from any discipline. However, as Alley and Brown (2002) emphasize, the principle challenges working in diabetes as social workers are the political battles and competition for resources among other health disciplines, not the complexity of the disease and patient cases.

**CONCLUSION**

From the initial 1118 titles on diabetes and older adults, 17 (1.5%) met the criteria as evidence-based psychosocial interventions. Reviewed psychosocial treatments usually targeted one or more of three elements: continuity of care, diabetic self-care training, and/or psychological support. The majority of efforts were lead by medicine and psychology, although many efforts were interdisciplinary. Intervention protocols were within the knowledge and skill range of undergraduate and graduate level social workers, using case management, health education, or group work techniques.

Diabetes is a remarkably complex chronic disease with patients remaining predominately responsible for implementing treatment though self-management of the disease. Considering the power patients have in diabetes treatment regimens, many traditional health-care practitioners and researchers may elect to concentrate on areas over which they have greater control, i.e., psychopharmacology. As Brown and Furstenberg state, “Health professionals, though they have technical expertise ...
can do little by themselves to create or maintain [lifestyle] change" (1992, p. 90). For this reason, professionals should expand their treatment focus to include educational efforts to help those with diabetes make informed decisions about health behaviors.

A degree of ageism may exist in diabetes care. As Funnell, Arnold, Fogler, Merritt, and Anderson state, diabetes researchers and practitioners may believe “...that older adults are unable to participate in educational programs or require excessive amount of education and support to carry out more intensive regimens” (1997, p. 163), which is a concern raised by other scholars as well (Banerjee, Banerjee, & Sarkar, 1998; Glynn et al., 1999). Although diabetes affects nearly 17 million seniors, research on psychosocial interventions remains sparse. This could be the result of reducing the importance for this disease among a patient population with numerous other medical conditions or the predominance of the medical model inhibiting the entry of other disciplines. It could also be associated with the challenge of working with aging subjects. For instance, recruiting and retaining older adults is often more difficult in research studies (Coonrod, Betschart, & Harris, 1994).

Overall, more behavioral research is needed to improve the health and quality of life of older adults with diabetes. The work in this area has yet to fully address the self-management challenges of elders nor has it coalesced into a model explaining how psychosocial aspects relate to self-management and glycemic control. An integrated model explaining life outcomes with diabetes is one desirable product of such research. According to Williams and Zeldman (2002), “...if diabetes self-management education is to become more effective, interventions need to be theory-based, to increase patient involvement in their care, and to encompass a broader array of evidence-based outcomes” (p. 151). Second, disciplines other than medicine need to become more involved in diabetes research to expand the conceptual scope and intervention breadth, a position asserted by some experts in diabetes (Vinicor, 2002). Third, since diabetes is a chronic disease, more longitudinal interventions and evaluative research studies are needed. Lastly, community and participant-based projects are required to realize the potential of the patients and families becoming experts in diabetes self-care and management.

Considering the frequency of diabetes, it is likely that social work clients across most areas of practice are affected by this illness, either directly or indirectly through their relationship with someone who has diabetes. As asserted by DeCoster (2001), social workers are abdicating the potential to be change agents for people with diabetes, and are missing opportunities to improve glycemic control and well-being. Although reimbursement for services may be an issue, many health-care organizations and insurers welcome new approaches and disciplines demonstrating successful outcomes, once political obstacles are cleared as suggested by Alley and Brown (2002). As seen in social work’s dominance in mental health and substance abuse treatment (NASW, 2005), practitioners often remain under the influence of psychiatry/medicine, failing to fully implement the social work paradigm (Aviram, 2002). In many ways, these interventions demonstrate the potential of treating the whole person, validating the bio-psycho-social approach, a long-standing principle in the social work paradigm. These interventions provide multiple tools for social work involvement in diabetes and, hopefully, will serve as stimuli for creative application and empirical investigations to support greater inclusion of social work in the treatment of diabetes.

**TREATMENT RESOURCE APPENDIX**

**American Diabetes Association**

www.diabetes.org

The American Diabetes Association is the leading diabetes advocacy association and provides overviews on the disease, treatment, research, advocacy and legal resources, and community/local events. In particular, resources on the site include:

- A brief diabetes risk assessment instrument that provides you with your current level of risk for Type II diabetes
- Information if you are a recently diagnosed Type I or Type II diabetic
- Information about weight and diabetes including how to get started, stay motivated and take off the pounds
- Exercise information and tips, including how to integrate exercise into your already packed day!
- Part of the web site resources for members of cultural groups that are high risk for diabetes including people who are African American, Asian/Pacific Islanders, Hispanic, and Native American. Material is printed in both English and languages that are native to those cultures.
National Center for Chronic Disease Prevention and Health Promotion
www.cdc.gov/diabetes

The CDC site also contains excellent information about diabetes including public health resources, fact sheets, geographical (GIS) diabetes maps, short courses, and listings for state-based diabetes prevention and control programs. Several pamphlets and brochures are available off the site including:

- **Taking charge of your diabetes.** Comprehensive information that describes what problems diabetes can cause, how to work with a health-care team to prevent problems, why it is important to get your blood glucose and blood pressure closer to normal, and how to find out about resources in your community to help you prevent problems.
- **Recipes and meal planning.** An English and Spanish guide to making decisions about foods and meal preparation. Introduces the diabetic food pyramid, and includes recipes, portion sizes, among other things.

National Diabetes Education Program
www.ndep.nih.gov

Information is given about this national, multi-agency initiative, with patient education materials on diabetes and pre-diabetes, resources for professionals, awareness programs, and partnerships. There are several free publications that can be downloaded off the site, including:

- **Four Steps to Control Your Diabetes.** Information about the condition, health concerns, health resources, and a diabetes recording system is included.
- **Tips for Helping a Person with Diabetes.** Information and fact sheet about issues if a loved one has diabetes. Includes ways to get information, and the importance of talking about your situation and your feelings.
- **Team Care: Comprehensive Lifetime Management for Diabetes.** Quality diabetes care involves more than just the primary provider. Find out more about implementing multidisciplinary team care for people with diabetes in all clinical settings and how to reduce the human and economic toll of diabetes through a continuous, proactive, planned, patient-centered, and population-based approach to care.

- **The Power to Control Diabetes: Is in Your Hands Community Outreach Kit.** This resource kit provides information on diabetes and older adults and suggestions on how to promote the Power to Control campaign with ideas for educational activities, media events and promotional campaigns.

National Institute on Diabetes and Digestive and Kidney Diseases
www.niddk.nih.gov

Similar to the other sites listed, this organization has a wide range of publications (several publications in Spanish) and resources on financial help, listing national organizations serving patients and professionals.

U.S. Food & Drug Administration
www.fda.gov/diabetes

Updates on diabetes pharmacological and treatment advances as well as essential information on food and meal planning, insulin, self-blood glucose monitoring devices and lancets, and complications, numerous downloadable publications. The site posts the latest information about diabetes management and consumer-related issues for testing and medications.

WebMD
www.webmd.com

Health and diabetes information on numerous topics, message boards with diabetes professionals.

For research and reviews of diabetes from a social work perspective see Auslander et al., 1990; Auslander et al., 1993; Auslander et al., 1997; DeCoste, 2001; DeCoste, 2003; DeCoste & Cummings, 2004; or DeCoste & Cummings, 2005.

REFERENCES


