# Chapter 13
# Promoting Self-Management of Chronic Medical Problems


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## Chronic Medical Problems

A 1996 study published by the Harvard School of Public Health (Murray & Lopez, 1996) forecasted that chronic medical conditions would replace infectious diseases as the primary global health concern by the year 2020. Indeed, chronic health conditions, also known as noncommunicable diseases (NCDs) now account for 71% of all deaths worldwide (World Health Organization, 2018). As the world's population continues to age and medical technology advances, health-related expenditures are likely to move from infectious to chronic conditions.

The combined influences of a shift in emphasis to chronic medical conditions, an aging population, and a continuing reform of the health care system may significantly change the role of social workers in health care. Regardless of future changes in the health care system, former US Surgeon General C. Everett Koop (1996) believes that "one thing seems certain; the economics of health care will mean that patients are going to have less time with their doctors" (p. 69).

## Changing Roles in Health Care

According to Wodarski, Wodarski, Nixon, and Mackie (1991), prior to the 1960s "reliance on the family physician as primary change agent was reasonable and necessary" (p. 20) because of the focus on infectious diseases. However, the authors

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note that as the predominant area of health problems began shifting to chronic conditions, which are often related to unhealthy lifestyles, the health care system began "to include active client responsibility in the treatment of disease and the maintenance of health" (p. 20). As noted by Wodarski et al. (1991), "interdisciplinary fields are forming as traditional boundaries between disciplines break to accommodate the biopsychosocial model" (p. 21). Instead of waiting for a physician's instructions, patients are actively participating as informed partners in tandem with other resource persons, including medical personnel, social workers, psychologists, dietary and exercise consultants, and other paraprofessionals and volunteers.

This chapter provides information concerning methods that have been found to be effective in the self-management of four common chronic medical problems: (a) diabetes, (b) arthritis, (c) headache and low back pain, and (d) asthma. While these four chronic conditions are the focus of this chapter, research has shown that self-management can be effective for a wide variety of chronic conditions, and for a range of demographics, such as age, including children and their families (Henry & Schor, 2015), culture, and language spoken (Ritter, Lee, & Lorig, 2011).

## Promoting Self-Management

As the role of the patient moves away from that of relying on the professional as expert and the predominant area of medical problems shifts to chronic conditions, the ability to self-manage a wide range of health problems will become increasingly important. Social workers Ivanoff and Stem (1992) define self-management as "the naturally occurring process by which individual identify and solve problems in the absence of external intervention" (p. 32). As noted earlier by Vattano, although patients "may be taught by professionals, the client assumes major responsibility for their operation in helping himself or herself' (Vattano, 1978, p. 113). Lorig (1996) agrees and describes self-management as being more complex than education alone, "in that it assists patients in gaining skills and, more important, gaining the confidence to apply these skills on a day-to-day basis" (p. xiv). Towle and Godolphin (2011) propose that chronic disease self-management is being largely ignored in medical education, which has resulted in a significant gap between medical professional's understanding of chronic disease self-management and patient expertise. This research suggests that future medical education should correct this problem by requiring better support of self-management.

Coleman and Newton (2005) explain self-management as the chronic conditions that many people struggle with today for example, "deciding what to eat, whether to exercise, if and when they will take medications" (p. 1). They define self-management support as a technique that professionals mainly use to contribute and motivate their clients in order to provide information, and help work in partnership with "patients to make medical decisions in collaborative manner (encouraging the patients to become activated)" (p. 1). Bodenheimer (2005) confirms that physicians may not produce enough information in any decision-making in multiple-agenda visit.

In order for them to provide high-quality, guidelines-compliant care in a 15-minute visit can not productive unless they have well teaching tool(s) for the patient to have accurate self-management/assessment. However, a 15-min physician's visit can produce weak result in patients with chronic conditions such as diabetes, arthritis, and back pain and so on. Research has shown that shortage of the 15-min visit make patients have incomplete information that they need in order to educate themselves. Furthermore, research also show that of 50% of patients who have type 2 diabetes earn limited or have no education on their condition because they have less time with their doctors. These situations give or create less opportunity for them to learn how to education more on self-management. Research shows that in addition to achieving the primary goal of preventing or delaying disease progression, self-management of chronic disease can improve general well-being, quality of life, and psychological-emotional states of patients (Conn, 2011).

Bodenheimer's article on "Planned Visit to Help Patients Self-manage Chronic Conditions" (Bodenheimer, 2005) suggests that self-management cannot be effective without planned visits that provide good education for the management of a patient with chronic condition. In addition to physicians, patients need additional supportive team members including nurses, social workers, and others or pharmacist other than the patient's regular physicians. Wagner, Baker, Bundorf, and Singer (2004) assessed the use of the Internet to obtain health information for people who have one to five different major chronic illnesses. The study proves found that using the Internet provides an opportunity for many clients to promote their self-management skills. A study conducted by Zheng, Nugent, McCullagh, Huang, and Zhang (2010) presents another way in which self-management of chronic disease can be assisted by technology. Patients are provided with an accelerometer, which measures and records levels of activity. Heart rate, blood pressure, and weight are also monitored and recorded by the device, allowing patients to constantly view feedback regarding their level of activity and health statistics, which was found to assist patients in achieving their health goals.

## Key Aspects of Self-Management Programs

Clark et al. (1991) identify three elements that are essential to the effective self-management of chronic medical problems: (a) adequate information, (b) "activities aimed at management of the condition," and (c) the ability to "maintain adequate psychosocial functioning" (p. 6) through the management of feelings associated with the medical condition. In addition, patients must deal with a number of specific tasks, which are also noted (Clark et al., 1991).

Adequate patient information must be made available to patients so that informed self-management decisions can be made. Such information is available in many different forms and languages. Although written materials are the most common, valuable information is available through other formats, including audio and videotapes and the Internet. This information will help patients accomplish such

tasks as understanding symptoms and triggers, using medication correctly, and managing crises.

It is important that social workers address any impairments to patient understanding, such as language, poor reading ability, visual or hearing impairments, or cognitive limitations, in order that the patient understands the information to the fullest possible extent. Physicians may not provide adequate coverage of this essential element of patient care. In a 1995 study, patients experiencing chronic medical problems were interviewed to gather information that would help to "enrich the approach to patient education through the views of patients" (Lacroix, Jacquemet, & Assal, 1995, p. 301). Medical problems addressed in the study included hypertension, back pain, asthma, chronic obstructive pulmonary disease, diabetes, and several other conditions. Numerous patients identified poor communication with physicians as a significant barrier to their treatment.

Patients interviewed in the study reported that physicians used that language that was not comprehensible, that there was a lack of access to relevant information, and that they experienced poor communicated with physicians (Lacroix et al., 1995). For example, one patient reported feeling "like a person relegated to the side," while another patient reported that nurses, on the other hand "are lists and lend us support" (p. 303). In addition to nurses, social workers and other health professionals are increasingly involved in the role of educating patients about their chronic medical conditions.

Self-management activities are behavioral steps or actions that are taken by patients based on the knowledge they have obtained about their conditions. Stretcher, DeVellis, Becker, and Rosenstock (1986) note that it is important for self-management programs to remove "the mysticism of change" (p. 90) by keeping programs simple and understandable. The social worker's role is to enhance the patient's ability to self-manage. Therefore, the patient, not the social worker, should become the expert on his or her condition. Self-management activities are helpful in dealing with a number of tasks, including eating properly, exercising, making decisions about symptoms and medications, and avoiding such harmful behaviors as smoking or abuse of alcohol and other substances.

Psychosocial functioning must be maintained in order for the patients to continue to self-manage his or her medical condition. Vattano (1978), a social worker, wrote about the need for self-management skills in dealing with stress and anxiety. In addition, people with chronic medical problems may also experience feeling of isolation, depression, and hopelessness. Interventions may be helpful to patients in accomplishing such tasks as adapting to work, managing emotions and enhancing relationships with others (Clark et al., 1991).

## Self-Management Treatment Components

Patient education, medical self-management skills, and psychosocial self-management skills are three common components of many effective self-management programs. Social workers will likely experience a great deal of

variance in their patients, not only with respect to their specific medical problems, but also relative to levels of functioning, cognitive ability, and motivation to self-manage their problems. Therefore, it is important to understand the subtleties of each medical problem and to work with patients at their own pace and level of motivation to change.

## *Patient Education*

In order to self-manage a chronic medical problem, the patient must first acquire sufficient medical knowledge about the problem to be able to make treatment decisions when the condition exacerbates. Lorig (1996) provides extensive information on patient education and its role in self-management and status. She goes on to note that "just because someone has correct knowledge does not mean he or she will change" (p. xiv). The social worker can contribute greatly to the effort to educate the patient. First, information can be provided that is not only adequate but is also in a form that tie person ran comprehend. Second, social workers can assist in any obtaining necessary equipment that is needed to monitor medical conditions as well as in teaching the patient how to use it correctly. Third, supportive resources can be provided, such as telephone help lines or emergency services, for the patient to use as a backup when needed. Finally social workers ran support their patients providing feedback and positive reinforcement as the medical knowledge is mastered.

## *Medical Self-Management Skills*

Although medical self-management skills will vary by specific problem, Clark et al. (1991) found that there were categories that were common to many programs. The correct use of medication is a common challenge in managing chronic medical problems and should begin with patient education about the medications. Next, programs may teach patients to use such tools as self-monitoring logs, daily medication dispensers, and devices to measure symptoms. These skills target medical symptoms and often involve teaching not only patients but also other supportive persons. The data obtained can be used to decide whether to alter medication, connect with backup resources, or go to an emergency facility. A wide range of mobile telephone applications are also available that can help patients manage their medications.

## *Psychosocial Self-Management Skills*

In addition to managing medical symptoms, many self-management programs incorporate skills for with chronic medical problems. Wodarski et al. (1991) provide information concerning a number of effective techniques that social workers

might teach to patients, including biofeedback, exercise, relaxation training, and systematic desensitization. Social workers Ivanoff and Stem (1992) report that, of 14 studies with follow-ups of 6 months or longer, "identified self-monitoring as an ongoing intervention component" (p. 33), and they further note that cognitive restructuring, self-instruction, and planning were used in the majority of the 14 studies. Certainly there may be overlap between medical and psychosocial techniques. In other words, becoming proficient at using a medical device to monitor symptoms may boost the patient's confidence. At the same time, learning to use relaxation techniques may help with the management of both physical symptoms and emotional characteristics.

Studies evaluating self-management programs have found that patients can be helped with a number of common chronic medical problems. As they become educated about their problems, learn medical and psychosocial management techniques, apply the knowledge on their own, and receive coaching and positive reinforcement from their social workers, patients can learn to effectively self-manage a wide range of conditions.

## Community Interventions

Community interventions can used to help support patient self-management and also provide information about community resources. These could include local health departments, the YMCA, the Arthritis Foundation, or the American Lung Association. Any clients with arthritis, asthmas, diabetes, and any other chronic illness will have the opportunity to improve or upgrade their level in mastery of skills through learning and practice. Some community organizations continue to give to clients' programs that build up their self-management skills through exercise programs, self-help groups, and patient education classes. A specific example of community-based chronic disease self-management is Move More for Diabetes, a program which encourages physical activity in patients with Type II diabetes. Research found that this program was successful largely due to its community-based format, where patients found social support in other members of their community (Richert, Webb, Morse, O'Toole, & Brownson, 2007).

## Self-Managing Specific Chronic Medical Problems

Social workers need a repertoire of potential tools and techniques in order to develop self-management programs that are congruent with patients' needs. However, a working knowledge of chronic medical conditions and the self-management programs that have been found to be effective for specific medical problems is also essential. Although not exhaustive, the following review of effective programs for

**Table 13.1** Studies of self-management of chronic medical problems

| Authors | Intervention components | Outcomes |
|---|---|---|
| Asthma | | |
| Boulet, Boutin, Cote, Leblanc, and Laviolette (1995) | Self-management training for adults | Increased asthma knowledge and fewer visits to emergency room |
| Colland (1993) | Communication skills, education, and problem-solving | Reduced anxiety, improved sleep, and fewer school absences |
| Harver (1994) | Verbal feedback | Improved ability to detect flow resistance to breathing |
| Wilson et al. (1993) | Small-group or individualized education program | Improved use of inhalers and better ability to control symptoms |
| Arthritis | | |
| Davis, Busch, Lowe, Taniguchi, and Djkowich (1994) | Group instruction | Improved knowledge and perceived ability to self-manage |
| Keefe et al. (1990) | Relaxation, imagery, and cognitive restructuring | Lower levels of pain and less psychosocial disability |
| Lorig and Holman (1993) | Education, pain management, problem-solving, and exercise | Lower pain, increased knowledge, and improved ability to self-manage |
| Taal et al. (1993) | Weekly contracting, goal-setting, and feedback | More practice of physical and relaxation exercises |
| Diabetes | | |
| Glasgow et al. (1992) | Self-management training for patients over 60 | Reduced calorie intake and reduced intake of fat |
| Glasgow, Toobert, Hampson, and Noell (1995) | Goal setting, feedback, and computer assistance | Weekly dietary goals achieved at a rate of 90% or higher |
| Pichert, Snyder, Kinzer, and Boswell (1994) | Anchored instruction for diabetics ages 9–15 | Improved ability to link problem-solving to decision rationales |
| Holroyd and Penzien (1994)<br>Turner and Clancy (1988) | Biofeedback and relaxation training,<br>Goal setting, relaxation, imagery and spouse training | Significant reduction in levels of pain<br>Decreased physical and psychosocial disability |

diabetes, arthritis, asthma, headache, low back pain, provides strong support for the potential benefits of self-managing chronic medical problems. In addition, Table 13.1 provides a brief summary by problem.

## *Diabetes*

Diabetes is caused by absent or ineffective insulin in the body, which causes high levels of glucose to appear in the blood. Diabetes can lead to serious complications, including high blood pressure, kidney disease, blindness, and the necessity of

amputations. The condition affects over 25 million people in the USA with annual healthcare costs that exceed $250 billion (NIH, 2017). It is the number one cause of blindness and the seventh leading cause of death in the USA (NIH, 2017). The American Diabetes Association is an information resource at both the national and local levels (www.diabetes.org).

Treatment emphasizes blood-glucose level and diet monitoring, physical activity, and attention to medical and psychosocial factors. Jenkins (1995) provides an overview of behavioral management techniques used in a number of diabetes programs. Self-management skills can be successfully learned by patients and several studies have indicated that these skills can be improved, although patient differences may affect the choice of intervention such as family treatment groups, and individual groups. Education group that will provide good outcome for patients and teach them what to eat and will also include the right medications. For example, Bradley (1994) identifies earlier studies that indicate that stress management may improve the psychological well-being of diabetics. On the other hand, a 10-week support group targeted to "improve blood sugar control and improve means of social support" (Oren, Carella, & Helma, 1996, p. 2) did not indicate significant results. Other programs that target specific populations and problems have been found to be significantly helpful to diabetics.

Pichert et al. (1994) studied the benefit of two 45-min small-group teaching sessions using an anchored instruction technique for participants ages 9–15 who were recruited from a summer diabetes camp. Campers who received the instruction were able to link the rationale for disease-management guidelines to their sick-day management decisions at a significantly higher rate than were controls.

A 10-session self-management training program for patients over age 60 having Type 11 (non-insulin-dependent) diabetes was helpful to "a relatively hardcore group of patients who had a long history of diabetes and a number of chronic diseases besides diabetes" (Glasgow et al., 1992, p. 71). Participants were reached through an aggressive community effort that included free testing materials and a coupon that could be redeemed for free walking shoes. Weekly groups focused on dietary and exercise self-care issues and used goal setting, logs, weekly assignments, and problem-solving activities. Participants reduced total calorie intake levels as well as the percent of fat calories at significantly higher rates than did controls.

Diabetic patients who utilized an office-based program to improve dietary self-care were able to achieve their goals at a very high level of success (Glasgow et al., 1995). Using computer technology, including interactive video, patients received a behavioral intervention program followed by immediate feedback and goal setting specifically tailored to the individual patient. At 1-week follow-up, 90% of the patients reported achieving their goal and 96% were successful after 3 weeks.

Technology can play an important role in self-management of chronic diseases, including diabetes. Bull, Gaglio, McKay, and Glasgow (2005) reviewed 87 websites that provide self-help for patients with diabetes. This research revealed that while most websites provided current and accurate information about diabetes, very few provided any interactive elements or social support networks, which have been found to be very effective in successful self-management of diabetes. Researchers

suggest that websites implement these features in order to be of more use to patients. The addition of family support has also been found to improve self-management outcomes (Pamungkas, Chamroonsawasdi, & Vatanasomboon, 2017).

## *Arthritis*

Arthritis is a common chronic medical problem and is "the major cause of disability in the elderly and of admission to skilled nursing facilities" (Lorig & Holman, 1993, p. 18). As the older adult population continues to grow in the USA, it has been estimated that over 25% of the population will be diagnosed with arthritis by 2040, the year 2040 (CDC, 2018a). There are different types of arthritis. Rheumatoid arthritis involves joint inflammation, with swelling, stiffness, and tenderness. Osteoarthritis, a degenerative joint disease, is the most common form of arthritis. The Arthritis Foundation is a resource for additional information at both the national and local levels (www.arthritis.org). Several studies have demonstrated the effectiveness of arthritis self-management that focus on learning to cope and live with the condition.

The Arthritis Self-Management Program (ASMP) is a well-established patient education program developed at Stanford University in 1979 (Lorig, 1992) that consists of six 2-h weekly sessions. Volunteers in the community are trained to teach the course, which is offered through local chapters of the Arthritis Foundation. The ASMP has been held in a wide range of community settings, including "senior centers, libraries, mobile home parks, churches, and shopping centers" (Lorig & Holman, 1993, p. 19).

The ASMP educates patients about the different forms of arthritis, the types and use of medications, exercises, cognitive pain management, and problem-solving skills. The Arthritis Help book (Lorig & Fries, 2006), a paperback text, provides additional information on the types of arthritis and medications and on goal setting and contracting, illustrates various exercises, and provides numerous tips on how to make daily tasks more manageable. In addition, the book can serve as a reference text for use by teachers and trainers.

Outcome studies have found the ASMP to be very helpful to arthritis patients. An earlier outcome study (Lorig, Lubeck, Kraines, Seleznick, & Holman, 1985) found that after 4 months, patients randomized to the ASMP exceeded those in a control group in their knowledge and practice of self-management techniques and experienced lower levels of pain. The investigation also included a 20-month longitudinal study that found that frequency of exercise and "a significant decline in pain was sustained at 20 months" (p. 682). Lorig and Holman (1993) published a 12-year review of the ASMP noting that the outcomes of replication studies in Australia and Canada were "similar to those in the original experimental setting with a reasonable range of variability" (p. 25).

Although Kraaimaat, Brons, Geenen, and Bijlsma (1995) did not find a 20-h cognitive-behavioral therapy group to be significantly helpful to rheumatoid arthritis patients. A 37-h group instruction program in Canada was found to improve both

knowledge about arthritis and the perceived ability to self-manage the condition (Davis et al., 1994). The Canadian program is conducted by professionals, including social workers, rather than by trained volunteers like the ASMP (Lorig, 1992).

Patients with osteoarthritis knee pain who received pain-coping skills training were found to have significantly lower levels of pain and psychosocial disability than those in a control group who received patient education (Keefe et al., 1990). The intervention was conducted in small groups of 6–9 people and included training in a number of techniques, including relaxation, imagery, distraction, and cognitive restructuring. Participants also were taught how to break tasks into time periods of activity followed by rest, as well as how to schedule pleasant activities.

A group program for rheumatoid arthritis patients who participated in 10 h of instruction was found to be significantly more helpful than controls (Taal et al., 1993). Participants demonstrated higher levels of knowledge, of practice of physical and relaxation exercises, of self-management behaviors, and of positive outcome expectations. The program was delivered by social workers and other professionals and included weekly contracting, goal setting, and feedback. Follow-up data indicate that after 14 months the researchers "still found strong effects on knowledge and the practice of physical exercises and a small effect on self-efficacy function" (Taal et al., 1993, p. 184).

While chronic disease self-management has been found to be effective for people of all ages, a recent study found that older men are more likely to take advantage of self-management techniques for arthritis than are younger men. Researchers found that this was due to the fact that younger men are very aware of social stigma, and consider arthritis to be a disease that only affects the elderly; therefore, they were ashamed to participate in self-management programs. Older men, however, were not sensitive to the same social stigma, and were more likely to participate in the self-management programs (Gibbs, 2008). This study indicates that efforts should be made to reduce social stigma and ageism surrounding arthritis in order to increase participation in younger men.

## *Headache and Low Back Pain*

Chronic low back pain and recurrent headache disorders are two common health problems that can account for large numbers of outpatient medical visits and serious economic losses, including the inability of patients to work (Holroyd & Penzien, 1994; Lackner, Carosella, & Feuerstein, 1996). Several behavioral techniques have been found to be helpful for both problems. For tension headaches, Holroyd and Penzien (1994) summarized 37 studies and found that biofeedback and relaxation training are equally effective and "have each yielded a nearly 50% reduction in tension headache activity" (p. 58). For migraine headaches, the researchers reported that a combination of biofeedback and relaxation training "yielded significantly larger reductions in migraine activity than either relaxation training or thermal biofeedback training alone" (p. 58). In a subsequent article, Penzien and Holroyd

(1994) provide a practical summary of techniques involved in both relaxation and biofeedback training.

For chronic low back pain, Turner and Clancy (1988) reported that, at 12-month follow-up, patients who had received 16 h of either operant behavioral or cognitive-behavioral treatment were helped equally. The operant behavioral group addressed pain and well behaviors and instructed spouses on how to positively reinforce well behaviors. Patients set behavioral goals, including exercises that were progressively increased using a quota system. The cognitive-behavioral group received training in progressive relaxation, in the use of imagery, and in methods for altering maladaptive thoughts.

A component analysis conducted by Turner, Clancy, McQuade, and Cardenas (1990) compared the outcomes of patients who were randomly assigned to 16 h of behavior therapy, to aerobic exercise, to a combination of both, or to a waiting-list control group. All three groups were found to have benefited at 6-month and 12-month follow-ups, although the groups receiving the combined behavioral and aerobic intervention reported the most significant reductions in self-reported levels of pain as well as in psychosocial disability. Behavioral treatment consisted of exploring pain and well behaviors, goal setting, homework assignments, and social reinforcement for completion.

Lackner et al. (1996) tested the influence of self-efficacies expectations on the treatment outcome of patients having chronic low back pain. The study investigated "functional self-efficacy expectations which refer to confidence judgments regarding the ability to execute or achieve tasks of physical performance" (p. 213). Results indicated that "performance-specific cognition may have greater explanatory power over disability than pain-specific ones" (p. 212). Keefe, Dunsmore, and Burnett (1992) provide additional information on the efficacy of behavioral interventions for chronic pain.

Technology also plays an important role in the current state of self-management of chronic back pain. PainACTION-Back Pain (https://www.painaction.com/) is a website dedicated to implementing self-management of chronic back pain. Chiauzzi, Pujol, Wood, Bond, and Black (2010) conducted a study to determine the efficacy of this website, and found that participants reported less pain, lower stress, increased coping skills, and increased social support when compared to the control participants.

## *Asthma*

Asthma is a chronic medical problem caused by airflow obstruction in the bronchioles, which may lead to shortness of breath, wheezing, coughing, and tightness in the chest. The Centers for Disease Control and Prevention (CDC, 2017) report that asthma affects over 8% of the population at all ages. As the most common chronic childhood disease, it is the third leading cause of hospitalizations, and a common reason for emergency department visits (Johnson, Chambers, & Dexheimer, 2016).

The CDC (1995) notes that "morbidity and mortality associated with asthma may be affected by patient compliance, patient education, and medical management" (p. 954). Buist and Vollmer (1994) report the need for the increased use of objective measures, for improved efforts in environmental control, and for "a partnership between patients and healthcare providers that includes health education" (p. 1585). At the national and local levels, the American Lung Association (www.kung.org) provides information and support concerning the growing problem of asthma. Programs to improve the self-management of asthma have been found to be effective for both adults and children.

Asthma affects 9 million children in the USA and causes approximately 14 million missed school days annually (Johnson et al., 2016). Interventions and studies of programs to improve the self-management of asthma in children are extensive and are beyond the scope of this chapter. Rachelefsky (1987) provides a review of several self-management programs that have been helpful to children with asthma in reducing the frequency of asthma attacks, the numbers of school absences, and the numbers of both hospital emergency room visits and hospital inpatient days.

Children ages 8–13 who participated in a 10-h educational training program (Colland, 1993) experienced significant changes when compared to controls, including a higher level of knowledge about asthma, a greater reduction in anxiety, a higher level of ability to use inhaled medications correctly, fewer sleep interruptions, and fewer school absences. The program used behavioral techniques and group therapy to teach self-management activities. A positive reward system was used for individuals and for the group as a whole to reinforce the completion of homework. In addition to self-management skills, participants learned how to communicate their needs when exposed to triggers, such as tobacco smoke. Problem-solving skills were practiced in role-plays and in homework assignments. One year after the program ended, the experimental-group children demonstrated clinically significant differences in their ability to manage their asthma. Colland (1993) also reported that for parents of the children, "the burden of having a chronically ill child had been reduced as a result of the child's participation in the training program" (p. 150).

The Centers for Disease Control and Prevention (1996) notes the need for environmental controls in conjunction with patient education and medical management. Buist and Vollmer (1994) further note that "environmental factors should be taken seriously" (p. 1585) in controlling asthma, particularly in poverty areas. Social workers can provide patients with a wide range of helpful information (Ingram & Heymann, 1993), including using plastic mattress covers, controlling dust mites, applying household cleaning tips, exterminating cockroaches, and reducing of numerous triggers, including cat allergen and cigarette smoke. One study (Huss et al., 1994) found that children ages 5–12 who had plastic covers on their mattresses had significantly fewer emergency room visits than children without the mattress covers. Zap Asthma (www.asthmacommunitynetwork.org/) focuses on childhood asthma in poor communities where the incidence of childhood asthma is higher.

The ability to detect flow resistance in breathing, an important factor in asthma self-assessment, was "improved significantly as a function of feedback experience" (Harver, 1994, p. 60). Boulet et al. (1995) compared participants and controls 1 year before and 1 year after a 2-h education and self-management training program for adult asthma patients and found that the intervention group had significant increases in asthma knowledge and the means to control it, as well as a significant reduction in emergency room visits.

Wilson et al. (1993) studied adult asthma patients who were randomly assigned to one of four groups, including a 6-h small-group education program, three to five individually tailored sessions, a self-study workbook group, or a control group that did not include asthma education. Patients in the two treatment groups (small group or individual sessions) were found to report significant improvements in the bedroom environment, in the use of inhaler medications, in the control of symptoms, and in adherence to treatment. Although the use of a self-study workbook was not found to be helpful, small groups were found to "have significant beneficial effect for modest cost" (p. 575).

Ahmad and Grimes (2011) conducted a meta-analysis on the impact of self-management of asthma on school-aged children (ages 5–18) diagnosed with asthma. Their investigation of nine studies revealed that children who participated in self-management education about asthma were significantly less likely to miss school and be admitted to the hospital for asthma-related complications.

There is also evidence that self-management treatment of asthma can have a positive impact above and beyond physical health results. Tousman, Zeitz, and Taylor (2010) found that a group-style self-management program for asthmatic patients not only led to an improvement of asthma symptoms, but it also led to an increase in the quality of life, increased self-efficacy, and decreased depression.

## Supplementary Information

General overviews concerning patient education and self-management programs, including theoretical perspectives are available (Araújo-Soares, Hankonen, Presseau, Rodrigues, & Sniehotta, 2018; Clark et al., 1991; Lorig, 1996; Stretcher et al., 1986). Additional information on the techniques used in self-management programs can be accessed elsewhere, including the use of goals and homework assignments (Shelton & Levy, 1981) and progressive relaxation training (Bernstein & Borkovec, 1973). Patient outcomes can be measured by using reliable and valid instruments available from original publications or from a two volume sourcebook (Corcoran & Fischer, 2013). Self-anchored scales, the use of client logs, and behavioral observations are also described by the authors.

Additional information concerning specific medical problems, as well as other helpful resources and patient education materials, are available from numerous organizations and the Internet. The Centers for Disease Control and Prevention offers its Chronic Disease Self-Management Program (Centers for Disease Control

and Prevention, 2018b) with access to materials and workshops. The American Lung Association offers extensive information about asthma and has offices at both the national and local levels (www.lung.org) while the Arthritis Foundation provides resources and support across the USA (www.arthritis.com).

## Conclusion

Former Attorney General C. Everett Koop, commenting on managed care and the sweeping changes in the delivery of health care, states that he is "convinced that patient education will help us solve the problems that lie before us" (Koop, 1996, p. 69). Many chronic medical problems have a more adverse effect on poor and disadvantaged groups traditionally served by social workers, including children, minority groups, disabled people, and elderly people. Patient education alone is not sufficient and may not reach these vulnerable and needy populations.

Social workers offer a unique perspective, practical skills, and a commitment to helping others that is congruent to the assessment, development, implementation, and evaluation of effective programs to help patients with the self-management of chronic medical problems. Dissemination of information through publishing, workshops, conferences, and teaching opportunities is essential as the expertise to help patients continues to expand.

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