

**SELF-MANAGEMENT EDUCATION: CONTEXT, DEFINITION, and OUTCOMES
AND MECHANISMS**

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ABSTRACT

Self-management is a term that has been used widely to describe patient education, patient behaviors, and health promotion programs. This article is an attempt to define the term “self-management” as it applies to patient education. In addition, the article discusses some of the evidence for the effectiveness of self-management programs. Finally the article suggests that self-efficacy may be one of the mechanisms through which self-management programs demonstrates success.

INTRODUCTION

Self-management for people with chronic disease is now widely recognized as a necessary part of treatment. The purpose of this article is to: 1) examine how self-management fits into the hierarchy of health care delivery. 2) Define or operationalize self-management as well as discuss some of the research, which underlies this definition. 3) Discuss the evidence that self-management programs can change behaviors, health status, and/or health care utilization. 4) Finally, examine self-efficacy, as one of the possible mechanisms by which self-management achieves the above mentioned outcomes. The following should not be taken as a complete review of the topic but rather as a basis for further explanation.

How does self-management fit into the health care delivery system?

In the past 50 years chronic diseases have become the number one cause of both morbidity and mortality, and account for three fourths of all health care expenditures.¹ Before that time, acute illnesses were the major problem. Neither of our major health care systems has adapted well to working with these chronic conditions. The medical model still largely posits that the role of the health care professional is to diagnosis and prescribe while the role of the patient is to comply. While this model works very well in managing acute conditions such as appendicitis or a bacterial infection, it is less effective in managing chronic conditions, which wax and wane over time, and often have neither definitive diagnostic tests nor definitive treatments. In chronic conditions effective care can only occur through patient and provider partnerships.

The second common model, public health is equally ineffective. The role of public health has largely been to prevent disease, through immunization and sanitation campaigns, or to assist with early diagnosis of disease through the promotion of screening programs such as with tuberculosis and breast cancer. While this model has been very effective in preventing problems ranging from childhood diseases to those caused by smoking, it has not been effective in stopping the increase of chronic conditions that are largely related to the aging of our population.

Given the inability of our present major health systems to deal with our biggest health problem, there is a need for a new means of delivering care to those with chronic conditions.

We suggest that self-management is a part of this solution. The major differences between the self-management model and the more traditional medical model are the roles of both the patient and health care professionals. For the person with a chronic condition, there is no way not to self-manage the disease. If one retires from life and stays at home as a depressed person this is a type of self-management. On the other hand, many people learn to deal with their conditions and remain active, happy participants in life. One can learn the skills necessary for this later type of proactive self-management.

The role of health care professionals must also change. One of their responsibilities is to act as a partner in care. It is the job of the patient to monitor symptoms, report them accurately and manage the disease on a day to day basis. It is the job of the health professional to act as a consultant, interpreter of symptoms, and resource person, and to offer treatment suggestions. Without this partnership, proactive self-managing patients can never reach their highest potential. While the redesign of health care delivery systems to support self-management is of prime importance, this topic is beyond the scope of this paper. Thus, the following discussion will focus on assisting the patient in achieving proactive self-management skills. The outcomes to be achieved by such self-management are improvements in quality of life and appropriate use of the formal health care system.

What is Self-Management?

One of the first uses of the term self-management appeared in an article on Asthma Self-Care written by Thomas Creer in the mid-1970's.² Since the mid-1960's he and his colleagues at

The Children's Asthma Research Institute and Hospital have been using the term to apply to how health education should be offered to children. They felt that self-management assured that the patient was an active participant in treatment. (Personal communications from Thomas Creer.) Since that time the term has been used widely and, mainly when referring to chronic disease patient education programs. Unfortunately, while the term is widely used, it has not been well conceptualized or defined. In the following section, we offer one such conceptualization.

Whether one is engaging in a health promoting activity such as exercise or is living with a chronic disease such as asthma, he or she is responsible for day to day management. Gregory Batson once said, "one can not not communicate".³ The same thing is true for health behavior and disease management. One can not not manage. If one decides not to engage in a healthful behavior or not to be active in managing a disease, this decision reflects a management style. Unless one is totally ignorant of healthful behaviors it is impossible not to manage one's health. The question is how one manages. The issue of self-management is especially important for those with chronic disease, where only the patient can be responsible for his or her day to day care over the length of the illness. For most of these people, self-management is a lifetime task. We will now examine more closely some self-management tasks.

Self-Management Tasks

Based on an elegant qualitative study, Corbin and Strauss delineated three sets of tasks commonly dealt with by people with chronic conditions.⁴ The first set of tasks involves the

medical management of the condition such as taking medication, adhering to a special diet, or using an inhaler. The second set of tasks involves maintaining, changing, and or creating new meaningful life roles. For example, the person with back pain may need to change the way he or she gardens or participates in favorite sports. For someone with heart or pulmonary disease it may mean doing less, such as cooking only one dish for a holiday dinner, while others prepare the other dishes. The final task requires one to deal with the emotional sequeli of having a chronic condition, which alters one view of the future. Emotions such as anger, fear, frustration, and depression are commonly experienced by someone with a chronic disease; therefore learning to manage these emotions becomes part of the work required to manage the condition.

Although Corbin and Strauss wrote specifically about people with chronic conditions, the three tasks that they outlined also apply to people who are trying to adopt more healthful behaviors. First, one has to learn the new behavior and do it on a regular basis. Second, one has to integrate the new behavior into one's life. This may involve changing the way one relates to other people. For example, if one goes walking at lunch instead of spending time with friends, this can affect one's social roles and relationships. One of the most dramatic examples of this are the 12-step programs where one usually has to give up old associates and make a new set of friends in order to remain "clean and sober". Finally, although seldom acknowledged, healthful behavior change often has emotional sequeli. Changing behavior may itself bring about feelings of loss, anxiety, fear, frustration and even depression.

If we use the Corbin and Strauss framework, then self-management programs must include content that addresses all three tasks: medical or behavioral management, role management, and emotions management. While most health promotion and patient education programs deal with the medical and/or behavioral management, many do not systematically deal with all three tasks. On the other hand, many support groups focus on the emotional but do not deal with the other necessary self-management tasks.

Self-Management is Problem Based

The research of Corbin and Strauss is based on the perceptions of patients about their conditions. Thus, self-management programs must be based on patient perceived problems rather than what health professionals think patients should know and do. For example, traditional arthritis education programs focus on preventing disability and disability management. However, the major concern of arthritis patients is pain.⁵ Therefore, arthritis self-management programs focus on pain management. This does not mean that information about managing disability is not taught. Rather, it is taught in the context of pain management. For example, one factor that contributes to people's pain is tense or weakened muscles. Exercise will strengthen and relax these muscles and thus lessen pain.

In a second example, most diabetes education programs focus largely on the medical management of the condition including proper diet, glucose monitoring, recognizing hypoglycemia, etc. While this management is very important, diabetes education often gives little attention to the problems of role management such as how do I eat and exercise with my

family, or how do I deal with the anger and depression that often accompany this disease and usually progress over time.

Because self-management education is focused on patient concerns and problems, a detailed needs assessment must be done for each new topic and population. While many concerns are shared across different diseases, behaviors, and populations, there are always differences among groups and individuals. For example, when working with a Spanish-speaking population we learned that many people felt that they were being neglected by the doctor when they were referred to see a nurse practitioner, physical therapist or health educator. This was different from their experiences in their countries of origin where most had seen only a doctor who spent more time with them at each consultation. Having discovered this information, we included a section on the training, roles and functions of different health care professionals in the United States in our self-management programs for the Spanish-speaking community.

Once patient problems have been identified, the next step is to identify the key messages to be delivered during the program. Health professionals are often the best people for delivering key messages. However, this is not an easy task. In most patient education programs, many different and sometimes contradictory messages are given. In one diabetes course, participants were told to either do or not do 100 different things during a five-week course. This is much more than most individuals can absorb, and the result is that some people pick and choose while others do nothing.

The purpose of key messages is to be sure that self-management education offers simple, clear, consistent and important advice. These key messages can be formed by having health professionals meet in focus groups to determine the three or four things that a diabetic must know about food or the four things that someone with arthritis should know about exercise. At the same time that one is forming these messages, one should be consulting the literature to be sure that the key messages are consistent with best practices.

Once the content of a self-management program has been determined through identifying patient problems and key messages, then this content must be combined with the basic self-management skills that are described below.

Core Self-Management Skills

There are five core self-management skills: problem solving, decision making, resource utilization, forming a patient/health care provider partnership, and taking action. We will examine each in more detail.

By definition, self-management education is problem based. Thus, it is logical that problem solving is a core self-management skill. This does not mean that people are taught how to solve their problems or that they are given solutions. Rather, they are taught basic problem solving skills; these include problem definition, generation of possible solutions, including the solicitation of suggestions from friends and health care professionals, solution implementation, and evaluation of results. These skills have been defined in detail by Thomas D'Zurilla.⁶ For example, a patient says that he cannot visit his daughter and grandchild. This

problem needs more definition. Upon examination we find that the daughter lives far away and the man is afraid that with his need to use oxygen he cannot travel. Many possible solutions are generated including having the daughter come for a visit; driving with a friend and carrying a supply of oxygen in the car, or calling the railway or airlines to see how they accommodate passengers who are oxygen dependent. Someone suggests that maybe the Lung Association may have more information. In the end, the man finds that the airlines can accommodate his needs and decides to fly to see his daughter.

A second self-management skill is decision-making. Decisions must be made on a day to day basis; therefore, patients must learn how to make these decisions. How do I know when I have exercised enough or too much? How do I know if a symptom is medically serious or not? Should I continue taking my medications when I have a fever? What do I do to get back on my diet if I eat some chocolate cake? Decision-making is based on having enough and appropriate information. For example, back pain patients can be taught what the serious symptoms or "red flags" are that require medical attention such as a loss of bladder control. They can also be told that if they do not have any serious symptoms, there is no need to see the doctor and that with self-management and a few days of rest, they can gradually return to their activities. When starting an exercise program, all people can be taught that they should not feel worse after exercising than before starting. If this occurs then they are given guidelines to follow. First cut back on the exercise, find a comfortable exercise level, stick to it for a week or two, and then add to it by 10 to 20 percent every week or two.

A third core self-management skill is how to find and utilize resources. Many programs tell participants about resources, but do not teach participants how to use the phone book, 800 numbers, the Internet, the library, community resource guides and community centers to find what they need. In addition to teaching people how to find resources, self-management includes helping people seek these out from many sources. When looking for a resource, most people will call only one at a time and wait for information. If that does not work, they try another. However, for best results, it is important to contact several potential resources at the same time, as if casting a net for information. As basic a skill as this is it is often overlooked in traditional health promotion and patient education programs.

The fourth self-management skill is helping people to form partnerships with their health care providers. A little historical perspective is necessary to truly understand this skill. For the first half of the 20th century the primary reason for seeking health care was to treat acute illness or problems such as broken bones, infection or appendicitis. Thus, our health care system was formed to provide care for acute illness. In this system the role of the health care provider was to diagnose and treat.

In the second half of the 20th century, this picture changed. Chronic disease now prevails. The health care system must deal more with chronic illness and less with acute illness. In dealing with a long-term illness, the role of the health care provider becomes that of teacher and partner. The patient must be able to report accurately the trends and tempo of the disease, and discuss and make informed choices about treatment together with the health

professional. Self-management training prepares people with chronic illness to undertake these tasks.

The final skill is that of taking action. This may seem more like a decision than a skill but, in fact, there are skills involved in learning how to change a behavior. The most important of these is probably making a short-term action plan and carrying it out. Making an action plan is a little like making a New Year's resolution, but of shorter duration and much more specific. An action plan involves a period of one or two weeks, and is very behavior specific. For example, "This week I will walk around the block once before lunch on Monday, Tuesday and Thursday. Next, it should be realistic or "doable". This means that the person should be able to accomplish the behavior this week. Finally, it should be something that the person is fairly confident he or she can accomplish. Confidence can be measured by asking yourself how confident you are that you will take a walk around the block before lunch on Monday, Tuesday and Thursday. This confidence can be measured on a scale, with 0 being totally unconfident and 10 being totally confident. If the answer is 7 or higher, there is a good chance that the action plan will be accomplished. If the answer were less than 7, then this would be the time to apply the problem solving techniques in order to make the plan more realistic and to avoid failure.

Given these different self-management tasks and skills, now let us examine the evidence that self-management education makes a difference in terms of changes in behavior, health status and health care utilization.

Self-Management Evidence

There is ever growing evidence that self-management programs improve health status and health care utilization. The Center for the Advancement of Health has summarized and documented this evidence for several key chronic conditions including arthritis asthma, cardiovascular disease, depression, diabetes and chronic back pain.⁷⁻¹² The following is a summary of some of the self-management programs developed and evaluated by the Stanford Patient Education Research Center. Some of these such as the Arthritis Self-Management Program, the Spanish Arthritis Self-Management Program and the Back Pain Self-Management Program (developed for Group Health Cooperative of Puget Sound) are condition specific, while the Chronic Disease Self-Management Program includes people with different conditions in the same intervention at the same time.¹³⁻¹⁵ All four of these programs have been evaluated in randomized trials lasting 4-12 months. The arthritis programs have also been evaluated for long term follow-up in longitudinal studies of 1-4 years.¹⁶

We have found that these programs resulted in significantly improved behaviors. These include an increase in the number of minutes per week of exercise, as well as in the practice of cognitive symptom management techniques such as relaxation. In addition, participants have reported improved communication with their physicians.

We have also found changes in health status. In all studies of painful conditions (arthritis and back pain), pain has been significantly reduced and, in most of the studies, disability has also

been reduced. In addition, participants have reported less fatigue and less health distress or worry about their conditions.

Finally, in both the English Arthritis Self-Management Program and in the Chronic Disease Self-Management program, participants have demonstrated significant reductions in health care utilization.

From these findings, it appears that self-management programs, when presented in a consistent manner and incorporating the above-mentioned skills, can have effects on health behaviors, health status and health care utilization.

How Are Self-Management Effects Achieved?

The answer to this question is not entirely clear. However, we do have some strong suggestions. Traditional health promotion and patient education programs have operated under the assumption that people should change behaviors in order to improve health status. This assumption has come from epidemiological studies, which link such behaviors as poor diet, lack of exercise, and smoking to future health problems. While there is little question that changing these behaviors will probably impact future health, this same assumption may not hold for people already living with chronic conditions.¹⁷

In our early arthritis studies we found that the associations between improvements in healthful behaviors and improvements in health status were weak to non-existent.¹⁸ In a qualitative study conducted to find an explanation for the improvements in health status,

participants suggested that they felt that the impact of the program was due to their feeling more in control of their illness.¹⁹ To study this concept of control, we operationalized control, or empowerment, as self-efficacy.²⁰

Self-efficacy theory states that the strength of belief in one's capability is a good predictor of future motivation and behaviors. In addition, one's self-efficacy beliefs can be enhanced through performance mastery, modeling, reinterpretation of physiological symptoms and social persuasion. Finally, enhanced self-efficacy leads to improved behavior, motivation, thinking patterns, and emotional well being (personal communication from Albert Bandura).

We tested this hypothesis to see if changes in self-efficacy were associated with changes in health status. In early studies we found evidence to support this hypothesis.²¹ In more recent studies, we have shown that both baseline self-efficacy and changes in self-efficacy are associated with future health status.²² Thus, it appears that enhanced self-efficacy is at least one of the mechanisms responsible for the improvements in health status demonstrated by those attending self-management programs. In addition, there are many other studies that support the finding that self-efficacy and changes in self-efficacy are associated with changes in health behavior and health status.²¹

Such findings have important implications for the design of future programs. The enhancement of self-efficacy must be considered a key program component and the teaching processes must be structured to include the four ingredients of efficacy enhancement:

performance mastery (discussed previously as action planning), modeling, interpretation of symptoms, and social persuasion.

CONCLUSION

In this article we have attempted to give meaning and substance to the term "self-management". We have examined the history of the word, and have suggested ways to operationalize it in educational programs. We have also offered evidence of its importance by reviewing the operational meaning; some of the outcomes of self-management programs and one of the mechanisms that may make self-management effective. With this meaning and substance, perhaps existing self-management programs can be more widely disseminated, and perhaps more effective programs that contain the key self-management components can be developed in the future.

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