

Peer-based behavioural strategies to improve chronic disease self-management and clinical outcomes: evidence, logistics, evaluation considerations and needs for future research

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The diagnosis of a chronic disease such as diabetes generally evokes strong emotions and often brings with it the need to make changes in lifestyle behaviours, such as diet, exercise, medication management and monitoring clinical and metabolic parameters. The diagnosis thus affects not only the person diagnosed but also the family members. Chronic illnesses are largely self-managed with ~99% of the care becoming the responsibility of patients and their families or others involved in the daily management of their illnesses. While the responsibility for outcomes, such as metabolic control and chronic complications, are shared with the health care team, the daily decisions and behaviours adopted by patients clearly have a strong influence on their future health and well-being. While diabetes self-management education is essential, it is generally not sufficient for patients to sustain behaviours and cope with a lifetime of diabetes. Peers have been proposed as one method for assisting patients to deal with the behavioural and affective components of diabetes and to provide ongoing self-management support.

This paper first describes effective behavioural strategies in diabetes, based on multiple studies and/or meta-analyses, and then provides examples of their use by peers or in peer-based programmes in diabetes. A comprehensive search using the MEDLINE® and Cinahl databases was conducted. Key search terms included peer mentors, peer leaders, peer educators, lay health workers and community health workers. Studies that clearly identified behavioural strategies used by peers were included.

Keywords. behaviour change, diabetes, lay health workers, social support.

Introduction

Self-management education has long been considered a cornerstone of chronic disease care and is the initial step in providing patients with the information they need to care for their health. Diabetes self-management education has been defined as the ongoing process of facilitating the knowledge, skill and ability necessary for diabetes self-care.¹ This process incorporates the needs, goals and life experiences of the person with diabetes and is guided by empirical evidence. The overall objectives of diabetes education are to support informed decision making, self-care behaviours,

problem solving and active collaboration with the health care team and to improve clinical outcomes, health status and quality of life.¹

In diabetes, self-management education provided by health care professionals is effective for improving clinical outcomes and quality of life, at least in the short term.^{2–8} However, while essential, education is generally not sufficient for most patients to maintain those behaviours over a lifetime of diabetes. There is evidence that while there is no one best educational programme, those that incorporate behavioural and affective strategies are more effective^{9–12} and that ongoing support is needed to sustain the changes made during the educational

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process.^{3,13–15} Peers have been proposed as one method for assisting patients to deal with the behavioural and affective components of diabetes and to provide ongoing self-management support.

Methods

This paper first describes effective behavioural strategies based on multiple studies and/or meta-analyses in diabetes and then provides information about their use by peers or in peer-based programmes in diabetes. A comprehensive search using the MEDLINE® and Cinahl databases was conducted. Key search terms included peer mentors, peer leaders, peer educators, lay health workers and community health workers. Based on this comprehensive review, all studies clearly identifying behavioural strategies in peer-based programmes were included.

Behavioural strategies for self-management support

While not all studies report a positive impact of behavioural approaches on outcome measures, a variety of strategies have been shown to facilitate behaviour change among chronically ill patients.^{15–17} Strategies that have demonstrated effectiveness in chronic illness and are relevant for peer programmes include self-directed behavioural goal setting, problem solving, social support, patient-centred communication and exploration of feelings.

Behavioural goal setting. Behavioural goal setting is an interaction resulting in the development of a concrete, usually short-term goal. Goal setting refers to the process of creating an action plan whereby patients can accomplish a specific behaviour.¹⁵ Behavioural goal setting is often used in programmes designed to increase self-efficacy and empowerment.^{11,12,15,16,18–21} The process is highly collaborative and often incorporates elements of problem solving, exploration of feelings and communication strategies, such as reflective listening and motivational interviewing (MI).^{11–13,15,16,18–21} A model for goal setting developed by Anderson and Funnell²² consists of five steps which are

- Explore the problem
- Clarify feelings and meaning
- Develop a plan
- Commit to action
- Experiment with and evaluate the plan.

In a recent review, Shilts *et al.*²³ concluded that goal setting was effective for promoting dietary and physical activity behaviour change among adults. Other studies support the use of goal setting in primary care settings²⁴ and chronic disease self-management education programmes.^{3,12,15,17–21,25–28}

Problem solving. Problem solving generally is viewed as a process with a sequence of activities that includes problem identification, generation of alternatives, weighing costs and benefits of those alternatives, selection of strategies or solutions and evaluation of outcomes.^{29,30} This process is often the first step in developing an action plan.

Problem solving is a central component of self-management and is a key element of almost all successful individual and group self-management programmes reporting improved outcomes.^{12,15,18–21,25,29,31–34}

A theoretical model of problem solving adapted to diabetes self-management³⁵ identifies four key components. These are (i) problem-solving orientation, which includes attitudes and beliefs and can serve as a positive or negative motivating factor; (ii) problem-solving process which is how a person attempts to handle the situation; (iii) transfer of past experiences or learning and (iv) disease-specific knowledge. In a focus group study designed to explore this model among urban African Americans, patients in good glycaemic control reflected a positive orientation towards problem solving, a rational problem-solving process and a positive transfer of past experiences. In contrast, the group with poor glycaemic control reported a negative orientation, careless and avoidant problem solving and a negative transfer of past experiences.³⁶

Social support. Social support refers to transactions that occur within a person's social network and includes four dimensions: appraisal support, informational support, instrumental support and emotional support.³⁷ The social support network for most patients consists primarily of health care professionals and family members. Peers, however, can become part of this network and provide support in each of these dimensions.³⁸ This may be particularly helpful when family members and friends are not available, willing or able to provide support or are viewed as a hindrance to the patient's self-management efforts.^{39,40} Multilevel support, particularly among ethnic minorities, appears to increase physical activity and healthy eating behaviours.⁴¹

Peer support connects two or more people who have the same disease and often the same frustrations, so they can relate to each other's feelings and anxieties.⁴² Peer support helps people cope with the necessary behaviour changes and assists them in making positive lifestyle changes.^{39,43–45} Peer support can become part of a group programme facilitated by health professionals through involving peers in the problem-solving and goal-setting processes^{12,30,34,46} and through support groups.^{44,47}

Creating peer partnerships is another approach to the provision of support. Some programmes pair peers who are similar,⁴⁸ while others are designated as mentoring or coaching programmes. Mentoring programmes pair

a person who has demonstrated successful behaviour change with a patient who needs help.^{39,42,43} Coaches serve as a support for their partner's efforts to achieve a new goal³⁹ and to help their partner maintain enthusiasm and motivation.

Communication skills. Communication skills that facilitate behaviour change are generally person centred and involve active or reflective listening. A non-directive communication strategy is the Ask—Listen—Empathize and Encourage approach,²² used effectively in empowerment-based programmes.^{22,30,34} This is a continuous process where open-ended questions are used to assist the patient to reflect on areas of concern or behaviours and through this process to gain insight and identify actions to address the problem or behaviour.

A directive communication strategy, MI, evolved primarily from addiction treatment programmes and was first described by Miller.⁴⁹ He defined MI as a counselling style for eliciting behaviour change by helping patients explore and resolve ambivalence. MI may be particularly relevant for patients who demonstrate a low readiness to change, defined in this model as $\text{importance} \times \text{confidence} = \text{readiness}$.¹⁵ The tone of the interaction is non-judgemental, empathetic and encouraging⁵⁰ and uses reflective listening and positive affirmations to help patients identify their own health goals and the discrepancies in their behaviours that influence goal attainment.^{15,50}

In a recent meta-analysis,⁵¹ MI was effective for improving body mass index, total blood cholesterol, systolic blood pressure and blood alcohol concentration, but the number of cigarettes per day and A1C were not significantly improved. In addition, MI was effective in 80% of studies when implemented by psychologists and physicians, while other health care professionals obtained an effect in only 46% of the studies.⁵¹ MI also has shown promise in promoting changes in dietary behaviours and exercise.^{52,53}

Exploration of feelings. The largest study of its kind, the Diabetes Attitudes, Wishes and Needs (DAWN) study, was carried out through structured interviews conducted in 11 regions (representing 13 countries). Survey participants included 2750 randomly selected generalist and specialist physicians, 1122 randomly selected generalist and specialist nurses and 5104 randomly selected patients with self-reported type 1 and type 2 diabetes.⁵⁴

The DAWN study reported that diabetes-related distress was common among people with both type 1 and type 2 diabetes and that these issues interfered with their self-management efforts.^{54,55} A large majority of the patient participants (85.2%) reported a high level of distress at the time of diagnosis, including feelings of shock, guilt, anger, anxiety, depression and

helplessness. Many years after diagnosis (mean duration almost 15 years), problems of living with diabetes remained common, including fear of complications and immediate social and psychological burdens of caring for diabetes.⁵⁴ Forty-one per cent of patients reported poor well-being and indicated that they wanted greater acknowledgement and support for their distress.⁵⁵ Exploring these feelings is an effective way to enhance self-efficacy and ultimately to improve patients' ability to manage their diabetes.¹⁷

Behavioural strategies in peer-based programmes

Face-to-face group peer support programmes. Groups can be used effectively to provide self-management support⁷ and successful programmes tend to use multiple behavioural strategies. In the most well-studied peer-led programmes, both the Asthma and Chronic Disease Self-management Programs developed by Lorig *et al.*^{18–21} use behavioural goal setting, problem solving, social support and coping with negative feelings. Specific clinical content is not provided, but the benefits of healthy diets and exercise are stressed. The ultimate goal of these programmes is improving self-efficacy, which is linked to successful self-management.¹⁷

Empowerment-based programmes also use a variety of behavioural strategies^{12,34,45} including behavioural goal setting using the five-step behavioural goal-setting model, problem solving, reflective listening, social support and exploring emotions. Clinical content is provided by health professional facilitators in response to questions and issues raised by group members. The ultimate goal of these programmes is to enable participants to discover and use their own innate ability to gain mastery over their diabetes.²² Similar programmes implemented in the UK²⁸ and Germany⁵⁶ have shown positive results. The current activity in the evolution of these programmes is to train peers to serve as facilitators of the groups using the behavioural and other strategies that were found to be effective when implemented by health professional facilitators.

Project Dulce^{57,58} is a culturally specific diabetes management and education programme for medically indigent Latino patients in California. This programme includes case management and medication adjustment by a registered nurse and a group education programme conducted by a Spanish-speaking peer educator. This peer-based programme consists of an 8-week curriculum that covers all major aspects of clinical diabetes care, with an emphasis on overcoming cultural misconceptions about diabetes and supporting patients to take charge of managing their disease. This programme has demonstrated significant reductions in A1C values and reduced hospital expenditures.⁵⁷

Clearly one of the advantages of face-to-face group programmes is the ability of members to both give and receive social support. Support groups can be facilitated by either peers or health professionals and

appear to be particularly effective for older adults and certain ethnic groups.^{43,47}

One-to-one peer support programmes. While one-to-one interactions with a peer may be ideal, they also present a variety of logistical and access issues. In an effort to overcome some of these issues, telephone-based support programmes have been developed and evaluated and are continuing to be developed as technological advances make these programmes more possible and affordable.

A feasibility study of an Interactive Voice Response telephone system was recently conducted at a Veterans Administration Medical Center.⁴⁷ Patients were matched with a peer partner based on insulin use and self-identified diabetes self-management goals, when possible. At the conclusion of the study, participants reported that their partners listened to them talk about their concerns and feelings, assisted them in solving problems and helped them to adopt healthy behaviours. Interestingly, in this pilot study, the least successful matches were made between those who were successfully managing their diabetes and those who were not. Participants recommended that training in listening skills and how to be a more effective peer be provided in future studies of this type.

Two small studies of mentoring based on the trans-theoretical model have been conducted. Joseph *et al.*³⁹ trained peer coaches for 2 hours in active listening techniques. The coaches then met with their assigned partner for 1 hour face-to-face and spoke by telephone weekly for 10–15 minutes over the next 8 weeks. Although no metabolic data were collected, participants reported in focus groups that coaching was personal, useful in disease management and helpful for making progress towards changing their behaviour related to diet, exercise and blood glucose monitoring. MacPherson⁴² implemented a similar model and found similar results.

Two similar studies using peer telephone support have been conducted among African Americans. The New Leaf program, designed to increase physical activity among women with type 2 diabetes, incorporated monthly calls by a Community Diabetes Advisor into a community-based programme.³⁸ The group who received the dietitian-led intervention enhanced by monthly advisor calls to provide social support and reinforce behaviour change demonstrated superior physical activity outcomes. The majority (86%) of the participants identified the calls as important to their success.

The New Diabetes Awareness and Wellness Network is a church-based programme for African Americans that included health professional-led group and individual sessions and monthly telephone follow-up by a Church Diabetes Advisor (CDA).⁵⁹ The CDAs all had type 2 diabetes and were trained in MI techniques, listening skills and diabetes content, with a focus

on diet and exercise. The CDAs provided support for behaviour change, follow-up on diet and activity goals, problem solving, information and connections with community resources. The results of this study have not yet been published.

Web and email peer support programmes. The Chronic Disease Self-Management program⁶⁰ was adapted to an Internet-based programme and found to be at least as effective as the small group-based programmes. The same behavioural strategies were used to promote self-efficacy. This approach to peer coaching has the potential to increase access to peer support.

The D-Net program⁶¹ was designed to provide information, personal diet coaching by a health professional and the opportunity to participate in a peer directed but professionally monitored 'chat room'. The purpose of the chat room was to provide a forum for participants to interact with their peers to express their feelings and obtain support for behaviour change. While all groups improved in behavioural, psychosocial and biological outcomes, the addition of the peer coaches did not significantly improve results.^{61,62}

Summary and conclusions

While behavioural and affective strategies and ongoing support can be effectively provided by health care professionals through educational and case management programmes,^{8,13–15} many health care professionals and systems are not equipped to provide the type of education and/or the behavioural and psychosocial support needed for long-term self-management.

With training, peers can fill this need both effectively and economically using established and effective communication and behavioural strategies (e.g. goal setting, problem solving and providing social support) in community settings and through the use of technology.

However, there are still things that we need to learn in order to maximize the effectiveness of these programmes. These include the following:

- While affective and behavioural strategies generally increase the effectiveness of self-management programmes, not all interventions result in improved outcomes. Thus, we do not fully understand which strategies are most effective for improving metabolic and other outcomes and if there are strategies that are more effectively implemented by professionals or peers.
- Many peer-based programmes described in the literature do not clearly identify or describe the behavioural strategies used by peers to provide self-management support.

- Very little is known about the training required for peers to successfully implement behavioural strategies and even less is known about the supervision needed or the qualities or qualifications that enable a person to become an effective peer partner.
- While peers and lay health workers are utilized to provide education and support in many countries, very little is known about the relative effectiveness of behavioural strategies in particular countries or among patients from particular cultures and/or religious beliefs.

Declaration

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