

**Title of Manuscript:** Coaching in the cardiovascular surgical population

**Abstract**

**Background:** Over-one quarter of all cardiovascular surgical patients are re-admitted to hospitals with post-operative complications experienced during the first 3 months of recovery. **Aim and Method:** The purpose of this discursive paper is to review the literature pertaining to a self-management coaching intervention that is currently being evaluated using a randomized controlled clinical trial. **Relevance to clinical practice:** A discussion of how to integrate coaching into clinical practice is presented. The use of coaching in the clinical setting has implications for nurses in that it can be used to assess behaviours, knowledge, and learning needs; provide individualized education that is reflective of a patient's identified learning needs; collaborate with patients in setting goals; identify barriers and engage in problem-solving to overcome barriers; and create a specific plan for follow-up.

## Background

Coronary artery bypass graft (CABG) and valve replacement (VR) are the most common surgical treatments for cardiovascular disease. In Ontario, approximately one in every 1000 individuals undergoes CABG and/or VR annually (Cardiac Care Network of Ontario, 2009). Despite the advantages, heart surgery may result in negative changes in the physical functioning of individuals within the first three weeks following surgery (Ai, Dunkle, Peterson, Saunders, & Bolling, 1998; Cebeci & Celik, 2007; Chunta, 1999; D'Agostino, Jacobson, Clarkson, Svensson, Williamson, & Shahian). These changes include fluid retention; sudden fluctuations in heart rate and rhythm; increased feelings of nervousness; and the presence of symptoms such as fatigue, dyspnea, pain, and muscle soreness (Beckie, 1989; Watt-Watson & Stevens, 1989). These changes are significant, as patients are spending less time in hospital due to the gradual decrease in the length of hospitalization (Cardiac Care Network of Ontario, 2009); which means reduced access to healthcare providers, requiring patients to become more engaged in the self-management of their condition throughout their recovery than was previously required. In particular, patients are required to carry out specific self-management behaviours to promote recovery that include monitoring their fluid and nutrition intake; ongoing assessment and modification of activity, such as bathing, dressing, and moving about; managing new and, at times, complex drug therapies; and recognizing and appropriately responding to signs and symptoms of pulmonary, wound, and abdominal complications such as pain, dyspnea, fatigue, and edema (Cardiac Care Network of Ontario, 2009).

Within the current acute care cardiovascular surgery (CVS) settings, education is typically provided to all patients who have undergone CABG and VR surgery

(Fredericks, Ibrahim, Puri, 2009; Koertke, Minami, Bairaktaris, Wagner, Korfer, 2000).

The intended outcome of these education programs is the increased confidence on effectiveness to self-manage behaviours following discharge. The delivery of education generally occurs 24-48 hours prior to hospital discharge (Fredericks, 2009) and usually involves presenting standardized information that addresses medication management, “healthy heart” diet, activity, signs and symptoms of infection, incision care, and complications (Public Health Agency of Canada, 2009; Winslow, 1986).

In Ontario, although resources in the form of education are made available to promote recovery, over a quarter of all CABG and VR patients are re-admitted to hospital with post-operative complications within the first 3 months of recovery (Cardiac Care Network of Ontario, 2009). The most common reasons for readmission are post-operative infections (28%) and heart failure (18 %) (Hannan, Racz, Walford, 2003). The hospital readmission rate for CABG and VR patients is one of the highest across the province and has significant implications for health care resource utilization and continuity of care. A possible reason for the high rate of readmission following heart surgery is the quality of patient engagement in learning and performing self-management behaviours. In particular, patients who have had CABG and VR may not be fully engaged in the required self-management behaviours, contributing to the onset of complications, leading to hospital readmissions.

### Aim and Method

To complement existing patient education programs, an interactive communication strategy may be required. In this paper, the author presents a review of the literature related to a self-management based intervention that is currently under

evaluation, beginning with a brief description of self-management and coaching, followed by a literature review. A summary of the study currently underway will then be presented.

## Literature Review

### Self-management

There is no single definition for self-management; but, it is commonly referred to as the day-to-day tasks an individual undertakes to control or reduce the impact of disease on physical health status (Robertson & Keller, 1992). Interventions to promote self-management differ from patient education interventions in that they are based on five principles: assessment of behaviours and knowledge; provision of specific information about health behaviours; collaborative goal-setting between the patient and the health care provider; identification of barriers, strategies, problem-solving techniques; and creation of a specific plan for follow-up (Robertson & Keller, 1992).

During the home recovery period, the individual may engage in self-management behaviours developed in collaboration with his or her healthcare provider (Robertson & Keller, 1992). Successful self-management requires sufficient knowledge of the condition and its treatment, performance of certain activities to manage the condition, and application of necessary skills to maintain adequate psychosocial functioning. The goals of interventions to promote effective self-management are increased self-efficacy and improved clinical outcomes.

Self-efficacy is the confidence individuals have regarding their ability to perform self-management behaviours (Robertson & Keller, 1992; Sallis, Hovell, Hofstetter, & Barrington, 1992; Stretcher, DeVellis, Becker, & Rosenstock, 1986). It is influenced by

the individual's ability to understand health teaching. King, Glasgow, Toober, Strycker, Estabrooks, Osuna, and Faber (2010) examined the relationship between self-efficacy and self-management behaviours. Their findings suggest that self-efficacy is a strong predictor of self-management following hospital discharge, with daily activities increasing gradually after discharge ( $p < 0.05$ ). The higher the level of self-efficacy an individual possesses related to his/her ability to engage in self-management behaviours, the more likely he or she will engage in this behaviour. Thus, interventions to promote effective self-management are geared towards enhancing the individual's level of self-efficacy.

### Self-management interventions and chronic illness

Goldstein, Whitlock, and DePue (2004), Ockene, Reed, and Reiff-Hekking (2009), Newman, Steed, and Mulligan (2004), and Guevara, Wolf, Grum, and Clark (2003) examined self-management interventions delivered to patients living with chronic illnesses including diabetes, alcoholism, asthma, and depression. The studies reported significant increases in the performance of behaviours ( $p < 0.05$ ) following delivery of the self-management intervention. The findings support the need to move towards providing not just information about how and when to perform specific behaviours, but encouraging and motivating patients to be able to master behaviour performance. These findings also support the need to work with patients to establish and achieve goals relating to behaviour performance. Thus, to facilitate behavioural change, it is important to motivate patients to gain the capability to engage in desired behaviours.

Studies that have investigated the effectiveness of CABG and/or VR patient education interventions in producing changes in performance of behaviours reported non-

significant effects on the outcomes (Beckie, 1989; Fredericks, 2009). These non-significant findings can be attributed to the nature of the treatment which consisted of the delivery of educational materials without the integration of a supportive mechanism. Thus, the education was provided at time, without follow-up or assessment of the patient's knowledge and performance of behaviours. As well, patients were not encouraged or shown how to establish goals related to behaviour performance during their recovery period. These activities have the potential to enhanced the likelihood of the individual engaging in the required self-management behaviours during their post-operative recovery period. Assessing patients' knowledge, providing education to address knowledge gaps, collaborating with the individual to establish goals related to behaviour performance, and supporting and encouraging the individual to perform specific behaviours are the defining qualities of self-management support interventions. An example of a self-management support intervention is coaching which consists of the assessment of an individual's values and beliefs about performing specific behaviours, followed by the provision of education based on the identified values and beliefs pertaining to the behaviour. This phase is then followed by goal-setting related to behaviour performance, and finally, an evaluation of the achievement of goals from previous sessions (Vale, Jelinek, Best, & Santamaria, 2002).

#### Coaching as a Self-Management Intervention

Coaching is a motivational approach often used to encourage the implementation of self-management behaviours (Vale et al., 2002). It has been shown to be effective in the cardiac population as a means of achieving target cholesterol within the home environment (Vale et al., 2002). Coaching is typically provided by a therapist who has

specialized training and experience with patients from a specific patient population (e.g., cardiovascular surgery). The self-management approach to coaching is delivered in 4 stages, ranges between 20-30 minutes in duration, and is delivered at 2 different times.

The first stage involves asking questions to establish the patient's knowledge about specific behaviours in which he or she is required to perform during his or her home recovery period. Having an understanding of previous self-management knowledge provides a context for evaluating the successes and difficulties, as well as level of understanding and misunderstanding related to the content. In addition, information related to reasons as to why engagement in recommended behaviours was not performed is also collected. The second stage of a coaching intervention consists of behaviour reinforcement in which misconceptions are clarified and self-management information is presented in greater depth. For example, if it appears that the patient has misunderstood the educational information, the therapist will review the content with the patient to clarify any misconceptions. Stage 3 consists of problem-solving and motivational guidance in which the therapist works with the patient to identify personal barriers that prevent performance of self-management behaviours. The therapist works with the patient to problem solve these barriers, negotiate realistic goals, and brainstorm creative, concrete, and realistic strategies for engagement in self-management behaviours within the home environment. During the final stage of the coaching session, when the intervention is first delivered, the therapist works with the patient to establish timelines for completion of goals. On the second delivery of the intervention at 2 weeks following hospital discharge, during stage 4 of the coaching intervention, the therapist assesses

whether or not established goals have been achieved. The therapist also provides positive encouragement, praise, and support for efforts and relapses (Vale et al., 2002).

### Description of Current Study

A randomized controlled trial is currently underway to evaluate the effectiveness of a coaching intervention as it relates to improved self-management, decreased incidence of co-morbid conditions, and reduced hospital readmission rates. This study is being conducted on a cardiovascular surgical unit at a university-affiliated teaching hospital in a large Canadian urban center. This study is unique because it is the first to evaluate the effectiveness of a self-management intervention that focuses on coaching patients to achieve desired self-management behavioural changes following either CABG or VR surgery or both. The results from this study will be used to design appropriate interventions to enhance the recovery of patients following heart surgery. As well, the results will be used to shape policy and nursing practice guidelines for caring for patients post-CABG and VR.

### Description of the self-management coaching intervention

During the delivery of the self-management intervention, patients will be coached to take responsibility for the achievement and maintenance of behaviours related to activity modification, nutrition, medication management, and management and prevention of complications. Specifically, the following topics will be discussed: the type, frequency and time to perform activity; the amount of fluid to consume in a day, strategies to manage sudden weight gain; management of medication; performance of deep breathing and coughing exercises; the number of times to use the incentive spirometer, how often to clean incisional wounds, how frequent to assess the incision for

signs of complications, and when to contact a healthcare provider when signs of complications are noted. The self-management coaching intervention consists of a systematic process for providing self-management information, aimed at enhancing understanding and performance of self-management. As compared to usual care, the self-management coaching intervention involves the assessment of patient knowledge, provision of educational reinforcement, and motivational guidance which involves establishment of goals.

The self-management coaching intervention will be given above and beyond usual care. The usual patient teaching that is delivered on the unit is in the form of a video and discharge booklet. The content of the booklet is based on a literature review of the learning needs of the CABG and VR patients and address: salt intake, fluid restrictions, basic function of typical medications (such as beta-blockers, ace-inhibitors, Warfarin, and analgesics) along with strategies to facilitate taking medication, improving activity performance (such as lifting objects, climbing stairs, walking, and sexual activity), and attending follow-up appointments. Usually, the nurse reviews the content of the booklet, at one point, with the patient and his or her family members prior to their hospital discharge.

The goal of this self-management coaching intervention is to enhance patients' self-care behavioural performance, while reducing the onset of post-operative complications and hospital readmission rates following CABG or VR surgery, or both.

### Conclusion and Relevance to Clinical Practice

The use of coaching sessions to complement the existing in-patient education program within the cardiovascular surgical population has not been examined. Such an

intervention may lead to reduced hospital readmission rates as well as a decline in the incidence and severity of post-operative complications within the first 3 months of recovery following CABG, VR, or both surgeries.

Using coaching to supplement existing CVS patient education initiatives would require trained CVS nurses with dedicated time to be able to engage in the coaching dialogue with the individual. Integrating this intervention would also require nurses to assess behaviours, knowledge, and learning needs; provide individualized educational materials that are reflective of a patient's identified learning needs; collaborate in setting goals with patients; identify barriers and engage in problem-solving to overcome barriers; and create a specific plan for follow-up. As well, dedicated space to allow for confidential patient interaction and access to a telephone are also required. It is important that the coach (nurse) provide evidence-based advice. However, coaching must be tested and shown to be efficacious in changing behaviours, reducing complications, and preventing hospital readmissions before integrating it into the clinical setting.

References

- Ai, A., Dunkle, R., Peterson, C., Saunders, D., & Bolling, S. (1998). Self-care and psychosocial adjustment of patients following cardiac surgery. *Social Work in Health Care, 27*, 3, 75-95.
- Beckie, T. (1989). A supportive-educative telephone program: Impact on knowledge and anxiety after coronary artery bypass graft surgery. *Heart & Lung, 18*, 1, 1-55.
- Cardiac Care Network of Ontario. (2009). *Database, consensus, and concern*. Retrieved from: <http://www.ccn.on.ca/pdfs/hospitalreportfinalchf4.pdf>.
- Cebeci, F., & Çelik, S. (2007). Discharge training and counseling increase self-care ability and decrease post-discharge problems in CABG patients. *Journal of Clinical Nursing, 17*, 412-420.
- D'Agostino, R., Jacobson, J., Clarkson, M., Svensson, C., Williamson, C., & Shahian, D. (1999). Readmission after cardiac operations: Prevalence, patterns, and predisposing factors. *The Journal of Thoracic and Cardiovascular Surgery, 118*, 823-832.
- Fredericks, S. (2009). Timing for delivering individualized patient education intervention to coronary artery bypass graft patients: A randomized controlled trial. *European Journal of Cardiovascular Nursing, 8*, 144-150.
- Fredericks, S., Ibrahim, S., & Puri, R. (2009). Coronary artery bypass graft surgery patient education: A systematic review. *Progress in Cardiovascular Nursing, 24*, 162-168.

- Guevara, J. P., Wolf, F. M., Grum, C. M., & Clark, N. M. (2003). Effects of educational interventions for self management of asthma in children and adolescents: Systematic review and meta-analysis. *British Medical Journal*, *326*, 1308-1309.
- Goldstein, M. G., Whitlock, E. P., & DePue, J. (2004). Multiple behavioral risk factor interventions in primary care: Summary of research evidence. *American Journal of Preventative Medicine*, *27*, 61-79.
- Gortner, S. R., & Jenkins, L. S. (1990). Self-efficacy and activity level following cardiac surgery. *Journal of Advanced Nursing*, *15*, 1132-1138.
- Hannan, E. L., Racz, M. J., Walford, G. (2003). Predictors of readmission for complications of coronary artery bypass graft surgery. *Journal of the American Medical Association*, *290*, 773-780.
- King, D. K., Glasgow, R. E., Toobert, D. J., Strycker, L. A., Estabrooks, P. A., Osuna, D., Faber, A. J. (2010). Self-efficacy, problem solving, and social-environmental support are associated with diabetes self-management behaviours. *Diabetes Care*, *33*, 751-753.
- Koertke, H., Minami, K., Bairaktaris, A., Wagner, O., & Korfer, R. (2000). INR self-management following mechanical heart valve replacement. *Journal of Thrombosis and Thrombolysis*, *9*, 41-45.
- Jaarsma, T., Halfens, R., Abu-Saad, H., Dracup, K., Diederiks, J., & Tan F. (2000). Self-care and quality of life in patients with advanced heart failure: The effect of a supportive educational intervention. *Heart & Lung*, *29*, 319-330.
- Newman, S., Steed, L., & Mulligan, K. (2004). Self-management interventions for chronic illness. *Lancet*, *364*, 1523-1537.

- Ockene, J. K., Reed, G. W., & Reiff-Hekking, S. (2009). Brief patient-centered clinician-delivered counseling for high-risk drinking: Four-year results. *Annals of Behavioral Medicine, 37*, 335-342.
- Perkins, S., & Jenkins, L. S. (1998). Self-efficacy expectation, behavior performance, and mood status in early recovery from percutaneous transluminal coronary angioplasty. *Heart & Lung, 27*, 37- 41.
- Public Health Agency of Canada. (2009). *Cardiovascular disease*. Retrieved from: <http://www.phac-aspc.gc.ca/cd-mc/cvd-mcv/index-eng.php>.
- Robertson, D., & Keller, C. (1992). Relationships among health beliefs, self-efficacy, and exercise adherence in patients with coronary artery disease. *Heart & Lung, 1*, 56-63.
- Sallis, J. F., Hovell, M. F., Hofstetter, C. R., & Barrington, E. (1992). Explanation of vigorous physical activity during two years using social learning variables. *Social Science and Medicine, 34*, 25-32.
- Stretcher, V., DeVellis M., Becker, M., & Rosenstock, I. (1986). Self-efficacy and health belief model. *Health Education Quarterly, 13*, 73-92.
- Vale, M. J., Jelinek, M. V., Best, J. D., & Santamaria, J. D. (2002). Coaching patients with coronary heart disease to achieve the target cholesterol: A method to bridge the gap between evidence-based medicine and the “real world” – Randomized controlled trial. *Journal of Clinical Epidemiology, 55*, 245-252.
- Watt-Watson, J., & Stevens, B. (1998). Managing pain after coronary artery bypass surgery. *Journal of Cardiovascular Nursing, 12*, 39 – 51.

Winslow, E. H. (1986). The role of the nurse in patient education. Focus: The cardiac patient. *Nursing Clinics of North America*, 11, 213-322.

This manuscript was accepted for publication by Pappin Communications, Fredericks, S. (2011). Coaching in the cardiovascular surgical population. *Canadian Journal of Cardiovascular Nursing*, 21, 3, 30-33.