

Abstract

The purpose of this report is to provide a detailed description of the challenges that arose throughout the implementation of an individualized patient education intervention delivered to patients during their home recovery following heart surgery. The intervention was delivered at two points in time by telephone to patients following heart bypass and/or valvular replacement. The individualized patient education intervention was found to be effective in reducing the rate and number of complications developed during the first three months following hospital discharge. However, throughout the implementation of this intervention, specific challenges arose that included: onset of symptoms that interfered with intervention delivery, patient's request for information beyond the scope of the teaching interaction, and the need to provide continued support to the therapist. These challenges were addressed throughout the course of the study and the strategies are currently being implemented into the planned knowledge translation activities associated with this intervention.

Keywords

complications, patient education, self-care, cardiac surgery

Introduction

Across the cardiovascular surgical population, education is provided to all patients who have had coronary artery bypass graft (CABG) and/or valve replacement surgery (Jaarsma et al. 2000). The intended outcome of these education programs is the increased performance of self-management behaviours following discharge. The delivery of education generally occurs 24-48 hours pre-hospital discharge (Fredericks, 2009) and 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 2008). Standardized patient education involves presenting the same educational information to all patients in its entirety despite its potential relevance to the individual and their situation. There is minimal patient involvement throughout the educational interaction. Thus, all patients receive the same information related to the topics. Standardized education programs are not reflective of the individual's perceived learning needs (Winslow, 1986; Jaarsma et al., 2000). Learning needs are defined as specific areas of interest related to the patient's condition that are perceived as important to learn (Moranville-Hunziker, Sagehorn, Feutz, Hagenhoff, 1993). Typically, learning needs are reflective of an individual's experience with managing previous illnesses. Attending to an individual's learning needs has been shown to promote patients' active engagement in health and wellness activities (Fox, 1998). The more relevant and applicable teaching materials are to individuals, the more likely they will adhere to the content of the education program. The unique, individualized quality of the patient education content increases the likelihood that patients will actively respond to the teaching; through acquisition of relevant knowledge,

appropriate performance of self-care behaviour, and/or proper management of symptom experience (Fox, 1998). Patient education programs that are based on the perceived learning needs of the individual are called individualized patient education interventions (Fox, 1998).

Studies that have investigated the effectiveness of standardized CABG and/or valve replacement patient education interventions in producing changes in performance of behaviours reported non-significant effects on outcomes (Beckie, 1989; Moore & Dolansky, 2001; Moore, 1996; Fredericks, 2009) produced. These non-significant findings can be attributed to the quality of the patient education intervention, which may not be optimal in supporting patients up to three months following their hospital discharge. As a result, patients may not have the adequate knowledge to effectively engage in behaviours to prevent the development of complications and/or exacerbation of existing illness condition.

An individualized telephone based patient education intervention that is delivered during patients' home recovery has since been designed and evaluated as a compliment to standardized, in-hospital cardiovascular surgical patient education. The study received Institutional Review Board approval from the author's home institution. The individualized educational intervention was found to be effective in producing changes in performance of self-care behaviours and reducing the number of hospital readmissions up to three months post-discharge (XXX, submitted). During its evaluation, the intervention was delivered at two points in time (24-48 hours and two weeks following hospital discharge), individualized to reflect the individual and their learning needs at a particular point in time, and was delivered by telephone to enhance patient engagement during the

educational interaction. Even though this intervention was found to be effective, specific challenges arose through its implementation (XXX, submitted). This discussion paper begin with a detailed description of the intervention of interest. It will be followed by an overview of the specific challenges that arose throughout its implementation, along with a presentation of the strategies used in response to each issue that was identified.

Methods

The individualized patient education intervention was delivered at two points in time by telephone to post-operative CABG and/or valve replacement patients following hospital discharge. It began with an assessment of the individual patient's learning needs. The education that followed was individualized to reflect the learning needs identified by the specific patient. Each patient was contacted by a trained research nurse (therapist), via telephone (at two points in time: 24-48 hours of the study participant's hospital discharge and again at two weeks post-hospital discharge), at a pre-arranged hour of the day. The therapist introduced himself to the patient, by identifying his name, position (research therapist), name of study, and purpose for call. He then proceeded to ask the patient if they had any questions regarding the intent of the call. If questions arose, the therapist responded as appropriate.

Using the Patient Learning Needs Scale, the therapist attempted to determine the individual's learning needs. The Patient Learning Needs Scale is a self-report measure with a six point Likert scale, where responses range from zero - not important to learn, to five - extremely important to learn (Galloway, Bubela, McKibbon, McCay, Ross, Nagle, 1993). It has demonstrated content and construct validity, and internal consistency reliability (alpha coefficient 0.95). The therapist proceeded to read the instructions

associated with the Patient Learning Needs Scale. This was followed by the completion of the learning needs scale over the phone by the patient. Patients were asked to rate the degree to which they perceived the topics contained on the learning needs questionnaire to be important for learning. Topics included: complications (specifically, how to recognize complications and how to decrease or avoid complications during post-operative recovery period), activities (in particular, what are appropriate physical activities that should or can be performed during the first three weeks of the post-operative recovery period), medication (particularly what are different strategies for medication management), symptom management (related to interventions for relieving incision and chest pain, nausea, vomiting, fatigue, sleep disturbance, constipation, and edema/water retention), and psychological symptoms (i.e. how to manage these emotional reactions). Any topic identified as being important or very important for learning was discussed with the patient. Depending on the topic identified, the therapist used the education material identified in the pre-designed education protocol to discuss the related self-care behaviours that the patient needed to perform to enhance their overall recovery experience. If all topics on the Patient Learning Needs Scale were identified by the patient as being important or very important to learn, then all content areas within the individualized telephone teaching intervention protocol were discussed with the patient. The average length of time for delivery of the patient education intervention, if all topics were identified as being important or very important to learn, was 35 minutes.

Discussion

Throughout the implementation of the patient education intervention, several challenges were identified. In particular, the length of time for delivering the intervention

was on average 35 minutes for each session. This time interval was problematic, as approximately 25% of patients stated that the length of time for delivery of the intervention was too long, especially during the first 24-48 hours of home recovery. Specifically, patients stated that they found it difficult to hold the telephone receiver for long periods of time due to arthritis; muscle soreness in arms, shoulders, and back; swelling in arms; and in a few instances pain due to radial artery graft in forearm.

Due to the nature of the intervention (education); a minimum amount of time was needed to allow for information to be provided to address identified learning needs; as well as to ensure an opportunity for learning had occurred through the patient-therapist interaction. Thus, reducing the amount of time to deliver the intervention was not an option, as 30-40 minutes was identified as the optimal time in which to deliver the intervention so as to produce desired outcomes. Instead, the therapist provided the patients with the option to deliver the teaching in two to three sessions based on the number of learning needs identified. Thus, if a patient requested information on medication management and nutrition, and also stated that they weren't able to hold the telephone for too long; then the therapist suggested providing information related to medication management at that point in time, and then calling back in one to two hours to deliver information related to nutrition. The flexibility with which the intervention was delivered allowed for the patient's identified learning needs to be addressed without exacerbating their existing symptoms. A similar approach was used in a study in which a telephone was used to deliver an intervention, as well as collect data over an extended period of time (Ferrante, Varini, Macchia, Soifer, Badra, Nul, Grancelli, et al., 2010). The researchers provided the study participants the option to complete the data collection over

a number of sessions. Their findings suggested this strategy was successful in promoting retention of study participants.

Anecdotal data from this study suggested patients appreciated the flexibility with which the intervention was delivered. They felt the therapist was genuinely concerned for their well-being and was interested in not only delivering the information but in their understanding and being able to use the information to engage in self-care behaviours. Thus, for future application of this intervention into the clinical setting, flexibility in the delivery of the intervention may be required depending on the overall health status of the patient.

Another challenge identified throughout the delivery of the telephone based intervention was that of patients feeling fatigued, weak, and experiencing extreme difficulty when moving, which in many instances lasted up to three months following surgery. The presence of these symptoms served to distract the participant from fully engaging in the educational interaction resulting in patients rushing to complete the patient-therapist interactions and in a few instances several individuals becoming upset and angry during the delivery of the intervention.

In response, the therapist suggested calling back at an alternate, mutually agreed upon time. However, in most instances this strategy proved to be unsuccessful as patients' fatigue and overall weakness seemed to persist. After several attempts at trying to deliver the education, the therapist decided to withdraw the study participant from the intervention group. Eventually, when the therapist encountered patients who displayed symptoms that seemed to persist and exacerbate over time, he reminded them that they had the option to withdraw from the study if they felt that they could, for whatever

reason, no longer actively participate. This recommendation is in accordance with the Tri-Council Policy Statement that addresses Ethical Conduct for Research Involving Humans (2010). This strategy was appreciated, as patients stated that they were happy with having the reminder that they were able to drop out from the study at any point in time. A few patients did opt to withdraw from the study due to not feeling well. As a result, this study had a higher than expected drop-out rate (34%). For future implementation of this intervention into the practice setting, a reminder card can be mailed to patients informing them of the dates with which the therapist will call to deliver the individualized teaching, as well as a reminder that if they do not feel that they need or are ready to receive the educational information, then they should let the therapist know at the start of the call.

Additionally, another challenge that was identified during the delivery of the intervention related to a small number (nine percent) of patients who asked for information which was not covered in the pre-designed patient education protocol. In these instances, patients were notified the information that they requested was not part of the usual educational content and that the therapist would seek out further information pertaining to their concerns and respond to them within 24-48 hours. Additionally, a few individuals requested advice pertaining to alternatives to their medication regimen and future diagnostic tests. Even though members of the research team were nurses, they were reminded that their involvement with patients was for research purposes and thus, could not provide advice relating to patients' condition outside of the Research Ethics Board (REB) approved scripts (Tri-Council Policy Statement, 2010). Approval was obtained from relevant institutions' REB prior to the conduct of the study. During

instances in which patients requested information outside of the intervention, the therapist reminded the participants that any alterations to their medication regimen and diagnostic tests were to be discussed with their primary health care provider (family physician and/or nurse practitioner).

Health literacy was not anticipated to be of a concern for this particular study, as the educational intervention had undergone rigorous validity testing prior to its evaluation for effectiveness. However, if there were any words or phrases that were difficult to comprehend, the therapist was asked to keep a running list so that future revisions to the patient education materials could be made. To date, there did not appear to be any challenges pertaining to health literacy.

Finally, even though the therapist had experience with patient counseling over the telephone, worked with similar clinical populations, and had strong communication and interpersonal skills; he still needed to be supported in his role as a patient education therapist. According to Ford (1979), practitioners and therapists must acquire certain “skills, attitudes, and knowledge in order to function effectively” (p. 87). Thus, mechanisms must be in place to support these individuals within the clinical setting. For this study, the therapist had access to the senior researcher. They met on a regular basis to discuss issues that had occurred and routinely strategize solutions. For the implementation of this intervention into the clinical setting, specific support mechanisms such as a designated supervisor should be made available to counsel and provide guidance to the therapist; as well as access to resources in the form of library databases, patient education specialists, and cardiovascular health care providers.

Conclusion

An individualized patient education intervention was designed and evaluated in response to findings that indicate non-significant effects of current patient education interventions. The individualized patient education intervention was found to be effective in reducing the rate and number of complications that developed during the first 3 months following hospital discharge. However, throughout the implementation of this intervention, specific challenges arose that included: onset of symptoms that interfered with intervention delivery, patient's request for information beyond the scope of the teaching interaction, and the need to provide continued support to the therapist. These challenges were addressed throughout the course of the study and the strategies have been implemented into the planned knowledge translation activities associated with this intervention.

Disclosure

There are no involvements, financial or otherwise, that might potentially bias each of the authors' work.

This manuscript has been accepted for publication by Wiley Online; Fredericks, S. & Bechtold, A. (2013). Challenges associated with delivering education to patients after heart surgery. *Japan Journal of Nursing Science*.
[http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1742-7924](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1742-7924). doi:
10.1111/jjns.12022