Promoting the continuum of care following heart surgery: A systematic review of web-based educational interventions

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Background

A compliment to in-hospital educational interventions is web-based patient education accessed during the home discharge period. Intervention provides a means through which nurses can communicate with patients outside of the healthcare arena. Evidence suggests patients who received educational materials via the internet reported better outcomes, than patients who received educational interventions delivered via other media. While findings demonstrate the effects of web-based patient education on patient outcomes, they fall short of elucidating the characteristics of these interventions that are associated with desired outcomes. Knowledge of the most effective educational interventions’ approach, mode of delivery, and dose will direct the design and implementation of similar web-based educational interventions; as well as the creation of guidelines for improving the prevention of complications during the immediate home recovery following heart surgery.

Research Question

What is the most effective approach, mode, and dose of CABG and/or VR web based patient education interventions associated with producing changes in self-care behaviours?

Study Design

A systematic review of studies to determine the most effective approach, mode, and dose of CABG and/or VR web based patient education interventions associated with producing changes in self-care behaviours during the home recovery period was conducted. The PRISMA framework was used to ensure the transparent and complete reporting of this systematic review (http://www.prisma-statement.org/statement.htm).

Sample

Studies were included in the systematic review if they met the following selection criteria:

- Sample represented adult (≥ 18 years) patients who underwent CABG and/or VR surgery
- Outcomes assessed relate to number and type of self-care behaviours performed during the post-hospital discharge recovery period
- Study report published in English between 2000 and 2012 and used non-experimental, experimental or randomized clinical trial (RCT), quasi-experimental, mixed methods, and qualitative designs

Search Strategies

- The search for relevant studies was performed using the following databases: CINAHL, MEDLINE, PUBMED, EMBASE, COCHRANE, and HEALTH STAR
- The keywords used in the search included: recovery phase, post-operative, CABG, VR, post-surgical, post-operative behaviours, web-based interventions, and self-care
- Following initial searches, the results were combined with the operand AND
- Reference lists of studies retrieved were examined for additional studies that address the post-operative recovery period of patients who have had a CABG and/or VR

Measurement of Outcome

- The following information was gathered about each study: year of publication, country in which the study was conducted, study design (non-experimental, quasi-experimental, experimental, qualitative, mixed method), sample size (total, and for each study group, if relevant), sample demographics (age, sex, marital status, co-morbid condition, type of surgery), drop-out rate, and number and type of study groups (control or comparison and treatment, or two treatment groups)
- Web-based interventions were characterized in terms of approach (standardized, tailored, individualized), mode (format: group vs. one-on-one; and medium: type of web-based intervention), and dose (frequency of intervention delivery and length of time of delivery)
- With regards to behaviour performed, the type and number of self-care behaviours were extracted

Analysis

Descriptive statistics were used to:

- 1) Delineate the characteristics of the studies included in this systematic review
- 2) Describe the characteristics of individuals comprising the samples
- 3) Describe the approach, mode, and dose of web-based interventions associated with statistically significant changes in self-care behaviour performance during the post-discharge recovery period

Implications

This systematic review will facilitate patient’s continuity of care within the home environment through the design and implementation of an interactive web-based educational intervention.

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References available upon request

Future Directions for Research

Design a web-based patient education intervention to be delivered to patients during the first 6 months of their home recovery following heart surgery.

Evaluate the feasibility and usability of the web-based patient education intervention via pilot study

Revise intervention based on results of pilot study

Evaluate revised intervention for effectiveness using a large scale randomized controlled trial.