Title of article: The influence of country of origin on engagement in self-care behaviours following heart surgery: A descriptive correlational study

Abstract:

Aim: The aim of this study was to determine if an individual's country of origin influenced performance of self-care behaviours after heart surgery. **Background:** Patients are required to perform self-care behaviours following cardiovascular surgery. Usual care encompasses a patient education initiative that addresses self-care behaviour performance. Within Canada, current heart surgery patient education efforts have been designed and evaluated using homogenous samples that self-identify their country of origin as England, Ireland, or Scotland. However, approximately, 42.6% of Canadian cardiovascular surgical patients self-identify their country of origin as India or China. Thus, current cardiovascular surgery patient education initiatives may not be applicable to all patients undergoing heart surgery, which may result in decreased patient outcomes such as performance of self-care behaviours. **Design and methods:** This descriptive study included a convenience sample of ninety patients who underwent heart surgery at one of two university affiliated teaching hospitals, representing individuals of diverse backgrounds. Point-biserial correlational analysis was conducted to determine the relationship between country of origin and performance of self-care behaviours. **Results and conclusion:** Findings indicate individuals who self identified their country of origin as England or Ireland were associated with a higher score on the number of self-care behaviours performed (p < .05) than individuals who self-identified other countries of origin. Self-care behaviours were taught using patient education materials that were designed based on feedback obtained from individuals whose country of origin was

England or Ireland. Thus, this study provides preliminary evidence to suggest country of origin influences the amount of self-care behaviours individuals will perform. **Relevance to clinical practice:** Patient education initiatives should incorporate the values, beliefs, attitudes, and customs reflective of an individual's country of origin to enhance the likelihood of producing desired outcomes.

Keywords: cardiovascular surgery, country of origin, self-care behaviours, patient education

Background

Cardiovascular surgery (CVS) is a common treatment for cardiovascular disease (CVD). It consists of a variety of open heart surgical procedures and has been shown to be effective in enhancing quality of life (Gillinov & Garcia 2005, Society of Thoracic Surgeons 2010). On average, one in every one thousand individuals annually undergo CVS across the globe (World Health Organization (WHO) 2007). Despite its advantage, CVS results in changes in the physical and psychological functioning of individuals within the first month following surgery, which give rise to an increased demand for the performance of specific self-care behaviours post-discharge (WHO). As a result, patients need to have a good understanding of how to perform self-care behaviours upon discharge to prevent the onset of post-operative complications. One way in which this is addressed is through patient education initiatives (Brennan *et al.* 2001).

Examination of existing CVS patient education interventions have reported mixed findings related to patients' engagement in self-care behaviours during the first month following heart surgery (xxx 2009, xxx et al. 2009). These results may be due to the quality of the educational materials, which may not have been designed to reflect specific demographic characteristics of the individual undergoing CVS. In Canada, approximately 42.6 % of the current population that undergo CVS is of non-Western European (non-WE) origin (Chiu et al., 2010). In particular, individuals from India (31.4 %) and China (19.8 %) make up the two largest cultural groups who undergo CVS (DesMeules *et al.* 2005), however, existing CVS patient education materials are routinely designed and evaluated using homogenous samples of predominantly WE origin (xxx et al. 2009). Thus, current CVS patient education initiatives may not be applicable to individuals who

self-identify their country of origin as that of non-WE resulting in a decrease in the performance of self-care behaviours following heart surgery.

To date, no study has examined the effect of country of origin on self-care behaviours. The aim of this study was to determine if an individual's country of origin influenced their performance of self-care behaviours following cardiovascular surgery.

Theoretical perspective

Country of origin is a term that is most commonly referred to as the place where an individual is either born or where they can retrace their cultural ancestry (Spector 2003). An individual's country of origin can impact their values, beliefs, attitudes, and customs and is influenced by cultural generation. The generational representation of an individual is significant as the closer a particular generation is to their country of origin (i.e. 1st generation – born abroad and emigrated to new country – i.e. Canada….these individuals are closest to their country of origin; 2nd generation – born in Canada and children of 1st generation parents…these individuals are not as close to their country of origin as 1st generation individuals, 3rd generation – grandchildren of 1st….these individuals are furthest from their country of origin, etc…), the more likely their values, beliefs, and attitudes will reflect that of their homeland (Abouguendia & Noels 2001). Furthermore, an individual's country of origin will affect how they respond to health and illness. For example, an individual draws on personal experiences and traditions to learn from their own country of origin of how to be healthy, how to recognize illness, and how to be ill. As well, the meanings attached to the notions of health and illness is related to the values, beliefs, attitudes, and customs associated with the country of origin and shape how the individual's behaviours are perceived, defined, and performed (Spector).

Performance of behaviours is influenced by the individual's country of origin (Spector 2005). Specific attitudes, values, and beliefs will determine the extent to which an individual will engage in specific behaviours. Self-care behaviors is an expected outcome associated with patient education interventions (Orem 2001). Orem (2001) describes self-care as "the practice of behaviours that individuals initiate and perform on their own behalf to maintain or enhance their health" (p. 35). She defines self-care as a process which involves selection and performance of appropriate treatment strategies to enhance or maintain functioning, or to alleviate or prevent the onset of symptoms, and evaluation of treatment strategies to determine if to continue with the intervention, stop treatment, or implement a new strategy (Orem 2001). Within the CVS population, patients are expected to engage in the following self-care behaviours during their home discharge period: routine monitoring of fluid and nutrition intake; ongoing assessment and modification of activity performance, such as bathing, dressing, and moving about; the management of new and at times, complex drug therapies; and early recognition and response to signs and symptoms of pulmonary, wound, and abdominal complications such as pain, dyspnea, fatigue, and edema (Barnason *et al.* 2000).

The selection and performance of treatment strategies are influenced by an individual's beliefs and values that have been shaped by their country of origin.

Literature review

Studies using randomized controlled trials and quasi-experimental designs, investigated the effectiveness of CVS patient education interventions in enhancing the performance of self-care behaviours (McKenna *et al.* 2001, Moore & Dolansky 2001, xxx 2006). More than 95% of the samples in each of the studies contained individuals

who self-identified their country of origin as WE. The studies defined WE countries as England, Scotland, and Ireland. Results indicated significant changes ($p < 0.05$) related to self-care behaviour performance post-hospital discharge.

However, studies that included culturally diverse samples reported non-significant findings related to self-care behaviour performance (Harkness *et al.* 2005, Anderson *et al.* 2005, xxx *et al.* 2009). The most frequently reported country of origin of the samples included: India, China, Poland, and Russia.

Although the relationship between an individual's country of origin and patient education outcomes have not been examined in the CVS population, studies have investigated the effectiveness of educational interventions designed to reflect cultural norms in enhancing patient education outcomes using chronically ill populations. In particular, individuals living with CVD (Moreno *et al.* 1997), chronically ill children (Povlsen *et al.* 2008), and diabetic adults (Brown *et al.* 2002; Hawthorne *et al.* 1993). Randomized control designs, focus groups, and case studies were used to examine the relevance of patient education content from a diverse group of study participants that included individuals who self-identified their country of origin as either Pakistan (Hawthorne), Morocco, Turkey, Somalia, Eritrea, Iraq, Iran, Palestine, Afghanistan (Povlsen *et al.*), San Salvador (Moreno *et al.*), or Mexico (Brown *et al.*). Findings suggest that educational interventions reflective of specific cultural norms promoted an increase understanding, implementation, and maintenance of recommended self-care behaviours identified in educational materials.

<div align="center">Methods</div>

Research Design

A descriptive non-experimental design was used to address the study aim. Approval from research ethics boards was obtained from participating institutions. Demographic information related to age, sex, educational level, marital status, co-morbidity, type of CVS procedure, and country of origin (England, Scotland, Ireland, India, China) was collected at 24-48 hours of admission to the CVS unit via face-to-face techniques following acquisition of consent. Data related to self-care behaviours performed were collected at 1 week post-hospital discharge by telephone. Collection of outcome data occurred at 1 week following hospital discharge as this is the point in time in which all patients would have already received, reviewed, and started engagement in self-care behaviours (Cohen 1992, Jaarsma *et al.* 2000, xxx *et al.* 2006). Data were collected by 2 trained research assistants.

Setting

Setting and Patient Population

The settings for this study included 2 CVS units at university-affiliated teaching hospitals in a large Canadian urban center. The accessible population was individuals having coronary artery bypass graft (CABG) with 1-5 grafts and/or valvular replacement. The average length of stay on the unit was 5 days. Mean patient age was 68 years, and the male/female ratio was 3:1. Patients were ethnically diverse representing East Indian, Chinese, English, Scottish, and Irish cultural groups. Approximately 70% of the accessible population met the eligibility criteria.

Sample Inclusion Criteria, Sampling Technique, Sample Size

Participants who met the following eligibility criteria were included in the study: underwent CABG and/or valvular replacement; spoke English; were oriented to time, place, and person; and had access to a working phone at home.

A convenience sampling technique was used in which available consenting patients were entered into the study until the required sample size of 100 was reached. In total, 90 patients completed the post-discharge data collection. The sample size was adequate to examine the influence of country of origin on performance of self-care behaviours 1 week following hospital discharge, setting ß at 0.8 and ∞ at 0.05 (Cohen 1992).

Instruments

Standard questions were used to collect information related to the patient's age, sex, educational level, marital status, co-morbidity, type of CVS procedure, and country of origin (England, Scotland, Ireland, India, China) immediately following acquisition of consent, 24-48 hours pre-hospital discharge.

Self-care behaviours were measured at 1 week following discharge with the Revised Self-Care Behaviour Scale (RSCB) (Artinian *et al.* 2002). The RSCB scale is a 26-item, self-report, Likert-type scale. The scale includes behaviours that patients must perform, to some degree, in order to regulate their own functioning. The behaviours addressed included: management of post-operative CABG complications, incision and chest pain, nausea, vomiting, fatigue, sleep disturbance, constipation, edema/water retention, and emotional reactions; and self-care strategies for medication administration. These behaviours are consistent with what is recommended by the hospitals' patient education materials. Respondents were asked to indicate how often they performed each

of these behaviours, during their home discharge period, on a scale ranging from "none of the time" (0) to "all of the time" (5) (Artinian *et al.*). The total scale score was calculated by summing the scores across items and ranged from 0 to 145. Higher scores indicate more frequent performance of self-care behaviours (Artinian *et al.*). Artinian *et al.* reported the approximate time for scale completion as being 10 minutes. Content validity was established by a panel of experts, including two nurse practitioners and two self-care experts. A content validity index of 0.86 was obtained. Its internal consistency reliability was assessed in the main study (Cronbach's alpha = 0.789).

Procedures

Patients who met the eligibility criteria were approached for study participation within 24-48 hours of admission to the CVS units. The unit staff were provided with the study inclusion criteria and asked to use these criteria in identifying eligible patients. The staff members used a standardized script, to inform eligible patients of the study and ask if they would like to hear more about it. The researcher approached patients who expressed interest in hearing about the study, explained the study in detail, answered any questions that the patient had, and obtained written consent.

Data Analysis

Descriptive statistics (i.e. measures of central tendency and dispersion) were used to characterize the sample in terms of demographics profile and health status. Point biserial correlation was used to determine the relationship between country of origin and performance of self-care behaviours 1 week following hospital discharge.

<p align="center">Results</p>

Demographic Profile and Health Status

One hundred and ten patients who met the eligibility criteria were approached to participate in the study. One hundred individuals provided consent, with ten individuals declining to participate after hearing details about the study (response rate = 90.9 %). Ninety individuals completed the study. Ten participants dropped out indicating that they were not feeling well (completion rate = 90%). The demographic characteristics and health profile of the sample is representative of the target population (Table 1).

The majority of the study participants were first generation Canadians (63.3%), with English (52.2 %), East Indian (26.6%), and Chinese (11.1%) being the most common cultures represented in the sample. Individuals of Irish (8.9%) and Scottish (1.2 %) decent were also represented in the sample.

Relationship between country of origin and self-care behaviours

The correlations between England as the country of origin (r_{pb} (89) = .416, p = .04) and performance of self-care behaviours and Ireland as the country of origin (r_{pb} (89) = .413, p = .04) and performance of self-care behaviours were statistically significant. The nature of the relationship was that individuals who self identified their country of origin as England or Ireland were associated with a higher score on the number of self-care behaviours performed at one week following hospital discharge. No statistically significant relationships were noted between Scotland, India, and China as the country of origin and performance of self-care behaviours (Table 2).

Discussion and Relevance to clinical practice

Since performance of self-care behaviours were based on educational content that was originally designed and evaluated using English and Irish samples and the findings suggest that individuals of English and Irish origin performed more self-care behaviours

than other individuals, this study provides preliminary evidence to suggest country of origin influences the amount of self-care behaviours individuals will perform. However, it is important to note that the study findings are based on very small cultural subgroups, which may not be representative of the general population. Thus, the findings should be cautiously regarded. The findings from this study are significant in that over 60% of the population in the city of Toronto are from countries that are non-WE (Chiu *et al.* 2010). As well, close to 40% of the city's population is first generation Canadian (Chiu *et al.*). This is the first study that has collected data on the cultural subgroups of individuals who have had heart surgery in the city of Toronto. Thus, there is an increase likelihood that these individuals will adhere to healthcare customs, practices, and traditions associated with their country of origin (Brown *et al.* 2002; Hawthorne *et al.* 1993; Moreno *et al.* 1997; Povlsen *et al.* 2008). Therefore, future patient education initiatives should incorporate the values, beliefs, attitudes, and customs reflective of an individual's country of origin, to enhance the likelihood for patient engagement in the performance of self-care behaviours.

Accommodating an individual's country of origin into patient education initiatives can be incorporated into the usual care routine of nurses. Prior to delivering CVS patient education, nurses should briefly introduce the notion of the need for patients to engage in self-care behaviours during the home recovery period. This is followed by the nurse asking the individual if they are in agreement with the notion of caring for themselves at home. If they are not, then the nurse may need to confer with members of the multidisciplinary healthcare team and/or family members to arrange for alternative care options such as use of family caregivers, cardiac rehabilitation, or homecare. If the

individual is in agreement to engage in self-care behaviours during the home recovery period, then the nurse should briefly identify the topics to be addressed and ask them if they have a preference to learn about a particular topic, if there are any items they would like addressed that have not been identified, and if there are any topics that they do not want to discuss. Tailor the patient education session based on the individual's response. Strategies that will address the content areas that have not been discussed, but is deemed to be important for the overall recovery of the individual, should be formulated in consultation with members of the multidisciplinary healthcare team and/or family members.

Since the findings from this study are preliminary, they will require further examination. It is recommended that a larger, more focused study to investigate attitudes, values, and beliefs associated with expected self-care behaviours following CVS be conducted using a diverse sample. As well, patient outcomes related to the development of complications and/or symptoms, hospital readmissions, and death should be examined following the delivery of tailored CVS patient education interventions. Furthermore, continued investigation is needed to determine the type of cultural norms (associated with each country of origin) and the extent to which they influence performance of specific behaviours following heart surgery.

Conclusion

This study provides preliminary evidence that suggests country of origin influences the amount of self-care behaviours individuals will perform following heart surgery. Current nursing practices should incorporate a re-evaluation of existing nursing interventions to assess whether or not they address the needs of the present clinical

population. This is especially important as funding is being cut, nursing workloads are

increasing, and patient acuity is on the rise (Ferguson-Paré & Bandurchin 2010). Within

the cardiovascular surgical populations, interventions that are not reflective of

individual's healthcare customs, practices, and tradition will result in an increase in

complications, symptoms, readmissions, and even death (Spector 2003).

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Table 1

Demographic characteristics and health profile

Demographic and Clinical Data	Findings
Age (mean and standard deviation in years)	64.1 (8.51)
Sex (male: female frequency percentage)	Male: 73.3 Female: 26.7
Highest level of education (percentage)	< high school: 24.9 high school: 35.3 college: 18.5 university: 21.3
Marital Status (percentage)	Single/widowed/divorce: 22.3 Married/cohabitating: 77.7
Most commonly performed cardiovascular surgery (percentage)	CABG + Valvular Replacement = 42.2 Primary Isolated CABG = 39.6 Primary Isolated Valvular Replacement = 18.2
Number of co-morbid conditions (mean and standard deviation)	1 = 9.0 (6.22) 2 = 41.0 (6.19) 3 = 34.5 (5.50) 4 = 12.9 (6.04) > 4 = 2.6 (5.80)
Comorbid conditions (percentage)	High blood pressure = 73.3 High cholesterol = 74.4

	Diabetes = 45.5
	Hernia = 32.2
	Arthritis = 22.2

Table 2

Relationship between country of origin and self-care behaviours

Country of origin and self-care behaviour	Point biserial correlation
England and self-care behaviour	r_{pb} (89) = .416, p = .04 *
Ireland and self-care behaviour	r_{pb} (89) = .483, p = .04 *
Scotland and self-care behaviour	r_{pb} (89) = .092, p = .14
India and self-care behaviour	r_{pb} (89) = -.047, p = .45
China and self-care behaviour	r_{pb} (89) = -.068, p = .27

* significant at p < .05