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Résumé

Un examen des interventions actuelles en matière d'enseignement au patient menées auprès de patients de diverses cultures ayant subi un pontage aortocoronarien

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Les initiatives actuelles en matière d'enseignement au patient devant subir une chirurgie cardiaque reposent sur la rétroaction de personnes originaires de l'Europe occidentale. On ne connaît pas leur pertinence dans le cas de patients d'autres origines. Les auteures de cette étude ont examiné la pertinence culturelle d'initiatives d'enseignement qui ont été menées auprès de patients de diverses origines ayant subi une chirurgie cardiaque. L'étude, qui comptait 242 participants, a été réalisée selon un modèle d'analyse descriptive non expérimentale. La pertinence culturelle a été évaluée en se fondant sur les comportements d'autogestion de la santé adoptés comme il était recommandé dans l'initiative d'enseignement au patient. Il a été constaté que pendant la première semaine suivant leur congé de l'hôpital, les participants d'une autre origine que l'Europe occidentale prenaient part à davantage d'activités liées au travail et affichaient moins de comportements d'autogestion de la santé que leurs homologues originaires de l'Europe occidentale, indiquant ainsi un manque de respect des recommandations. Cette étude fournit certaines données préliminaires suggérant que les initiatives actuelles d'enseignement au patient en matière d'autogestion de la santé ne sont pas pertinentes d'un point de vue culturel. Il sera nécessaire d'effectuer d'autres évaluations pour déterminer les raisons pour lesquelles des groupes culturels donnés adoptent certains types de comportements.

Mot clé : enseignement au patient

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An Examination of Current Patient Education Interventions Delivered to Culturally Diverse Patients Following CABG Surgery

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The design of current educational initiatives for heart surgery patients is based on feedback from individuals of Western European origin. The relevance of these initiatives is unknown when provided to individuals from non-Western European cultures. This study examined the cultural relevance of heart surgery patient educational initiatives delivered to individuals of diverse backgrounds. It used a non-experimental descriptive design involving 252 participants. Cultural relevance was assessed through self-care behaviours performed as recommended in the educational initiative. The participants of non-Western European origin were found to engage in more work-related activities and fewer self-care behaviours than their Western European counterparts in the first week following hospital discharge, indicating lack of adherence to educational recommendations. The study provides preliminary evidence suggesting that current self-care educational initiatives may not be culturally relevant. Continued evaluation to determine reasons why specific cultural groups engage in specific types of behaviour is needed.

Keywords: adult health, cardiovascular disease, clinical nursing research, patient education

Introduction

Coronary artery bypass graft (CABG) is a common surgical treatment for cardiovascular disease. In the Canadian province of Ontario, every year an average of one in every one thousand individuals undergo a CABG procedure (Cardiovascular Health and Services in Ontario, 2005). Despite its benefits, CABG results in changes in the individual's physical and psychological functioning within the first 3 weeks following surgery (Cebeci & Celik, 2007). These changes increase the need for specific self-care behaviours post-discharge (Cebeci & Celik, 2007; Heart and Stroke Foundation of Canada, 2008). In the current inpatient cardiovascular surgical (CVS) setting, post-operative CABG patient education is usually provided (Johansson et al., 2004). Since the intended outcome of this education is increased performance of self-care behaviours (Johansson et al., 2004), CABG post-operative education programs address self-care behaviours. The majority of these programs have been designed, evaluated, and shown to be relevant using homogeneous samples of Canadians of Western European (WE) origin (Fredericks, Lo, Ibrahim, & Leung, 2010; Fredericks, Sidani, & Shugurensky, 2008). While CABG post-operative education programs are used throughout southern Ontario, their relevance for Canadians of non-WE origin has not been demonstrated.

According to Statistics Canada (2006), approximately 72% of the current Canadian population diagnosed with cardiovascular disease (CVD) (statistics reflect proportion of population with "heart disease") are of non-WE origin. In particular, individuals from India (37.3%) and China (14.0%) make up the two cultural groups most frequently diagnosed with CVD. Of these, 32.5% of the individuals who gave their country of origin as India and 24.1% of the individuals who gave their country of origin as China underwent CABG surgery in 2005–06.

Purpose

The purpose of this study was to examine the cultural relevance of current post-operative CABG patient education programs. Specifically, the aim was twofold: (1) to assess and compare the type of self-care behaviours engaged in by Canadians who give their country of origin as WE and those who give their country of origin as non-WE (in particular, individuals from India and China); and (2) to examine the difference in the number of self-care behaviours engaged in by Canadians who give their country of origin as WE and those who give their country of origin as non-WE (in particular, individuals from India and China).

Theoretical Underpinnings and Literature Review

Culture and Cultural Relevance

Ethnicity is an individual's ancestry, language, customs, religion, culture, and nationality. One aspect of ethnicity is culture, which refers to behaviours that are shared and transmitted within a society (Wildes & Emery, 2001). In particular, culture encompasses the values, beliefs, attitudes, and customs that are shared by a group of people and passed from one generation to the next. Culture has a considerable impact on how patients access and respond to health-care information. For example, individuals draw on their personal experiences and traditions to learn from their own culture how to be healthy, how to recognize illness, and how to be ill. The meanings attached to the notions of health and illness are related to the culture-bound values that shape how experiences are defined and perceived. A specific component of culture is cultural classification, which relates to the group (White [English, Irish, Scottish)], Indian, Chinese) or country (England, Ireland, Scotland, India, China) with which an individual identifies.

Cultural relevance refers to the extent to which interventions are consistent with the values, beliefs, and desired outcomes of a particular community (Yamazaki, 2005). One measurable indicator of relevance is effectiveness. In the health-care setting, failure to ensure cultural relevance can result in cultural biases and can significantly affect the way an intervention is perceived and hence implemented. For interventions to be culturally relevant, investigators must have knowledge of the community's cultural values and beliefs in order to develop and implement programs that are perceived as culturally acceptable (Yamazaki, 2005). The use of culturally acceptable treatments and interventions results in increased adherence, which results in turn in improved outcomes.

Relevance of CABG Patient Education Materials in Producing Changes in Self-Care Behaviour

Four studies, using randomized controlled trials and quasi-experimental designs, investigated the effectiveness and relevance of CABG patient education interventions in producing changes in self-care behaviours (Fredericks, 2009; Fredericks et al., 2008; Harkness et al., 2005; Moore & Dolansky, 2001). Relevance was measured using self-report measures. More than 90% of the sample in each of the studies contained individuals who identified their cultural background as WE. Cultural generation was not given in any of the studies. Results indicated a significant increase ($p < 0.05$) in the performance of self-care CABG behaviours following hospital discharge. The relevance of CABG patient education materials across culturally diverse groups (i.e., Indian and Chinese) has not been determined.

Relevance of Patient Education Materials Across Various Populations

Although the cultural relevance of CABG patient education in non-WE samples has not been examined, the cultural relevance of patient education materials in culturally diverse samples, including adults diagnosed with heart disease (Moreno et al., 1997), children with chronic illness (Povlsen, Karlberg, & Ringsberg, 2008), and adults with diabetes (Brown, Garcia, Kouzeranani, & Hanis, 2002; Hawthorne, Mello, & Tomlinson, 1993), has been explored. Randomized control designs, focus groups, and case studies were used to examine the relevance of patient education content in a diverse group of participants that included individuals who gave their country of origin as Pakistan (Hawthorne et al., 1993), Morocco, Turkey, Somalia, Eritrea, Iraq, Iran, Palestine, Afghanistan (Povlsen et al., 2008), El Salvador (Moreno et al., 1997), or Mexico

(Brown et al., 2002). In three of the four studies, cultural relevance was assessed by examining the difference between specific cultural groups and subgroups in terms of the number and type of behaviours performed. In one study, cultural relevance was examined using open-ended questions. The findings indicate that educational interventions that are culturally relevant promote increased understanding, implementation, and maintenance of recommended self-care behaviours identified in educational materials.

While there has been much interest and work in evaluating the cultural relevance of CABG patient educational interventions using a WE homogeneous sample, there does not appear to be any work addressing the relevance of CABG patient education materials for individuals with non-WE backgrounds. There is some support for the impact of culture in shaping individuals' perception of educational materials and their response to these resources (Brown et al., 2002; Hawthorne et al., 1993; Moreno et al., 1997; Povlsen et al., 2008; Yamazaki, 2005). A focused, in-depth understanding of this issue is necessary to inform the development of culturally competent, context-specific educational materials for enhancing self-care behaviours in patients who have undergone CABG surgery.

Methods

Research Design

A quantitative, non-experimental design was used. Approval for the study was received from the research ethics boards at the participating institutions.

Setting

The settings for the study were CVS units at two university-affiliated teaching hospitals in a large Canadian city. The accessible population included approximately three thousand CABG patients each year. These individuals underwent CABG surgery entailing one to four grafts. The average length of stay on the unit was 5 days (step-down CVS units). The average age was 68 years. The male/female ratio was 3:1. The ethnic distribution (as self-identified) was as follows: WE (English, Irish, or Scottish), 38.9%; Indian, 32.5%; Chinese, 24.1%.

Sample

Individuals were eligible for the study if they had undergone CABG surgery for the first time, with no additional surgical interventions; spoke English; were oriented to time, place, and person; and had access to a working phone at home.

Non-proportional quota sampling was used to stratify based on cultural group and to accrue participants. Calculation of sample size was based on (1) the number of groups to be compared (three: WE, Indian, Chinese); (2) an alpha level of 0.05 (to avoid a type II error); (3) a preset beta level or power of 0.8; and (4) a moderate effect size of 0.6 on self-care behaviour performance based on theoretical (Redman, 2007) and empirical (Fredericks, 2009; Harkness et al., 2005) evidence. Therefore, n = 75 patients were required for each group and the desired sample size was 225 (three cultural groups of 75 patients each).

Loss due to follow-up was anticipated, as previous studies examining patient education interventions in a CABG population report attrition rates of 10% (Fredericks, 2009; Harkness et al., 2005). In anticipation of dropouts, 10% over the required number of patients were recruited. The adjusted sample size was 249 (rounded up to this figure so that the three groups would have an equal number of participants) — 83 in each cultural group. The final sample size was 252. As there was unequal distribution across cultural groups, the groups were collapsed into WE and non-WE (Indian and Chinese) clusters.

Procedure

All patients received usual post-operative self-care standardized patient education in written format provided 24 to 48 before admission to the CVS unit. The education was developed by expert CVS nurses. The content of the usual education addressed the following: salt intake; fluid restrictions; an overview of the function of common medications (such as beta-blockers, ACE-inhibitors, warfarin, and analgesics) along with an overview of strategies that patients can use to remember to take their medication; activity performance (such as lifting objects, climbing stairs, walking, and sexual activity); and follow-up appointments. Nurses reviewed the usual self-care education materials with patients during a single one-on-one interaction during their post-operative hospitalization. This interaction varied in length from 3 to 10 minutes. After the materials were reviewed with the nurse, the patient was encouraged to continue to review and adhere to self-care behaviours outlined in the educational materials post-discharge.

Data related to performance of self-care behaviours were collected at baseline (upon entry into the study — that is, 24–48 hours pre-discharge) and at 1 week post-discharge. Also collected at baseline was demographic and clinical information related to age, sex, educational level, marital status, co-morbidity, number of grafts received during the CABG procedure (e.g., 1, 2, 3, 4), cultural classification (WE, Indian, Chinese), and cultural generation (first-generation Canadian, second-generation Canadian, etc.). During the baseline data collection period, the data were obtained through questionnaires administered by the research staff. Post-test data were gathered by telephone. One week post-discharge was selected for post-test data collection, as this was the point in time at which immediate changes in self-care behaviour were expected to occur (Fredericks, 2009; Jaarsma et al., 2000; Moore & Dolansky, 2001).

The unit staff were provided with the inclusion criteria and asked to use these in identifying eligible patients. Research assistants then approached eligible patients for possible participation 24 to 48 hours prior to discharge; they used a standardized script to describe the study in detail, answer any questions, and obtain written consent.

Instruments

A standard demographic questionnaire was administered immediately following the securing of consent, 24 to 48 hours pre-discharge. This information related to age (in years), sex (male/female), education (> high school/high school/college/university), marital status (single/widowed/divorced, married/cohabitating), co-morbidity (number of co-morbid conditions), number of grafts received during the CABG procedure (e.g., 1, 2, 3, 4) as reported by the patient, culture (English/Irish/Scottish, Indian, Chinese), and cultural generation (e.g., first-, second-generation Canadian).

Throughout the study, the measurement of cultural relevance was assessed by measuring effectiveness as an indicator of relevance and included an assessment of CABG patient education materials delivered to patients following surgery.

Self-care behaviours were measured 24 to 48 hours pre-discharge and 1 week post-discharge using the Revised Self-Care Behaviour scale (RSCB) (Artinian, Magnan, Sloan, & Lange, 2002). The RSCB is a 29-item self-report, Likert-type scale. The scale describes behaviours that patients with heart failure must perform, to some degree, in order to regulate their own functioning. Thorne and Peterson (1998) identify the immediate post-discharge self-care behaviours performed by heart failure patients as being similar to those of CABG patients. The RSCB was adapted for use in a CABG population, as well to reflect the content of the individualized education intervention (Fredericks, 2009). The behaviours relate to management of post-operative CABG complications, incision and chest pain, nausea, vomiting, fatigue, sleep disturbance, constipation, edema/water retention, and emotional reactions, as well as self-care strategies for medication administration. Respondents were asked to indicate how often they performed each of these behaviours, during the home discharge period, on a scale from “none of the time” (0) to “all of the time” (5) (Artinian et al., 2002). The total score, calculated by summing the scores across items, ranged from 0 to 145. Higher scores indicated more frequent performance of self-care behaviours. Artinian et al. (2002) report the approximate time for scale completion as 10 minutes. Content validity consisted of evaluations by a panel of experts, including two nurse practitioners and two researchers who had investigated self-care in a cardiac population. A content validity index of 0.86 was obtained by Artinian et al. (2002). In addition, the tool demonstrates convergent validity, as evidenced by a positive correlation between a tool for assessing self-care behaviours and the RSCB. As well, an internal consistency reliability coefficient of 0.8 (Cronbach's alpha) was noted.

Analysis

The data were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics (i.e., measures of central tendency and dispersion) were used to characterize the sample on demographic factors and the self-care behaviours performed post-CABG surgery. Independent sample t test was used to identify differences in the mean score on each item of the RSCB related to type of self-care behaviours performed by the WE and non-WE groups. Independent sample t test was also conducted to determine differences between the two groups based on the number of self-care behaviours performed.

Results

A total of 270 patients who met the eligibility criteria were approached to participate in the study. A total of 252 completed the study (for a response rate of 93.3%), with 12 individuals declining to participate due to feeling unwell and 6 indicating that they were not interested after hearing details of the study. The sample was representative of the target population (Table 1).

Even though no questions pertaining to the role of caregivers were asked, anecdotal comments repeatedly emerged to suggest that women routinely took on the role of primary caregiver.

Type of Self-Care Education Received by Participants

The RSCB took approximately 10 minutes to complete. All participants received self-care patient education. This information was presented either orally (by the nurse) (87.5%), in booklet form (98.5%), or on video (38.2%). The majority of participants (75.9%) received self-care information through all three media. There was no statistically significant ($p > 0.05$) difference between the WE and non-WE cultural groups in terms of the type of self-care education received.

Table 1 ***Demographic and Clinical Data***

Characteristic		%
Age mean *(SD)* in years		63.7 (10.1)
Sex	Male	78.2
	Female	21.8
Highest level of education	< High school	23.5
	High school	20.5
	College	12.5
	University	25.6
Marital status	Single/widowed/ divorced	21.8
	Married/cohabitating	78.2
Generation Canadian	First	43.1
	Second	12.3
	Third	2.5
Culture	English, Irish, Scottish	60.3
	Indian	32.6
	Chinese	7.1
Number of bypasses	1	8.8
	2	32.7
	3	48.1
	> 3	10.4
Number of co-morbid conditions	1	23.9
	2	30.4
	3	20.9
	> 3	24.8
Co-morbid conditions	High blood pressure	96.4
	High cholesterol	82.7
	Diabetes	83.2
	Arthritis	32.5
	Thyroid condition	18.2

Between-Group Differences in Self-Care Behaviours

Of 29 self-care behaviours, 10.1 (*SD* = 1.61) were performed 24 to 48 hours pre-discharge (WE individuals performing 14 on average and non-WE individuals 9 on average), while 15.9 behaviours (*SD* = 9.49) were reported at 1 week post-discharge (WE individuals performing 20 on average and non-WE individuals 13 on average). For WE patients, the behaviours most often performed 24 to 48 hours pre-discharge related to activity and rest, while 1 week post-discharge they tended to be mainly activity-related. For non-WE patients, the behaviours most frequently performed 24 to 48 hours pre-discharge were activity-related, while 1 week post-discharge these individuals also engaged in behaviours related to medication management and nutrition (Table 2).

Between-Group Differences in Type of Self-Care Behaviours

For types of behaviour performed, statistically significant differences were noted in WE and non-WE groups 24 to 48 hours pre-discharge. Non-WE individuals engaged in more activity-based behaviours: use of blue breathing machine (t (260) = 0.00, $p < 0.05$); deep breathing and coughing exercises (t (260) = 0.04, $p < 0.05$); increasing walk time by 1 minute every other day (t (260) = 0.02, $p < 0.05$); not lifting, pushing, or pulling objects heavier than 10 pounds (t (260) = 0.00, $p < 0.05$); and being physically active 3 to 4 days per week (t (260) = 0.01, $p < 0.05$). WE individuals were more likely to adhere to pain management regimens: taking pain medication (t (260) = 0.04, $p < 0.00$); limiting activities that are hard to perform (t (260) = 0.04, $p < 0.01$).

Statistically significant differences were also noted for types of behaviour 1 week post-discharge. WE individuals engaged in more of the following behaviours: avoiding strain (t (260) = 0.00, $p < 0.05$); not lifting, pushing, or pulling objects heavier than 10 pounds (t (260) = 0.00, $p < 0.05$); refilling prescriptions on time (t (260) = 0.04, $p < 0.05$); having a system to help take pills (t (260) = 0.01, $p < 0.05$); taking prescribed pain medication when needed (t (260) = 0.00, $p < 0.05$); contacting the doctor before stopping, starting, or altering pain medication (t (260) = 0.01, $p < 0.05$); spreading activities out over the day (t (260) = 0.02, $p < 0.05$); planning rest times during the day (t (260) = 0.03, $p < 0.05$); not drinking more than 2 cups of fluids per day (t (260) = 0.04, $p < 0.05$); contacting the doctor when feeling tired (t (260) = 0.00, $p < 0.05$); contacting the doctor when nauseated (t (260) = 0.02, $p < 0.05$); and contacting the doctor when having to vomit (t (260) = 0.02, $p < 0.05$).

Between-Group Differences in Number of Self-Care Behaviours

No statistically significant difference between the groups was noted at 24 to 48 hours pre-discharge ($p > 0.05$), but a statistically significant difference was noted at 1 week post-discharge (t (260) = 0.04, $p = .03$), with the WE group performing mean = 15.98 (SD = 9.03) self-care behaviours and the non-WE group performing mean = 10.63 (SD = 10.02) self-care behaviours (Table 3).

Table 2 ***Mean Number of Participants Engaged in Individual Self-Care Behaviours***

	24–48 hours pre-discharge		**1 week post-discharge**	
Self-Care Behaviour	**WE (n = 152) Mean**	**Non-WE (n = 100) Mean**	**WE (n = 152) Mean**	**Non-WE (n = 100) Mean**
1. I use my breathing machine as described by my health-care provider.	59.4	89.5	123.4	83.9
2. I perform my deep breathing and coughing exercises at least 3 times every hour.	29.9	89.5	137.7	88.7
3. I clean all of my surgical incisions every day with soap and water.	0.0	0.0	138.8	93.5
4. I constantly assess all of my incisions for redness, swelling, puffiness, leaks, and tenderness.	4.4	7.4	81.5	70.2
5. I contact my doctor if I notice any redness, swelling, puffiness, leaks, or tenderness.	1.1	0.0	90.3	45.2
6. I contact my doctor when I have abdominal pain.	2.1	1.4	56.2	46.4
7. I increase my walking time by 1 minute every other day, if tolerated.	1.4	89.5	150.3	99.2
8. I try to avoid strain (such as putting weight on upper arms, shoulders, back, neck, and chest).	148.7	99.2	150.9	56.9

9. I use the stairs only when necessary.	3.3	0.8	143.1	94.2
10. I do not lift, push, or pull objects heavier than 10 pounds.	2.1	97.6	150.9	68.4
11. I am physically active (for example, walk) 3 to 4 days per week.	1.8	33.1	148.5	96.4
12. I take my pills every day as the doctor prescribed.	6.5	4.8	149.9	99.2
13. I always refill my prescriptions on time.	1.1	0.0	119.0	54.9
14. I have a system to help tell me when to take my pills.	0.0	0.0	55.0	12.4
15. I take my prescribed pain medications whenever I need them.	58.4	0.0	119.0	52.1
16. I contact my doctor before stopping, starting, or altering my pain medication.	3.6	3.2	104.4	41.9
17. To help reduce my symptoms or fatigue (i.e., feeling tired) or shortness of breath (i.e., having difficulty breathing), I limit the activities that are hard for me.	35.6	93.5	150.2	83.5
18. I spread my activities out over the whole day so I do not get too tired.	143.2	92.7	150.2	62.9
19. I plan rest times during my day.	142.1	93.2	150.2	54.4
20. When I am unable to sleep, I use different techniques to help put me to sleep.	105.8	68.5	92.6	61.9

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Table 2 (cont'd)

Self-Care Behaviour	**24–48 hours pre-discharge**		**1 week post-discharge**	
	WE (*n* = 152) Mean	**Non-WE (*n* = 100) Mean**	**WE (*n* = 152) Mean**	**Non-WE (*n* = 100) Mean**
21. I try to eat food high in fibre to prevent constipation.	7.8	2.4	110.0	98.4
22. I weigh myself every day of the week.	4.4	29	131.3	72.4
23. I am careful not to drink more than 2 cups of fluids/day.	39.7	29.4	55.0	24.9
24. I contact my doctor when I have gained 2 pounds or more in a day.	0.0	0.0	56.2	28.1
25. I put my feet up when I sit in a chair if swelling is present in my leg.	56.2	44.4	121.1	62.6
26. I try to return, as best as possible, to my usual daily activities.	55.0	41.1	135.4	96.0
27. I contact my doctor when I feel tired all the time.	0.0	0.0	62.8	12.0
28. I contact my doctor when I have nausea (i.e., sick to the stomach).	1.1	0.0	55.0	2.0
29. I contact my doctor when I have vomiting.	0.0	0.0	54.0	14.1

Table 3 ***Number of Self-Care Behaviours Performed, by Group***

24–48 hours pre-discharge Mean *(SD)*		**1 week post-discharge Mean *(SD)***	
WE	**Non-WE**	**WE**	**Non-WE**
3.70 (1.82)	3.89 (1.61)	15.98 (9.03)	10.63 (10.02)

Discussion

The majority of the non-WE participants self-identified as first-generation Canadians. The generational representation of the sample is significant, as the closer a particular generation is to their country of origin, the more their values, beliefs, and attitudes will reflect those of their homeland (Abouguendia & Noels, 2001). Thus, it is likely that the behaviours performed are a reflection of the behaviours found in the individual's country of origin.

With regard to consistency of beliefs and values of diverse cultures, anecdotal evidence emerged indicating that women were the primary caregivers and that women's main responsibility was to provide care for the family. This finding is consistent with that reported by Salgado de Snyder (1987), who describes the role of immigrant women, according to societal norms, as centred on the needs of the family and the home. Thus, activities pertaining to caring for sick family members are viewed as included in the responsibilities associated with women. The idea of delivering patient education materials to women (i.e., spouse, child, or parent) suggests the need for continued investigation into the appropriateness and feasibility of incorporating female family members into the patient's overall plan of care following CABG surgery. Preliminary findings on the effectiveness of patient education initiatives provided to spouses of patients who have had CABG surgery (Allen, Becker, & Swank, 1991) demonstrate mixed results.

Furthermore, the results suggest that non-WE individuals are engaged in more physical activity and fewer self-care behaviours than WE individuals 1 week following discharge. This finding may be related to employment. Recent statistics indicate that immigrants from China and India form the largest immigrant group in the city of Toronto (Metropolis: Enhancing Policy Through Research, 2009). New immigrants tend to be employed in positions that do not allow for a large number of sick days. Thus, these individuals tend to return to work sooner than their WE counterparts, thereby increasing their likelihood of engaging in long periods of physical activity immediately after hospital discharge.

Implications for Practitioners

This study provides preliminary evidence suggesting that existing self-care patient education initiatives are not culturally relevant. This may be due to a large percentage of the patient population being first-generation Canadians whose approach to self-care is influenced by their specific cultural values (Chachkes & Christ, 1996), as well as existing programs having been developed from a Western point of view. Anecdotal evidence suggests that female family members engage in the caregiver role to support the patient's home recovery. Nurses could consider including family members, in particular the primary caregiver (if this person is available), in patient education sessions. As well, nurses should consider including appropriate recovery time in pre-operative education and screen for those patients who cannot manage this recovery time.

Since a large number of non-WE study participants appear to have been engaged in activity immediately following hospital discharge, it is recommended that nurses work closely with members of the multidisciplinary team (e.g., social workers) to assist patients who are unable to get time off work in negotiating extended recovery periods with their employers and/or accessing appropriate financial resources. Nurses may also wish to stress the importance of minimizing strenuous activity during the first 3 weeks of recovery to promote healing, and thus to work closely with the patient in designing an activity program that will promote healing during work-related activities. Theoretical examination is needed to fully understand the extent to which culture influences caregiving behaviour.

The results from this study indicate a statistically significant difference between WE and non-WE individuals in terms of the number of self-care behaviours performed. Non-WE participants engaged in more work-related activities and fewer self-care behaviours than their WE counterparts immediately following hospital discharge. Continued evaluation to determine the reasons why specific cultural groups engage in specific types of behaviour is needed. In particular, focus groups promoting dialogue on the cultural relevance of existing self-care behaviours are needed.

Limitation

As there was unequal distribution across cultural groups, the groups were collapsed into WE and non-WE clusters. This made it difficult to determine individual variability between specific subgroups. For example, individuals of English, Irish, and Scottish origin were clustered into one group, yet there are subtle differences between each of these cultures that could impact on the relevance of patient education initiatives. Future research could build on this study by using a non-experimental design to determine the cultural relevance of self-care patient education materials currently being delivered following heart surgery. Use of a non-proportional quota sampling design would ensure that specific cultural groups are adequately represented in the sample, and thus allow for a more detailed understanding of the cultural relevance of patient education materials.

Conclusion

The design of current educational initiatives for heart surgery patients is based on feedback received from individuals of Western European origin. This study examined the cultural relevance of these initiatives for individuals of diverse backgrounds. The findings reveal that participants of non-Western European origin engaged in more work-related activities and fewer self-care behaviours than their Western European counterparts 1 week after hospital discharge, indicating a lack of adherence to educational recommendations. This study provides preliminary evidence suggesting that existing self-care educational initiatives may not be culturally relevant. Continued evaluation to determine why specific cultural groups engage in specific types of behaviour is needed.

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