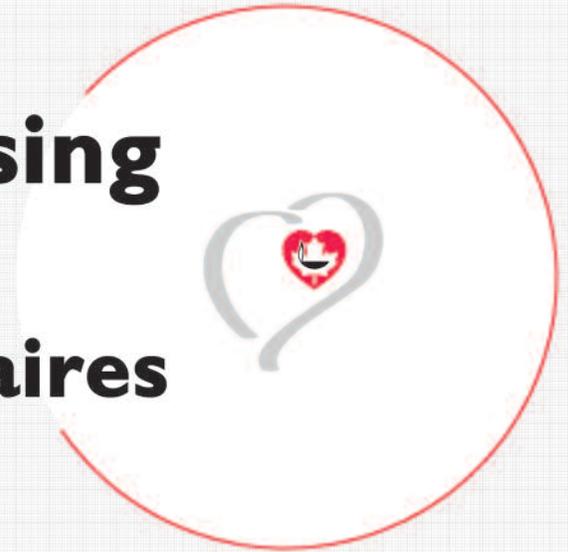


Canadian Journal of Cardiovascular Nursing

Revue canadienne de soins infirmiers cardiovasculaires



Clinical column: A Model for Teaching the Determinants of Cardiac Output
Susan Gail Morris, RN, BN, MEd, CNCC(C), CCN(C)

Rubrique clinique : Un modèle pour l'enseignement
des déterminants du débit cardiaque
Susan Gail Morris, inf., BN, MEd, CSI(C), CSIC(C)

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*Vanessa Spyropoulos, RN, BScN, MSc(A), Sylvie Ampleman, RN, BScN,
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Lynne E. Young RN, PhD, and Jackie Murray RN, MN

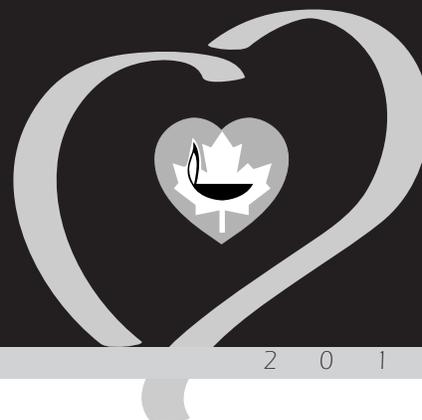
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Rubrique de recherche : S'impliquer en recherche
Davina Banner, inf., Ph.D. et Lyle G. Grant, inf., BComm, MSc, LLB

CCCN Vision Statement

Advancing cardiovascular nursing through leadership, advocacy, research and knowledge translation.

Contribuer à l'avancement des soins infirmiers cardiovasculaires par le leadership,
les activités de sensibilisation, la recherche et le transfert des connaissances.



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We had the pleasure of attending some excellent poster and oral presentations during the recent Cardiovascular Scientific Sessions and Meetings in Montreal. We were impressed by the innovative programs, and advances in nursing science through rigorous research our colleagues are doing across the country. Since only a fraction of Canadian cardiovascular nurses are able to attend the annual conference, to those who presented, please consider sharing your work with your colleagues by publishing it. If you find this a daunting task, the editorial board is here to help you.

In this issue of the **CJCN**, we have two original articles. Spyropoulos and her colleagues share their experience of developing two questionnaires for cardiac surgery patients and their caregivers to assist with appropriate discharge teaching. In the second article, Young and Murray provide us with a literature review that explored patients' perceptions of their experience of receiving primary percutaneous intervention (PCI) as a treatment for STEMI. Both of these articles have important nursing implications for patient education. ♥

N. Parent, RN, PhD
P. Price, RN, PhD
Co-Editors CJCN

Nous avons eu le plaisir d'assister à des séances d'affiches et à des exposés oraux d'excellente qualité lors de la réunion sur la santé cardiovasculaire qui a eu lieu récemment à Montréal. Nous avons été impressionnées par les programmes novateurs et les progrès en sciences infirmières, rendus possibles grâce aux travaux de recherche réalisés avec rigueur par nos collègues partout au pays. Puisque seulement une fraction des infirmières et des infirmiers œuvrant en soins cardiovasculaires peuvent assister à la conférence annuelle, nous encourageons les personnes qui ont fait une présentation à publier leurs travaux pour les partager avec leurs collègues. Si cette tâche vous semble ardue, le comité de rédaction est là pour vous aider.

Ce numéro de la **RCNC** vous propose deux articles originaux. Tout d'abord, Spyropoulos et ses collègues décrivent leur expérience d'élaboration de deux questionnaires destinés aux patients de chirurgie cardiaque et à leurs aidants, et qui visent à faciliter l'enseignement avant le congé. Dans le deuxième article, Young et Murray nous présentent une revue de la littérature qui explore les perceptions des patients qui ont vécu une intervention coronarienne percutanée, réalisée pour traiter un infarctus du myocarde avec élévation du segment ST. Ces articles ont tous deux des implications importantes pour l'enseignement au patient. ♥

N. Parent, inf., Ph.D.
P. Price, inf., Ph.D.
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Thank you to our peer reviewers

We would like to express our sincere appreciation to our peer reviewers who assisted the associate editors by reviewing manuscripts for the **Canadian Journal of Cardiovascular Nursing** during 2009–2010.

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CCCN Award Winner



**2010 Cardiovascular
Nursing Leadership
Excellence Award**

Kathy Bally,
Kingston General
Hospital

Canadian Council of Cardiovascular Nurses (CCCN) Endorses and Supports an Eli Lilly Sponsored Cardiovascular Best Practices/Knowledge Transfer and Exchange Workshop

The CCCN Board of Directors has accepted an invitation from Linda Chow, BSc(Pharm), MBA, Manager, Strategic Partnership Group (West) for Eli Lilly Canada, to collaborate on developing and participating in a forum that will bring cardiovascular (CV) care providers from acute care facilities in Alberta (AB) and British Columbia (BC) together for a CV Best Practices (BP) Knowledge Transfer and Exchange (KTE) Workshop. CCCN's role involves providing a co-chair and encouraging CCCN members to champion/participate in this event.

I am delighted that Dr. Martha Mackay, PhD, RN, CCN(C), an active CCCN member, has agreed to represent CCCN as a co-chair for this initiative. Dr. Mackay is currently the Clinical Nurse Specialist (CNS) in Cardiology in the provincial heart centre, part of the Providence Heart and Lung Institute at St. Paul's Hospital in Vancouver, B.C. She was the recipient of a CIHR Clinical Research Fellowship, and currently holds a new investigator fellowship in cardiovascular outcomes from Cardiac Services B.C. She has been practising for 30 years in critical care and cardiac nursing, with many years as critical care nursing educator, and the past 13 years as a CNS. She is a member of the



Dr. Martha Mackay

UBC/Providence Health Care Research Ethics Board, the Michael Smith Foundation for Health Research Nursing Research Advisory Committee. She is a member of the *Dynamics of Critical Care* Editorial Review Board and is also a periodic reviewer for several other journals, including *Circulation* and *Canadian Journal of Cardiovascular Nursing*. Her research interests include sex and gender differences in symptoms of acute coronary syndromes, ethnic differences in symptoms of, and outcomes from ischemic heart disease, and helping patients to improve their risks for heart disease, and she has several publications in these areas.

Dr. Mackay will be joined by Co-chair Dr. Blair O'Neil, President of the Canadian Cardiovascular Society and for this initiative representing the Mazankowski Alberta Cardiac Institute where he is Divisional Director, Division of Cardiology and Professor of Medicine. With the additional support of Linda Chow, Eli Lilly and representatives from Alberta Innovates—Health Solutions (ABIHS) and the Michael Smith Foundation for Health Research (MSFHR), they will work to bring this initiative to fruition, beginning with the first workshop on February 4–5, 2011. The aim of this pilot project is to bring CV practitioners together (first in Vancouver and later in the year in Edmonton) for sessions where attendees will share BPs and, with the help of a facilitator, reach consensus on one or two specific practices that all will work to implement in their home sites. Ongoing project management will be through the combined efforts of ABIHS and MSFHR, as participants reconnect to learn and teach one another throughout the process.

The expected outcome is that this pilot will be a success and that the initiative will gain momentum and spread to other regions of the country.

For more information please contact Rody Pike, National CCCN Professional Education Chair (709) 777-6886 or rodolfo.pike@easternhealth.ca ♥

Submitted by
Jocelyn Reimer-Kent, RN, MN
CCCN National President

Hold the Dates:

- May 13, 2011—CCN Spring Annual National Nursing Conference “Update your Cardiovascular Nursing Toolkit”, Halifax, NS. More details pending
- October 23–25, 2011—CCCN Fall Annual General Meeting and Scientific Sessions, Vancouver, BC. More details pending

CCCN receives three Certificate of Excellence Awards from Hypertension Canada



Sandra Matheson, National Conference Chair, Jocelyn Reimer-Kent, National CCCN President, Dorothy Morris, National Health Promotion Chair

Hypertension is a leading cause of heart disease, stroke, disability and death in the world, and the Canadian Council of Cardiovascular Nurses (CCCN), through its national health promotion and advocacy work, is doing its part in addressing this silent killer.

As the voice for cardiovascular (CV) nursing in Canada, CCCN has collaborated over the years with organizations that share its vision in promoting the health and well-being of Canadians. CCCN strives to embody its Health Promotion and Advocacy slogan *“Health Promotion starts with us”*. These words help guide CCCN policy and action and CCCN encourages CV nurses to practise what they teach their patients and take care of their own health by increasing physical activity, minimizing stress, choosing healthy foods and choosing to be tobacco-free. This slogan also encompasses the role CCCN believes CV nurses need to play in addressing the multiple social determinants of health so that all Canadians can achieve the highest levels of health and well-being.

CCCN’s health promotion and advocacy work takes multiple forms such as organizing/participating in

group walks/runs; holding blood pressure clinics; collaborating on establishing policies and evidence-based guidelines with organizations such as Hypertension Canada’s blood pressure guidelines, the sodium reduction policy, and the Heart and Stroke Foundation’s Health Check Symbol for food labelling and restaurant menus; and developing/disseminating educational materials to increase awareness of hypertension and its management among nurses and other health care providers.

At the 2010 International Society of Hypertension meetings, CCCN’s efforts were recognized by Hypertension Canada, as they bestowed upon them three Certificate of Excellence Awards. One of the certificates of excellence was awarded to the organization itself, while the other two were given to two CCCN executive members, Dorothy Morris, current national CCCN Health Promotion and Advocacy Chair, and Sandra Matheson, immediate past national CCCN Health Promotion and Advocacy Chair. Morris and Matheson have been Canadian nurse leaders in their collaboration with Hypertension Canada over the past decade in developing and disseminating evidence-based recommendations for the management of hypertension throughout Canada. ♥

For more information, please contact:
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 Web: www.cccn.ca

	<h3 style="margin: 0;">Nursing Rounds Schedule 2011</h3> <h4 style="margin: 0;">11:30–12:30 Pacific time webinar sessions</h4>	
<p>Jan. 17 Talking to Patients about Their Mood Dr. Colleen Canon, Clinical Psychologist, Heart Centre</p> <p>Feb. 21 Acute Heart Failure Jen Kealy, Patient/Nurse Educator, Acute Heart Failure Shona Wilson, Nurse Educator, CCU</p> <p>Mar. 21 Atrial Fibrillation Clinic Evaluation Sonia Basi, Pharmacist, AFib Clinic Serena Kutcher, Patient Educator, AFib Clinic</p>	<p>Apr. 18 Minimally Invasive Cardiac Surgery Jackie Forman, Nurse Educator, Cardiac Surgery</p> <p>May 16 Provincial Heart Failure Strategy Bonnie Caitlin, Clinical Nurse Specialist, Heart Failure</p> <p>Jun. 20 Electrophysiology Studies and Ablations Jen Lindenberg, Nurse Educator, Interventional Cardiology</p>	<p>Jul. 18 Heart Transplants Susanne Nixon, Clinical Nurse Specialist, Heart Transplant</p> <p>Sep. 19 Emergency Cardiac Care Dr. Martha Mackay, Clinical Nurse Specialist, ACS</p> <p>Nov. 21 Pacemakers and ICDs Sandra Lauck, Clinical Nurse Specialist, Arrhythmia</p>
<p><i>For more information, email: sessions.heartcentrewebinar@providencehealth.bc.ca</i></p>		

Canadian
Council of
Cardiovascular
Nurses



Conseil canadien
des infirmières et
infirmiers en soins
cardiovasculaires

2011 CCCN Scientific Sessions CALL FOR ABSTRACTS

in conjunction with the
Canadian Cardiovascular Congress
Vancouver, British Columbia: October 23–25, 2011

CCCN is announcing a Call for Abstracts related to any aspect of cardiovascular and/or cerebrovascular nursing for presentation at the Scientific Sessions of the Canadian Council of Cardiovascular Nurses in Vancouver, British Columbia from October 23–25, 2011.

Submissions are invited for presentation in English or French. Please indicate on the abstract form the language in which you would like to present.

Abstracts are invited in **four** presentation options:

- ♥ **Workshop:** Workshop presenters will offer an interactive discussion and analysis of a clinical topic or clinical practice issue in a forum lasting 50–60 minutes. The abstracts for the workshop sessions must meet the same criteria as the other submissions, and must outline the educational objectives, proposed content area and method of presentation (i.e., case study, multiple choice questions) for attendees to interact with one another and the presenters.
- ♥ **Oral:** Paper presentations will be 15 minutes in length with 5 minutes for questions.
- ♥ **Poster:** Posters will be displayed for one day of the two days of the CCCN conference. Presenters will be requested to be available at their poster location for 30 minutes on one of the two days. Poster presenters **may** be selected by the abstract review committee to present their poster in a moderated oral poster session.
- ♥ **Oral or poster:** Submitter is willing to have their abstract considered by the abstract review committee for either an oral or poster format.

Submissions will be peer-reviewed in one of two broad categories: research and non-research. An abstract submission will be reviewed in the “research” category if it describes some aspect of an original piece of research. The “non-research” category includes theoretical, clinical application, literature reviews, etc. (i.e., submissions that do not describe an original piece of research). Clinical topics are strongly encouraged.

Please note, CCCN has an online submission process and all abstracts **must** be submitted on the CCCN web site at www.cccn.ca. Online submission will open February 1, submission deadline is February 15 at 2400 hours. For more information, visit the website or contact ccnabstracts@rcpsc.edu.

Deadline: February 15, 2011

Please note: Abstracts that have been previously presented at CCCN Scientific Sessions will not be accepted. Should an abstract be accepted for presentation at CCCN Scientific Sessions in Vancouver, it may not be presented in duplicate at any other national conference before or within three months following presentation at CCCN.



Demande de communications pour 2011 séances scientifiques du CCIISC

dans le cadre du Congrès canadien sur la santé cardiovasculaire
Vancouver (Columbie-Britannique) 23 au 25 octobre, 2011

Le Conseil canadien des infirmières et infirmiers en soins cardiovasculaires invite la soumission de communications traitant de n'importe quel aspect des soins infirmiers cardiovasculaires ou cérébrovasculaires, lesquelles seront présentées dans le cadre des séances scientifiques du CCIISC qui auront lieu à Vancouver, du 23 au 25 octobre, 2011.

Les communications peuvent être présentées en français ou en anglais. Veuillez indiquer sur le formulaire de demande dans quelle langue vous souhaitez faire votre présentation.

Les communications peuvent être présentées dans l'un de **quatre** formats :

- ♥ **Atelier** : L'atelier fournira l'occasion de participer à une discussion et à une analyse interactive portant sur un sujet clinique ou un sujet lié à la pratique professionnelle dans le contexte d'un forum de 50 à 60 minutes. Les communications destinées aux ateliers doivent satisfaire aux mêmes critères que les autres communications présentées; en outre, les objectifs pédagogiques, le contenu projeté et le mode de présentation (par exemple, étude de cas, questions à choix multiples) doivent être précisés afin de permettre aux participants d'interagir entre eux et avec le présentateur.
- ♥ **Exposé oral** : La présentation du rapport durera 15 minutes et sera suivie d'une période de questions de 5 minutes.
- ♥ **Affiche** : Les affiches seront exposées à l'une des 2 journées de la conférence du CCIISC. Les personnes qui les présenteront devront se trouver sur les lieux de leur affichage 30 minutes au cours de la journée. Certaines affiches pourraient être identifiées par le comité scientifique pour faire l'objet d'une courte présentation orale avec un modérateur.
- ♥ **Exposé oral ou affiche** : Les personnes qui soumettent une demande acceptent que le comité scientifique décide si les affiches feront l'objet d'une présentation orale ou d'une séance d'affichage.

Les communications feront l'objet d'une évaluation par le comité scientifique afin d'être réparties en deux grandes catégories: sujet de recherche et sujet autre que la recherche. Une communication sera incluse dans la catégorie « recherche » si elle décrit un aspect de travail de recherche original. La catégorie « autre que la recherche » comprend les sujets théoriques, les applications cliniques, les revues de littérature, etc. (c'est-à-dire les communications ne portant pas sur un travail de recherche original). Le choix d'un sujet clinique est fortement encouragé.

Veuillez prendre note que le CCIISC emploie un processus de soumission en ligne. Toutes les communications **doivent** donc être soumises par l'intermédiaire du site du CCIISC au www.ccn.ca. Pour de plus amples renseignements, visitez le site Web ou communiquez avec nous par courriel à l'adresse ccnabstracts@rcpsc.edu ou par téléphone au (613) 730-2573.

Date limite : 15 février 2011

À noter : les communications déjà présentées dans le cadre des séances scientifiques du CCIISC ne seront pas acceptées. En outre, si une communication est acceptée pour les séances scientifiques du CCIISC qui se dérouleront à Vancouver, la même communication ne pourra être présentée lors d'aucune autre conférence nationale dans les trois mois qui précéderont et qui suivront les séances scientifiques du CCIISC.



A Model for Teaching the Determinants of Cardiac Output

Susan Gail Morris, RN, BN, MEd, CNCC(C), CCN(C)

There is an abundance of literature to support the observation that decision-making among novice nurses occurs in a linear and task-oriented fashion (Benner, 1984; Benner, Hooper-Kyriakidis, & Stannard, 1999; Tanner, 2006; Yancey, 2005). Traditionally, over a period of time (one to five years), clinical experience and mentorship allowed the novice nurse to move from reliance on abstract principles to application of concrete experience (Benner, 1984). This tradition is being forced out by the changes in the Canadian health care system. The current nursing shortage has changed hiring practices and nurse managers often hire graduate nurses directly into critical care areas. As clinical nurse educators (CNE), we must rethink our continuing education strategies and acquire the facilitation tools to expedite the critical thinking process. Gillespie and Paterson (2009) assert "It is clearly not feasible to simply wait for nurses to develop sufficient experiential knowledge to ensure that their decisions will be accurate and safe" (p. 164).

What tools are available to clinical nurse educators to assist with this change in continuing education practice? The discussion that follows will look at one aspect of cardiovascular nursing education: understanding hemodynamic concepts. The author will offer clinical nurse educators and senior preceptors a model for teaching the determinants of cardiac output that is comprehensive, portable, cost effective, and has the ability to foster critical thinking. To promote the leap from linear decision-making to a more complex critical approach, nurses must be in an environment that fosters growth and is free of judgment (Duchscher, 2003). Clinical nurse educators can play a pivotal role.

The model for understanding the hemodynamic concepts of heart rate, preload, afterload and contractility builds on undergraduate foundational knowledge. The CNE and novice nurse work together to paint the clinical picture of what low cardiac output looks like. The four determinants of cardiac output would be reviewed, allowing the novice nurse to consider complex decisions regarding the need for manipulation of these four determinants. Following this model, a discussion on specific facilitation techniques for hemodynamic concepts is offered.

Problem: Decreased Cardiac Output

1. Assess heart rate and rhythm. Is the rate too slow or too fast, regular or irregular? Does the patient require pharmacological rate control, vagal manoeuvres, or cardiac pacing? Correct heart rate. If cardiac output remains low, proceed to step 2.
2. Assess preload. Does the patient need volume or pharmacologic intervention? Correct volume abnormalities with fluid or medication (e.g., lasix, nitroglycerin). If cardiac output remains low, proceed to step 3.
3. Assess afterload. Does the patient require vasoconstriction (dopamine, epinephrine, norepinephrine, phenylephrine) or vasodilatation (milrinone, dobutamine, alpha blockers, nitroprusside, Intra-Aortic Balloon therapy)? If cardiac output remains low, proceed to step 4.
4. Following manipulation of heart rate, preload or afterload, the final parameter that can affect cardiac output is contractility. Is positive inotropic and left ventricular support needed (dobutamine, milrinone, epinephrine, IABP, LVAD, or transplantation)?

Tools and Equipment Required

Heart rate. Through facilitated discussion between the CNE/preceptor and the novice nurse, an understanding of the importance of diastolic filling time and the effects of tachycardia and bradycardia can be achieved. This activity may encourage the novice nurse to move away from task-oriented linear thinking to a more analytical approach that is critical in nature.

Preload. The sample graph below allows the novice nurse to better understand preload and the Frank Starling Law of the heart. The Starling Law suggests the strength of ventricular contraction is increased when the ventricle is stretched prior to contraction (Woods, Froelicher, Motzer, & Bridges, 2005). The CNE and novice nurse work together to produce a visual image of a patient's optimal left heart preload. This graph is a tool that is easily reproduced, allowing the novice nurse repeated use until understanding of preload is achieved. A comprehensive discussion regarding the differences between right and left heart preload should occur prior to the exercise.

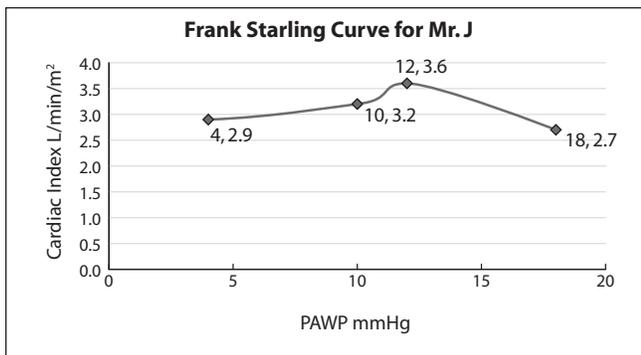


Figure 1: Sample case study and graph

Mr. J. is admitted to the CVICU following a CABG X 5 using his LIMA and RSV. His cardiac index (vertical axis) is 3.2 l/min/m² and his PAWP (horizontal axis) is 10 mmHg on arrival (plot on graph). As body temperature increases to 38.1 degrees Celsius and vasodilatation occurs, the cardiac index drops to 2.9 l/min/m² and the PAWP drops to 4 mmHg (plot on graph). The physician orders a 500 ml fluid bolus. The readings following the fluid bolus: cardiac index increases to 3.6 l/min/m² and the PAWP increased from 4 to 12 mmHg (plot on graph). The physician wants to challenge the patient's heart further and orders another 500 ml fluid bolus. The readings following the second bolus: cardiac index 2.7 l/min/m² and the PAWP is 18 mmHg. Critical thinking questions include: What is this patient's optimal preload and why? Did you observe any clinical changes? Did we exceed the optimal numeric value? What could the RN have done to prevent this? If this patient did not have a pulmonary artery catheter, name some strategies that would evaluate preload (past medical history, physical exam, clinical presentation, cath reports (LVEDP), echo reports). What is the difference between right heart and left heart preload?

Afterload. The facilitation method for assisting with afterload education is adopted from an article by Petersen (2001). The following equipment is required: a 3 ml syringe, glass of water, 20-gauge needle and a 27-gauge 1.5 inch needle along with an absorbent pad.

Normal stroke volume and normal ejection fraction can be simulated by filling a 3 ml syringe with 1.5 ml of fluid and asking the novice nurse to hold the syringe between the middle finger and thumb. The novice nurse would be asked to eject the water from the needle-free syringe, thus simulating normal ejection fraction. To assist in replicating hypertension without volume overload, a 20-gauge needle is added to the syringe filled with 1.5 ml of water and "ejection" is repeated.

To simulate volume overload, the syringe is filled past the 3-ml mark (allowing the plunger to become flimsy),

ensuring only one hand is used to eject contents. The CNE and novice nurse would examine the length of time required to eject contents (resistance) and discuss the effect of tachycardia and how it perpetuates the problem of fluid overload.

The final exercise examines the clinical condition of aortic stenosis. Filling the syringe past the 3-ml mark replicates the volume overload (often seen in critical aortic stenosis) and the smaller 27-gauge needle replicates the stenotic valve. This final exercise is very effective at demonstrating the high afterload of aortic stenosis and will often stimulate a discussion on the limited treatment options available for patients with this condition.

Contractility. The CNE/preceptor and novice nurse review the previous steps: assessing heart rate, preload and afterload. If the cardiac output remains low, then the process of elimination leads the novice nurse to now consider the fourth determinant of cardiac output: contractility.

A discussion regarding ejection fraction (EF) and echocardiography as the gold standard for assessment should occur at this time. The equation for calculating EF is: stroke volume (SV) (calculated by end diastolic volume **minus** end systolic volume) divided by end diastolic volume. The CNE provides the novice nurse with normal values and asks for a calculation: SV = 70 ml and EDV = 120 ml (70/120) = 0.583 or 58%. Smaller SV and higher end diastolic volumes parameters are provided to allow the novice nurse to link the numeric values with the clinical picture.

The final discussion surrounding inotropic support and ventricular assist devices should occur at this time. Providing the novice nurse with a "cheat sheet" of common drugs, their action, and dose ranging will assist in decision-making for titration according to clinical condition.

Conclusion

This four-step model for manipulating cardiac output has proved successful in practice. It offers the CNE a cost-effective teaching strategy that can be applied at the bedside instead of a formal classroom. The accompanying discussion can be as simple or as complex as required. It can be repeated as the novice nurse progresses in ability, confidence, and patient acuity. The CNE does play a pivotal role in the integration of novice nurses into critical care areas where creativity, flexibility and ingenuity can lead to enhanced patient safety. ♥

References

References can be found on page 12.



Un modèle pour l'enseignement des déterminants du débit cardiaque

Susan Gail Morris, inf. aut., BN, MEd, CSI(C), CSIC(C)

De nombreux articles publiés rapportent l'observation selon laquelle la prise de décision chez les infirmières novices suit un parcours linéaire qui est davantage axée sur les tâches (Benner, 1984; Benner, Hooper-Kyriakidis et Stannard, 1999; Tanner, 2006; Yancey, 2005). Traditionnellement, l'expérience clinique et le mentorat permettaient à l'infirmière novice de passer des principes abstraits jusqu'à l'application de l'expérience concrète, au cours d'une période qui s'échelonnait entre 1 à 5 ans (Benner, 1984). Aujourd'hui, ce processus d'intégration des connaissances est en voie d'être abandonné due aux changements du système de soins de santé canadien. En effet, la pénurie actuelle en main d'œuvre infirmière a changé les pratiques d'embauche et les infirmières gestionnaires engagent souvent des infirmières nouvellement diplômées pour travailler directement dans les soins intensifs. Les infirmières cliniciennes enseignantes doivent revoir leurs stratégies de formation continue et utiliser les outils qui faciliteront l'intégration du processus de la pensée critique. Gillespie et Paterson (2009) soutiennent que, « de toute évidence, il n'est pas plausible de simplement attendre que les infirmières acquièrent assez de connaissances empiriques pour garantir qu'elles prendront des décisions correctes et sans danger » (traduction libre) (p. 164).

Quels sont les outils disponibles aux infirmières cliniciennes enseignantes afin qu'elles puissent s'adapter à ce changement en matière de formation continue? La discussion qui suit portera sur un aspect particulier de l'enseignement des soins cardiovasculaires : la compréhension des concepts de l'hémodynamie. L'auteure propose aux infirmières cliniciennes enseignantes et aux précepteurs

expérimentés un modèle d'enseignement sur les déterminants du débit cardiaque. Ce modèle est à la fois complet et transférable, il offre un bon rapport coût-efficacité et facilite l'intégration de la pensée critique. Afin de promouvoir ce passage de la prise de décision linéaire jusqu'à la démarche critique plus complexe, les infirmières doivent exercer dans un environnement qui favorise le développement et qui est exempt de tout jugement (Duchscher, 2003); les infirmières cliniciennes enseignantes peuvent jouer un rôle déterminant à cet égard.

Le modèle utilisé pour comprendre les concepts hémodynamiques que sont la fréquence cardiaque, la précharge, la postcharge et la contractilité s'appuie sur des connaissances de base acquises au premier cycle. Dans un premier temps, l'infirmière enseignante et l'infirmière novice unissent leurs connaissances pour décrire le profil clinique d'un bas débit cardiaque. Les quatre déterminants du débit cardiaque sont évalués, afin de permettre à l'infirmière novice de saisir la complexité de la décision entourant la nécessité de manipuler ces quatre déterminants. Par la suite, une discussion s'en suit sur les techniques spécifiques qui facilitent la compréhension des concepts d'hémodynamie.

Problème : bas débit cardiaque

1. Évaluez la fréquence et le rythme cardiaque. La fréquence est-elle trop lente ou trop rapide; le rythme est-il régulier ou irrégulier? Le patient requiert-il un contrôle pharmacologique pour corriger la fréquence ou le rythme cardiaque, d'une manœuvre vagale ou d'un entraînement cardiaque? Corrigez la fréquence cardiaque. Si le débit cardiaque demeure bas, passez à la deuxième étape.

- Évaluez la précharge. Le patient a-t-il besoin d'un apport en volume ou d'une intervention pharmacologique? Corrigez les anomalies du volume à l'aide de liquide ou de médicaments (p. ex. furosémide, nitroglycérine). Si le débit cardiaque demeure bas, passez à la troisième étape.
- Évaluez la postcharge. Le patient a-t-il besoin d'une vasoconstriction (dopamine, épinéphrine, norépinéphrine, phényléphrine) ou d'une vasodilatation (milrinone, dobutamine, alphabloquant, nitroprussiate, contrepulsion par ballonnet intra-aortique). Si le débit cardiaque demeure bas, passez à la quatrième étape.
- Après avoir manipulé la fréquence cardiaque, la précharge et la postcharge, le dernier paramètre qui peut agir sur le débit cardiaque est la contractilité. Est-il nécessaire de fournir un soutien inotrope positif et un soutien ventriculaire gauche (dobutamine, milrinone, épinéphrine, contrepulsion par ballonnet intra-aortique, dispositif d'assistance ventriculaire gauche ou transplantation)?

Outils et matériel requis

Fréquence cardiaque. Afin de mieux comprendre l'importance du temps de remplissage diastolique et des effets de la tachycardie et de la bradycardie, il est important que l'infirmière clinicienne enseignante (ou préceptrice) et l'infirmière novice aient ensemble une discussion approfondie sur ces notions. Cette activité permettra à l'infirmière débutante de s'éloigner de la pensée linéaire axée sur les tâches afin de réaliser une démarche plus analytique et de nature critique.

Précharge. Le graphique ci-dessous aide l'infirmière novice à mieux comprendre les notions de la précharge et de la loi de Frank Starling. Selon la loi de Starling, la force de la contraction ventriculaire augmente quand le ventricule est étiré avant la contraction (Woods, Froelicher, Motzer et Bridges, 2005). L'infirmière clinicienne enseignante et l'infirmière novice élaborent ensemble une image visuelle de la précharge optimale pour le cœur gauche. Ce graphique est un outil facile à reproduire que l'infirmière novice peut utiliser à répétition jusqu'à ce qu'elle ait une bonne compréhension de la précharge. Avant de faire cet exercice, il est conseillé d'avoir une discussion détaillée sur les différences entre la précharge du cœur gauche et celle du cœur droit.

M. J. a été admis à l'unité de soins intensifs cardiovasculaires après un quintuple pontage coronarien avec des greffons de l'artère mammaire interne gauche et de la veine saphène droite. À l'arrivée, son index cardiaque

(axe vertical) est de 3,2 L/min/m² et sa pression capillaire pulmonaire bloquée (PCPB) (axe horizontal) est de 10 mm Hg (indiquer sur le graphique). Alors que sa température corporelle augmente jusqu'à 38,1 degrés Celsius et qu'une vasodilatation se produit, son index cardiaque chute à 2,9 L/min/m² et sa PCPB, à 4 mm Hg (indiquer sur le graphique). Le médecin lui prescrit 500 mL de soluté en bolus. Après cette perfusion rapide, les résultats sont : une hausse de l'index cardiaque jusqu'à 3,6 L/min/m² et une hausse de la PCPB qui passe à 12 mm Hg (indiquer sur le graphique). Le médecin décide alors de soumettre le cœur à une nouvelle action et prescrit un autre 500 mL de soluté en bolus. Les résultats sont alors les suivants : index cardiaque de 2,7 L/min/m² et PCPB de 18 mm Hg. Les questions qui font appel à la pensée critique seraient, entre autres : Quelle est la précharge optimale pour ce patient et pourquoi? Avons-nous constaté des changements cliniques? Avons-nous dépassé la valeur numérique optimale? Quelles auraient été les actions de l'infirmière pour prévenir cette situation? Si le patient n'avait pas eu de cathéter dans l'artère pulmonaire, quelles auraient été quelques-unes des stratégies pour évaluer la précharge (antécédents médicaux, examen physique, tableau clinique, rapports de cathétérisme [pression ventriculaire gauche en fin de diastole], rapports d'échographie). Quelle est la différence entre la précharge du cœur droit et celle du cœur gauche?

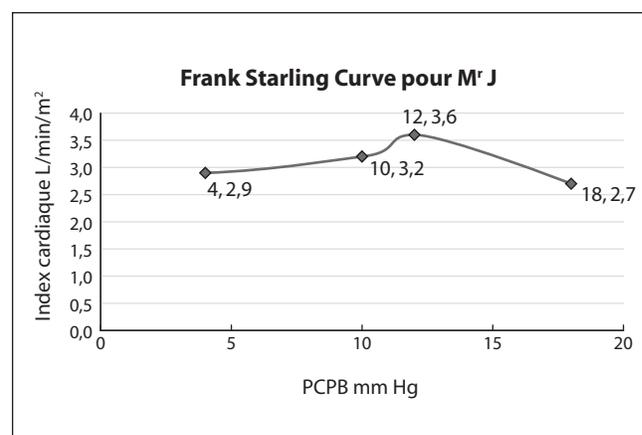


Figure 1 : Exemple d'étude de cas et graphique

Postcharge. La méthode qui facilite l'enseignement de la postcharge a été décrite dans un article de Petersen (2001). Le matériel requis est le suivant : une seringue de 3 mL, un verre d'eau, une aiguille de calibre 20 (20 G) et une aiguille de calibre 27 et de 1 ½ po de longueur et un tampon absorbant.

Pour simuler le volume d'éjection systolique normal et la fraction d'éjection normale, on remplit une seringue de 3 mL avec 1,5 mL de liquide, puis on demande à l'infirmière novice de tenir la seringue entre le majeur et le pouce. Elle doit ensuite éjecter

l'eau qui se trouve dans la seringue sans aiguille, ce qui correspond à une fraction d'éjection normale. Pour simuler l'hypertension sans surcharge volumique, une aiguille de calibre 20 est fixée à la seringue qui contient 1,5 mL d'eau et « l'éjection » est répétée.

Pour simuler la surcharge volumique, on remplit la seringue au-delà de la marque indiquant 3 mL (de sorte que le piston devient instable), puis on s'assure que le contenu est éjecté à l'aide d'une seule main. Ensuite, l'infirmière clinicienne enseignante et l'infirmière novice examinent le temps requis pour éjecter le contenu (résistance), puis elles discutent des effets de la tachycardie et de la façon dont celle-ci maintient le problème de la surcharge volumique.

Le dernier exercice sert à examiner la condition clinique de la sténose aortique. Le remplissage de la seringue au-delà de la ligne correspondant à 3 mL simule la surcharge volumique (souvent constatée dans les cas de sténose aortique sévère), tandis que l'aiguille de calibre 27, plus petite, tient lieu de la valve sténosée. Ce dernier exercice s'avère très efficace pour démontrer l'ampleur de la postcharge qui est présente lors d'une sténose aortique, et donne lieu à une discussion sur le peu d'options thérapeutiques qui s'offrent aux patients atteints de ce trouble.

Contractilité. L'infirmière clinicienne enseignante (ou préceptrice) et l'infirmière novice revoient les étapes précédentes : évaluation de la fréquence et du rythme cardiaques, de la précharge et de la postcharge. Si le débit cardiaque demeure bas, le processus d'élimination conduit l'infirmière novice à examiner le quatrième déterminant du débit cardiaque, celui de la contractilité.

À cette étape de l'enseignement du débit cardiaque, les méthodes d'évaluation dites « gold-standard » que sont l'évaluation de la fraction d'éjection (FÉ) et l'échocardiographie, doivent être revues. La formule pour évaluer la FÉ est: volume systolique (VS) (calculé

en prenant le volume télédiastolique [VTD] et en y **soustrayant** le volume téléystolique) divisé par volume télédiastolique. L'infirmière clinicienne enseignante transmet les valeurs normales à l'infirmière novice et lui demande de faire un calcul : si le VS = 70 mL et le VTD = 120 mL, la FÉ (soit $70/120 = 0,583$, ou 58 %). Cet exercice est repris avec des valeurs plus petites pour le VS et plus grandes pour le VTD afin de permettre à l'infirmière novice de faire le lien entre les valeurs numériques et le tableau clinique.

La discussion ultime concernant la nécessité d'un soutien par un agent inotrope et d'une assistance ventriculaire devrait avoir lieu à cette étape. Une feuille « aide-mémoire » précisant les médicaments habituellement utilisés, leur mode d'action et les limites supérieures et inférieures permises des médicaments, servira de guide à l'infirmière novice pour la soutenir dans ses décisions sur le calibrage des médicaments en fonction de l'état clinique du patient.

Conclusion

L'utilisation de ce modèle qui comporte quatre étapes pour mieux comprendre le débit cardiaque s'est avéré bénéfique pour la pratique clinique. Il permet à l'infirmière clinicienne enseignante d'utiliser une stratégie d'enseignement rentable qui peut être mise en pratique au chevet plutôt que dans une salle de classe. Ce modèle d'enseignement engendre des discussions qui peuvent être simples mais tout autant complexes selon la pertinence de la situation clinique. Les discussions peuvent être reprises quand l'infirmière novice améliore sa compétence, sa confiance en soi et son acuité dans l'évaluation des besoins des patients. L'infirmière clinicienne enseignante peut jouer un rôle déterminant dans l'intégration des infirmières novices sur les unités de soins intensifs, où l'innovation, la flexibilité et l'ingéniosité peuvent accroître la sécurité du patient. ♥

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Cardiac Surgery Discharge Questionnaires: Meeting Information Needs of Patients and Families

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Tailoring discharge teaching information to the unique learning needs of cardiac surgery patients and their caregivers may improve information acquisition and retention and positively influence the transition home for these individuals. Two questionnaires were developed, one for adult cardiac surgery patients, and one for their caregivers, to explore their self-identified information needs regarding discharge teaching information. The questionnaires were adapted from the Patient Learning Needs Scale of Bubela et al. (1990). The content of the questionnaires was based on informal discussions with patients and their caregivers and nurses of the cardiac surgery department of a university teaching hospital. In addition, previous research exploring discharge teaching content post cardiac surgery and perceived discharge information needs of this population was reviewed. Preliminary testing of the tools indicated content validity. The questionnaires may enhance the efficiency and quality

of discharge teaching, as they enable nurses to address the unique information needs of patients and caregivers. This, in turn, may assist patients and caregivers to cope with the transition home. Formal piloting and evaluation of the tools with all stakeholder groups is indicated, in order to determine the effectiveness of the questionnaires and to evaluate and validate their content and format.

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Key words: cardiac patients, heart surgery, patient discharge education, family, caregivers, structured questionnaires

Questionnaires pour le congé après une chirurgie cardiaque : Répondre aux besoins des patients et des familles en matière d'information

En adaptant l'enseignement effectué lors du congé de l'hôpital aux besoins particuliers des patients qui ont subi une chirurgie cardiaque et de leurs aidants, il est possible d'améliorer l'acquisition et la rétention des connaissances, en plus d'avoir un effet positif sur le retour à domicile. Deux questionnaires ont été élaborés, un premier pour les adultes qui subissent une chirurgie cardiaque et un deuxième pour leurs aidants, dans le but d'explorer leurs besoins spécifiques en matière d'information liée à l'enseignement lors du congé. Les questionnaires ont été adaptés à partir de l'échelle des besoins d'apprentissage du patient (Patient Learning Needs Scale) de Bubela et collaborateurs, 1990. Le contenu des questionnaires est fondé sur des

discussions informelles auxquelles ont pris part les patients, leurs aidants et le personnel infirmier du département de chirurgie cardiaque d'un hôpital universitaire. En outre, les auteurs ont passé en revue les travaux de recherche antérieurs portant sur le contenu de l'enseignement effectué au congé après une chirurgie cardiaque et sur les perceptions des besoins en matière d'information lors du congé. Des tests préliminaires sur les outils ont confirmé la validité de contenu. Les questionnaires pourraient augmenter l'efficacité et la qualité de l'enseignement fait au congé, car ils permettent aux infirmières de se concentrer sur les besoins d'information spécifiques des patients et de leurs aidants ce qui pourrait, par la suite, faciliter le retour à domicile. Une étude pilote et une évaluation des outils auprès des groupes concernés sont indiquées pour déterminer l'efficacité des questionnaires ainsi que pour en évaluer et en valider le contenu et la présentation.

Nurses provide discharge teaching to adult cardiac surgery patients and their families in order to prepare these individuals for recovery at home (Lenz & Perkins, 2000). The literature indicates that tailoring information to the unique learning needs of individuals is a useful approach to improve discharge teaching for this patient population and their family caregivers (Fredericks, Ibrahim, & Puri, 2009b). It is anticipated that such efforts will positively influence the transition home for patients and their families.

At this time, no guideline or tool was found to explore the self-identified learning needs of cardiac surgery

patients and their caregivers regarding discharge teaching information. In this article, the authors describe the process of developing the Cardiac Surgery Patient Discharge Questionnaire and the Cardiac Surgery Discharge Questionnaire for Families. First, the literature on discharge teaching in a cardiac surgery setting is reviewed; the issues that emerged informed the development of the tool. Second, the methods used to design the clinical tool are described, followed by a critique of the tool, clinical implications, and recommendations for further development.

Literature Review

Background information. The discharge teaching process of cardiac surgery patients and their family caregivers is hindered by several factors. Reduced hospital stays restrict the amount of time that nurses may engage in discharge teaching (Brennan et al., 2001; Klein-Fedyshin, Burda, Epstein, & Lawrence, 2005; Worth, Tierney, & Watson, 2000). The retention of new information by patients and their caregivers is limited, as fewer opportunities exist to provide information and respond to individual concerns (Hartford, 2005; Lenz & Perkins, 2000).

The intense emotional responses in confronting cardiac surgery also negatively influence the discharge teaching learning process. Patients perceive cardiac surgery as an overwhelming experience (Stengrevics, 1997; Theobald & McMurray, 2004), and cardiac events give rise to stress, anxiety, and depression for patients and caregivers (Davies, 2000a; Davies, 2000b; Fredericks, 2009; Lenz & Perkins, 2000; Leske & Pelczynski, 1999). High anxiety levels can block the acquisition, retention, and recall of discharge information for patients and families (Davies, 2000a; Fredericks, 2009; Fredericks & Sidani, 2008; Hartford, 2005).

It is not surprising that several studies have reported that adult cardiac surgery patients and their family caregivers are not satisfied with discharge teaching received in hospital, nor do they feel adequately prepared for the return home (Davies, 2000a; Davies, 2000b; Leske & Pelczynski, 1999; Theobald & McMurray, 2004). The reduced amount of time available for teaching (Davies, 2000b) and heightened anxiety levels in patients and family members (Davies, 2000a) were identified as contributing factors. Methods of improving discharge preparation thus merit further consideration.

The nurse leaders of a cardiac surgery unit of a university teaching hospital wanted to explore new ways to improve the discharge teaching process on their unit. Nurses on this unit were using different teaching strategies, such as a written booklet, verbal explanations, and a follow-up phone call post discharge. However, patients and their family caregivers were not found to consistently retain the information provided to them, findings echoed in the literature (Klein-Fedyshin et al., 2005; Lee, Wasson, Anderson, Stone, & Gittings, 1998).

In addition, patients, family members, and nurses on this unit often differed in their preferences for discharge teaching content. Previous research has demonstrated variability among coronary artery bypass graft (CABG) patients regarding their discharge information needs (Jickling & Graydon, 1997), differences in perceived information needs between patients and their spouses following a cardiac event (Moser, Dracup, & Marsden, 1993), and differences between nurses' and cardiology patients' perceptions about discharge teaching content (Burney, Purden, & McVey, 2002).

The aim of the current project was to develop two questionnaires, one for cardiac surgery patients, and one for their family caregivers, to assess discharge information needs. The focus on learning and the inclusion of the family perspective are consistent with the McGill Model of Nursing's core tenets of education and family-centred care (Gottlieb & Rowat, 1987; Gottlieb & Sherrard, 2004). The purpose of developing these tools was to improve the discharge teaching process by assisting nurses to tailor teaching to the recipients' self-identified needs for information. A systematic review of post-operative education for CABG patients found that information tailored to patients' unique learning needs results in the provision of meaningful information, thus increasing the likelihood of its retention (Fredericks et al., 2009b). Moreover, past studies have demonstrated that high-quality discharge information increases satisfaction with care, improves the adaptation from hospital to home, and enhances patient and caregiver coping (Clark et al., 2005; Driscoll, 2000).

Current state of knowledge. A review of the literature failed to reveal an existing questionnaire to explore the discharge information needs of family caregivers in any health setting. Three studies were found that explored discharge information needs of adult CABG patients using the Patient Learning Needs Scale (PLNS) (Fredericks, 2009; Fredericks, Guruge, Sidani, & Wan, 2009a; Jickling & Graydon, 1997). The PLNS, developed by Bubela et al. (1990) asks medical and surgical patients to rate the importance of learning each item prior to discharge. A Likert scale response format is used with scores ranging from one, not important, to five, extremely important (Bubela et al., 1990; Fredericks et al., 2009a).

The PLNS has demonstrated face and content validity (Jickling & Graydon, 1997), and internal consistency reliability (Cronbach's alpha: 0.80 to 0.90) with CABG patients (Fredericks, 2009). The scale enables nurses to tailor discharge teaching to patient preferences (Fredericks et al., 2009a; Redman, 2003). However, there have been some issues. In one study, some respondents were unclear whether they should rate items irrespective of whether they already possessed the information. In addition, the questionnaire may not have addressed their specific information needs, as the structured format does not offer patients the opportunity to raise their unique needs (Jickling & Graydon, 1997).

A questionnaire capturing the individual discharge information needs of adult cardiac surgery patients and their family caregivers does not exist. Nurses are challenged to provide timely and relevant discharge teaching in a cardiac surgery setting characterized by reduced hospital stays and intense emotional responses in patients and caregivers. Discharge teaching

questionnaires may advance practice by assisting nurses to respond to the specific self-identified needs of these individuals, promote information retention, and facilitate the transition home.

Methods

Format. The PLNS had been used with a cardiac surgery population and had demonstrated psychometric properties. Therefore, it provided the foundation for the design of the clinical tool. The lead author of the PLNS was contacted and permission was obtained to modify the scale for clinical use, and to acknowledge the original authors of the PLNS in the final report. The modified questionnaires would also contain Likert scale questions to address the common information needs of patients and caregivers. In addition, short-answer questions were included to capture their unique information needs.

Content: Data from patients and caregivers. Informal discussions were held with patients and family caregivers who were at various stages of the cardiac surgery trajectory to gain a better appreciation of the content to be included in the questionnaire. Six patients and two caregivers were seen in the pre-operative clinic, and 10 patients and nine caregivers were seen post-operatively on the cardiac surgery unit. Patients and caregivers described their information needs and indicated their preferred timing of discharge teaching in order to determine the time to administer the questionnaire.

Patients and caregivers on the cardiac surgery unit indicated whether they would be interested in completing a questionnaire to specify their needs for discharge teaching. The majority of patients and family members expressed interest, stating that such a tool would ease the transition home. Patients and caregivers also stated that they would like to receive the questionnaire several days after the surgery, as surviving the surgery constituted the primary concern in the pre-operative phase.

Content: Data from nurses. Nursing staff were consulted about the content of the questionnaires, as nurses will administer the tools and follow up on respondents' information needs. A nurse involved in the pre-operative clinic and four staff nurses on the cardiac surgery unit described the content of their discharge teaching for patients and families. Inclusion of this information in the questionnaire may prompt patients and families to reflect on issues influencing discharge.

Nurses were also asked about their interest in the questionnaires, and all responded favourably, stating that such tools would help to reinforce discharge teaching. Most nurses felt that the post-operative period constituted the ideal time to offer the questionnaire to patients and families, as patients and

families are concerned with the surgery itself in the pre-operative period. These suggestions were consistent with those from patients and caregivers.

A nurse involved in telephone follow-up for discharged patients from the cardiac surgery unit described the most common concerns of patients and caregivers once at home that could be useful to include in the questionnaire. The nurse reflected that at times it seemed as though patients had not received discharge teaching, due to their numerous questions. This further supported the need for a tool to promote individualized discharge teaching, as this increases the likelihood that information will be retained (Fredericks et al., 2009b).

Content: Literature findings. The literature was reviewed to provide additional content for the tool that might prompt respondents to reflect on issues that merit attention prior to leaving the hospital. Two areas of research were reviewed with respect to cardiac surgery patients and their caregivers: 1) perceived needs of discharge information and, 2) discharge teaching content post cardiac surgery. This, along with the informal discussions with patients, family caregivers, and nurses, contributed to the tool modifications.

Nurses' feedback. The two questionnaires (patient and caregiver) were presented to 11 nurses on the cardiac surgery unit for their feedback. The nurses felt that the questionnaires were useful and would help to prioritize their teaching time. They felt that the patient kardex was the ideal location for the tools. The kardex is an individual binder for each patient that includes vital sign and medication sheets. The nurses agreed that post-operative day three would be the most appropriate time to administer the questionnaires. This is the time when patients are normally transferred from the cardiac step-down unit to the cardiac surgery unit.

Several issues were raised by the nurses. Consistent use of the completed questionnaires might vary, as certain nurses may regard the tools as additional paperwork and choose not to review the answers. Two nurses indicated that it would be difficult to determine where to begin teaching if patients and caregivers rated every item on the questionnaire as important.

Preliminary testing. Ten patients and seven family caregivers on the cardiac surgery unit completed the questionnaires. Caregivers were spouses of patients, and patients had an age range of 35 to 76 years and diverse occupations. Thus, it was possible to test the suitability of these tools with different patients. Respondents described the questionnaires as clear, simple, and easy to follow, and one patient stated that, "Someone in grade five could easily fill this out." The average time to complete the questionnaire was 20 minutes.

The questionnaires demonstrated content validity, as respondents indicated that the questions included issues that they were already contemplating with

regard to the return home, such as incision care and physical activity restrictions. Questions stimulated their thinking about issues that they had not considered, but were important to reflect on prior to discharge, such as symptom management and medical follow-up.

Most respondents agreed that post-operative day three was an ideal time to complete the tool. Respondents completed the entire questionnaire, and eight respondents used the full range of responses on the items. The other nine respondents indicated that all items were "important" or "very important" to know prior to discharge.

The Cardiac Surgery Discharge Questionnaires

Content. The Cardiac Surgery Patient Discharge Questionnaire begins with a preamble stating that the questions inquire about content that the cardiac surgery patient may wish to know prior to leaving the hospital, and the responses will allow the nurses to determine what information is most important to the patient. The nurses may then provide information that will help the patient to manage better at home. Instructions follow regarding the steps involved in completing the questionnaire. The original PLNS begins with a similar preamble, but it is not directed to a specific patient group, and it does not link the responses to the nurses' teaching (Redman, 2003).

The introductory statements reinforce to patients that nurses are interested in their unique views, as a means of providing relevant and individualized information. Such an approach conveys a respect for the patient's perspective and engages the patient in a therapeutic relationship with the nurse (Wright & Leahey, 2005).

The Cardiac Surgery Discharge Questionnaire for Families contains a similar preamble indicating that the nurses are committed to providing support and information that will ease the transition home. This is extremely important, as caregivers often do not feel adequately prepared to care for the cardiac surgery patient at home (Davies, 2000b). Thus, investing time in evaluating the caregiver's unique learning needs may help to ease the transition home.

The questions in the Cardiac Surgery Patient Discharge Questionnaire are grouped into the following categories: medications, physical activity, nutrition, incision, pain, symptoms, feelings, and follow-up. These categories reflect patient perceived discharge information needs from previous studies (Beggs et al., 1998; Fredericks et al., 2009a; Fredericks & Sidani, 2008; Hartford, 2005; Theobald & McMurray, 2004), and from the informal discussions in the pre-operative clinic and the cardiac surgery unit. The categories also reflect content of discharge teaching performed by nurses on the cardiac surgery ward and cited in the literature (Beggs et al.,

1998; Cebeci & Celik, 2007; Fredericks et al., 2009b; Fredericks & Sidani, 2008; Lenz & Perkins, 2000; Mullen-Fortino & O'Brien, 2008).

The categories in the Cardiac Surgery Discharge Questionnaire for Families are similar to the patient version, and are also based on family discharge information needs from past studies (Leske & Pelczynski, 1999; Theobald & McMurray, 2004), and concerns raised by caregivers in the pre-operative clinic and the cardiac surgery unit. An additional category, coping at home, is significant, as the literature underscores the importance of acknowledging the stress experienced by family members and their need for support (Davies, 2000a; Leske & Pelczynski, 1999).

Format. Both the patient and the family versions of the questionnaire consist of a series of questions with a Likert scale response format. The respondent rates how important each item is to know prior to hospital discharge by selecting one of four possible responses: not important, a little important, important, and very important. The nurse may then target discharge teaching towards items rated as "important" and "very important." The Likert scale questions are followed by one short-answer question, in which the respondent may indicate other information needs related to that category. The final question of each questionnaire asks the respondents to indicate additional concerns they may have about the return home.

Health literacy considerations. Following the recommendations of Cutilli (2006) and the Jewish General Hospital Patient Education Network Working Group (2008), the content of both versions of the questionnaires has been formatted in a 12-point, Times New Roman font. Sentences were constructed in the active voice and used a conversational style, in order to simplify the material. Advanced organizers were used in the form of section headings, separation of categories, and instructions to the reader of what is to follow. The Fleisch-Kincaid reading ease test indicates a reading comprehension level of grade 5.6 for the patient version, and a grade of 5.8 for the family version. A copy of the first page of the patient and family questionnaires appears in Tables 1 and 2.

Administration of questionnaires and follow-up. The family version of the questionnaire will target the primary family caregiver, as identified by the patient. It may also be given to a close loved one of the patient, and/or an individual who will provide caregiving to the patient in the home environment. Family member implies whomever the patient identifies as family.

The nurse will administer the questionnaire to the patient and family caregiver on post-operative day three on the cardiac surgery unit. The nurse will not administer the questionnaire if the patient is unwell or presents with an impaired cognitive status as assessed

Table 1: Cardiac Surgery Patient Discharge Questionnaire

Many people would like to know how to care for themselves when they go home after heart surgery. The questions below ask you about some things that you may want to know before you leave the hospital. Please take some time to answer the questions. This will let us know what information is most important to you. We can then give you information that will help you to manage better at home.

For each item, please place a check mark (✓) next to your answer. Your answer will tell us how important each item is for you to know before you leave the hospital. If you have other questions, please write them down on the blank lines.

MEDICATIONS

- 1. I would like to know what medications I will have to take when I am at home.
Not important A little important Important Very important
- 2. I would like to know the reason that I am taking each medication.
Not important A little important Important Very important
- 3. I would like to know about the best time to take each medication.
Not important A little important Important Very important
- 4. I would like to know the side effects of my medications.
Not important A little important Important Very important
- 5. I would like to know what to do if I have a reaction to a medication.
Not important A little important Important Very important
- 6. Would you like to have any other information about your medications? If yes, please write it down here:

Table 2: Cardiac Surgery Discharge Questionnaire for Families

Many family members would like to know how to care for their loved one at home after heart surgery. The questions below ask you about some things that you may want to know before your loved one leaves the hospital. Please take some time to answer the questions. This will let us know what information is most important to you. We can then give you information that will help you both to manage better at home.

For each item, please place a check mark (✓) next to your answer. Your answer will tell us how important each item is for you to know before your loved one leaves the hospital. If you have other questions, please write them down on the blank lines.

MEDICATIONS

- 1. I would like to know what medications my loved one will take at home.
Not important A little important Important Very important
- 2. I would like to know the reason that my loved one is taking each medication.
Not important A little important Important Very important
- 3. I would like to know the side effects of my loved one's medications.
Not important A little important Important Very important
- 4. I would like to know what to do if my loved one has a reaction to a medication.
Not important A little important Important Very important
- 5. Would you like to have any other information about your loved one's medications? If yes, please write it down here:

PHYSICAL ACTIVITY

- 6. I would like to know about the kind of activity and exercise my loved one can do at home.
Not important A little important Important Very important

by the nurse or physician. The nurse will explain the purpose of the questionnaire and, once completed, the nurse will review it and will provide discharge teaching that addresses the areas in which information is deemed "important" or "very important," or the needs indicated in the short-answer questions. Once the nurse has provided teaching, he/she will note this on the questionnaire by writing the date and his/her initials next to the question or item. Colleagues working with the patient and family will do the same. Thus, all nurses will know what teaching has been provided. The questionnaires will be kept in the patient's kardex to allow easy access for the nursing staff.

Conclusion

Questionnaire strengths. The format and content of the questionnaires follow adult health literacy principles. The literature and perspectives of adult cardiac surgery patients, family caregivers, and nurses have shaped the content. Preliminary testing of the tools indicates content validity. The questionnaires may enhance the efficiency of discharge teaching, as nurses may address the self-identified learning needs of patients and caregivers. This is significant, given the current call for discharge teaching tailored to the recipient's unique learning needs (Fredericks et al., 2009b).

The questionnaires will likely enhance the quality of discharge teaching, as most patients and caregivers who participated in this project were pleased to voice their perspectives regarding their information needs, and those completing the questionnaires enjoyed doing so for similar reasons. Discussion is also stimulated regarding salient discharge issues, and this may potentially enhance patient and caregiver coping in their transition home.

Questionnaire limitations. The response pattern on the questionnaires may be an issue, as half the respondents in the preliminary testing rated all items on the tool as "important" or "very important" to know prior to discharge. The nurse may not know where to begin the teaching process. A solution may be that the nurse explains to the patient the limited time that exists for teaching in that particular session, and then he/she may ask the patient where to begin. This demonstrates respect for the patient's perspective and readiness to learn.

Sustainability may be challenged by two issues. First, there is no permanent repository for the questionnaires once the patient is discharged. The fact that it is not a formal part of the health record may render it invisible. In addition, the questionnaire consists of five pages. Patients and caregivers may be unable to complete the questionnaires, and nurses may not have the time to review the responses. Consequently, the questionnaire is abandoned due to feasibility issues, thus formal piloting and evaluation of the tool with all stakeholder groups is indicated.

Clinical implications. The ongoing use of the questionnaires on the cardiac surgery unit may be enhanced by several methods. Further feedback from staff nurses regarding the implementation of these tools is critical to their viability. Inclusion of the questionnaires in the patient's permanent record will ensure their visibility. This process requires a review of the questionnaires by a hospital committee in order to become an official document stored in medical archives. Inclusion in the permanent record will permit a retrospective chart review. The initiative could be part of a quality assurance project that examines patterns over time in terms of priority learning needs of patients and caregivers and the nature and timing of discharge teaching provided by nurses. The findings could inform nursing in-service sessions on discharge planning.

Lastly, nurses require support from the multidisciplinary health care team in addressing patient and caregiver concerns indicated in the questionnaires. Nurses may not feel adequately prepared to address certain concerns, thus the involvement of other professionals is essential to assist nurses to respond to information needs raised by respondents.

Recommendations for further development. The questionnaires require a French translation, as French and English are the primary languages of communication at this hospital. Further testing of the questionnaires with patients and caregivers is necessary, as is ongoing feedback from nurses regarding the use and feasibility of the questionnaires. The testing and feedback will determine the effectiveness of the questionnaires and an evaluation and validation of their content and format. Comments of nurses and respondents will guide modifications. The effectiveness of the tools may be further gauged from the telephone follow-up for discharged patients by exploring whether patients and caregivers continue to present with the same volume and type of questions.

In summary, the authors developed a questionnaire to elicit the discharge teaching information needs of adult cardiac surgery patients and their caregivers. Preliminary testing provided promising results, and ongoing evaluation is needed to refine the tools based on the feedback from the users. It is anticipated that these questionnaires will be helpful and feasible for patients, family members and the nurses providing care, and contribute to an improved discharge teaching process post-cardiac surgery. ♥

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Patients' Perception of their Experience of Primary Percutaneous Intervention for ST Segment Elevation Myocardial Infarction

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Many patients experiencing ST segment elevation myocardial infarction (STEMI) are currently treated with primary percutaneous intervention (PCI). This relatively new procedure has reduced the time patients with the diagnosis of STEMI spend in hospital. In this literature review we explore patients' perceptions of their experience of receiving primary percutaneous intervention (PCI) as a treatment for STEMI. We critiqued and graded for relevance 10 papers that included original research and other sources. Key findings indicate that there is considerable variability in how patients treated for STEMI perceive the experience of PCI. Further, there is a misalignment between

some patients' perceptions and health professionals' perceptions of this experience related to the event as well as the language used to speak of it. Thus, we recommend that nurses assess patients' perception of the experience and patients' health literacy level, then tailor the content and language of patient and family education to ensure an effective educative intervention.

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Intervention percutanée primaire après un infarctus du myocarde avec élévation du segment ST : perceptions des patients en regard de leur expérience

À l'heure actuelle, le traitement de nombreux patients qui subissent un infarctus du myocarde (IM) avec élévation du segment ST consiste en une intervention coronarienne percutanée primaire (ICPP). Cette intervention relativement nouvelle réduit la durée de séjour après un diagnostic d'IM avec élévation du segment ST. Cette revue de la littérature explore les perceptions des patients en regard de leur expérience d'ICPP comme traitement de l'IM. Nous avons révisé

10 articles qui contenaient des travaux de recherche originaux et citaient d'autres sources, et nous leur avons assigné un score de pertinence. Le constat principal est qu'il existe une variation considérable dans la perception des patients en regard de leur expérience de l'ICPP comme traitement de l'IM avec élévation du segment ST. De plus, nous avons constaté une dissimilitude entre la perception de certains patients et celle des professionnels de la santé quant à l'événement et au langage utilisé pour en parler. Donc, dans le but d'assurer la réussite de l'intervention éducative, nous recommandons au personnel infirmier d'évaluer la perception du patient en regard de son expérience et son niveau de littéracie, puis d'adapter le contenu et le langage de l'enseignement au patient et à sa famille.

Once a person with cardiovascular disease (CVD) has undergone a medical or surgical intervention for CVD, secondary prevention is the key to further risk reduction and improved quality of life (Wiles & Kinmonth, 2001). A key role for nurses in hospital settings is to plan, deliver and evaluate educative interventions in support of secondary prevention for this population (Berra, Miller, & Fair, 2006). Evidence suggests that many people with established CVD and who receive preventative care experience risk reduction (Wiles & Kinmonth, 2001). However, it appears that present-day treatments for some acute manifestations of CVD, such as ST segment elevation myocardial infarction (STEMI), may obscure a patient's understanding of the underlying disease processes (Astin, Closs, McLenachan, Hunter, & Priestly, 2009). In this paper, we critique the literature on patients' perceptions of their experience of primary

percutaneous coronary intervention (PCI) for the treatment of STEMI to determine how their perceptions affect their understanding of CVD.

Background

Primary PCI (p-PCI) is the newest addition to a suite of coronary interventions used in the treatment of STEMI (Astin et al., 2009) and refers to an emergency procedure where a miniature balloon, and often a stent, are inserted into a blocked coronary artery. P-PCI is an alternate to intravenous thrombolysis and the first-line treatment of choice for reperfusion following STEMI (Hatchett & Thompson, 2002). With this treatment, patients may be discharged from hospital within 48 to 72 hours, a shorter length of stay than with intravenous thrombolysis (Sampson, O' Cathain, & Goodacre, 2008). Such rapid discharge has implications for the nursing care of p-PCI patients and their families.

To illustrate how the experience of a patient travelling through this situation may influence perception, consider the scenario of Jolene, a previously well 55-year-old woman. Jolene developed crushing, severe chest pain in the middle of the night on a Monday and, out of fear and concern, woke her husband who immediately called 911. An ambulance rushed to Jolene's house. On arrival, the paramedics administered an analgesic and oxygen to relieve Jolene's pain and decrease the workload on her heart. Jolene was then transported with her husband to a nearby tertiary care hospital offering full cardiac services. Staff members on call for such emergencies were waiting for Jolene when she arrived. Fifteen minutes later, the interventional cardiologist introduced the balloon catheter into Jolene's blocked coronary artery, inflated the balloon, and deployed the stent, thus restoring blood flow distal to the occlusion. At last, Jolene's chest pain was completely relieved. Jolene was in the coronary care unit for the next two days. By Thursday late morning, Jolene was home sipping tea and pondering what happened to her over the past two days, the most dramatic and confusing two days of her life.

As one can imagine, 48 hours is a very short time for patients such as Jolene to come to an understanding of what has occurred. Prior to having an MI, many patients, like Jolene, are unaware of their heart disease. Given the urgency, emotional intensity, and short duration of hospitalization many patients may not be ready to learn about their STEMI, and what they can do with regard to lifestyle changes to reduce the risk of a future MI. Following PCI, patients are prescribed multiple medications to which ongoing adherence is required for optimal effectiveness, and this may be additionally overwhelming for many. That many who have experienced STEMI treated by PCI are challenged to understand what has happened, and what they will need to do after discharge home is entirely understandable.

Nurses assume an educative role to support patients and their family caregivers to manage CVD following MI and PCI. During "teaching" sessions, nurses provide information to patients and families regarding prescribed medications, post-PCI care, their risk for cardiovascular disease, lifestyle modification strategies, and post-discharge follow-up. In addition to this long list of "teaching" items, the nurse provides patients and family members with information about community supports, for example, the location of cardiac rehabilitation programs and the related referral processes. This approach to "teaching" is inconsistent with pedagogical views on the educative role of nurses that is located within a client-centred view of nursing, since a manual and checklist dictate what the nurse

covers, not the patient's perceptions of their learning needs. One of the authors has noticed that while some patients and their family members seem to grasp that the patient now has a chronic condition to manage, others do not. In fact, some are shocked to learn that an MI catalyzed the cascade of events requiring an intervention and short hospitalization. This misperception, coupled with the large amount of information that nurses impart, may contribute to patients' and their family members' inability to retain the information they are given during educative sessions in the hospital.

CVD risk factor reduction education and management requires a systematic approach in which the patient, family members, and the community are all involved (Berra, Miller, & Fair, 2006). Smith and Liles (2007) wrote, "Providing information and support to MI patients has long been identified as an important nursing function and such activity should be patient-centred and open to the learning needs of the participants" (p. 663). How can nurses enacting the educative role with primary PCI patients and their families be learner/patient-centred? We propose that nurses who understand patients' perceptions of the disease leading to PCI are more apt to design learner/patient-centred interventions. Thus, we explored the literature addressing patients' perceptions of primary PCI as a way to advance understandings in this substantive area of nursing practice.

Method

An integrative review of the literature guided by frameworks developed by Polit and Beck (2008) and Whittemore and Knafl (2005) was undertaken. The review proceeded through the following phases: problem identification, literature search, assessment of peer-reviewed articles for relevance and quality according to established criteria, discussion of the findings, and, recommendations for nursing practice and research. We critiqued the literature retrieved for strength of evidence, methodological rigour, and findings using a tool adapted from Polit and Beck (2008) (See Table 1). Further to this critique, we used Whittemore and Knafl's 2.0 system, to assess the relevance of each article related to the question of patients' perceptions of their primary PCI experience. This rating scale reflects the methodological or theoretical rigour and data relevance of a study on a two-point scale: 2.0 indicates high relevance with a score of 1.0 indicating low relevance. Studies that included the primary PCI population were rated 2.0. Studies that scored less than 2.0 did not specifically include patients who had received primary PCI as a treatment. However, from our reading of the paper

Table 1: Scoring guide: Relevance of papers

Citation: Authors: _____
Title: _____
Journal: _____
Year: _____ Volume: _____ Issue: _____ Pages: _____

Type of study: Qualitative Quantitative Mixed

Location: _____

Key Concept: _____

Variables: Interventional/Independent Variable: _____
 Dependent Variable: _____
 Controlled Variable: _____

Framework/Theory: _____

Design Type: Experimental Non-experimental Quasi-experimental

Specific Design: _____

Blinding: None Single Double

Description of Intervention: _____

Comparison Group: _____

Cross Sectional Longitudinal/Prospective No. of Data Points: _____

Qualitative Tradition: Grounded Theory Phenomenology Ethnography Other

Sample: Size: _____ Method: _____

Characteristics: _____

Data Sources: Self Report Observational Biophysiologic Interview Other

Description of Measures: _____

Quality: _____

Statistical Tests: Bivariate T-Test ANOVA Chi-Square Pearson's R Multi Var

Multiple Regression: MANOVA Logistic Regression Other

Findings: _____

Effect Sizes: _____

Themes: _____

Recommendations: _____

Strengths: _____

Weaknesses/Limitations: _____

Adapted from Polit & Beck, 2008, p. 120.

there was resonance between the question of our integrative review and the research question of the study reviewed.

The following criteria were used to determine which papers would be included: (a) written in English, (b) published after 1999 since, after 1999, PCI became the treatment of choice, (c) either quantitative or qualitative research and literature reviews, and (d) addressed the population of patients experiencing an acute myocardial infarction (AMI) treated with primary PCI. It became apparent relatively quickly that there was very little in the literature specific to patients treated with primary PCI, so we broadened the search to include patients who had experienced an AMI and no primary PCI. The databases searched were CINAHL (EBSCO), Medline Cochrane Database of Systematic Reviews, PubMed, PsycInfo, and the Social Citation Index. Key words included *acute*

myocardial infarction, primary angioplasty, primary PCI, patient perceptions, patient understanding, and informational needs. As well as the search of the databases, we performed an ancestry search* using the same criteria. Twenty-one papers met the initial inclusion criteria. However, after a preliminary reading of the papers, 11 were excluded, as these papers gave no indication of treatment received for the AMI, focused on post-discharge interventions, had participants who had received elective PCI versus primary PCI, or focused on perceived information needs as opposed to perception of the event. Table 2 lists papers included. Papers were rated for relevancy with three papers rated 2.0, or a high degree of relevance, one rated 1.5, or moderate degree of relevance, and six rated 1.0, or a low degree of relevance. See Table 1 for the rating system that was derived from Polit and Beck (2008) and Whittemore

Citation	Purpose	Method
Alsén, P., Brink, E., & Persson, L. (2008)	Explore patients' illness perceptions of myocardial infarction 4 months after myocardial infarction.	Qualitative
Astin, F., Closs, S.J., McLenachan, J., Hunter, S., & Priestley, C. (2008)	To explore the information needs of patients treated with primary PCI for heart attack.	Qualitative
Astin, F., Closs, S.J., McLenachan, J., Hunter, S., & Priestley, C. (2008)	To explore patients' beliefs about the causes of their MI.	Qualitative
Broadbent, E., Petrie, K.J., Ellis, C.J., Anderson, J., Gamble, G., Anderson, D., ... Benjamin, W. (2006a)	To investigate whether risk perceptions of patients with myocardial infarction were accurate compared with an established risk model.	Quantitative
Cherrington, C., Moser, D., Lennie, T., & Kennedy, C. (2004)	To determine the relationship between illness representation of myocardial infarction and the occurrence of in-hospital complications.	Quantitative
French, D., Maissi, E., & Marteau, T.M. (2008)	To explore patients' experiences of primary PCI and assess illness perception.	Mixed
Genz, C. (2000)	To present a comprehensive account of the perceived concerns and learning needs of patients in the early recovery period after a coronary angioplasty.	Integrated literature review
Johansson, I., Swahn, E., & Stromberg, A. (2007)	To describe variations in how individuals perceive suffering symptoms of an acute myocardial infarction.	Qualitative
Sampson, F., O'Cathain, A., & Goodacre, S. (2008)	To explore positive and negative views of patient and carer experiences of undergoing primary PCI.	Qualitative
Wiles, R., & Kinmonth, A. (2001)	To explore patients' understanding of heart attack in order to contribute to the design of secondary prevention measures.	Qualitative

* An ancestry search is a systematic review of citations from studies included in the review and from review articles (Conn et al., 2003).

and Knafl (2005). We will discuss these papers under the following headings: first tier studies (papers rated 2.0 relevance), second tier studies (papers rated 1.5 relevance), and third tier studies (papers rated 1.0 relevance).

First Tier Studies

Only three papers reporting original research on patient perception following primary PCI were identified. The first study published by Astin, Closs, McLenachan, Hunter, and Priestley (2009), nurse researchers, was designed to explore patients' perceptions of the experience of primary PCI. The study was designed to contribute understandings of patient experiences to generate knowledge for patient-centred care, a direction advanced in policy-level documents such as *Crossing the Quality Chasm* (Institute of Medicine, 2001). The setting for this study was a tertiary cardiac centre in the United Kingdom. Twenty-nine participants were enrolled in this study using purposive sampling to ensure a balance between men and women, and younger and older participants. The inclusion criteria were patients who had undergone primary PCI for AMI, who did not have a previous history of cardiac disease, and who spoke English.

This study used a mixed qualitative and quantitative exploratory methodology. Qualitative data were collected during in-depth interviews and quantitative data were collected by administering the Illness Perception Questionnaire (IPQ-R) (Moss-Morris et al., 2002). The IPQ-R is based on Leventhal's Cognitive model of illness perception (Leventhal, Meyer, & Nerenz, 1980), a fitting choice for the research question. IPQ-R assesses patients' perceptions of personal control, treatment control, emotional representation, and illness coherence. Authors report that this self-report questionnaire has sound psychometric properties. The authors refer to the quantitative aspect, as a pilot study that informs the qualitative findings. Referring to the qualitative study as a pilot study is appropriate given the small sample size of 29.

In the qualitative aspect of the study, using the framework analysis method, the researchers identified three themes: events, expectations and reality, and emotional reactions presented in a detailed conceptual model they entitled: "The process of acute myocardial infarction, primary angioplasty, and how patients make sense of events" (Astin et al., 2009, p. 76). Regarding events, the researchers found that many participants were amazed at the speed of events and that this contributed to their feelings of uncertainty about what had occurred. Regarding expectations and reality, the researchers report that there was a mismatch

between expectations and reality that encompassed many aspects of the experience. For example, participants thought they had received a general anesthetic, as opposed to the local anesthetic they had actually received. Along the same line, participants perceived that they had an operation, not a procedure. The researchers report that unexpectedly low levels of procedural pain contributed to the participants' uncertainty about what had happened. Many participants experienced a surge of energy after the procedure, this contributing to the belief that a heart attack may not have occurred, a perception that was thought to have implications for recovery. For example, one participant felt so well after the procedure that he walked six miles on the day of his discharge. The emotional reactions to the event identified in this research included disconnectedness, shock and disbelief, and denial.

In the quantitative aspect of this study, the researchers noted trends in the scores. For example, scores indicated that the participants viewed their illness as a serious acute illness rather than a chronic condition, that they understood the treatment as curative and effective, and that they could control the illness. The quantitative findings resonate with the qualitative findings in that the quantitative analysis suggests that participants lacked a coherent understanding of their illness, and that some participants had perceptions of the experience of PCI that aligned more closely to reality than for others.

This study was thoughtfully designed combining qualitative and quantitative data to elicit a comprehensive picture of the perception of patients undergoing primary PCI following MI. The sample size was small for the quantitative study that was appropriately labelled a pilot study, and more than adequate for a qualitative design. The qualitative aspect of the study was carefully described and rigorous, with the findings presented in a logical, coherent manner. The quantitative data point to trends that inform understandings of the qualitative description. Reflecting on their research, the authors conclude:

Cardiac rehabilitation practices may require review to ensure a closer alignment with advances in treatment and shortened hospital stays. It may be useful to ask patients and families to reflect on their hospitalization experience, as a way of uncovering misunderstandings they may have about their condition. (Astin et al., 2009, p. 82).

Overall, the Astin et al. study offers comprehensive and convincing findings, an insightful discussion, and a conclusion closely aligned with, and highly relevant to, the focus of this literature review. The second

study in this review ranked as highly relevant was carried out by Sampson, O’Cathain, and Goodacre (2008) and was designed to “explore positive and negative views of patient and carer experiences of undergoing primary angioplasty, and ...what contributed to their satisfaction” (p. 85). The study was part of a larger evaluation of a national project, the National Infarct Angioplasty Pilot Project (NIAPP). Using purposive sampling, 16 people were included in the study representing a range of referral routes: those who had been cared for in or out of regular hours; those who arrived directly to the hospital; or, those who had been transferred into the hospital. Ten patients and six carers participated in the study. All patients had been admitted to hospital with a diagnosis of STEMI and treated with p-PCI. In this qualitative study, researchers used semi-structured interviews to gather data using critical incident technique to identify positive and negative views of key aspects of the patient and carer experience within one month following the event. The Framework approach (Ritchie & Spencer, 1994) was used to analyze the data. Here data are analyzed using a process of identifying themes, and then constructing a thematic framework, coding data systematically into the framework, considering links between the themes and the types of patients and carers reporting, and not reporting the themes. Key themes of the analytic framework were: positive voices, “do or die”, speed and efficiency, feeling fixed, “was it really a “heart attack?”

Regarding positive voices, participants expressed satisfaction with the experience:

Participants spoke in extremely positive terms of the experience of undergoing primary angioplasty. Both patients and their carers praised the care that they received highly and were clearly eager to express their gratitude towards the various health care professionals involved in their care (Sampson et al., 2008, p. 86).

After the event, patients spoke of feeling as if nothing had happened to them, as if they were their “old selves”. Feelings of *denial* were noted in this study with many of the participants not aware that they had experienced a heart attack. The researchers concluded that if patients do not believe they have experienced a “heart attack”, they might not believe that they live with a condition to control, and think instead, they have been “cured”, and this may affect patients’ willingness to participate in cardiac rehabilitation and secondary prevention measures. Patients were satisfied with a shorter length of hospital stay, and were impressed with the exceptional competence of the nursing staff who exceeded patients’ and carers’ expectations.

Many of the themes identified in the Astin et al., 2009 study were echoed in this research, for example, the speed of events:

Both patients and their carers spoke of the speed of the patient’s recovery and were amazed at the degree of improvement within a few hours of having their heart attack. (Sampson et al., 2008, p. 88).

The Sampson et al. (2008) study is a thoughtfully designed study in which the researchers used a unique approach to elicit and analyze the data. The systematic nature of the analysis contributes to the rigour to the design. A limitation of the study acknowledged by the researchers is that the findings might be different had they been able to interview participants several months following the event.

A study by Broadbent et al. (2006a) is the third study designated as highly relevant in this review, a study set in New Zealand. This quantitative study was designed to explore the accuracy of MI patients’ perceptions of future risk of MI relative to an objective clinical assessment of risk. To explore this question, the researchers investigated whether risk perceptions of patients with MI were accurate when compared with an established clinical risk model. A convenience sample of 79 patients (64 men and 15 women) admitted to a Coronary Care Unit for acute MI participated in the study, with 57 patients diagnosed as STEMI and 22 non-STEMI. Participants were treated with medication only (39), angioplasty (28), or surgery (12). Prior to discharge, as per usual practice, all patients receive a 30-minute visit with a cardiac rehabilitation nurse who provided them with pamphlets outlining risk-reduction strategies and on the morning of discharge, patients were asked to complete questionnaires.

Patients’ perceptions of risk of future MI and their self-efficacy with regard to reducing their perceived risk was measured using three questions to which patients responded using an 11-point (0–10) Likert-type scale. Psychometrics of this tool were not reported. Participants’ illness representation was measured using the Brief Illness Perception Questionnaire (Broadbent, Petrie, Weinman, & Main, 2006b), an abbreviated version of the tool used in the Astin et al. (2009) study discussed above. The Brief IPQ (BIPQ) demonstrated good test–retest reliability, concurrent validity, and good predictive validity in patients recovering from MI three months post-MI. The risk of future AMI was calculated using the Thrombolysis in Myocardial Infarction (TIMI) risk score, an established risk stratification tool for patients presenting with MI that has been validated across studies (Morrow et al., 2000). The TIMI Risk score was calculated from medical notes by researchers blind to participants’ responses to the perception of risk and

BIPQ. The TIMI score is calculated for STEMI and non STEMI patients using emergency room indicators such as history of diabetes, hypertension, and/or angina, systolic blood pressure, heart rate, and so on. Participants' troponin T levels were entered into the data set as independent markers of future risk. The study was designed to detect moderate agreement (correlation of at least 0.3) between objective clinical risk and the perception of risk.

Statistical analysis was undertaken to first explore the patients' perceptions of their risk and the objective clinical risk assessment (TIMI score). There was a considerable range in patients' perception of future risk with some patients perceiving no risk for future MI and others scoring eight out of 10. There was no association between perceived risk of future MI and TIMI score. Similarly, there was no relationship between patients' perceived risk and troponin T levels. Age, sex, presence of traditional risk factors, treatment (medication only, angioplasty, or bypass surgery) and length of hospital stay were all unrelated to perceived risk. Next, the researchers explored if perceived risk and objective risk were related and found that illness perception scores were consistently related to perception of the risk of future MI. Thus, this study found that patients' perceptions of risk were unrelated to objective clinical assessments of future risk for MI, but were related to illness perception. The authors concluded that "Improving the accuracy of risk perceptions may help decrease unnecessary cardiac anxiety and invalidism in some patients and prompt risk-reducing behaviours in others" (Broadbent et al., 2006a, p. 643).

In terms of the rigour of the study, the sample size ensured power, and some measurement tools had adequate validity and reliability. A limitation of this study for the purposes of this review is that only 28 of 79 (35%) were treated with angioplasty. Further, the reliability and validity of the BIPQ and the questions eliciting patients' perceptions of future risk of MI were not reported. However, the findings of this study resonate with the findings of similar studies and, thus, this study contributes to knowledge about patients' perceptions of the MI experience.

In summary, themes related to the patient experience of p-PCI are beginning to emerge. The findings provide evidence that the speed of the event clouds patients' perceptions of what has occurred, and that there is variability among patients in understanding what indeed has occurred. The experience is a highly emotional one for patients and, in one study, for their carers as well. For example, shock, disbelief, disconnectedness of emotional reactions, amazement and gratitude are poignant emotions that are documented. The Sampson et al. (2008) study illustrates that patients and their carers felt positive

about the events surrounding their p-PCI, and that this positive perception is related to being cared for by a well-functioning and efficient health care team. The Broadbent et al. (2009a) study is revealing in that the findings suggest a misalignment between the patients' perceptions of their future risk for CVD risk and objective clinical assessments of their future risk. Findings of these three studies underscore the need for health professionals to assess patients' perceptions of p-PCI prior to initiating health teaching or cardiac rehabilitation, as a first step to success in planning patient-centred care. We note the paucity of original research on this topic and suggest that this may be attributed to the short time that p-PCI has been used as a treatment for STEMI, and/or the brevity of the interface between the patients and their families and health professionals.

Second Tier Studies

Only one study was considered as second tier. In this medium-relevance study, not all the participants received PCI as a treatment for AMI. Using constructivist grounded theory, Alsén, Brink, and Persson (2008) explored patients' illness perceptions of their MI and related factors that influence secondary preventive strategies four months following MI. Eighteen of the 25 participants had had PCI, but there was no mention in the paper as to whether PCI was primary or not. Data were gathered during interviews with 25 people who had experienced an AMI four months following discharge from hospital. Data were analyzed using a constructivist grounded theory approach (Charmaz, 2006). Findings, the researchers report, can be understood relative to two core categories: "trust in self" versus "trust in others" and "illness reasoning". Variations in these categories were further sorted into six categories that illustrated variations in the perception of a myocardial infarction. For some, myocardial infarction was the sign of a chronic condition over which the individual had influence—the dimension "trust in oneself" and "reflective in personal terms". Individuals in this category were interested and engaged in understanding the causes, treatments, and lifestyle modifications required to manage this chronic condition. For others, myocardial infarction was the sign of a chronic illness over which there was no control—the dimension "trust in others" and "reflective in personal terms". Individuals holding this perception were uncertain about why the event had occurred, and lacked confidence in their ability to influence recovery. For still others, there was the perception that the myocardial infarction was an acute event that might recur—the dimension "trust in oneself" and "reflective in general terms". Those holding this perception felt that they could prevent recurrence through lifestyle modification. A further

theme was the perception that a myocardial infarction was an acute event that could recur and there was no way to control its recurrence—the dimension “trust in others” and “reflective in general terms”. Also, there were those who held to the view that myocardial infarction would lead to physical and social incapacity—the dimension “trust in oneself” and “less reflective”. Last, there were those who perceived that the MI was an isolated incident with few health-related consequences—the dimension “trust in others” and “less reflective”. This well designed and carefully executed qualitative study adds significantly to knowledge about the variability in patients’ perception of myocardial infarction by uncovering the reasoning that underlies the variability of perceiving an MI as an acute versus chronic condition. Similar to authors of previously reviewed papers in this review, these authors conclude that understanding patient’s individual perceptions of the MI experience is essential to individualizing care.

Third Tier Studies

Six papers were rated as third tier in terms of relevance. While these papers did not specifically focus on patients who had undergone p-PCI, they did focus on illness understanding following AMI. Papers included were published after 1999 when the treatment of choice for AMI, especially STEMI, became primary PCI. Of these six papers four used qualitative methodologies, one was quantitative, and one was an integrated literature review.

Johansson, Swahn, and Stromberg (2007) described patients’ perceptions of acute MI pre-hospitalization. Participants were 15 Swedish-speaking patients who had experienced a first or subsequent MI (with or without ST elevation) and who represented men and women, a range of ages, and who were in a variety of contexts when the MI occurred 15 minutes to five days prior to hospitalization. Of the 15 participants, 11 had experienced a STEMI. Using phenomenology as method, data were gathered during individual interviews guided by the question “Please describe your experiences when you suffered your myocardial infarction”. Follow-up questions deepened and expanded the narratives. Transcripts of in-depth interviews were analyzed consistent with the phenomenological tradition. Analysis of the interviews yielded three main categories that described the phenomenon of experiencing the symptoms of acute MI: manageability, vulnerability, and interaction. Manageability was further discussed relative to three subcategories: symptom awareness, which described participants’ differing experiences in attempting to understand what was happening, confidence in self-care, and denial of the severity of the symptoms. Similar to findings discussed earlier, the authors of this

paper concluded that there is considerable variability in how patients perceive the experience of the symptoms of their acute MI, and that this variability, combined with the short length of hospital stay, makes patient education about secondary prevention measures challenging. Denial is a theme that surfaced in this study as in other studies included for this review. Further, the researchers noted that there was large variability in how patients thought about their situation. Like other authors, the researchers conclude that individualizing care is the key to successful outcomes.

Wiles and Kinmonth’s (2001) qualitative study was carried out as part of a larger study. This grounded theory study explored patients’ understandings of “heart attack” to inform the design of secondary prevention services. In this British study, 25 participants (12 women and 13 men) were enrolled in a pilot secondary prevention intervention. Participants were purposively sampled to ensure demographic variation. In-depth interviews were carried out. Each person was interviewed twice, at about two and four weeks following hospital discharge. A number of themes similar to the previously described studies surfaced in this research. For example, participants reported feelings of shock and disbelief immediately after acute MI, and many participants at the four-week interview perceived that they had been cured. A key conclusion from this study is that the information that patients receive from health professionals encourages people to view a “heart attack” as an isolated acute event rather than a chronic condition, and this leads to low motivation for long-term lifestyle change. The researchers concluded that health professionals need to grasp patients’ understandings of “heart attack” and recovery and provide information that aligns with what patients understand.

French, Maissi, and Marteau (2005) investigated what first-time MI patients believed to be the cause of their acute MI. The purpose of the study was to explore causal attribution and the reasons for such attribution. Twelve people who had been admitted to hospital in England for a first-time MI were interviewed. These semi-structured interviews were recorded and transcribed, then analyzed guided by a published interpretive phenomenological approach (Smith, Jarman, & Osborn, 1999). The authors identified a number of themes related to the participants’ beliefs about the cause of their acute event. Relevant to this review is the implication that while patients may understand the possible causes for their acute MI, they still seek to determine a single cause for the acute event, and do not grasp the chronic nature of the disease process. The authors suggest that health professionals may be more successful in their work with such patients if they understand their patients’ causal

attribution processes. Once again this research lends support for adopting a patient-centred, individualized approach to care.

Astin, Closs, McLenachan, Hunter, and Priestley (2008), in the United Kingdom, examined the information needs of MI patients treated with p-PCI in the first one to two weeks of recovery. Twenty-nine patients were interviewed for this study using a semi-structured interview. Framework analysis (Ritchie & Spencer, 1994) guided the analysis. The findings indicated that health information provision was satisfactory for most. However, for many in the early recovery period patients experience fear and uncertainty (Astin et al., 2008). These feelings coupled with “participants’ beliefs and misconceptions of the event provided a potent backdrop with which communicated information was interpreted” (Astin et al., 2008, p. 328). The authors conclude that individualizing health information provision in the context of shortened hospital stay is problematic given the emotionality of the experience. The findings of this study echo and enlarge the findings of studies reviewed previously in this paper.

Cherrington, Moser, Lennie, and Kennedy (2004), guided by Leventhal’s Self-Regulation Model of Illness (Leventhal, Hudson, & Robitaille, 1997), explored the relationship between illness representation at the time of an acute MI and in-hospital complications (for example, arrhythmias, congestive heart failure, cardiac arrest, reinfarction, and cardiac death) and whether or not anxiety and depression mediate this relationship. Illness representation refers to a person’s understanding of a threatening health event in terms of the accuracy of related signs and symptoms, and cause of the disease, and the possible outcomes of having lived through the event. Using a prospective correlation design, a convenience sample of 49 white, well-educated, middle-class men and women who had experienced a STEMI treated with PCI completed the Illness Perception Questionnaire (IPQ) (Weinman, Petrie, Moss-Morris, & Horne, 1996), Spielberger’s State Anxiety Inventory, and the Beck Depression Inventory 24 to 48 hours following admission. Descriptive data were analyzed and hypotheses were tested using hierarchical logistic regression. Lack of clarity with regard to understanding the illness event, and negative illness representation were found to be associated with greater odds of having a complication. Anxiety and depression were not significant predictors of the occurrence of complications. While the design of this study limits its generalizability, particularly the sampling method and limited power, findings do lend support to the notion that a person’s understanding of an illness event affects outcomes. Further, findings illustrated variability in patients’ understandings of this illness event, similar to other studies, and to anecdotes from nurses caring for these patients.

The final paper included in this review of the literature is itself an integrative literature review. Gentz (2000) explored perceived learning needs of patients undergoing coronary angioplasty. Nineteen papers published between 1989 and 1999 were included in this review. Since the studies included predated widespread use of PCI as a standard treatment for acute MI, and a key criterion of the review was that participants had undergone PCI, this paper was assessed at a low relevance level. The angioplasty experience emerged as one of three major themes. Gentz found that patients undergoing angioplasty were, overall, pleased with their experience, feeling it was non-threatening and routine; however, there were some negative feelings such as dehumanization and lack of control over decision-making. The degree of threat patients felt from their heart disease was assessed as mild to moderate. Regarding the patients’ experience of PCI, Gentz noted that inadequate time was allowed for educative interventions by nurses.

Discussion

Interestingly, only one of the papers included in this review was from North America (Gentz, 2000) with the other nine studies carried out in Britain, Ireland, Sweden and New Zealand. While the number of studies included in this review is relatively small, some key findings related to patients’ perceptions of the experience of primary PCI in the setting of STEMI are evident, and across both quantitative and qualitative studies. Key themes that emerged in our review are the emotionality of the experience, the variability of patients’ perception of the PCI experience, and how they view CVD afterwards—as either an acute or chronic condition.

Our review of the literature demonstrated that there is a limited amount of research on the subject of patients’ perceptions of their primary PCI experience (Astin et al., 2008; Cherrington et al., 2004; Johansson et al., 2006; Sampson et al., 2008). However, including patient perceptions of AMI in this review provides a glimpse into the perception of the overarching experience of PCI. Prior to 1999, much of the research demonstrated that patients experiencing an AMI understood little of what has happened to them (Gulanick et al., 1997; Zerwic, King, & Wlasowicz, 1997). This trend seems to have been amplified by the advent of primary PCI for STEMI and the resultant rapid discharge from hospital.

Patients perceiving STEMI as an acute condition that can be cured is one of the themes repeated throughout the literature. CVD is a condition that can be managed, but never cured, yet the perception that it can be cured is prevalent. Although some patients understand that their AMI is a sign of a chronic condition, others do not.

Patients who understand that the AMI is an event related to a chronic underlying condition are more likely to leave hospital with an appropriate awareness of their disease, and motivation to make the lifestyle changes necessary to aid in managing their CVD (Alsén et al., 2008). Patients who leave hospital with a view that their acute event has been cured are likely to be less motivated to make these changes (Wiles & Kinmonth, 2001).

Patients' interpretations of the events surrounding their STEMI affects their understandings, and how the events are spoken of to patients by nurses influence these interpretations. In my experience (Murray), I have heard nurses and other professionals explain what has happened to them in phrases like: "We fixed the artery" "We fixed the culprit narrowing" or "You had some rust in the pipes." These types of statements can lead a patient to misunderstand the chronic nature of CVD. Misinterpretation of the events surrounding STEMI and a related misunderstanding of CVD can have significant consequences for patients. Patients who do not have an understanding of their CVD or feel unexpectedly very well may not be motivated to participate in secondary prevention measures once they leave hospital (Astin et al., 2008). Misinterpretation may also lead to fear for some (Astin et al., 2008; Alsén et al., 2008; Broadbent et al., 2006a), which may be a barrier to participating in cardiac rehabilitation (Astin et al., 2009).

While health literacy did not emerge as a key concept in the literature reviewed, we propose that this is a concept that bears consideration when addressing the gap between patients' and health professionals' perceptions. Health literacy is "the ability to access, understand, evaluate, and communicate [health-related] information as a way to promote, maintain, and improve health in a variety of settings across the life course" (Rootman & Gordon-El-Bihbety, 2008, p. 13). The variability in perception of the experience of PCI may be partially explained by variability in levels of health literacy among patients. According to Rootman and Gordon-El-Bihbety (2008), an estimated 55% of Canadians between the ages of 16 and 65 years had below adequate levels of health literacy in 2003. Additionally, only one in eight over the age of 65 had adequate health literacy skills (Rootman & Gordon-El-Bihbety, 2008). Patients who have lower levels of health literacy may be less able to understand what health professionals are telling them about their situation or to question such remarks as "you have rust in your pipes."

Recommendations

Several recommendations arise from this review of the literature. The first is to use interview questions and existing tools to assess patients' perceptions of STEMI treated by PCI. Such tools might include semi-

structured interviews, illness perception questionnaires, other types of questionnaires, or scripted interviews. Throughout the literature reviewed in this inquiry such tools were used in research to assess patient perceptions. However, debate exists over which tool is most adequate (Smith & Liles, 2007). Thus, further development and testing of relevant tools for clinical application is required. Nurses should be educated about the concept of health literacy so they may incorporate some of the techniques identified by Black (2008) into their discharge discussions with patients. These techniques include the use of plain language and visual aids. All existing patient education materials should be evaluated for appropriateness in terms of both content and health literacy relative to the patient population being cared for. Patient and family education interventions are most effective if they are meaningful and comprehensible. Thus, discharge teaching must be individualized and focused on the patient and his or her family member's learning needs, not health care providers' priorities. Smith and Liles (2007) note:

The literature reveals a complex, ambiguous, and frequently challenging role for nurses, who are regarded as the principal providers of patient education within CR [cardiac rehabilitation]. Whilst some authors strongly endorse models of health education that advocate collaboration with and empowerment of patients, many studies confirm the continuing influence of the medical models towards patient education, which are didactic and pedagogic in nature. (p. 664).

Further research into the issue of pedagogy and the educative role of nurses in the cardiovascular field is essential. The education needs of these patients and their family members are complex and the time available too brief to adequately assess, and then address information needs during hospitalization. Thus, intentional effort to reach this patient population with understandable and meaningful information to support their capacity for self-care is paramount.

Conclusion

CVD is a substantial worldwide health issue. Although there have been significant changes in the treatment of CVD, including primary PCI for the treatment of STEMI, a number of challenges continue. In this review, we have identified that many people who have experienced a STEMI treated with primary PCI leave hospital with an understanding of their disease that does not match health professionals' understandings. The many reasons for this became evident in this review of the literature. In order for people to effectively manage their CVD, they must possess accurate perceptions of the nature of their disease. People who

feel they have been cured are less likely to engage in the measures necessary to decrease further risk such as taking medications, ceasing smoking, exercise, and other lifestyle modifications. It is our hope that with a deeper understanding of common patients' perceptions, nurses will be better equipped to assist patients with family members to manage CVD because, contrary to a common belief, there is no cure. ♥

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Research

R O U N D S

Getting Involved in Research

Davina Banner, RN, PhD, and Lyle G. Grant, RN, BComm, MSN, LLB

The need for quality nursing research to promote evidence-based practice and optimize patient care is well recognized. This is particularly pertinent in cardiovascular nursing, where cardiovascular disease continues to be the leading cause of morbidity and mortality worldwide (World Health Organization, 2007). Across the spectrum of academic, clinical, and health care administration nursing roles, research remains fundamental to bridging theory, practice, and education (LoBiondo-Wood, Haber, Cameron, & Singh, 2009). Despite recognition of the importance of nursing research, the gap between research and practice continues to be an ongoing issue (Funk, Tornquist, & Champagne, 1995; Pettengill, Gillies, & Clark, 1994; Rizzuto, Bostrom, Suterm, & Chenitz, 1994; Rolfe, 1998).

Nurses are appropriately situated to contribute to research that improves clinical outcomes and health service delivery. However, the majority of nurses in clinical practice do not have a significant research component structured into their nursing role. In this research column, the authors outline the importance of nurses being engaged in research and present some different levels of involvement that nurses may assume. A continuum of nursing research involvement includes asking

researchable questions, being a savvy consumer of research evidence, finding your own level of research involvement, and aspiring to lead.

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Background

The need to be research active falls within the professional requirements of nurses internationally. In Canada, nurses are required to “support, use and engage in research and other activities that promote safe, competent, compassionate and ethical care” (Canadian Nurses Association, 2008, p. 8). This involvement not only works to establish quality evidence-based patient care, but also cements our professional status within the health disciplines (Hutchinson & Johnston, 2004). Despite this, nursing involvement in the conduct and use of research is not widespread (Funk et al., 1995; Rolfe, 1998).

One explanatory factor accounting for the continued research-practice gap is the perception that research and practice in nursing represent distinct domains, whereby research is undertaken in the academic setting and remains detached from clinical practice settings (Alde, Cheek, & Ballantyne, 2009; White & Taylor, 2002). The cultures of research and clinical practice are, thereby, viewed as somewhat incompatible, having differing expectations and goals (Boland, Kamikawa, Inouye, Latimer, & Marshall, 2010). While research in nursing is increasingly valued, barriers to research uptake and utilization include a lack of familiarity with research terminology, research skills, financial or organizational support, and a perceived inability to

change clinical practice (Gerrish & Clayton, 2004; Hartley, 2005; Le May, Mulhall, & Alexander, 1998; Parahoo, 2000; Retsas, 2000; Segrott, McIvor, & Green, 2006). Consequently, much research evidence is not integrated into clinical practice. Similarly, researchers often experience barriers that prevent closer connections to practice. These may arise due to work restrictions, differing organizational climates and cultures, and difficulties establishing fruitful research relationships (LeGris et al., 2000). Subsequently, more complete integration of research into clinical practice is hampered.

In light of this, many health organizations have a growing interest in the way that knowledge is created and translated to practice (Canadian Institutes of Health Research, 2010) and increasing importance is being placed on partnerships across academic and health care organizations. This is recognized as an essential means to increase knowledge exchange and research involvement (Alde et al., 2009; Boland et al., 2010; Brown, White, & Leibbrandt, 2006; Cheek, Corlis, & Radoslovich, 2009). Through such approaches, knowledge users (such as health care professionals, decision makers, communities, and professional organizations) may work collaboratively with researchers to identify research priorities and inform all aspects of the research process (Canadian Institutes of Health Research, 2010). Clinical practice settings then become a constant source of researchable questions and provide continued feedback to ensure that research is responsive and that knowledge uptake and translation are maximized.

Nurses are appropriately situated to contribute to research that improves clinical outcomes and health service delivery. As such, the need to develop research capacity and involve nurses in research remain goals of many health care organizations in Canada and internationally (Finch, 2003; Gerrish & Clayton, 2004; McKenna & Mason, 1998). Capacity-building activities need to occur at both individual and organizational levels. At an organizational level, there is the need to foster a culture of research in nursing and on an operational level a need to provide support and time for nurses to engage in research activities (Boland et al., 2010; Brown et al., 2006). Importantly, nurses benefit from improving and increasing their individual involvement in research (Csokasy, 1997).

Getting Involved in Research

Research may seem daunting for many nurses, and researchers may be perceived as intimidating or detached from the clinical practice setting. However, such perceived barriers are often easily overcome once opportunities to share perspectives and to collaborate are provided. Nurses can become involved in research

in a variety of ways that best fit their relative abilities and current circumstances. A continuum of nursing research involvement includes asking researchable questions, being a savvy consumer of research evidence, finding your own level of research involvement, and aspiring to lead.

Asking Researchable Questions

In daily practice, nurses frequently encounter challenges and dilemmas relating to the delivery of patient care. Often these situations lead to questions and clinical problems that can suggest research activities. In many instances, it may not be clear to whom nurses can direct these questions, obtain support to address them, or find time to take on the actual work of responding to them. Many clinical problems or potential research questions then remain unanswered.

On a unit level, nursing teams can help identify research priorities by discussing arising clinical issues during staff meetings or, alternatively, posting problems, questions, or useful resources on a notice board. On an organizational level, nurses may direct questions or access support from the research department of their health authority, health care organization, or local university. These departments are often able to provide support for local research initiatives, provide resources to help address a clinical problem, or support an individual or team in developing larger research proposals. Forming links with such departments can be an important first step in addressing clinical problems and improving patient care and health outcomes.

Being a Savvy Consumer of Research Evidence

Nursing education promotes the use and interpretation of research evidence. It is embedded as a core professional skill and responsibility. Through nursing research and theory courses, students are expected to gain skills in critiquing and evaluating research evidence and its application to clinical practice (Ax & Kincade, 2001). These requirements continue during practice as registered nurses (Canadian Nurses Association, 2008). Despite this expectation, many nurses lack confidence in the critical evaluation of research evidence (Le May et al., 1998; Parahoo, 2000; Retsas, 2000).

Creating opportunities for nurses to review and use research evidence is an important way for nurses, health care organizations, and nursing leaders to improve the uptake of research knowledge, enhance research capacity, and improve patient outcomes. This may start by practice settings creating more opportunities for nurses to be reflective in their practice

and opening spaces for sharing ideas and discussing clinical issues for which research answers are sought. This may take the form of a journal club or clinical interest group (Csokasy, 1997; Krugman, 2003). Partnerships between health care and academic organizations can help augment these processes, particularly in smaller organizations where resources may be limited. These partnerships and team processes can help nurses foster important reflective, communication, and critical appraisal skills along with providing opportunities for mentorship, support, and teambuilding (Csokasy, 1997; Gattuso et al., 2007; Milne, Krishnasamy, Johnston, & Arandra, 2007). In addition, joining professional groups such as the Canadian Council of Cardiovascular Nurses (CCCN) can provide access to specialist journals, educational conferences, professional education events, and important clinical resources to support these processes.

Finding Your Own Level of Research Involvement

Nurses may assume many different levels of involvement in research, and finding a comfort level is important and can boost confidence. Nurses offer diverse ranges of experiences and skills that can contribute to all stages of the research process. Most importantly, nurses in clinical practice provide an important 'real world' perspective to research and can help identify some of the wider patient-care issues that might otherwise be overlooked. Becoming a member of an advisory group or steering committee with a research project is often an easy entry point for the clinical nurse. Advisory groups provide guidance and direction to a research study and nurses can provide vital clinical and organizational insights. Additionally, such participation can provide nurses with the opportunity to make connections with researchers and get a sense of how research studies are planned and enacted (Alde et al., 2009).

Working with groups and committees within your own organization to develop and implement practice guidelines is another way to increase your involvement in research. In such cases, nursing or interdisciplinary teams may work to systematically review the contemporary literature to develop statements or benchmarks to guide the delivery of patient care (Brownman et al., 1995; Grimshaw et al., 1995). Nurses in clinical practice may find comfortable mentoring relationships or leadership roles in these types of research-connected undertakings.

Aspiring to Lead

Over recent decades, there has been an increase in the number of nurses completing master's and doctorate level education, which, in turn, has provided more

opportunities for nurses to lead and undertake research (McNett, 2006; Rosenzweig, Bender, & Brufsky, 2005). Advancing your formal education, through postgraduate courses and degrees can significantly improve your capacity to use and implement research, and may provide opportunities for research leadership roles.

The majority of nurses in clinical practice do not have a significant research component structured into their nursing role and this continues to hold open the gap between research and practice. Some roles such as the research nurse role are specific research positions within nursing. These typically involve nurses working within larger (often medically-led) research teams to collect and organize data for clinical trials (Johnson & Stevenson, 2010). More recently, the clinical scientist or research specialist nursing roles have emerged. These positions have a distinct mandate to develop research capacity and drive practice-based relevant nursing research and its translation. Through these roles, there is the potential to provide greater resources and mentorship to clinical practice nurses who are interested in undertaking research or research-related activities. This may help demystify the research process, increase research involvement, and improve the delivery of services and health outcomes for those with cardiovascular disease (Gattuso et al., 2007; Milne et al., 2007; Reutter et al., 2010; Swenson-Britt & Reineck, 2009; White & Taylor, 2002;). While these types of roles have been widely adopted in the medical arena, they are not widespread in nursing and still require significant development (Chan, Gardner, Webster, & Geary, 2010; Mackay, 2009).

Conclusion

The need for increased involvement by all nurses in the generation and use of quality nursing research is continuing. Research forms an important bridge for theory, practice, and education that can directly contribute to the improved care and health outcomes of patients. In this research column the author has outlined the importance of nurses being engaged in research and has presented some different levels of involvement that nurses may assume. A continuum of nursing research involvement includes asking researchable questions, being a savvy consumer of research evidence, finding your own level of research involvement, and aspiring to lead.

Potential Resources

If you are interested in finding out more about research opportunities in your province, contact your CCCN Research Chair. Contact details are available through the CCCN website. ♥

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recherche

S'impliquer en recherche

Davina Banner, inf., Ph.D. et Lyle G. Grant, inf., BComm, MSc, LLB

On reconnaît bien l'importance de la recherche de qualité en sciences infirmières afin de promouvoir une pratique fondée sur des résultats probants et d'optimiser les soins aux patients. Ceci est particulièrement approprié en soins cardiovasculaires où la maladie continue d'être la principale cause de morbidité et de mortalité dans le monde entier. A travers la diversité des rôles universitaires, cliniques et administratifs en soins infirmiers, la recherche demeure un moyen essentiel pour faire le pont entre la théorie, la pratique, et l'enseignement. En dépit de la reconnaissance que l'on accorde à la recherche en sciences infirmières, le fossé entre la recherche et la pratique continue d'être une préoccupation continue.

Les infirmières occupent une position stratégique leur permettant de s'impliquer en recherche afin d'améliorer les résultats cliniques et la prestation des soins de santé. Cependant, la majorité des infirmières qui oeuvrent dans les milieux cliniques n'ont pas de responsabilités de recherche qui soient intégrées à leur rôle clinique. L'auteure de cette chronique de recherche décrit l'importance de

l'engagement des infirmières dans des activités de recherche et présente différentes façons pour ces dernières d'y participer. La participation de l'infirmière désireuse de s'impliquer dans la recherche en sciences infirmières se décrit par certaines actions spécifiques, notamment poser des questions de recherche, être un consommateur de l'évidence scientifique, trouver son propre niveau de participation en recherche, et assumer un « leadership ».

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Introduction

S'impliquer en recherche constitue une responsabilité professionnelle pour toutes les infirmières partout dans le monde. Au Canada, les infirmières sont tenues de « soutenir, utiliser et s'engager dans des activités de recherche et d'autres activités qui assurent la promotion des soins sécuritaires, de qualité, empathiques et éthiques » (Association canadienne des infirmières, 2008, p. 8). Cette implication ne garantit pas seulement une qualité de la pratique des soins infirmiers qui soit fondée sur l'évidence, mais renforce aussi notre statut professionnel auprès des autres disciplines de la santé (Hutchinson & Johnston, 2004). En dépit de ceci, l'implication des soins infirmiers dans le développement et l'utilisation de la recherche n'est pas répandue (Funk et al., 1995; Rolfe, 1998).

Un des facteurs qui pourrait expliquer le fossé qui sépare la recherche de la pratique est la perception que la recherche et la pratique en soins infirmiers

représentent des domaines distincts, la recherche étant réalisée dans les milieux académiques et isolée des milieux cliniques (Alde, Cheek, & Ballantyne, 2009; White & Taylor, 2002). La culture propre à la recherche et celle de la pratique clinique sont, de ce fait, considérées comme incompatibles, avec des attentes et des buts différents (Boland, Kamikawa, Inouye, Latimer, & Marshall, 2010). Bien que la recherche en sciences infirmières est de plus en plus valorisée, certaines barrières nuisent à son utilisation, notamment le manque de connaissance sur la terminologie utilisée en recherche, les compétences en recherche, le soutien financier ou le soutien des organisations, et la difficulté perçue à vouloir changer la pratique clinique (Gerrish & Clayton, 2004; Hartley, 2005; Le May, Mulhall, & Alexandre, 1998; Parahoo, 2000; Retsas, 2000; Segrott, McIvor, & Green, 2006). Par conséquent, de nombreuses connaissances issues de la recherche ne sont pas intégrées dans la pratique clinique. Par ailleurs, les chercheurs perçoivent souvent des barrières qui font

obstacle à une collaboration plus étroite avec la pratique clinique. Ces barrières peuvent survenir en raison des restrictions au travail, des différentes cultures et climats dans l'organisation et des difficultés à établir des collaborations rentables de recherche (LeGris et al., 2000). Par conséquent, l'intégration de la recherche dans la pratique clinique est entravée.

Par conséquent, de nombreux établissements de soins de santé ont un intérêt grandissant à l'endroit du processus de développement des connaissances issues de la recherche et de leur application dans la pratique (Institut canadien de la recherche en santé, 2010). Un intérêt grandissant est aussi observé à l'endroit de l'importance des partenariats entre les milieux académiques et les établissements de soins de la santé. De tels partenariats ont été identifiés comme un moyen essentiel d'accroître l'échange des connaissances et la participation en recherche (Alde et al., 2009; Boland et al., 2010; Brown, White, & Leibbrandt, 2006; Cheek, Corlis, & Radoslovich, 2009). Grâce à de telles approches, les utilisateurs des connaissances (tels que les professionnels de la santé, les décideurs, les communautés et les associations professionnelles) peuvent travailler en collaboration avec des chercheurs afin d'identifier les priorités de recherches et faire connaître tous les aspects du processus de la recherche (Instituts canadiens de la recherche en santé, 2010). Ainsi, les milieux de pratique clinique alimentent l'identification des questions de recherche et fournissent la rétroaction continue permettant ainsi à la recherche d'être congruente et d'optimiser l'acquisition et l'utilisation des connaissances.

Les infirmières occupent une position stratégique qui leur permet de contribuer à la recherche afin d'améliorer les résultats cliniques et la prestation des soins de santé. La nécessité de développer tout le potentiel de la recherche et d'impliquer les infirmières dans des activités de recherche demeure un objectif pour de nombreuses organisations de soins de santé au Canada et internationalement (Finch, 2003; Gerrish & Clayton, 2004; McKenna & Mason, 1998). Les activités qui favorisent le développement du potentiel de la recherche doivent se réaliser tant à un niveau individuel qu'à un niveau organisationnel. Au niveau de l'organisation, il est important d'établir une culture de recherche en sciences infirmières, et au niveau opérationnel, de fournir le soutien et le temps nécessaire afin de permettre aux infirmières de participer à des activités de recherche (Boland et al., 2010; Brown et al., 2006). Il est certain que les infirmières ont avantage à améliorer et accroître leur participation individuelle en recherche (Csokasy, 1997).

S'impliquer en recherche

La recherche peut décourager certaines infirmières à première vue et les chercheurs peuvent être perçus

comme intimidants ou détachés de la réalité de la pratique clinique. Par contre, ces perceptions quant aux obstacles de la recherche sont souvent surmontées assez aisément grâce à une collaboration et des opportunités de partage. Les infirmières peuvent s'impliquer en recherche de différentes façons en fonction de leurs compétences et des différentes opportunités qui s'offrent à elles. La participation de l'infirmière désireuse de s'impliquer en recherche en sciences infirmières se décrit par certaines actions spécifiques, notamment poser des questions de recherche, être un consommateur de l'évidence scientifique, trouver son propre niveau de participation en recherche, et assumer un « leadership ».

Poser des questions de recherche

Dans la pratique clinique, au quotidien, les infirmières rencontrent fréquemment des défis et des dilemmes liés à la prestation des soins aux patients. Ces situations conduisent régulièrement à des questions et des problématiques cliniques qui peuvent engendrer des activités de recherche. Bien souvent, les infirmières ne savent pas à qui adresser ces questions, comment obtenir le soutien pour les résoudre, et où trouver le temps au travail pour répondre à ces questions. Plusieurs problématiques cliniques ou questions potentielles de recherche demeurent ainsi sans réponse.

Sur les unités de soins, les équipes soignantes peuvent contribuer à l'identification des priorités de recherche en discutant les thématiques cliniques qui surviennent au cours des réunions de personnel, ou encore, en signalant les problèmes, les questions, ou les ressources utiles sur un tableau d'affichage. À un niveau organisationnel, les infirmières peuvent soumettre leurs questions ou encore recevoir le soutien du département de recherche de l'établissement, des organismes de soins de santé, ou encore de l'université régionale. Ces départements peuvent fournir l'appui nécessaire afin de soutenir les initiatives locales de recherche, d'octroyer les ressources pour résoudre une problématique clinique, ou encore pour soutenir un individu ou une équipe à développer un protocole de recherche plus élaboré. Développer des liens avec de tels départements peut donc être une étape initiale importante pour adresser les problématiques cliniques, dans le but ultime d'améliorer les soins aux patients et les résultats de santé.

Être un consommateur de l'évidence scientifique

L'interprétation et l'utilisation de l'évidence scientifique sont enseignés dans les programmes pédagogiques en sciences infirmières et intégrés à titre de compétence de base et de responsabilité professionnelle. Grâce à des cours de recherche et de théories en soins infirmiers, les

étudiants peuvent acquérir les compétences sur la critique et l'évaluation de l'évidence scientifique et leur application à la pratique clinique (Ax & Kincade, 2001). L'acquisition des ces compétences se poursuit en pratique clinique (Association canadienne d'infirmières, 2008). Mais en dépit de ces attentes, plusieurs infirmières n'ont pas la confiance pour réaliser la critique et l'évaluation de l'évidence scientifique (Le May et al., 1998; Parahoo, 2000; Retsas, 2000).

Il est donc important pour les infirmières, les établissements de soins de santé et les administrateurs en soins infirmiers de créer des initiatives pour réviser et utiliser l'évidence scientifique, dans le but d'optimiser le processus d'intégration des connaissances issues de la recherche, d'accroître la capacité de la recherche et d'améliorer les résultats aux patients. Une première étape serait, pour les milieux cliniques, de développer des conditions permettant aux infirmières de réfléchir à leur pratique, partager les idées et discuter des aspects cliniques pour lesquelles des réponses de recherches sont attendues. Ceci peut prendre la forme d'un club de lecture ou d'un groupe d'intérêt clinique (Csokasy, 1997; Krugman, 2003). Les partenariats entre les établissements de soins de santé et les universités peuvent encourager ces initiatives, particulièrement pour les plus petits établissements où les ressources peuvent être limitées. Ces partenariats et ces groupes d'intérêts peuvent favoriser le développement de la pensée critique, le développement des compétences en communication et en évaluation critique, en plus d'offrir un soutien de type mentorat et la création d'équipe de travail (Csokasy, 1997; Gattuso et al., 2007; Milne, Krishnasamy, Johnston, & Arandra, 2007). En outre, les associations professionnels, telles que le Conseil canadien des infirmières et infirmiers en soins cardiovasculaire (CCIISC), peuvent permettre d'accéder à des revues avec comité de pairs, à des conférences éducatives, à des événements d'éducation professionnelle, et à des ressources cliniques importantes pour soutenir ces démarches et initiatives.

Trouvez son propre niveau d'implication en recherche

Les infirmières peuvent s'impliquer de différentes façons dans des activités de recherche, trouver leur zone de confort, ce qui contribuera à renforcer leur confiance. Grâce à la diversité de leurs expériences et de leurs qualifications, les infirmières peuvent contribuer à toutes les étapes du processus de la recherche. De façon plus significative encore, les infirmières qui oeuvrent dans les milieux cliniques apportent une perspective de la « réalité clinique » au domaine de la recherche. Elles peuvent ainsi mieux identifier les aspects importants pour la recherche et les thématiques de soins aux patients qui autrement seraient ignorées. Devenir membre d'un comité de la

recherche représente aussi une porte d'entrée à la recherche pour les infirmières dans les milieux cliniques. Les groupes consultatifs fournissent également des conseils et une direction à la recherche, permettant ainsi aux infirmières d'apporter un point de vue clinique et organisationnel inestimables. De telles participations représentent des occasions uniques pour les infirmières d'établir des collaborations avec les chercheurs et d'obtenir plus d'information sur la façon dont des études sont réalisées et suivies (Alde et autres, 2009).

Participer à des groupes de travail et des comités dans vos établissements qui visent le développement et l'implantation des directives de soins représentent une autre façon d'accroître la participation dans la recherche. Ainsi, les équipes de soins infirmiers et interdisciplinaires pourront réaliser des revues systématiques de la littérature contemporaine dans le but de développer des rapports qui guideront la prestation des soins aux patients (Brownman et al., 1995; Grimshaw et al., 1995). Les infirmières qui oeuvrent en pratique clinique peuvent également assumer des rôles de type mentorat.

Assumer un « leadership »

Au cours de la dernière décennie, un nombre plus important d'infirmières ont complété des études de maîtrise et des études doctorales, ce qui par conséquent augmente les opportunités d'entreprendre des activités de recherche (McNett, 2006; Rosenzweig, Bender, & Brufsky, 2005). Le fait d'entreprendre des études graduées peut améliorer de façon significative notre capacité à utiliser et à appliquer les résultats issus de la recherche, et accéder à des rôles de leadership.

La majorité des infirmières qui oeuvrent en milieux cliniques assument rarement des responsabilités en recherche, ce qui contribue à maintenir l'écart entre la recherche et la pratique. Il existe cependant des responsabilités spécifiques en recherche, telles que « l'infirmière de recherche ». Ces infirmières travaillent au sein de grandes équipes de recherche (principalement médicales) et assument un rôle exclusif de recherche afin de réaliser des collectes de données pour des études de type essais cliniques (Johnson & Stevenson, 2010). Plus récemment, les rôles de « clinicien scientifique » ou de « chercheur en soins infirmiers » ont émergés. Ces postes ont comme mandat spécifique de développer la recherche appliquée à la pratique clinique et promouvoir son utilisation. Ces rôles favorisent un meilleur soutien, de type mentorat, pour les infirmières oeuvrant dans les milieux cliniques et désireuses de s'impliquer en recherche. Ces infirmières chercheuses aident à démystifier le processus de la recherche, à augmenter la participation des infirmières dans des activités de recherche et à

améliorer la prestations des soins et des services aux patients atteints de maladie cardiovasculaire (Gattuso et al., 2007; Milne et al., 2007; Reutter et al., 2010; Swenson-Britt & Reineck, 2009; White & Taylor, 2002). Alors que ces rôles sont répandus dans la discipline médicale, ils sont peu développés en soins infirmiers et méritent une plus grande attention (Chan, Gardner, Webster, & Geary, 2010; Mackay, 2009).

Conclusion

Il est nécessaire de maintenir une participation continue des infirmières et de favoriser l'utilisation de la recherche en soins infirmiers. La recherche assure un lien entre la théorie, la pratique et l'enseignement, ce qui peut directement contribuer à améliorer les soins et la santé des patients. L'auteure de cette chronique de

recherche a souligné l'importance pour les infirmières de s'engager dans des activités de recherche. Elle a présenté quelques unes des différentes façons pour les infirmières de s'impliquer en recherche. La participation de l'infirmière se décrit par certaines actions spécifiques, notamment poser des questions de recherche, être un consommateur de l'évidence scientifique, trouver son propre niveau de participation en recherche, et assumer un « leadership ».

Ressources potentielles

Si vous êtes intéressé à connaître davantage les opportunités de recherche dans votre province, entrez en contact avec votre représentante provinciale de recherche du CCIISC. Les informations sont disponibles sur le site Web du CCIISC. ♥

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Conseil canadien des infirmières et infirmiers en soins cardiovasculaires

Le Conseil canadien des infirmières et infirmiers en soins cardiovasculaires (CCIISC) a été mis sur pied en avril 1973 et incorporé en juillet 1994. Le CCIISC est une organisation nationale qui se compose de dix sections provinciales ayant chacune son conseil de direction et sa structure de comités.

Le Conseil canadien des infirmières et infirmiers en soins cardiovasculaires représente les infirmières canadiennes passionnées par la santé du cœur et/ou celles qui œuvrent en soins cardiovasculaires. Le Conseil est engagé à promouvoir et à maintenir des hauts standards de pratiques en liens avec la santé cardiovasculaire. Afin de maintenir ces standards, il est essentiel d'investir dans l'acquisition continue des connaissances, des habiletés et des comportements.

La mission du CCIISC est de faire progresser les soins infirmiers cardiovasculaires grâce à l'enseignement, la recherche, la promotion de la santé, les alliances stratégiques et l'« advocacy ».

Nos objectifs sont :

- Identifier le profil et les besoins des infirmières en soins cardiovasculaires afin de recruter et de maintenir l'adhésion des membres
- Développer et maintenir des infrastructures administrative et financière qui soutiennent les directives stratégiques
- Promouvoir les activités de développement et d'innovation en soutenant la recherche et les activités de diffusion des savoirs dans le domaine des soins cardiovasculaires

- Développer une stratégie de formation pour les soins cardiovasculaires
- Promouvoir la santé des Canadiens grâce à des activités de promotion de la santé de d' « advocacy »

Avantages à devenir membre

- Abonnement à la *Revue canadienne de soins infirmiers cardiovasculaires*, une revue avec comité de pairs, publiée par le CCIISC
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Information pour les auteurs



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