

The Official Journal of the Canadian Council of Cardiovascular Nurses
La revue officielle du Conseil canadien des infirmières et infirmiers en soins cardiovasculaires

Canadian Journal of Cardiovascular Nursing

Revue canadienne de soins infirmiers cardiovasculaires

VOLUME 31, ISSUE 3 • FALL 2021
eISSN: 2368-8068

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Canadian Journal of Cardiovascular Nursing

Revue canadienne de soins infirmiers cardiovasculaires

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Publishing

The *Canadian Journal of Cardiovascular Nursing* is published three times per year by the Canadian Council of Cardiovascular Nurses (CCCN).

This is a refereed journal concerned with health care issues related to cardiovascular health and illness. All manuscripts are reviewed by the editorial board and selected reviewers. Opinions expressed in published articles reflect those of the author(s) and do not necessarily reflect those of the Board of Directors of CCCN or the publisher. The information contained in this journal is believed to be accurate, but is not warranted to be so. The CCCN does not endorse any person or products advertised in this journal. Produced by Pappin Communications, Cobden, Ontario.

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Layout and Design

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Pembroke, ON

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For information on advertising, please see www.cccn.ca for the rate sheet with full technical specifications.

Yearly subscription rates*

	Canada	International
Individual	\$85.00	
Institution	\$100.00	\$125.00

If you become a member of CCCN for \$85.00* (CAD) annually, you will receive your journal subscription at no additional charge.

* Plus applicable taxes

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Indexing

The *Canadian Journal of Cardiovascular Nursing* is indexed in EBSCO.
eISSN: 2368-8068

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Editorial

Great leaders don't set out to be a leader... They set out to make a difference. It's never about the role. It's always about the goal.

—author unknown

Research and quality improvement (QI) initiatives are central to improving patient care and patient safety. In this issue of the *Canadian Journal of Cardiovascular Nursing* (CJCN), we are pleased to share three papers that exemplify the key role of nursing leaders in the ongoing quest to achieve quality care and optimal outcomes in our cardiovascular patients. In the first paper, Amelie Belanger and Dr. Lyne Cloutier share their descriptive findings of factors influencing nurses' adherence to the Canadian Stroke Best Practice recommendations in a regional Quebec hospital. Second, in a QI project, Laura Duchesne and colleagues from the University of Ottawa Heart Institute identify transitional care gaps in post-transcatheter aortic valve implant (TAVI) patients, using various types of technology following hospital discharge. In another QI project, DNP Elizabeth Mauser

and Ann Hayden from the University of Minnesota aimed to improve depression screening and referral for patients on their cardiology in-patient unit. I hope that these papers will inspire other cardiovascular nursing leaders to share their research and QI initiatives with the CJCN readership!

On a related note, I am once again drawing your attention to several opportunities for you to make a difference in cardiovascular nursing: 1) We are delighted to announce a call for English and French papers for our next CJCN theme issue: *COVID-19's Impact on Cardiovascular Nursing: Lessons Learned*. I invite you and your colleagues to reflect and share your lessons learned, as we begin to see the light at the end of the pandemic tunnel! 2) We are seeking qualified English and French Associate Editors and Guest Peer Reviewers for the CJCN. I encourage you to consider these opportunities to make a difference in cardiovascular nursing scholarship and publishing. Please see inside this issue for further details.

Happy reading!

Jo-Ann V. Sawatzky, RN, PhD
Editor, CJCN

OPPORTUNITY

Associate Editors & Guest Peer Reviewers for the Canadian Journal of Cardiovascular Nursing

We are currently seeking **Associate Editors** and **Guest Peer Reviewers** for the *Canadian Journal of Cardiovascular Nursing* (CJCN). Required qualifications include:

- A minimum of 5 years of cardiovascular nursing experience
- A current CCCN membership
- A minimum of master's preparation
- Experience in publishing in peer-reviewed journals

We encourage qualified nurses to consider these rewarding roles. Experience reviewing manuscripts is preferred for the Associate Editor role. The Guest Peer Reviewer role is an ideal way to gain experience reviewing manuscripts, with guidance and support from the Editor. Guest peer reviewers should possess subject-matter expertise in the topic of the paper to be reviewed.

This is an opportunity to learn and grow, and to share your knowledge and expertise in the area of cardiovascular nursing scholarship and publishing! For further information on these opportunities to participate in the CJCN publication process, please contact CCCN Director of Publications & CJCN Editor, Dr. Jo-Ann Sawatzky at joanne.sawatzky@umanitoba.ca

OPPORTUNITÉ

Rédacteurs adjoints et évaluateurs invités pour la Revue canadienne de soins infirmiers cardiovasculaires

Nous sommes actuellement à la recherche de rédacteurs adjoints et d'évaluateurs invités pour la revue canadienne de soins infirmiers cardiovasculaires. Les qualifications requises pour ces postes sont les suivantes:

- Au moins 5 ans d'expérience en soins infirmiers cardiovasculaires
- Être membre en règle du Conseil canadien des infirmières et infirmiers en soins cardiovasculaires
- Préparation à la maîtrise, au minimum
- Avoir publié dans des revues évaluées par les pairs

Nous encourageons les infirmières et infirmiers qualifiés à envisager ces rôles enrichissants. De l'expérience avec la révision de manuscrits est préférable pour le poste de rédacteur adjoint. Le rôle d'évaluateur invité est un moyen idéal d'acquérir de l'expérience dans la révision de manuscrits, avec les conseils et le soutien de la rédactrice en chef. Les évaluateurs invités doivent posséder une expertise dans le domaine du manuscrit à évaluer.

C'est une occasion d'apprendre et de développer ses compétences professionnelles, et de partager vos connaissances et votre expertise dans le domaine de la recherche et de l'écriture en soins infirmiers cardiovasculaires. Pour obtenir de plus amples renseignements sur ces postes, veuillez communiquer avec la directrice des communications et rédactrice en chef de la RCSIC, D^{re} Jo-Ann Sawatzky, à l'adresse joanne.sawatzky@umanitoba.ca.

*Often when you think you're at the end of something, you're at the beginning of something else
—Fred Rogers*

The Canadian Journal of Cardiovascular Nursing announces a Call for Papers for a Special Theme Issue:

COVID-19's Impact on Cardiovascular Nursing: Lessons Learned

As we are beginning to see the end of the COVID-19 pandemic, it is time to reflect and share our lessons learned during this pandemic! What positive changes have occurred in your workplace that will change healthcare for the better going forward? What challenges have you had to overcome? Broad topic areas related to this theme may include, but are not limited to:

- Virtual Care
- Cardiac Rehabilitation
- Patient & Nursing Education
- Impact on the Nursing Workforce
- New & Alternative Models of Care
- Long Haulers & Cardiovascular Health

The *Canadian Journal of Cardiovascular Nursing* (CJCN) is pleased to announce the call for papers for a special theme issue on COVID-19 in the Summer/Fall, 2022 issue. We invite any and all nurses, including researchers, clinicians, educators, leaders, and others to consider submitting original research, short reports, knowledge synthesis/review papers, commentaries, case reports, arts informed scholarship, and other discourse relevant to this theme.*

Please direct queries to Dr. Jo-Ann Sawatzky, CJCN Editor at joanne.sawatzky@umanitoba.ca.

Deadline for submissions: March 1, 2022

*Please follow CJCN Author Guidelines for all submissions: <https://www.ccn.ca/media.php?mid=1278>.

*Tout ce qui a un début a une fin, mais chaque fin est le début d'un nouveau départ
—Serge Zeller*

La revue canadienne de soins infirmiers cardiovasculaires annonce un appel à communications pour un numéro thématique spécial: L'impact de COVID-19 sur les soins infirmiers cardiovasculaires: Leçons tirées

Alors que nous commençons à voir la fin de la pandémie de COVID-19, il est temps de réfléchir et de partager les leçons que nous avons tirées de cette pandémie. Quels sont les changements positifs survenus sur votre lieu de travail qui vont améliorer les soins de santé à l'avenir? Quels sont les défis que vous avez dû surmonter? Les grands sujets liés à ce thème peuvent inclure (mais ne sont pas limités à):

- Soins virtuels
- Réadaptation cardiaque
- Éducation des patients et des infirmières
- Impact sur le personnel infirmier
- Modèles de soins nouveaux et alternatifs
- COVID-19 à long terme et santé cardiovasculaire

La revue canadienne de soins infirmiers cardiovasculaires (RCSIC) a le plaisir d'annoncer un appel à communications

pour un numéro thématique spécial sur la COVID-19 dans le numéro d'été/automne 2022. Nous invitons toutes les infirmières et tous les infirmiers, y compris les chercheurs, cliniciens, éducateurs, les leaders et autres, à soumettre des recherches originales, des rapports succincts, des synthèses de connaissances, des commentaires, des rapports de cas, des études fondées sur l'art et tout autre discours pertinent à ce thème.*

Veuillez adresser vos questions à Dre Jo-Ann Sawatzky, rédactrice en chef, à l'adresse joanne.sawatzky@umanitoba.ca.

Date limite pour les soumissions : 1^{er} mars 2022

*Veuillez suivre les directives de la RCSIC concernant les auteurs pour toutes les soumissions : <https://www.ccn.ca/media.php?mid=1278>.

Accident vasculaire cérébral: Étude descriptive sur l'adhésion aux recommandations canadiennes en soins infirmiers

Nurses' adherence to the Canadian Stroke Best Practice recommendations: A descriptive study

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Résumé

Introduction: L'accident vasculaire cérébral (AVC) nécessite une prise en charge rapide et organisée. Des études démontrent des écarts entre la pratique et les lignes directrices.

Objectifs et méthodes: Nos objectifs étaient de décrire l'adhésion des infirmières aux Pratiques optimales de soins de l'AVC au Canada à l'aide de données rétrospectives dans les dossiers de patients et de recenser les facteurs influençant l'adhésion des infirmières à ces recommandations à l'aide de questionnaires, dans un hôpital régional du Québec.

Résultats: L'analyse des dossiers des patients ($n = 30$) a révélé que la prévention des chutes (29%) et l'évaluation de la douleur (56%) ont obtenu l'adhésion la plus faible. Les infirmières

($n = 33$) ont indiqué que les principales barrières comprenaient le manque de temps, de formation et d'intérêt pour la pathologie de l'AVC. Les principaux facilitateurs étaient la motivation à suivre les recommandations canadiennes et la croyance en l'importance de les appliquer dans la pratique clinique.

Conclusion: Ce portrait de la pratique infirmière au Québec met en lumière les domaines d'amélioration de la pratique des soins de l'AVC et les facteurs qui influencent cette pratique.

Mots clés: accident vasculaire cérébral, organisation des soins pour l'AVC, réadaptation post-AVC, recommandations canadiennes AVC, barrières, facilitateurs

Bélanger, A. & Cloutier, L. (2021). Accident vasculaire cérébral: Étude descriptive sur l'adhésion aux recommandations canadiennes en soins infirmiers. *Canadian Journal of Cardiovascular Nursing*, 31(3), 5–13.

Abstract

Background: Stroke is a life-threatening health problem, requiring rapid and organized management. Studies show existing gaps between stroke care practice and current stroke guidelines.

Objectives and Methods: Our objectives were to describe nurses' adherence to the Canadian Stroke Best Practice recommendations, using retrospective chart review data, and to identify the factors influencing nurses' adherence to these recommendations, with questionnaires, in a regional Quebec hospital.

Results: The review of patient charts ($n = 30$) revealed that fall prevention (29%) and pain assessment (56%) achieved

the lowest adherence. Nurses ($n = 33$) reported that the main barriers to adherence included lack of time, training, and interest in stroke pathology. The main facilitators were motivation to follow Canadian recommendations and belief in the importance of applying them in clinical practice.

Conclusion: This portrait of nursing practice in Quebec highlights areas for improvement in stroke care practice and the factors influencing this practice.

Keywords: stroke care, post-stroke rehabilitation, guidelines, barriers, facilitators

Points saillants

- Une prise en charge optimale des personnes qui subissent un AVC est très importante pour améliorer le rétablissement à la suite d'un AVC.
- Le dépistage du risque de chute et la prise en charge de la douleur ainsi que de la dysphagie sont des indicateurs prioritaires à améliorer.
- Les principales barrières identifiées sont le manque de temps, de formation et de motivation.
- Les principaux facteurs facilitateurs sont la motivation à suivre les recommandations canadiennes et la croyance quant à l'importance de les appliquer dans la pratique clinique.
- Cette étude souligne l'importance d'évaluer l'adhésion aux recommandations canadiennes de l'AVC afin d'améliorer la pratique en soins infirmiers.

L'accident vasculaire cérébral (AVC) cause, chaque année, 6,2 millions de décès dans le monde (Lancet, 2018). Au Canada, c'est la troisième cause de mortalité (Statistique Canada, 2018) et l'une des premières causes d'incapacité grave chez l'adulte (Kyu et al., 2018). L'organisation des services et des soins a un impact déterminant sur la morbidité et la mortalité post-AVC et améliore considérablement la qualité de vie des personnes touchées lorsqu'elle est optimisée (Ganesh et al., 2016; Lackland et al., 2014). Des recommandations sont d'ailleurs émises au Canada afin d'harmoniser les soins et services en instaurant un continuum de soins avec une trajectoire de services adaptés dans l'objectif d'optimiser la prise en charge (Boulanger et al., 2018). Afin de mesurer les pratiques actuelles dans les différentes organisations, plusieurs indicateurs ont été conçus et certains concernent directement la pratique infirmière. À titre d'exemple, un dépistage de la dysphagie effectué en temps opportun peut prévenir une pneumonie d'aspiration (Masrur et al., 2013). Pourtant, une observation en clinique effectuée par l'Institut national d'excellence en santé et services sociaux (INESSS) a indiqué une pratique sous-optimale au regard de cet indicateur au Québec. En effet, le dépistage de la dysphagie effectué avec un outil validé était mentionné dans seulement 16% des dossiers des patients (INESSS, 2016).

La littérature fait état d'un grand nombre d'études portant sur l'adhésion à des indicateurs en AVC comme l'accès aux traitements de revascularisation post-AVC (Eswaradass et al., 2017). Or, très peu d'études ont porté sur l'analyse des indicateurs en AVC spécifiques à la pratique infirmière. Un autre aspect peu exploré concerne les barrières et les facilitateurs à l'adhésion à ces recommandations canadiennes et aux lignes directrices internationales (Powers et al., 2018). Les quelques études réalisées au Canada, en Europe, en Australie et aux États-Unis révèlent quelques principales barrières, dont le manque de temps, de formation ou de connaissances ainsi que la résistance au changement (Bayley et al., 2012; Dale et al., 2015; McCluskey et al., 2013). En revanche, ces études

ont aussi démontré qu'une compréhension adéquate des lignes directrices et une notion d'interdisciplinarité étaient perçues comme des facilitateurs à l'adhésion aux lignes directrices (Donnellan et al., 2013, Miao et al., 2015). À notre connaissance, la seule étude au Québec portant sur la prise en charge de l'AVC constatant des écarts n'est pas spécifique à la pratique infirmière et ne fait pas mention des barrières et des facilitateurs influençant le suivi de ces recommandations (INESSS, 2016). À la suite de ces différents constats, il était donc important de décrire le portrait de la situation actuelle dans la prise en charge en soins infirmiers des personnes ayant subi un AVC et de recenser les barrières et les facilitateurs influençant le suivi de ces recommandations canadiennes dans la pratique clinique.

Le but global de l'étude était d'améliorer la pratique infirmière dans la prise en charge des personnes qui subissent un AVC ischémique. Les objectifs spécifiques sont les suivants: 1) décrire l'adhésion des infirmières aux recommandations canadiennes de l'AVC 2014 dans la prise en charge des personnes ayant subi un AVC, et 2) identifier les barrières et les facilitateurs perçus par les infirmières par rapport à l'adhésion aux recommandations canadiennes dans les soins administrés aux personnes après un AVC. Les recommandations canadiennes de l'AVC 2014 et le modèle d'évaluation de la qualité de Donabedian ont été retenus afin de guider la présente étude. Le modèle de Donabedian, fondé sur trois dimensions nécessaires à l'évaluation de la qualité des soins, soit la structure, le processus et les résultats, a guidé l'élaboration des outils de mesure utilisés dans le cadre de cette étude (Donabedian, 1988).

Méthodologie

Cette étude descriptive a été réalisée en 2017 dans trois unités de soins (d'urgence, de soins intensifs, spécialisée en AVC) d'un hôpital régional au Québec, soit l'Hôpital Sainte-Croix (HSC). Celui-ci comprend près de 200 lits dont huit lits aux soins intensifs, et 32 en médecine dont quatre lits dédiés à l'AVC. Afin de répondre aux deux objectifs de cette étude, deux approches méthodologiques ont été utilisées. La certification éthique a été obtenue par les deux organisations concernées, soit l'Université du Québec à Trois-Rivières (UQTR; CER-16-22807.07) et le Centre intégré universitaire de santé et de services sociaux de la Mauricie et du Centre-du-Québec (CIUSSS MCQ; CÉR-2016-026), ainsi qu'un examen de convenance entre l'UQTR et le CIUSSS MCQ (460-Étude descriptive-comparative AVC).

Objectif 1: Décrire l'adhésion des infirmières aux recommandations canadiennes dans la prise en charge des patients qui subissent un AVC

Devis de l'étude et échantillon

Une analyse rétrospective des dossiers de santé des patients a été effectuée afin de décrire la pratique actuelle en soins infirmiers basée sur les recommandations canadiennes

de 2014 lors de la prise en charge des patients hospitalisés pour un AVC. Ces recommandations évolutives sont mises à jour en fonction de l'avancement des connaissances en AVC et des données probantes permettant aux utilisateurs d'obtenir les recommandations les plus récentes à intégrer dans la pratique clinique (Boulanger et al., 2018). Pour que le dossier soit inclus, les patients devaient avoir plus de 18 ans et avoir reçu un diagnostic primaire d'AVC, et ne devaient pas être décédés dans la première semaine d'hospitalisation. Les études similaires consultées rapportent que les audits de qualité analysent environ 20% des dossiers médicaux (Abileira et al., 2012). À l'HSC, on estimait une moyenne de 110 patients hospitalisés pour un diagnostic principal d'AVC annuellement en 2013-2014, ce qui suggérait l'analyse de 22 dossiers. Cependant, certains chercheurs recommandent un minimum de 30 sujets lorsque peu de données sont disponibles dans la littérature (Grove et al., 2013). La taille de l'échantillon pour cette étude a donc été de 30 dossiers, ce qui représente environ 27% des diagnostics d'AVC avec hospitalisation sur une période d'un an. La méthode non probabiliste avec un échantillonnage de convenance a été utilisée et les 30 premiers dossiers de patients hospitalisés entre le 13 décembre 2015 et le 10 décembre 2016 ont été analysés.

Variables à l'étude et outils de mesure

Nous avons mesuré l'adhésion à sept indicateurs spécifiques aux soins infirmiers dont: 1) le contrôle de la température; 2) la mobilisation précoce; 3) la constipation; 4) la prise en charge de la douleur; 5) le dépistage de la dysphagie; 6) le dépistage du risque de chute; 7) la rédaction du plan thérapeutique infirmier (PTI). Ces indicateurs découlent des recommandations canadiennes de l'AVC qui étaient en vigueur en 2014 (Boulanger et al., 2018); ils ont été intégrés à une grille d'analyse des dossiers qui a été élaborée à partir des ordonnances médicales, des règles de soins infirmiers (interventions documentées que l'infirmière doit effectuer) en vigueur dans le milieu de l'étude ainsi que des recommandations canadiennes de l'AVC. L'élaboration de la grille d'analyse a été guidée par le cadre conceptuel de Donabedian (1988) pour faciliter l'explication des résultats cliniques post-AVC. Ensuite, cette grille d'analyse a été validée par deux experts de contenu et un expert en métrologie et testée sur trois dossiers de santé répondant aux critères d'inclusion et d'exclusion afin d'évaluer la faisabilité. La grille d'analyse de dossiers est disponible sur demande à l'auteur correspondant. Les caractéristiques des patients telles que l'âge, le sexe et le type d'AVC ont été recueillies dans les dossiers afin de dresser un portrait général des patients à l'étude. Le recueil de l'information dans les dossiers des patients était effectué seulement par la chercheuse principale et une codification de 1 à 30 a été effectuée pour conserver la confidentialité des dossiers et l'anonymat des patients.

Analyse des données

Des analyses descriptives incluant des calculs de tendance centrale, des données avec des moyennes et des écarts-types

ont été réalisées (SPSS version 24). Les résultats ont été calculés individuellement pour chacun des indicateurs en soins infirmiers. La grille d'analyse des dossiers comportait une liste de critères de qualité pour chacun des indicateurs en fonction des recommandations canadiennes et des règles de soins établies dans le milieu clinique.

Objectif 2: Identifier les barrières et les facilitateurs perçus par les infirmières à l'adhésion aux recommandations canadiennes dans la prise en charge des patients qui subissent un AVC

Devis de l'étude et échantillon

Nous avons effectué une description des barrières et des facilitateurs perçus par les infirmières œuvrant auprès des patients atteints d'un AVC dans les unités de soins ciblées par l'étude au moyen d'un questionnaire. Deux périodes de recrutement ont eu lieu en mars et en avril 2017 afin de rejoindre le plus grand nombre d'infirmières par des présentations orales sur tous les quarts de travail. La lettre d'information ainsi que les questionnaires étaient à la disponibilité des infirmières en tout temps sur les unités de soins pendant la période de collecte de données. Les questionnaires ont été remplis de façon anonyme et la participation volontaire supposait que l'infirmière consentait à l'étude selon l'Énoncé de politique des trois conseils: Éthique de la recherche avec des êtres humains (EPTC2, 2014).

Variables à l'étude et outils de mesure

Le questionnaire, conçu à l'aide du modèle de Donabedian (1988) et à partir des barrières et facilitateurs recensés dans la littérature (Bayley et al., 2012; Dale et al., 2015; Gache et al., 2014; McCluskey et al., 2013), contenait également des données démographiques pour permettre la description des infirmières à l'étude. Constitué de 23 énoncés, il était divisé en trois thématiques: 1) l'importance de l'application des recommandations canadiennes; 2) les caractéristiques personnelles des infirmières; 3) les caractéristiques de l'organisation. Les infirmières devaient répondre selon une échelle de Likert de 1 à 5 permettant de connaître leur degré d'accord ou de désaccord avec les énoncés. Le questionnaire a été validé par deux experts en AVC et un expert en métrologie afin de s'assurer de la validité de contenu de celui-ci. De plus, le questionnaire a été testé par trois infirmières qui avaient des connaissances au niveau de l'AVC, mais qui ne travaillaient pas sur les unités ciblées par cette étude. Par la suite, certaines modifications ont été apportées au questionnaire pour permettre son utilisation.

Analyse des données

Nous avons effectué une analyse descriptive des barrières et des facilitateurs de l'adhésion aux recommandations canadiennes avec des moyennes et des écarts-types (SPSS Version 24). Les résultats ont été calculés pour chacun des énoncés du questionnaire. Cependant, pour faciliter l'analyse, les réponses ont été regroupées en trois catégories, soit:

D'accord (représentant 4 ou 5 sur l'échelle) avec l'énoncé; Ni d'accord et ni en désaccord (3) avec l'énoncé; et En désaccord (1 ou 2) avec l'énoncé. Cette catégorisation des résultats a permis de mettre davantage en évidence les barrières et facilitateurs perçus par les infirmières.

Résultats

Objectif 1: Analyse des indicateurs de soins à partir des dossiers de patients

Les caractéristiques des patients des dossiers inclus dans l'étude sont présentées au tableau 1. L'âge moyen des patients dont les dossiers ont été analysés était de 72.8 ans $\pm$ 12 ans et on note une proportion similaire d'hommes et de femmes. L'AVC ischémique représentait 90% des cas identifiés. Les résultats présentés à la figure 1 montrent que l'indicateur ayant obtenu le résultat le plus élevé est celui de la mobilisation précoce (96%). Les deux indicateurs ayant obtenu les résultats les plus faibles sont la prise en charge de la douleur (56%) et le dépistage du risque de chute (29%).

L'analyse de l'indicateur du dépistage de la dysphagie (65%) révèle une grande variation de l'écart-type ($\pm$ 43.6) dans les dossiers des patients. Dans cette étude, un pointage de 0.5 était accordé si le dépistage de la dysphagie était effectué, et 0.5 point si celui-ci était réalisé dans un délai inférieur à quatre heures. Ensuite, un autre point était accordé pour chacune des étapes apparaissant sur l'outil du dépistage de

la dysphagie utilisé dans notre établissement (HSC). La moyenne du pointage obtenu a été calculée et ramenée sur un point. Majoritairement, les résultats étaient supérieurs à 0.8/1 pour plusieurs dossiers, alors que d'autres dossiers ont obtenu des scores de 0. On peut donc affirmer que, lorsque le dépistage de la dysphagie est réalisé et présent au dossier du patient, il semble très bien effectué puisque l'ensemble des critères est respecté, alors que dans certains dossiers, le score de zéro s'expliquerait par l'absence complète du dépistage au dossier.

Tableau 1

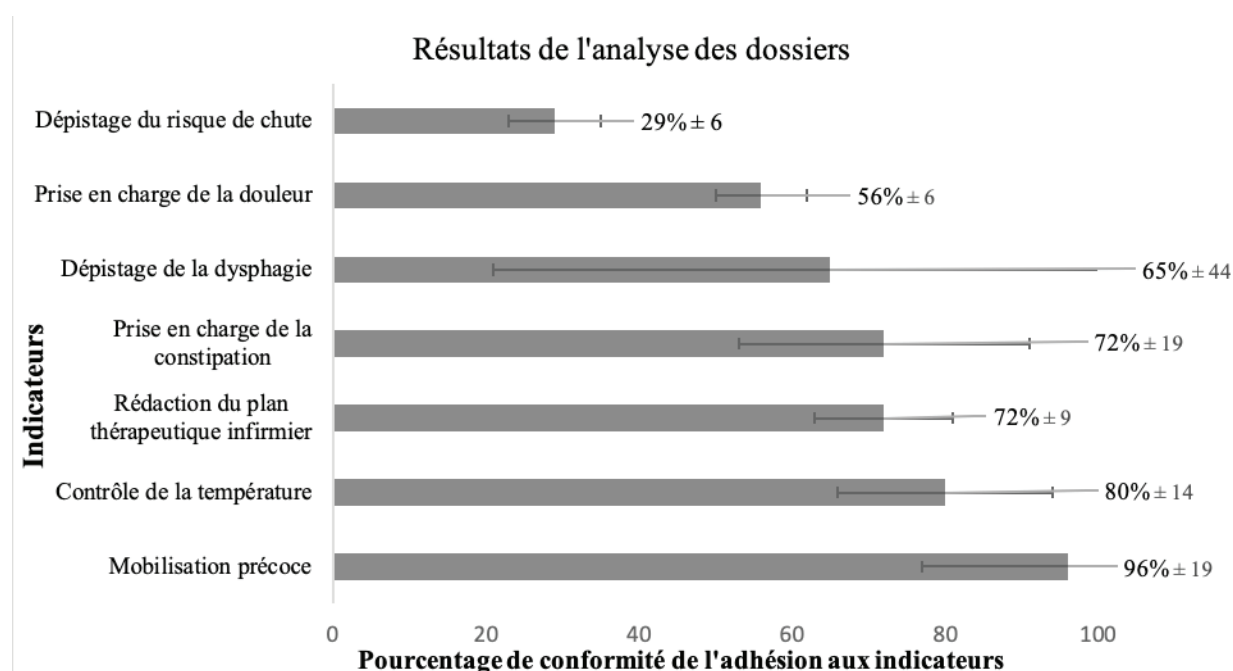
Caractéristiques des personnes ayant subi un accident vasculaire cérébral (AVC) (n = 30)

Caractéristiques		M $\pm$ ÉT n (%)
Âge		72.8 $\pm$ 12
Sexe	Femme	16 (53)
	Homme	14 (47)
Type d'AVC	Ischémique	27 (90)
	Hémorragique	3 (10)

Note: M: moyenne; ÉT: écart-type; n: nombre de dossiers de patients

Figure 1

Résultats concernant l'analyse des dossiers (n = 30)



Note: n: nombre d'infirmières

Tableau 2*Caractéristiques liées à l'emploi des infirmières (n = 33)*

Caractéristiques (n)	Unités de soins	Résultats n (%)
Unité de travail (33)	Urgence	8(24)
	Soins intensifs	10(30)
	Unité AVC	15(46)
Quart de travail (31)	Nuit	6(19)
	Jour	16(52)
	Soir	9(29)
Statut de travail (31)	5 jours/semaine	24(77)
	3-4 jours/semaine	5(16)
	2 jours et moins/semaine	2(7)
Expérience de travail dans le service actuel (33)	Moins de 2 ans	7(21)
	Entre 2 et 5 ans	7(21)
	De 5 à 10 ans	7(21)
	Plus de 10 ans	12(36)

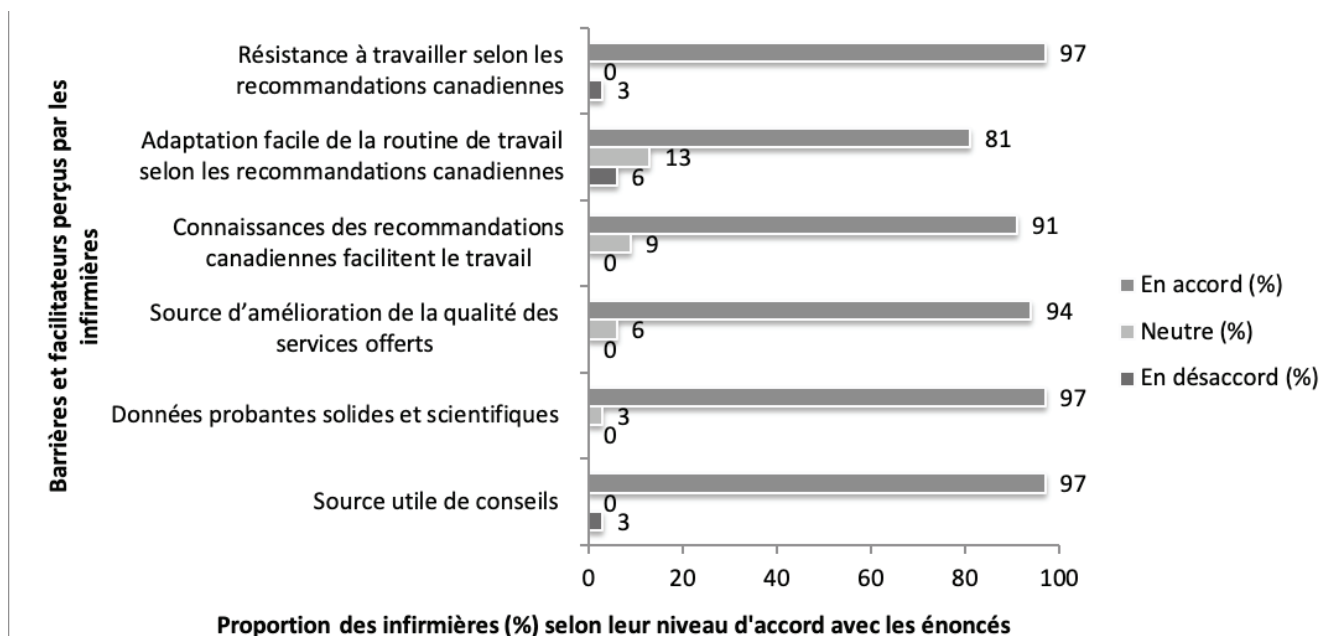
Note: n: nombre d'infirmières

Objectif 2: Analyse des données du questionnaire sur les barrières et facilitateurs

Les caractéristiques sociodémographiques des infirmières ayant participé à l'étude sont présentées au tableau 2. Sur environ 100 infirmières travaillant dans le milieu de l'étude, 33 ont rempli le questionnaire à la suite du recrutement, une participation de 33% de la population accessible. Presque la moitié des infirmières provenait de l'unité dédiée pour la clientèle AVC (46%) et travaillait sur le quart de jour, ce qui s'explique, entre autres, par le fait qu'un nombre supérieur d'infirmières travaillent sur ce quart de travail comparativement aux quarts de soir et de nuit. De plus, 77% des infirmières travaillaient à temps complet (5 jours/semaine), et environ le tiers comptait plus de dix années d'expérience dans l'unité de soins actuelle.

Barrières et facteurs facilitateurs perçus par les infirmières

Les barrières et les facilitateurs par rapport à l'application des recommandations canadiennes de 2014 sont présentées à la figure 2. Les résultats les plus élevés révèlent que les 33 infirmières ayant participé à l'étude croient que les recommandations canadiennes sont une source utile pour le travail (97%), qu'elles sont fondées sur des données probantes (97%) et qu'elles peuvent conduire à une amélioration de la qualité des soins (94%). Le plus faible résultat (81%) concerne l'adaptation de la routine de travail en fonction des recommandations canadiennes de 2014. Globalement, l'opinion des infirmières est donc favorable pour l'ensemble des énoncés en lien avec l'application des recommandations canadiennes.

Figure 2*Barrières et facilitateurs perçus par les infirmières (n = 33) en lien avec l'application des recommandations canadiennes*

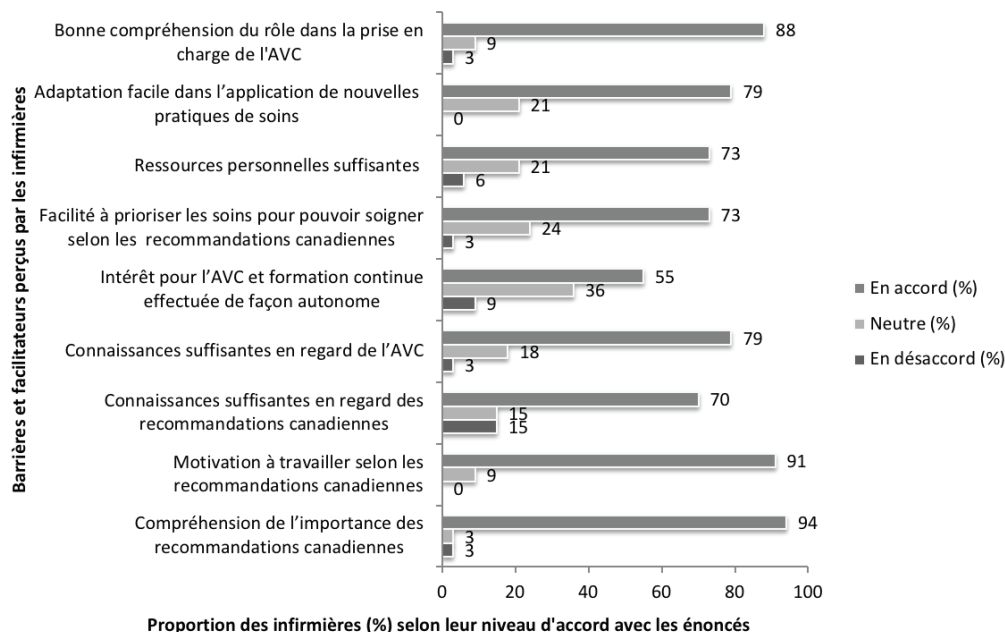
Note: n: nombre d'infirmières

Les barrières et les facilitateurs au regard des caractéristiques personnelles des infirmières sont présentés à la figure 3. Les résultats les plus élevés sont l'importance accordée à la prise en charge des patients (94%) et la motivation à adhérer aux recommandations (91%). L'énoncé pour lequel le résultat est le plus faible est l'intérêt personnel que les infirmières accordent à la pathologie de l'AVC (55%). Cependant, sur les 33 questionnaires, 12 infirmières participantes avaient une réponse neutre concernant cet énoncé (36%).

Les barrières et les facilitateurs au regard des caractéristiques de l'organisation sont présentés à la figure 4. Les résultats sont légèrement plus faibles que pour les autres thèmes du questionnaire. Les énoncés ayant obtenu des résultats plus élevés sont l'aide par les pairs (97%) et la collaboration dans l'équipe (91%). Bien que le résultat le plus faible soit le temps que les infirmières ont à consacrer pour les soins selon les recommandations canadiennes (36%), 43% des infirmières n'ont pas pris de position pour cet énoncé. De plus, 79% des

Figure 3

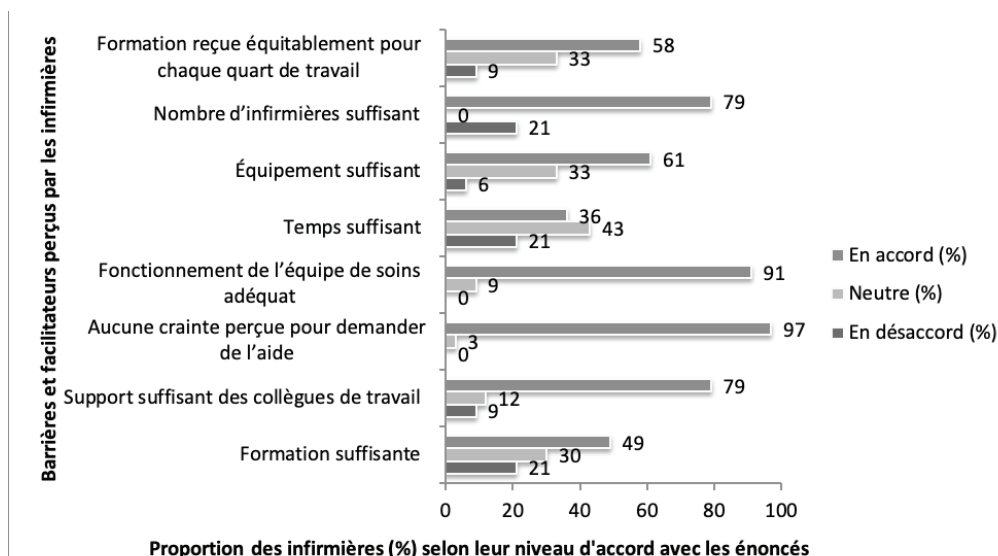
Barrières et facilitateurs perçus par les infirmières (n = 33) en lien avec les caractéristiques personnelles des infirmières



Note: n: nombre d'infirmières

Figure 4

Barrières et facilitateurs perçus par les infirmières (n = 33) en lien avec les caractéristiques de l'organisation



Note: n: nombre d'infirmières

infirmières considèrent que le nombre d'infirmières œuvrant sur l'unité de soins est suffisant pour assurer les soins à l'usage selon les recommandations canadiennes. Un peu moins de la moitié des infirmières ont indiqué avoir suffisamment de formation (49%) et 58% trouvent que la formation est dispensée de façon équitable sur les trois quarts de travail. De plus, 61% des infirmières ont répondu avoir suffisamment d'équipement pour travailler.

À la lumière de ces résultats, les principaux facilitateurs sont l'importance des recommandations canadiennes, la motivation à les suivre et le fait que celles-ci améliorent la qualité des soins. Les principales barrières recensées sont le faible intérêt pour le sujet de l'AVC, le manque de connaissances pour l'AVC et de formation, et le manque de temps, de ressources et d'équipement.

Discussion

L'étude avait pour objectifs d'identifier l'adhésion aux recommandations canadiennes de sept indicateurs au regard des soins infirmiers administrés aux personnes ayant subi un AVC et d'identifier les barrières et les facilitateurs qui pouvaient influencer l'atteinte de ces indicateurs en vue d'améliorer la pratique clinique. Les résultats de notre étude ont permis d'approfondir l'état des connaissances par rapport à l'adhésion aux indicateurs importants dans la prise en charge de l'AVC et de mettre en lumière les principales barrières ou les facteurs facilitateurs pouvant freiner l'adhésion à ces indicateurs. Tout d'abord, cette étude québécoise démontre bien que parmi les sept indicateurs étudiés, trois avaient de plus faibles résultats par rapport aux autres, notamment ceux qui concernent le dépistage du risque de chute (29%) et la prise en charge de la douleur (56%).

Par ailleurs, il est reconnu qu'un dépistage du risque de chute n'étant pas effectué de façon optimale peut entraîner des conséquences au niveau de la qualité de vie, et ce, même à long terme après un AVC (Verheyden et al., 2013). Le faible résultat de 29% pour le dépistage du risque de chute permet de mettre en lumière que c'est un indicateur qui nécessite un suivi prioritaire et un plan d'amélioration pour la pratique clinique dans ce milieu de soins en particulier. De plus, le faible écart-type de 6% de cet indicateur démontre qu'il n'y a pas de grandes variations au sein des dossiers analysés et que pour l'ensemble de ceux-ci, le score était très bas.

Le résultat de la prise en charge de la douleur reflète l'analyse d'un ensemble d'interventions incluant l'évaluation et la surveillance du patient jusqu'aux interventions devant être effectuées pour diminuer la douleur. À titre comparatif, une étude évaluant l'inscription de la douleur à l'épaule au dossier, sans toutefois analyser la prise en charge globale du patient par rapport à cet indicateur, a obtenu un résultat de 90% (Luker & Grimmer-Somers, 2009). Ce plus faible résultat dans notre étude pourrait probablement s'expliquer

par l'analyse de critères plus détaillés dans notre grille d'analyse de dossiers. De plus, l'analyse de cet indicateur a été effectuée pour la douleur générale et ne concerne pas uniquement la douleur à l'épaule.

Le résultat du dépistage de la dysphagie (65%) est comparable à l'étude ontarienne (67.2%) (Hall et al., 2014), mais demeure supérieur aux résultats obtenus dans l'étude au Canada ayant un taux de dépistage de 50% (Réseau canadien contre les accidents cérébrovasculaires [RCCAVC], 2011) et dans l'étude au Québec qui notait un taux de dépistage de 16% pour les centres secondaires (INESSS, 2016). Cependant, aucune de ces études n'avait considéré le délai de quatre heures après le triage pour effectuer le dépistage tel qu'il était indiqué dans les recommandations canadiennes qui étaient en vigueur en 2014 alors que ce critère a été considéré dans notre étude. Considérant que des complications importantes peuvent survenir si une dysphagie n'était pas dépistée, il est important d'optimiser la rapidité avec laquelle le dépistage doit être effectué. De plus, l'écart-type de 44% pour le dépistage de la dysphagie démontre une grande variation de cet indicateur dans les dossiers des patients. Ce classement dichotomique indique qu'une portion des dossiers (21 dossiers) se situait dans un score supérieur à 0.8/1 et que l'autre portion des dossiers (9 dossiers) n'avait aucun dépistage de la dysphagie complété au dossier. Ce constat met donc en lumière que l'écart observé pourrait ne pas être en lien avec une difficulté dans l'achèvement du dépistage, mais peut être davantage lié à une sensibilisation sur l'importance de l'effectuer auprès de la clientèle AVC.

En résumé, les résultats obtenus pour ces trois indicateurs signalent donc une nécessité de développer les compétences du personnel infirmier par la formation et la sensibilisation à l'importance de ceux-ci. Le faible résultat concernant l'indicateur du dépistage du risque de chute montre que celui-ci est préoccupant et devient une priorité dans ce milieu de soins.

L'analyse des résultats au regard des barrières et des facilitateurs a permis de constater des éléments positifs à une meilleure prise en charge de l'AVC. Ainsi, la motivation à suivre les recommandations canadiennes 2014 (91%) et la croyance à l'importance de les appliquer dans la pratique clinique (94%) constituent des éléments facilitateurs et favorables pour le suivi des pratiques optimales dans notre étude. En revanche, l'étude de McCluskey et collaborateurs (2013) a fait mention du manque de motivation pour le suivi des lignes directrices de l'AVC comme étant une barrière à l'adhésion à celles-ci, mais l'étude concernait l'ensemble des intervenants qui travaillaient sur l'unité AVC et ne ciblait pas seulement les infirmières (McCluskey et al., 2013).

Les énoncés concernant des caractéristiques de l'organisation sont ceux pour lesquels les infirmières étaient le moins en faveur. Seulement 49% ont mentionné avoir

suffisamment de formation et 58% croient que la formation offerte est équivalente sur tous les quarts de travail. D'ailleurs, plusieurs études ont également indiqué que le manque de formation et le manque de connaissances sont des barrières au suivi de recommandations (Bayley et al., 2012; Dale et al., 2015; Gache et al., 2014; McCluskey et al., 2013). De plus, l'argument du manque de temps, de ressources et d'équipement pour travailler obtient des résultats comparables à d'autres études qui recensent des barrières similaires comme le manque de temps (Bayley et al., 2012) et d'équipement disponible (Bayley et al., 2012; Dale et al., 2015; Gache et al., 2014).

En résumé, considérant la présence d'écarts dans l'adhésion aux recommandations canadiennes, il semble y avoir une discordance entre les résultats des indicateurs démontrés dans notre étude et les réponses aux questionnaires orientées de façon très favorable. Somme toute, ces résultats permettent d'identifier des pistes d'amélioration prioritaires telles que l'ajout de formation ainsi que le rehaussement des ressources et du matériel disponible pour travailler. D'ailleurs, des chercheurs ont démontré que le développement des compétences des infirmières avec un programme de formation permettait une meilleure adhésion aux lignes directrices de l'AVC (Reynolds et al., 2016).

Limites de l'étude

Cette étude comporte certaines limites. Tout d'abord, considérant la petite taille des échantillons à l'étude et l'unique milieu de recherche, la transférabilité des résultats obtenus à d'autres milieux demande une certaine prudence. Ensuite, l'analyse des dossiers a été effectuée par une seule personne et comporte donc des limites au niveau de la fidélité interjuges. De plus, le questionnaire, nouvellement créé, a été évalué pour la validité de contenu et devrait donc subir une analyse psychométrique plus détaillée. Une autre limite est le fait que le questionnaire ne permettait pas de réponses spécifiques et différentes pour chacun des indicateurs, mais avait une approche davantage globale de la pratique clinique. Finalement, une autre limite importante est la désirabilité sociale concernant la réponse aux questionnaires par les infirmières puisqu'il est probable que celles-ci ne voulaient pas répondre en défaveur des recommandations canadiennes de l'AVC. En revanche, les questionnaires ont été remplis de façon anonyme et confidentielle.

Implications pour la pratique infirmière

Cette étude aura permis l'élaboration d'un outil d'analyse de dossiers standardisé pouvant être utilisé afin d'effectuer des audits de qualité de façon plus systématique par rapport à l'AVC dans le milieu de soins concerné par l'étude.

De plus, cette étude a aussi mis en lumière des indicateurs prioritaires à améliorer. Considérant aussi le fait que ces indicateurs nécessitent une sensibilisation du personnel quant à l'importance de les suivre, il pourrait être proposé d'identifier des infirmières cliniciennes ressources dans les unités de soins ciblées afin de soutenir et de maintenir les pratiques optimales à long terme. Notamment, il serait pertinent d'expliquer les résultats d'évaluation d'indicateurs lors d'audits systématiques effectués afin d'impliquer les infirmières dans une recherche active de pistes d'amélioration pour le suivi d'indicateurs en soins infirmiers. De plus, les barrières et les facilitateurs relevés pourraient être des leviers afin d'optimiser la formation offerte et d'évaluer la possibilité d'ajouter des ressources ou du matériel à la disposition des infirmières comme des thermomètres, des appareils à pression ou des glucomètres (Dale et al., 2015).

Implications pour la recherche

Une étude similaire ultérieure effectuée dans différents hôpitaux au Québec serait pertinente afin d'avoir une vision globale des soins qui y sont administrés concernant la prise en charge des usagers ayant subi un AVC. De plus, les outils élaborés dans cette étude pourraient être adaptés et testés dans des études pilotes afin d'augmenter la fiabilité et la validité de ceux-ci. Plusieurs auteurs ont également expliqué que l'augmentation du nombre de recherches sur les soins administrés et sur l'intégration des suivis systématiques aiderait à augmenter l'adhésion aux nouvelles pratiques par les professionnels de la santé et augmenterait la qualité des soins (Abilleira et al., 2012; de Carvalho et al., 2012). Finalement, une étude qualitative sous forme de groupes de discussion ou d'entrevues avec des infirmières pourrait faire émerger d'autres facteurs influençant la pratique qui n'étaient pas présents dans le questionnaire.

Conclusion

Cette étude québécoise a permis de démontrer des écarts entre la pratique clinique actuelle de l'AVC et la pratique attendue selon les recommandations canadiennes de 2014 pour des indicateurs importants reliés à la pratique infirmière. Les résultats mettent en lumière certains indicateurs devant être améliorés de façon prioritaire ainsi que les barrières et facilitateurs sur lesquels agir pour orienter certaines prises de décisions concernant l'amélioration de la pratique clinique actuelle. Bien que l'AVC soit un sujet d'actualité pour lequel de nombreuses recherches sont effectuées, des recherches futures en sciences infirmières seraient très pertinentes et devraient être davantage exploitées pour s'assurer d'appliquer les résultats de recherche obtenus à la pratique clinique.

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Use of Technology to Monitor Patient Transitions Post-transcatheter Aortic Valve Implant: Results of a 12-month Follow-up Quality Improvement Initiative

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Abstract

Background: Transitional care strategies have demonstrated effectiveness in lowering readmissions, improving quality of life (QOL), and decreasing costs of care.

Purpose: The purpose of this prospective follow-up, quality improvement initiative was to identify transitional care gaps, based on patient outcome indicators in post-transcatheter aortic valve implant (TAVI) patients, using various types of technology after hospital discharge.

Methods: All TAVI patients discharged from a Canadian tertiary cardiac care centre from January 2019 to January 2020 were offered automated follow-up (N = 77).

Results: Most common transitional care gaps included failure to recognize early signs of heart failure, understand the activity guidelines, and access a primary care provider.

Conclusion: Using various types of technology to facilitate transitional care practices was an effective nurse-led strategy for assessing post-discharge complications and QOL.

Implications for Practice: Increasing the use of novel technology strategies to monitor TAVI patients post-discharge could optimize the care of this patient population.

Keywords: transcatheter aortic valve implant, patient-reported outcomes, quality of life, technology, transitional care

Duchesne, L., Quinlan, B., MacPhee, E., Abols, A.-P., Cross, C., & Twyman, K. (2021). Use of Technology to Monitor Patient Transitions Post-Transcatheter Aortic Valve Implant: Results of a 12-month Follow-up Quality Improvement Initiative. *Canadian Journal of Cardiovascular Nursing*, 31(3), 14–20.

Key highlights

- TAVI patients have an increased risk for post-discharge issues due to their advanced age, frailty, and multiple co-morbidities.
- The most commonly reported transitional care gaps in our post-TAVI patients included failure to recognize early signs of heart failure, understand physical activity guidelines, and access a primary care provider.
- The use of novel technology and nurse-led transitional care strategies to monitor TAVI patients may have contributed to patient satisfaction with the technology and improved QOL post-discharge.

The rapidly growing aging population and the accompanying increase in age-related aortic valve stenosis have major implications for healthcare resource planning. While transcatheter aortic valve implantation (TAVI) has been the standard of care for high-surgical-risk patients with severe aortic valve stenosis in Canada since 2012 (Webb et al., 2012), it is now also becoming an acceptable alternative

for intermediate and low-surgical-risk patients (Asgar et al., 2019; Mack et al., 2019). Although less invasive than open heart surgery, patients undergoing TAVI still require vigilant post-procedure management. Transitional care strategies are particularly important for this vulnerable population, as they are at an increased risk for hospital readmission due to their advanced age, frailty, and multiple co-morbidities (Krzyszowski et al., 2016). Therefore, ensuring that this patient population is supported with optimal follow-up care is essential to improve patient safety and recovery outcomes.

Transitional care is defined as a set of interventions designed to ensure continuity and coordination of care, as patients transfer from hospital to home (Meleis et al., 2000; Naylor et al., 2011). Transitional care programs, which are often made up of nurse-led, multidisciplinary teams, offer education and counselling via home visits, telephone calls, telemonitoring, and outpatient clinics (Feltner et al., 2014; Stamp et al., 2014). Transitional care strategies assist healthcare providers with identifying patients who require early medical interventions, reinforcing discharge teaching, and ensuring timely follow up

with primary care providers (Stella et al., 2016). Based on an integrative review of nurse-led transitional care program outcomes in heart failure patients (N = 20 studies), Stamp et al. (2014) concluded that these programs are particularly crucial for older adults with complex health conditions, as they are effective in lowering readmissions, improving quality of life (QOL), and decreasing costs of care. Similar favourable outcomes of transitional care have been reported in TAVI patients (Wong et al., 2018).

For most patients at our tertiary cardiac care centre, transitional care interventions include interactive voice response (IVR) technology as a routine part of the discharge process. The IVR is a follow-up system that enables users to respond to scripted dialogues with the telephone keypad or through voice recognition. This system has been shown to safely and effectively monitor patients after discharge from the emergency department (Calder et al., 2018), as well patients with heart failure (Chaudhry et al., 2010) and coronary disease (Reid et al., 2007). Prior to this QI initiative, our post-TAVI patients were followed up through standard transitional care practices, which included providing patients with a 24-hour number to call in the event of questions or concerns, a four-week follow-up visit with the TAVI physician, and the recommendation to follow up with their primary care provider within two weeks of discharge. However, it was unclear if the IVR system or other forms of technology would also be efficacious for patients undergoing TAVI.

The purpose of this quality improvement (QI) initiative was to identify transitional care gaps based on key patient outcome indicators post-TAVI using an automated follow-up system at various intervals after hospital discharge. Based on previous evidence, key post-TAVI patient outcome indicators included fluid balance, access site recovery and complications, symptom assessment and management, readmissions, and other potential complications (Wong et al., 2018). The primary objective was to identify transitional care gaps, based on post-TAVI patient outcomes, to assist healthcare providers with anticipating and optimizing post-discharge care. The secondary objectives were to identify the preferred method of follow-up in this patient population, as well as patient satisfaction with the various methods of technology.

Methods

This prospective follow-up QI initiative was guided by Transitions Theory (Meleis et al., 2000). According to Meleis et al. (2000), this theory recognizes that transitions are complex and multidimensional and provides a framework for understanding patient experiences during transitions. This initiative was reviewed and approved as a QI project by the Ottawa Health Science Network Research Ethics Board.

Sample and Setting

The setting for this project was a university-affiliated, tertiary cardiac care centre in eastern Canada, which provides care to more than 185,000 patients annually. The

sample included all post-TAVI patients who were discharged between January 2019 to January 2020. Since transitional care post-discharge is a standard of care at our institution, no TAVI patients were excluded from the project.

Procedures

Prior to discharge, TAVI patients were seen by advance practice nurses (APNs) to review discharge information and to explain the follow-up options. In addition to IVR, a TAVI specific mobile application for an android tablet device was developed in collaboration with TelASK Technologies Inc. and offered to patients at follow-up. Patients were also offered email and texting follow-up options, thereby increasing availability and access for patients with different information processing styles, abilities, or preferences. Post-TAVI patients were then contacted on day two, day 10, day 30, six months, and 12 months post-discharge by the automated follow-up system method of choice.

Measures

All automated follow-up methods used a structured interview questionnaire (see Table 1) that integrated post-TAVI transitional best practices. This tool was created by a team of experts, including APNs, cardiologists, and cardiac surgeons involved in TAVI care at our centre; it targeted known risks associated with post-TAVI care transitions such as medications, access site complications, heart failure symptoms, physical activity, and follow-up appointments (Wong et al., 2018).

The Medical Outcomes Short Form-12 (SF-12; Ware et al., 1996) was used to assess TAVI patients' generic health status and perceived QOL. The SF-12 measures patients' feelings regarding their physical and mental health across eight health domains. The reliability and validity of this tool have been well established (Ware et al., 1996) and it has been used extensively to assess patients' perceived health across multiple patient populations, including several TAVI studies (Ando et al., 2019; Frantzen et al., 2021; Straiton et al., 2018). The SF-12 was elicited from patients prior to their TAVI procedure by the APN in person, and then at 30 days, six months, and 12 months post-discharge through the automated follow-up system.

Patients' satisfaction with their selected follow-up technology was measured by a dichotomous (i.e., yes or no) question included in the interview tool at six months and 12 months post-TAVI. Monitoring of the follow-up system was conducted by APNs who identified transitional care gaps and provided the appropriate interventions through telephone follow-up.

Data Analysis

Numerical and dichotomous data collected from the automated follow-up system were compiled into a Microsoft Excel spreadsheet and analyzed using descriptive statistics. Descriptive statistics were used to characterize the patient population and report frequencies/percentages at each time interval, as outlined above.

Table 1

*Sample of Automated Follow-up Questions Developed Through TelASK Technologies Inc. Targeting Key Patient Outcome Indicators after Hospital Discharge Post-TAVI**

Day 2 Post-Discharge	Did you go to the pharmacy to fill your prescription? Did you have a question about your medication? Since discharge has your breathing become worse? Do you own a scale? Are you weighing yourself every day? Are you following the activity program that you were provided before discharge? Has dizziness prevented you from doing your usual activities? Are you having any new or worsening pain from when you were in the hospital? Are you having pain or discomfort at your insertion site?
Day 10 Post-Discharge	Do you have questions about your medications? Since discharge, has your breathing become worse? Are you weighing yourself every day? Are you following the activity program that you were provided before discharge? Are you having problems with your appetite? Are you having difficulty sleeping? Are you having any new or worsening pain from when you were in the hospital? Are you having pain or discomfort at your insertion site? Have you been to see your family doctor? Do you know when to call a doctor? Have you been to an emergency department or admitted to the hospital?
Day 30 Post-Discharge	Do you have questions about your medications? Since discharge, has your breathing become worse? Are you weighing yourself every day? Are you following the activity program that you were provided before discharge? Are you having problems with your appetite? Are you having difficulty sleeping? Are you having any new or worsening pain from when you were in the hospital? Are you having pain or discomfort at your insertion site? Have you been to an emergency department or admitted to the hospital?
6 and 12 Months Post-Discharge	Have you been to an emergency department or admitted to the hospital? Do you think this is a good way to follow-up with you after your discharge from the hospital?

*Note: dichotomous responses (i.e., yes/no)

Results

Sample Description

Sixty-nine percent ($N = 77$) of the 112 enrolled post-TAVI patients completed all 12 months of automated follow-up. The mean age of the sample was 79 years with a range of 64 to 93 years. Forty-seven percent ($n = 36$) of the patients were female. Eighteen percent ($n = 14$) of the patients were diagnosed with diabetes, with an average HbA1C of 7.2%. Almost all patients ($n = 72$; 94%) underwent the TAVI procedure using the transfemoral approach.

Transitional Care Gaps and Patient Outcomes

Day two post-discharge. Most patient concerns on day two post-discharge involved not recognizing early signs of heart failure, not understanding the activity program provided prior to discharge, and having questions about their access site. Approximately 10% ($n = 8$) of the patients were reportedly not performing daily weight checks and not following the activity guidelines provided in their TAVI booklet prior to discharge. Access site discomfort, fatigue, and

dizziness were the common reasons reported by patients for their lack of activity. Seventeen percent ($n = 13$) of patients reported having pain or discomfort at their access site, while 12% ($n = 9$) noted swelling at the site. In all these cases, telephone follow-up by the nurses determined the discomfort and swelling described were associated with the normal healing process and not an adverse event requiring further treatment.

Day 10 post-discharge. The two most common issues at day 10 post-discharge included problems with sleeping ($n = 10$; 13%) and lack of follow-up appointments with their primary care provider ($n = 35$; 46%). While some of these patients had appointments in the upcoming days, many had not yet called to make an appointment and were encouraged to do so as soon as possible. Others expressed difficulty making follow-up appointments with their family physician.

Day 30 post-discharge. On day 30 post-discharge, the top patient concerns were related to not following the activity

program provided, having difficulty sleeping, and being admitted to an emergency department (ED) or hospital. Twenty-two percent of patients ($n = 77$) identified not following the activity guidelines in their TAVI booklet. Twelve percent ($n = 9$) of patients reported having difficulty sleeping. For many of these patients, the sleeping issues were related to shortness of breath/fluid retention, but they were already being followed by a physician and had been prescribed diuretics. Finally, 13% ($n = 10$) of patients reported being seen in an ED or admitted to hospital post-discharge. Follow-up revealed that most of these cases were not cardiac-related. However, two patients were seen in an ED due to difficulty breathing as a result of fluid retention and two others were admitted with complications from their TAVI procedure (i.e., one minor ischemic stroke and one contained left ventricular perforation).

Six and 12 months post-discharge. Eighteen percent ($n = 14$) and 22% ($n = 17$) of patients had been seen in an ED or readmitted to hospital post-discharge at six months and 12 months respectively. Although the majority of the readmissions were not cardiac related, the two main reasons for cardiac-related readmissions included heart failure ($n = 3$) and rhythm abnormalities ($n = 2$).

Generic Health Status and Quality of Life

Table 2 outlines the SF-12 responses pre-TAVI, as well as post-TAVI, at the specified intervals. Trends in early TAVI benefits were shown at 30 days post-discharge and these trends persisted at six and 12 months across all SF-12 components. Overall, generic health status improved from “fair” pre-TAVI to “good” post-TAVI. Prior to TAVI, almost all patients ($n = 68$; 88%) reported physical health restrictions, including

Table 2

SF-12 Quality of Life Means of Patient Responses Post-TAVI (N = 77)

SF-12 Questions	Scale	Pre TAVI	Post-Discharge		
			Day 30	6 months	12 months
How good do you think your health is?	1 = Poor 5 = Excellent	2.48	3.37	3.33	3.24
Does your health now limit you in moderate activities such as moving a table, pushing a vacuum cleaner, bowling or playing golf?	1 = Limited a lot 3 = Not limited at all	1.54	2.17	1.97	1.96
Does your health limit you in climbing several flights of stairs?	1 = Limited a lot 3 = Not limited at all	1.38	2.05	1.78	1.81
During the past 4 weeks, does your physical health restrict you from accomplishing less than you would like?	Yes/No Yes (%)	88%	45%	51%	53%
During the past 4 weeks, does your physical health limit the kind of work or activities you can perform?	Yes/No Yes (%)	88%	52%	49%	50%
During the past 4 weeks, did you accomplish less than you would like as a result of any emotional problems such as feeling depressed or anxious?	Yes/No Yes (%)	38%	19%	15%	23%
During the past 4 weeks, did you perform work or activities less carefully than usual as a result of any emotional problems such as feeling depressed or anxious?	Yes/No Yes (%)	26%	13%	15%	14%
During the past 4 weeks, how much did pain interfere with your normal work, including working outside the home and housework?	1 = Extremely 5 = Not at all	3.34	4.12	3.87	3.8
During the past 4 weeks, how much of the time have you felt calm and peaceful?	1 = None of the time 6 = All the time	4.06	5.0	4.7	4.72
During the past 4 weeks, how much of the time did you have a lot of energy?	1 = None of the time 6 = All the time	2.96	4.08	4.65	3.82
During the past 4 weeks, how much of the time have you felt downhearted and blue?	1 = All of the time 6 = None of the time	4.14	4.12	4.7	4.55
During the past 4 weeks, how much of the time have your physical or emotional problems interfered with your social activities, such as visiting friends or relatives?	1 = All of the time 6 = None of the time	3.74	4.58	4.65	4.27

the intensity and types of desired activities. These restrictions decreased to 50% at six and 12 months post-procedure. Similarly, the data suggested a reduction in anxiety and depression over time, with a decrease from 38% pre-TAVI to 23% at 12 months post-TAVI.

Evaluation of Follow-up Technology

Approximately 83% of the patients ($n = 64$) utilized the IVR system, while only 17% ($n = 13$) preferred to be contacted by email for follow-up. In most cases ($n = 59$; 77%), the patients interacted with the automated follow-up system and nurses directly; however, some follow-up sessions also occurred with family or caregivers. Unfortunately, none of the patients selected the mobile app or texting options, as they felt more comfortable using the traditional method of phone calls. Additionally, most of these patients had iOS rather than Android operating systems for which the application was designed. However, 78% ($n = 60$) of patients were reportedly satisfied with their method of follow-up.

Discussion

Post-TAVI Patient Outcomes

Transitional care is a critical component of quality care for patients following discharge (Stamp et al., 2014). Understanding transition processes leads to improved nursing therapeutics and thus promotes positive responses to transition (Meleis et al., 2000). In this QI project, several key care gaps were identified in post-TAVI patients as they transitioned from the hospital to the community. The most common gaps occurred during the first 30 days post-discharge and included inadequate recognition of early signs of heart failure, understanding the recommended activity program, and follow-up with a primary care provider.

Recognition of early signs of heart failure is crucial for patients post-TAVI, as it is a common risk factor for hospital readmission (Auffrett et al., 2020). While our pre-discharge APN intervention included heart failure patient education, such as monitoring daily weights and common signs or symptoms, post-discharge findings supported the importance of reinforcing this education in subsequent phases of the transitional care program. Physical activity is also important for post-TAVI patients, as it has been associated with increased mortality, as well as improved functional and mental status (Sathananthan et al., 2019). Akin to the heart failure education, the value of the nurses reviewing and reinforcing the physical activity guidelines provided in their discharge teaching was evident in the trends towards increasing adherence to these guidelines over time.

Lastly, timely follow-up with a primary care provider is a vital component of reducing care gaps and ensuring continuity of patient care (Tung et al., 2017). However, our QI project revealed that almost half (46%) of our TAVI patients were unable to access follow-up appointments ten

days post-discharge, thereby potentially compromising their safety post-discharge. Although the nurses intervened by contacting the physicians' offices, additional strategies, such as assisting TAVI patients with making follow-up appointments prior to discharge, are needed.

Follow-up Technology. The use of mobile health technology in clinical settings is associated with high levels of satisfaction in older adults (Ramprasad et al., 2019). Similarly, this QI initiative demonstrated that older adults are receptive and able to use various types of technology to facilitate transitional care practices. While IVR systems have been shown to be successful in identifying cardiac patient safety issues after discharge (Calder et al., 2018; Chaudhry et al., 2010; Reid et al., 2007), there is a paucity of research regarding the use of technology follow-up with the TAVI patient population. Our findings contribute to this body of evidence that the increasing use of technology in society may play a key role in transitional TAVI care by offering a more flexible means of tracking patient outcomes, especially for those with different information processing capabilities and preferences. However, further research in this area is warranted.

Limitations

Limitations for this QI initiative included a relatively small sample from a single institution. In addition, the data were elicited by self-reported questionnaires. Nonetheless, we were able to achieve our project objectives; several important gaps in transitional care, as well as patient preferences and satisfaction with follow-up care were identified. Finally, we did not have a control group in our project. However, our findings suggested favourable trends in QOL in our post-discharge TAVI patients over the 12-month follow-up, which may have been influenced by the nurse-led transitional care program.

Implications for nursing practice

According to Wong et al. (2018), monitoring of follow-up systems by APNs ensures that post-TAVI patients receive quality symptom assessment and appropriate interventions based on individualized patient needs. In this QI project, APNs played a key role in the development, implementation, and evaluation of a QI project to identify gaps, as well as novel technology in nurse-led transitional care of TAVI patients in our cardiac centre. Our automated follow-up system assisted nurses with early identification of post-discharge patient complications or issues, which, in turn, led to more timely resolution and may have had a positive impact on the patient outcomes. Our findings also highlighted the need to develop additional strategies to reduce the identified gaps in our transitional care program to ensure that our patients are receiving optimal care throughout their recovery. These strategies focus on the important nursing role of patient education, to include early

follow-up education in areas such as heart failure symptom awareness and physical activity. The nursing role of advocacy also emerged as important by ensuring that patients were able to access follow-up appointments with a primary care provider.

Findings from this QI project may provide insights for other nurse-led transitional care programs for TAVI patients. While the specific gaps identified in our project may be unique to our sample, our project could be easily replicated in other patient populations. As well, longitudinal research, and/or clinical trials, with larger samples and more clinical sites are central to contributing to this body of evidence and the goal of optimal transitional care for the TAVI patient population.

Conclusion

As the older adult population continues to increase, along with expanding recommendations for TAVI

procedures to lower risk groups, there is an accompanying growing demand for transitional care for TAVI patients. In this nurse-led transitional care project, we identified the key gaps in our follow-up care, as well as patient preferences and satisfaction with various transitional care technology. We also determined that the use of automated systems for follow-up was an effective strategy for assessing post-discharge patient complications, issues, and gaps in care, as well as trends in QOL over a 12-month period. The information gleaned from this project will contribute to enhancing our healthcare protocols related to transitional care and ensure optimal patient outcomes. While the generalizability of our findings may be limited, we have established the key role of nurses in evaluating the various aspects of transitional care TAVI patients, as well as the foundation for future research in this area.

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Simplifying depression screening in hospitalized cardiac patients—A quality improvement project

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Abstract

Background: Depression is common in patients with cardiovascular disease (CVD) and a leading cause of morbidity, mortality, and poor quality of life in this population. However, it is under-recognized and under-reported. The purpose of this quality improvement project was to improve depression screening and referral for patients on our cardiology in-patient unit.

Methods: Using the Plan-Do-Study-Act model, we replaced the Patient Health Questionnaire (PHQ)-9 with the PHQ-2. The project was evaluated with pre- and post-intervention chart audits and surveys of the nurses' perspectives.

Results: Pre-intervention chart reviews revealed a PHQ-9 depression screening completion rate of 38%. Post-intervention chart audits (n = 110) demonstrated PHQ-2 screening completion of 65%. Nurses reported that the PHQ-2 was easy to use and preferred over the PHQ-9.

Conclusions: The PHQ-2 is efficient and feasible, with increased nursing adherence and preference over the PHQ-9 for depression screening in cardiac patients.

Keywords: cardiovascular diseases, heart diseases, depression, quality improvement

Mauser, E. C., & Hayden, A. M. (2021). Simplifying depression screening in hospitalized cardiac patients—A quality improvement project. *Canadian Journal of Cardiovascular Nursing*, 31(3), 21–28.

Key Highlights

- Patients with CVD are at higher risk for depression compared to the general population.
- Depression in patients with CVD is under-recognized and under-reported.
- The PHQ-2 is an efficient and feasible initial screening tool for depression in our cardiac patient population.
- Routine use of a depression screening algorithm provides the potential for early identification, referral and treatment of depression to improve patient health outcomes.

Background

Approximately one in six adults will have depression in their lifetime (Centers for Disease Control, 2020). Patients with chronic diseases have been found to have a two to threefold higher rate of depression compared with age and gender matched primary care patients (Allabadi et al., 2019; Jha et al., 2019; Tesio et al., 2017). The prevalence of depression in patients with cardiovascular disease (CVD), in particular, is staggering. Up to 40% of patients with CVD meet criteria for major depressive disorder (MDD) (Dhar & Barton, 2016) and 20-30% may exhibit mild depression or increased depressive symptoms (Vaccarino et al., 2019). Depression is an independent risk factor for less favourable outcomes in patients with coronary artery disease (CAD;

Vaccarino et al., 2019). It has also been associated with a two-to-three times higher risk of death or rehospitalization within three to 12 months after hospitalization for heart failure (HF; Jha, et al., 2019). Depression in patients with CVD is associated with increased use of health care resources, poor quality of life, increased risk of social isolation, economic burden, and caregiver fatigue (Jha et al., 2019). Jha et al. (2019) identified several possible reasons for the unfavourable prognosis for patients with CVD who have depression and CVD, including lifestyle, autonomic dysfunction, neuroendocrine imbalance, inflammation, insulin resistance, and increased platelet reactivity.

Based on the compelling evidence of the link between depression and CVD, there has been an increasing focus on creating a screening process for depression in patients with CVD, with the goal to improve health outcomes. Accordingly, several large, influential healthcare organizations have established guidelines for screening patients with CVD for depression. For example, the United States Preventive Services Task Force (Siu et al., 2016) has recommended screening all adult patients with CVD for depression. More specifically, depression screening has also been recommended for patients following a myocardial infarction (MI; Virani et al., 2021; Green et al., 2009), and for patients with HF (Ponikowski et al., 2016), and CAD (Allabadi et

al., 2019; McManus et al., 2005; Vaccarino et al., 2019; Wang et al., 2011). However, despite these recommendations, depression in patients with CVD is often missed or under-reported due to lack of screening and follow-up (Jha et al., 2019; Tesio et al., 2019).

Over the past decade, several studies have explored the hypothesis that standardized screening for depression in patients on cardiac units offers the potential for early identification and optimal management of depression to improve patient health outcomes. In a prospective study, Ski et al. (2012) implemented and evaluated a depression screening and referral tool (Cardiac Depression Scale 5 [CDS-5]) on two cardiac units (N = 212). They found that 54% of their sample was 'at risk' for depression, with 35% of these patients at 'high risk.' Moreover, most risk scores (91%) were documented and 25% of these patients were referred for follow-up. Based on the findings of a subsequent follow-up study (N = 212), the levels of depression remained relatively constant over a 12-month period (Ski et al., 2015). Ski et al. (2015) highlighted the importance of depression screening, as well as referral and follow-up of these cardiac patients.

This quality improvement (QI) project was conducted to address an identified gap in screening practices for depression in cardiac patients at a large, tertiary medical centre in the mid-western United States. Results of a chart audit on a local medical cardiology progressive care unit (PCU) revealed that nurses only performed depression screening using the nine-item PHQ-9 (American Psychological Association, 2011) approximately one third (38%) of the time. Because the two-item PHQ-2 (Kroenke et al., 2003) requires less time to complete, it has the potential to be an efficient and feasible initial depression screening tool for nurses to use to identify depression in patients with CVD and requires less time to conduct than the standard PHQ-9 tool. Therefore, the lead author (EM) developed and implemented a QI project, which included initial screening with the PHQ-2 and follow up with the PHQ-9, as needed, to address the gap in screening practices for depression for our cardiac patients. Our primary goal was to improve identification and referral of depression in this patient population.

Purpose

The purpose of this QI project was to improve depression screening and referral rates on our inpatient medical cardiology PCU. The primary project objective was to achieve a minimum 50% increase in initial depression screening by using the PHQ-2. Secondary objectives included completion of additional screening with the PHQ-9 being completed at least 80% of the time for patients with PHQ-2 scores greater than or equal to three, and referral to the patient's primary care team at least 85% of the time for the PHQ-9 scores greater than or equal to 10.

Methods

A Plan-Do-Study-Act (PDSA) model (Langley et al., 1996) was used to guide the project. The PDSA model utilizes a repeated measures design that involves a change aimed at improvement, implemented on a small scale, and then evaluated (Langley et al., 1996).

Sample and setting

The QI project was implemented between June 28, 2020 and August 15, 2020 on a busy 24-bed medical cardiology PCU at a large, tertiary medical centre in the mid-western United States. At the time of the project, 60 nurses, 10 patient care assistants (PCAs), and five health unit coordinators (HUCs) were employed on this cardiology PCU. Unit leadership included the nurse manager (NM), as well as a nursing education specialist (NES), and a clinical resource nurse (CRN). The unit patient population included adults over the age of 18, primarily being treated for valvular heart disease, structural heart disease, and HF. The majority of patients on the unit were English speaking. The sample population included newly admitted PCU patients during the project duration of seven weeks. Established pre-heart transplant patients and patients admitted for active stroke were excluded from this QI project. Patient demographic data and specific diagnoses were not collected.

Depression screening instruments

Multiple screening tools are available to screen for depression, including the Beck Depression Inventory (Beck et al., 1961), Hamilton Rating Scale for Depression (Hamilton, 1960) and the Hospital Depression and Anxiety Scale (Zigmond & Snaith, 1983). However, the PHQ-2 and PHQ-9 are easy to use, available in multiple languages, and easily accessible in the public domain, which makes these tools among the best screening tools currently available to screen for depression in patients with CVD (American Psychological Association, 2011; Jha et al., 2019; Piepenburg et al., 2015).

Prior to the QI project, the PCU utilized the PHQ-9 (American Psychological Association, 2011) for depression screening. The PHQ-9 is a 9-item screening tool, which screens for each of the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5)'s criteria for MDD: anhedonia, depressed mood, too much or too little sleep, fatigue, poor appetite or overeating, feeling bad about oneself, trouble concentrating, moving/speaking slowly or fidgety/restless, and suicidality (American Psychological Association, 2011). Haddad and colleagues (2013) conducted a large-scale investigation into the accuracy of the PHQ-9 for the detection of depression within a primary care coronary heart disease population utilizing a study that included 703 patients. In their study, the PHQ-9 depression screening tool had a sensitivity of 59% and a specificity of 77%, and criterion validity was also reportedly good (Haddad et al., 2013).

The PHQ-2 (American Psychological Association, 2011) is a brief 2-item depression screening tool that takes less than one minute to complete. The PHQ-2 includes the first two

questions of the PHQ-9, which target the core symptoms of depression, including depressed mood and anhedonia. According to Kroenke et al. (2003), a score of three or greater on the PHQ-2 has an 82.9% sensitivity and 90% specificity for MDD in the primary care setting. In cardiovascular care settings, McManus et al. (2005) found that the PHQ-2 yields a 39% sensitivity compared with 54% for the PHQ-9, but a 92% specificity for the PHQ-2 compared with 90% for the PHQ-9. Given the lower sensitivity, it is recommended that a positive PHQ-2 (i.e., score ≥ 3) be followed-up with a focused assessment using the PHQ-9 (Jha et al., 2019), with a cut-off score of 10 or greater (McManus et al., 2005). Similar diagnostic accuracy metrics for the PHQ-2 and the PHQ-9 have also been reported in a study of patients with post-acute coronary syndrome (ACS) depression (Nieuwsma et al., 2017), and in the ability of these tools to predict morbidity and mortality in patients with HF (Piepenburg et al., 2015).

Project intervention

This QI project changed the PCU's depression screening practice by implementing an algorithm-based process developed by the lead author (EM; see Figure 1). Accordingly, staff nurses implemented the PHQ-2 as the initial depression screening tool with detailed follow-up for positive scores (i.e., ≥ 3). Nurses were instructed to follow up by administering the PHQ-9 to patients with positive PHQ-2 scores. Positive scores on the PHQ-9 were defined as 10 or greater. For patients with PHQ-9 scores between 10 and 14, nurses were instructed to provide the patient with a standard, institution-based education booklet on depression, which includes information on coping mechanisms for depression, as well as

notify the patient's primary care team of the screening tool results via electronic messaging. If scores were greater than 14, nurses were instructed to provide patients with the depression education booklet and contact the patient's primary care team of the screening tool results via phone.

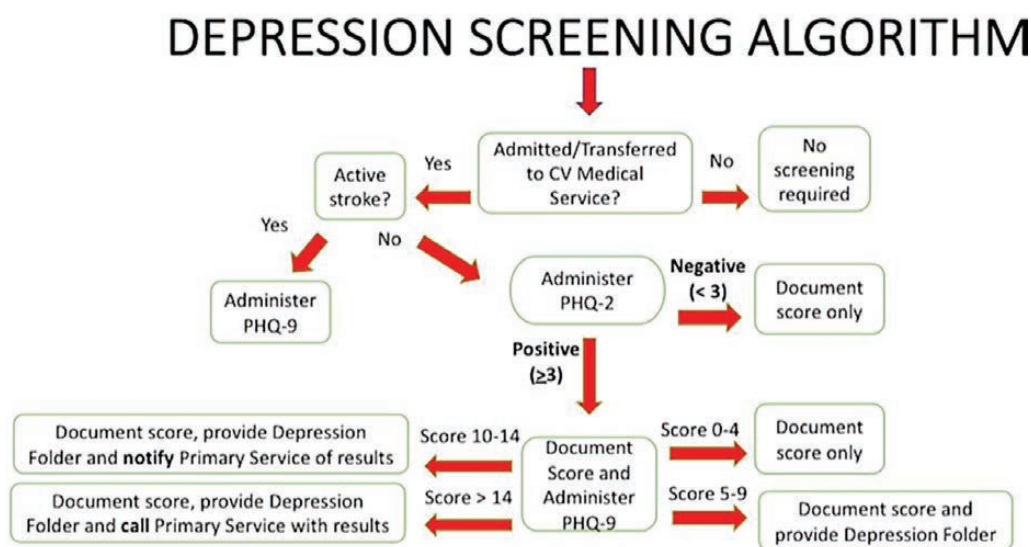
Project procedures

Project development and implementation followed consultations with nursing leadership and staff nurses. Staff nurse training for the QI project took place over four weeks using a recorded PowerPoint presentation developed by the project lead (EM). The unit NES reviewed and approved the learning objectives and presentation content prior to training initiation. The NES also created a flipchart of the PowerPoint slides to display on the cardiology PCU for nurses to review. Nurses were asked to sign a staff roster once they completed the online depression screening training.

Five HUCs participated in the project; their training occurred via email correspondence with the project lead. The responsibilities of the HUCs included a) placing the PHQ-2 in the admission paperwork; b) placing the PHQ-9 in the admission paperwork for patients to complete as needed; and c) placing a customized label on the PHQ-2s to remind nurses to administer the PHQ-9 when patients scored positive on the initial screening. The HUCs also reviewed patient charts once per shift to determine if the initial PHQ-2 screening had been completed. If it had not been completed, they sent the nurse a reminder message via text page or secure chat in the electronic health record (EHR). Training of the HUCs was measured by obtaining their written confirmation of understanding to the project lead via email.

Figure 1

Depression Screening Algorithm



Note. CV = Cardiovascular; PHQ-2 = Patient Health Questionnaire-2; PHQ-9 = Patient Health Questionnaire-9

The NM, CRN, and a staff nurse who served as the project's champion were also members of the QI project team. The NM served as the project site partner and provided ongoing support throughout the project. The CRN helped disseminate information regarding pre- and post-project surveys and staff training by including this information in weekly e-newsletters. The project champion incorporated nurse reminders of the practice change into shift huddles and posted a copy of the depression screening algorithm (Figure 1) in each medication room.

Fifty-two percent of the unit nurses completed the training for this QI project. All five of the HUCs completed their training. A combined total of 55% of staff completed training prior to the project implementation. Reminder notices were sent via email and incorporated into shift huddles, with a final total of 65% completion one week into the project.

Midway through the project, the project lead (EM) emailed a reminder notice to the nurses to document when they notified the primary care team of positive PHQ-9 scores, as this was identified as a weak area in the chart audits. The NES also included this information in the e-newsletter that week.

Table 1

*Nursing Staff Survey of Potential Barriers to Depression Screening
Baseline (n = 60) & Post-Intervention (n = 25)*

Potential Barrier	Baseline (n/%)	Post-Intervention (n/%)
Too many other admission requirements for nurses	41(69.6%)	7(28.0%)
Nurses forgetting to complete the depression screening	37(62.7%)	13(52.0%)
Screening not being built into the EHR admission documentation	35(59.3%)	14(56.0%)
Screening being a low priority for nurses	31(52.5%)	7(28.0%)
Too many other forms for patients to fill out on admission	28(47.4%)	4(16.0%)
Low response from the primary care team when patients score positive	21(35.5%)	3(12.0%)
Patient resistance	14(23.7%)	0(0%)
Nurse being uncomfortable reviewing with patient	12(20.3%)	0(0%)
Screening tool being too long	9(15.2%)	2(8.0%)
Screening tool being too complicated	3(5.0%)	0(0%)

Project evaluation measures

Baseline measures

Nursing staff completed a baseline, three-question online survey to identify perceived barriers to performing depression screening and their level of satisfaction with the current screening process (Tables 1 & 2). The survey was developed by the project lead (EM) based on her experience working on the unit and discussions with the NM. The content validity was established by a nursing expert in cardiovascular care. Survey administration was completed using SurveyMonkey. Principles of anonymity and confidentiality were maintained in the process. The information gathered in this baseline survey provided guidance for the direction of this QI project.

Post-intervention measures

At the conclusion of this project, nursing staff were asked to complete a nine-item barrier and satisfaction survey via SurveyMonkey. The survey elicited nurses' satisfaction with the piloted practice, preference for the original or the piloted practice, any remaining barriers to depression screening, and several questions related to feedback on the project processes (Table 3). Informal qualitative feedback was also elicited from the nursing staff.

Chart audits

The project lead (EM) performed weekly chart audits throughout the seven-week project implementation to collect data related to initial PHQ-2 screenings, follow-up PHQ-9 screenings, and primary care team notifications. A total of 110 patient charts were audited, de-identified and then coded to ensure anonymity. Data were entered into an Excel spreadsheet.

Ethical considerations

This QI project was approved by the PCU's nursing leadership team and council committee, as well as the program director of the institution's Midwest Nursing Academic Affairs. This QI project was also reviewed for human subject protection using the online Institutional Review Board (IRB) determination tool developed by the University of Minnesota IRB and the project site's online IRB determination tool. The responses indicated this was a QI project and did not meet the federal definition of Human Subjects

Table 2

*Nursing Staff Satisfaction Survey on Depression Screening Process:
Baseline (n = 60)*

Satisfaction	n/%
Neither satisfied nor dissatisfied	26(43.3%)
Satisfied	14(23.3%)
Dissatisfied	19(31.6%)
Very dissatisfied	1(1.6%)

Research. No additional IRB was required for this QI project. All patients who had positive PHQ-2 and PHQ-9 screening tool results were asked about safety concerns, and whether they had any thoughts of harming themselves or others, with a plan in place for consulting the inpatient psychiatry team for any positive responses.

Table 3*Post-Intervention Survey Results on Project Processes (n = 25)*

Question	Response (n/%)			
	Strongly Agree	Agree	Neither	Disagree
The PowerPoint and VoiceThread presentation were effective in training staff on the project.	9(36%)	12(48%)	4(16%)	0(0%)
I understood my role in the project upon completion of the staff training.	11(44%)	11(44%)	3(12%)	0(0%)
The depression screening algorithm was a helpful visual tool.	10(40%)	1(40%)	5(20%)	0(0%)
The reminder labels on the PHQ-2s were helpful in reminding nurses to complete the PHQ-9 when patients scored positive.	7(28%)	12(48%)	3(12%)	0(0%)
The reminder messages from the HUCs were helpful in reminding me to complete the required depression screening.	7(28%)	12(48%)	3(12%)	2(8%)
Overall, I feel very satisfied with the piloted depression screening practice change, satisfied, neither satisfied nor dissatisfied, dissatisfied, or very dissatisfied.	Very Satisfied	Satisfied	Neither	
	12(50%)	9(37.5%)	3(12.5%)	
I would say that I prefer the piloted depression screening practice change over the former depression screening practice, do not prefer, or have no preference.	Prefer	Do Not Prefer	No Preference	
	21(84%)	1(4%)	3(12%)	

Data analysis

Descriptive survey data were analyzed using SurveyMonkey's question summary feature. Qualitative comments included in the post-project survey were analyzed to identify common themes using thematic content analyses. Outcome data were analyzed using descriptive statistics. The PHQ-2 completion rates were evaluated serially over seven weeks, as well as an overall average and compared to the baseline PHQ-9 completion rate of 38%. The PHQ-9 completion rates for positive PHQ-2 scores were evaluated collectively over the seven weeks and compared to the outcome objective of at least 80% completion. Primary care team notification for positive PHQ-9 scores by the staff nurses were also evaluated collectively over the seven weeks and compared to the outcome objective of at least 85% completion.

Results

Baseline survey

Initially, the goal was to implement this QI project on three medical cardiology PCUs; therefore, nurses from all three units ($n = 110$) were invited to take the pre-project survey regarding potential barriers to performing depression screening (see Table 1) and satisfaction with the screening process (Table 2). A total of 60 nurses completed the survey, for an overall response rate of 55%. Twenty-four of the 60 nurses (40%) from the unit where the project ultimately took place completed the survey. The key barrier identified to depression screening was related to nursing workload. Only 23% of the participants were satisfied with the current PHQ-9 screening process (Table 2).

Post-intervention survey

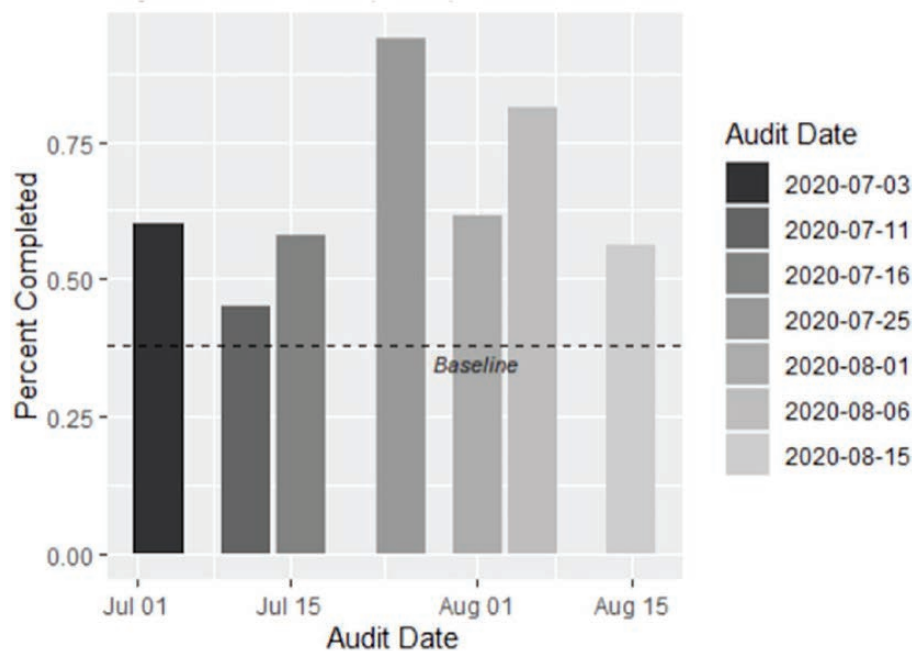
A total of 25 nurses completed the post-project survey, representing approximately 42% of the nursing staff on the unit (see Tables 1 & 3). The surveys and the accompanying qualitative responses reflected satisfaction with and majority preference for the revised depression screening process utilizing the PHQ-2 screening tool. Eleven qualitative responses were included on the post-intervention survey results. The major theme in these responses was that the PHQ-2 was easier for patients and nurses. For example, one nurse commented that "using the PHQ-2 was much easier than the PHQ-9 and patients were more receptive to the shorter questionnaire." Similarly, another nurse stated "I appreciate that your project was something that also made it easier for us as nurses! It's much easier to get a patient to complete a two-question survey, and I think it helps weed out some of the patients who had a positive score on the PHQ-9 not because of depression, but because of their heart failure symptoms."

Chart audits

A total of 110 patient charts were audited at seven weeks post-intervention. Of the 110 patient charts that were audited, 71 had completed a PHQ-2 (65%), compared to the baseline

Figure 2

Percent of PHQ-2 Depression Screenings Completed by Audit Period



Note. Weekly audits of percent PHQ-2 completion compared to baseline 38% PHQ-9 completion. PHQ-2 = Patient Health Questionnaire-2; PHQ-9 = Patient Health Questionnaire-9

of 38% PHQ-9 completion. Figure 2 highlights the weekly audits of percent PHQ-2 completion rates compared to baseline 38% PHQ-9 completion. Of the 71 patients, seven (10%) scored positive for depression. Of these seven, four (57%) had a documented follow-up PHQ-9 screening. All four of these patients had a positive PHQ-9 score, and no referrals to the primary care team were documented.

Discussion

The primary project outcome objective was to achieve at least a 50% increase in initial depression screenings. This project objective was achieved with a 65% PHQ-2 completion rate. However, the secondary objective of PHQ-9 screenings being completed at least 80% of the time for PHQ-2 scores greater than or equal to three was not achieved, with only 57% completion. As well, with none of the four patients with PHQ-9 scores greater than or equal to 10 being referred to the primary care team, this objective was also not met.

The primary objective was likely achieved because of the simplified depression screening process, as well as an increased awareness of the importance of depression screening outlined in the preliminary study procedures. Reasons for the secondary objectives not being achieved may be related to lower numbers of PHQ-2 completion with scores that required the PHQ-9 follow-up screening tool. Possible reasons for not achieving the third objective may have included

the additional workload for the nurses. Additionally, reminders were not sent to nurses to notify the team or document the notification, which could have also affected the results.

Baseline survey results indicated that approximately 33% of the nurses were dissatisfied with the previous depression screening practice and that multiple barriers existed to performing depression screening. Overall, post-survey results were positive, with most respondents being satisfied with the revised depression screening process. These findings suggest that the previous barriers to depression screening were reduced by replacing the PHQ-9 with a shorter, simpler screening tool. Several nurses also reported that the shorter tool increased their patients' willingness to complete the screening, thus reducing the barrier of patient resistance. Most nurses found the project processes, including the depression screening algorithm, reminder labels, and reminder messages helpful, which in turn may have reduced the barrier associated with nurses forgetting to complete the depression screening.

Our project results differed from those reported by others (Ski et al., 2012, 2015). Surprisingly, only 10% of our patients had a positive PHQ-2 score necessitating a follow-up PHQ-9 screening. Additionally, in our project, no patients had their PHQ-9 score shared with the care team, whereas Ski et al. (2012) found that 85% had their risk score shared with the care team. The results of our QI project may indicate that the

incidence of depression in these cardiac patients is not as high as predicted; however, the sample size of those screened was relatively small. We also utilized a different screening tool and shorter implementation period (i.e., 7 weeks versus 12 months) than Ski et al (2015). Moreover, our patient populations may have been different, which we could not corroborate as we did not collect patient demographics or diagnoses in our project. Finally, different processes for sharing risk scores with the primary team may explain the disparity in these results.

Implications to clinical practice

A standardized depression screening algorithm for cardiac patients offers the potential for early identification, referral, and optimal management and treatment of depression in these patients, which, in turn, may improve health outcomes and decrease healthcare costs. As well, adding the PHQ-2 and PHQ-9 follow up protocol to the EHR admission workflow may continue to improve nurse satisfaction and adherence with clinical practices.

Although our results are based on a small sample, we recommend initial screening of all newly admitted cardiac patients with a PHQ-2 because it is a quick and simple way to identify patients needing further assessment for depression. Based on our experience, guidelines for implementation of this screening tool are easily designed and implemented with a collaborative, multi-disciplinary approach. However, education of the healthcare team on the issue of depression in cardiac patients and the importance of depression screening must be part of the nurse onboarding process. Ongoing monitoring of the protocol processes, and regular staff updates are also central to sustained adherence. As well, more standardized communication processes between the hospital primary care team and the patient's outpatient primary care provider must be established to ensure optimal transitional care for the cardiac patients with depression.

Finally, future clinically based research and quality improvement initiatives on depression screening should include larger sample sizes and additional cardiovascular care settings. Based on our positive feedback, our project processes may be appropriate for a replication study.

Furthermore, prospective studies are needed to follow these patients over a longer period of time to evaluate their quality of life and functional improvement with early identification and treatment of depression.

Limitations

Our QI project had several limitations. First, generalizability of this QI project is limited due to the relatively small sample of nurses, HUCs, and cardiac patients. Second, the short duration of the project could have affected the project results. Third, surveys used in the project were not tested for reliability or validity; however, they were reviewed by a nurse expert in cardiovascular care. Fourth, the COVID-19 pandemic led to numerous challenges and undoubtedly affected project results. Importantly, it required the project lead (EM) to rely heavily on the site to carry out planning and implementation, as students were not allowed onsite throughout the project duration due to COVID-19 restrictions. As well, it was a stressful time for staff who were often overwhelmed with frequent, rapid institutional changes in addition to this project. However, despite our project challenges, we did achieve positive project outcomes.

Conclusion

Overall, this QI project was successful, as we developed, implemented and evaluated a simpler and more efficient screening process for depression in our hospitalized patients with CVD. Project results demonstrated improvement in depression screening adherence through simplification of the screening process, as well as reported increased nurse satisfaction with the revised process. Although this was a relatively small project, the findings suggest that a multi-disciplinary approach to the identification, management, and treatment of depression in patients with CVD, with early referral may improve patient outcomes.

Acknowledgments

Kimberly Poe, RN, NE-BC for serving as the project site partner.

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