

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

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# Canadian Journal of Cardiovascular Nursing

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en nursing  
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# Editorial

*Learn anything you can, anytime you can, from anyone you can. There will always come a time when you will be grateful you did!*

—Sarah Caldwell

If you are reading this, there is a really good chance that you are committed to ongoing learning! For this we are very grateful because it gives our Journal purpose! In the current issue of the CJCN, Dr. Francis Lau shares a summary of the recently developed action plan to modernize gender, sex and sexual orientation information practices in Canadian electronic health records. Haydn Molcak and colleagues offer methodological and practical considerations for rapid reviews, which are particularly relevant during the current COVID pandemic. Monika Keri and co-authors describe how their gap analysis strategy was effective in optimizing to their telemetry monitoring program. Last, but certainly not least, we are thrilled to present our first French manuscript in quite some time! Penelope Goudreault and colleagues' share the findings of their descriptive study of support for self-reliance for people with high blood pressure and their motivation to adhere to treatment.

Although the COVID pandemic has had a devastating impact in so many ways, it has resulted in access to a plethora of amazing learning opportunities. The Canadian Women's Heart Health Alliance *Wear Red Canada Day* is one example. As you may be aware, this event is celebrated annually on February 13<sup>th</sup> to raise awareness about women's heart health. Because of COVID, *Wear Red Canada Day* was forced to go virtual this year. In case you missed the event, the presentations from across Canada in this year's *Wear Canada Day* are still available for your viewing pleasure as webinars at: <https://cwhhc.ottawaheart.ca/how-get-involved/wear-red-canada/national-program>. These presentations serve as a reminder for all Canadians, but especially Canadian women, to be mindful, curious, and proactive in the management of our heart health and wellness. The knowledge gleaned from the lived experiences of women stood out as especially impactful for me this year! I highly recommend that you check it out!

**Happy reading & learning!**  
Jo-Ann V. Sawatzky, RN, PhD  
Editor, CJCN

## Save the Date!

CCCN's Spring Conference will take place on May 28th. Early-bird registration rate for members is \$25 and is available until April 9th. Don't miss out on your chance to save money and attend.

All sessions will be recorded so if you are not sure if you will be available or if you are unable to attend a particular session, they will be posted on the CCCN website following the session.

Visit [www.cccn.ca/content.php?doc=182](http://www.cccn.ca/content.php?doc=182) to view the program and register.

## Annual General Meeting

CCCN's AGM will take place July 2nd, 2021 at 4:00PM. Materials for the meeting will be posted on CCCN's website at: [www.cccn.ca/content.php?doc=278](http://www.cccn.ca/content.php?doc=278). You will be prompted to input your login (email) and password to access the materials. If you have any difficulties, please contact David Miriguay at: [david@cccn.ca](mailto:david@cccn.ca).

If you are unable to attend in person, you will be able to provide your voice in CCCN's governance process by completing a proxy and submitting it to the office ahead of the Annual General meeting.

## CCCN Awards of Excellence

CCCN seeks to celebrate and profile Cardiovascular (CV) Nursing Excellence. Nominations are now open for the 2021 Awards. The deadline to nomination an individual is **May 7th, 2021**. For more information on CCCN's Awards program, please visit [www.cccn.ca/content.php?doc=204](http://www.cccn.ca/content.php?doc=204).

## Call Out For Board Positions

CCCN has is looking for individuals interested in sitting on the Board of Directors. There are two position available: Treasurer and President-Elect. If you are interested or for more information on the nomination process and what is involved, please visit [www.cccn.ca/media.php?mid=50353](http://www.cccn.ca/media.php?mid=50353).

# A Call for Action to Modernize Gender, Sex, and Sexual Orientation Information Practices in Canadian Electronic Health Records

Francis Lau, PhD, FCAHS, CTSS, Professor, School of Health Information Science, University of Victoria, BC fylau@Uvic.ca

## Summary

Sexual and gender minorities (SGM) are amongst the most marginalized people in Canada (Standing Committee on Health, 2019). SGM tend to have higher rates of chronic diseases, depression, premature mortality, and lower rates of preventive care (Abramovich et al., 2020). Many face discrimination and even violence when seeking care. Some avoid care altogether due to their negative experiences with the health system (Bauer et al., 2014). One structural challenge is that most existing electronic health records (EHRs) are unable to capture gender, sex and sexual orientation (GSSO) information beyond a single sex/gender data field with a binary male or female option (Lau et al., 2020). This has made SGM largely invisible in EHRs and, by extension, within the health system. To address this challenge, a Canada Health Infoway Sex and Gender Working Group was created to examine how GSSO information should be defined, collected and used in Canadian EHRs (Infoway, n.d. [a]). The accompanying infographic shows the action plan with seven transformative actions that were co-created by the Working Group. Readers interested to learn more about this work can refer to the action plan summary and full reports published on the Infoway website (Infoway, n.d. [b]).

This action plan is just the beginning of a long journey towards an SGM-inclusive health system. There is still a lot of work ahead, but this is truly a unique opportunity for health professionals, especially frontline nurses, to help lead the way toward a more equitable future for all Canadians.

## Acknowledgements

I wish to thank the Planning Project Team members, the Infoway Sex and Gender Working Group and individuals from participating organizations and communities for contributing to the co-creation of the action plan. This work was funded by the Canadian Institutes for Health Research Institute of Gender and Health.

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# ACTION PLAN

To modernize gender, sex and sexual orientation (GSSO) information practices in digital and electronic health records (EHRs) in supporting the health of sexual and gender minorities (SGM) in Canada

**GUIDE**

## VISION AND GOALS

Envisage an equity- and SGM-oriented intervention that embraces diversity and aligns with other SGM-related initiatives. The ultimate goal is to have inclusive organizational policies, culturally competent staff and enabling EHR systems with modernized GSSO information practices to help achieve equitable health care access, experiences and outcomes for SGM.



**FOUNDATIONAL**



## ENGAGEMENT AND PARTNERSHIPS

Engage communities and organizations across Canada to modernize GSSO information practices in EHRs that support equity-oriented health care and can meet SGM needs. Examples include SGM and Indigenous Two-Spirit communities, patients, advocates, executives, clinicians, staff, professional associations, government jurisdictions, vendors, IT professionals, legal and privacy experts, researchers, educators and the public.



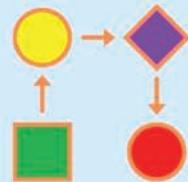
## GSSO TERMINOLOGY

Establish a precise, inclusive, appropriate, evolving and multi-level GSSO terminology with standardized data definitions, coding schemes and value sets that will support affirming patient care, provide complete and accurate health system use of data and inform health research.



## ENABLING EHR SYSTEMS

Adopt a common set of EHR functions that support the collection and use of standardized GSSO data, SGM-oriented clinical care guidelines information governance, health system performance tracking, clinical quality improvement, data-driven analytics and health evidence generation



**STRATEGIC**

## GSSO POLICY/PRACTICE GUIDELINES

Integrate and tailor GSSO data collection and use, including secondary uses, within all organizational structures, policies, practices, governance, use cases and workflow processes in order to be responsive to specific care needs of SGM.



## EDUCATION AND TRAINING

Educate and train health care staff to enhance their capacity to provide culturally competent and safe care, and implementers, policy-makers and researchers to ensure required safeguards are in place to protect GSSO data. Inform patients on the need for GSSO data collection and protections for safe access and use.



**IMMEDIATE**

## CENTRAL HUB FOR COORDINATION

Establish a central hub to liaise, guide, assist and monitor the progress of this action plan over time. To do so, the hub needs a pan-Canadian mandate, stakeholder commitment, consensus process and proper resourcing. An immediate next step is to have a national conversation about this action plan and reach consensus on a path forward.

To learn more about our research, please contact Francis Lau (fylau@uvic.ca) or Marcy Antonio (mantonio@uvic.ca) or visit: <https://infocentral.infoway-inforoute.ca/en/collaboration/wg/sex-gender>

**SELECT ACTIVITIES BASED ON ASSESSMENT OF NEEDS, READINESS AND SUSTAINABILITY**

# Rapid Knowledge Syntheses: Methodological and Practical Considerations

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## Abstract

Approaches to knowledge synthesis have evolved over recent decades to satisfy diverse requirements for evidence and inform the rapidly changing healthcare environment. During the COVID-19 pandemic, demands for responsive evidence have intensified and research teams are being increasingly challenged to deliver timely, relevant, and trustworthy data to guide healthcare planning and practice. Rapid reviews are a form of knowledge synthesis that utilize an accelerated review process, typically by streamlining or omitting specific steps. Rapid reviews are becoming more frequently used due to their ability to respond to urgent

evidence needs. In this article, we introduce knowledge synthesis approaches and examine the practical aspects of rapid reviews, drawing specifically on the rapid realist review approach. We continue by identifying how rapid review processes may prove useful to those engaged in cardiovascular nursing care and research, highlighting some of their advantages, disadvantages, and potential applications.

**Key words:** knowledge synthesis, literature review, rapid review, cardiovascular, nursing

Molcak, H. S., Appleby, C. J., Brown, J., Freeman, S., Kandola, D. K., & Banner, D. (2021). Rapid Knowledge Syntheses: Methodological and Practical Considerations. *Canadian Journal of Cardiovascular Nursing*, 31(1), 6–12.

## Key Highlights

- Approaches to knowledge synthesis have evolved over recent decades, and more rapid approaches to conducting literature reviews are emerging.
- COVID-19 has given rise to unprecedented challenges, along with the need for timely, relevant, and responsive evidence.
- Rapid reviews encompass an accelerated and streamlined review process that can meet time-sensitive evidence needs.
- Rapid reviews can generate timely information for nurses engaged in cardiovascular care and research, especially during the COVID-19 pandemic.

The emergence of COVID-19 as a global pandemic has given rise to unprecedented challenges. Health systems across the world have been required to rapidly develop and integrate models of care that could respond to the immediate threat of COVID-19, while simultaneously attempting to identify and mobilize effective interventions to prevent and treat infection. Within the context of cardiovascular care, rapid transitions in how services are offered and prioritized have also occurred (Cannata et al., 2020). To date, this has included a reduction in non-urgent and in-person

cardiac care, and widespread integration of virtual cardiac care through the provision of telehealth and remote clinic services and programs (Almufleh & Givertz, 2020; Babu et al., 2020; Cannata et al., 2020; Drwal et al., 2020; Kaliya-Perrumal et al., 2020; Moulson et al., 2020). Alongside this, new insights related to cardiovascular complications resulting from the novel virus continue to emerge, representing a new and developing field of cardiovascular care (Bansal, 2020; Minga et al., 2020).

As the COVID-19 pandemic has unfolded, there has been an ongoing need for the timely creation and evaluation of evidence to help guide and inform decision-making (Bero, 2020). While insights gleaned from previous pandemics have proved valuable, the quest for new knowledge and agile health systems has exploded and calls for responsive evidence have intensified (Tricco et al., 2020; Yang & Wang, 2020). Accelerated knowledge synthesis, so-called “rapid reviews,” that can respond to and inform this rapidly evolving healthcare landscape can be valuable tools. However, while rapid reviews may be responsive to changing healthcare needs, there are many important methodological and practical considerations to address in determining their usefulness (Tricco et al., 2020). Here, we introduce knowledge

synthesis and examine the theoretical and practical underpinnings of rapid reviews. We continue by identifying how rapid review processes may prove useful to those engaged in cardiovascular nursing care and research, highlight their key advantages and disadvantages, and reflect on other relevant contextual elements surrounding their effectiveness and reliability to inform evidence-based practice.

## Knowledge Synthesis

Knowledge synthesis emerged alongside the growing evidence-based practice (EBP) movement in the 1990s. This movement promoted “a problem-solving approach to the delivery of health care that integrates the best evidence from studies and patient care data with clinical expertise and patient preferences and values” (Melnyk et al., 2009, p. 49). In short, this required the creation, evaluation, and application of rigorous evidence to promote high quality and safe patient care. Since its inception, knowledge synthesis has also evolved as an important tool for advancing healthcare practice by responding to the complexities of clinical, health system, and social issues (Whittemore et al., 2014).

Broadly, knowledge synthesis involves the systematic searching, gathering, sorting, and synthesis of evidence (Grant & Booth, 2009). Over time, diverse methods of knowledge synthesis have also emerged, including approaches that allow for the generation of more contextualized evidence. The gold standard in knowledge synthesis is commonly considered the systematic review (Khangura et al., 2012; Marshall et al., 2019). This form of review is among the most well-recognized and allows for a structured evaluation of evidence that is accomplished through comprehensive and robust search procedures, with steps taken to evaluate the quality of evidence and minimize bias (Aromataris et al., 2015; Khangura et al., 2012; Watt et al., 2008; Figure 1). Systematic reviews are most valuable when researchers attempt to determine the effectiveness of a given treatment or intervention (Ganeshkumar & Gopalakrishnan, 2013). Other common knowledge synthesis approaches include integrative, narrative, realist, and scoping reviews (Arksey & O’Malley, 2005; Ferrari, 2015; Sucharew & Macaluso, 2019; Whittemore & Knafl, 2005). Regardless of the approach used, reviews must comprise reproducible, rigorous, and transparent searches that can inform EBP.

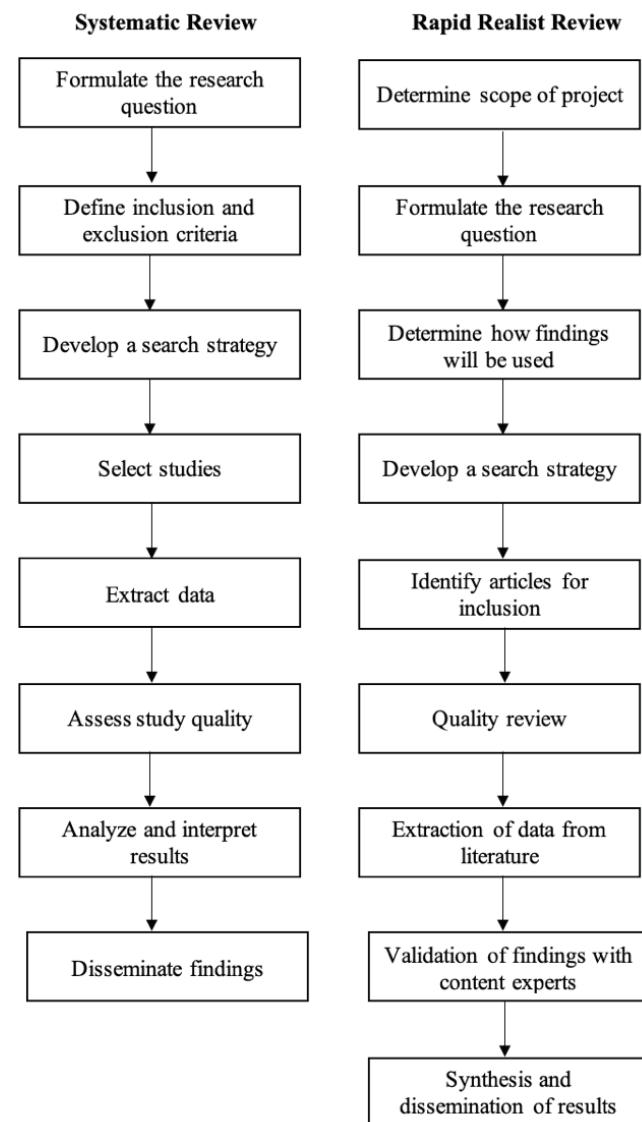
Despite many benefits, knowledge synthesis can be time-consuming and resource-intensive, commonly taking six months to multiple years to complete (Gannan et al., 2010). This can be a barrier, particularly in situations where rapid solutions are needed to respond to emerging health issues. This is especially true in the context of cardiovascular nursing and COVID-19, wherein healthcare providers and decision-makers are navigating widespread disruption in care and the emergence of novel COVID-19 complications (Bansal, 2020; Minga et al., 2020). Given the rise in morbidity, mortality, and reduced quality of life for patients

across Canada and beyond as a result of the pandemic (Cannata et al., 2020), there is also a growing need for timely, rigorous, and methodologically robust reviews of evidence (Bero, 2020) – the circumstances in which rapid reviews have evolved to address.

## Rapid Reviews

Rapid reviews represent an emerging array of methodologies with varied terminology and approaches. These methodologies are becoming more frequently used by organizations, including the World Health Organization, due to their effectiveness and efficiency in synthesizing and disseminating information (Hamel et al., 2020; Tricco et al., 2015). For the purpose of this paper, we chose to adopt the definition put forward by Garrity et al. (2020), who describe rapid reviews as “a form of knowledge synthesis that accelerates the process

**Figure 1. Comparison of Methodological Approaches of Systematic and Rapid Realist Reviews**



of conducting a traditional systematic review through streamlining or omitting specific methods to produce evidence for stakeholders in a resource-efficient manner” (p. 1).

Rapid reviews vary according to their purpose, comprehensiveness, methodological rigour, and resources used (Ganann et al., 2010; Haby et al., 2016; Patnode et al., 2018; Tricco et al., 2015; Tsertsvadze et al., 2015). Despite these differences, the overall approach to conducting a rapid review typically aligns well with the processes found in other forms of knowledge synthesis, including systematic review (Figure 1). However, in a rapid review, each step may be streamlined or adjusted to allow for more rapid progression (Table 1). Another point of consensus within the literature surrounding rapid review is that the time frame should remain relatively short, ranging from two weeks to six months (Ganann et al., 2010; Haby et al., 2016; Khangura et al., 2012; Polisena et al., 2015). This shortened time frame is an essential component of rapid reviews as it allows researchers to produce and disseminate results in a timely fashion while responding to high-priority healthcare issues (Ganann et al., 2010; Haby et al., 2016; Hailey et al., 2000; Khangura et al., 2012; Patnode et al., 2018; Polisena et al., 2015; Tricco et al., 2015; Watt et al., 2008; Table 1).

When undertaking a rapid review, research teams may achieve greater efficiency by introducing restrictions into the review process. This can include narrowing the scope, research question, study population, technologies, sources of information, and other key components (Ganann et al., 2010; Haby et al., 2016; Marshall et al., 2019; Patnode et al., 2018). For example, Hartling et al. (2015) identified a number of categories that these rapid review “shortcuts” could fall under, namely: 1) comprehensiveness (i.e., limiting the number of databases searched, the use of gray literature, the types of studies included, or the extent of data extraction), 2) quality control (i.e., the use of single rather than dual abstract and title screening and omitting external peer review), 3) synthesis (i.e., providing a narrow review with minimal synthesis of data and results), and 4) conclusions (i.e., providing minimal conclusions, recommendations, or future directions). Likewise, in a scoping review, Tricco and colleagues (2015) identified 50 unique rapid review methods, describing the most common practices used by researchers to obtain a streamlined review. Practices included presenting the results as a narrative summary (78%), limiting the inclusion criteria by date (68%) or language (49%), limiting the literature search to published literature only (24%), having a single person extract data and another verify it (23%), having researchers omit quality appraisal assessment or risk of bias (7%), having a single person screen studies (6%), and/or limiting the literature search to one database (2%).

Taking these factors into account, it is reasonable that concerns regarding the conduct and quality of rapid reviews have been raised. These include issues related to an increased risk of bias, a greater degree of error or missing evidence, and

the potential for decreased generalizability of study results (Khangura et al., 2012; Patnode et al., 2018; Schünemann & Moja, 2015; Tricco et al., 2015; Table 1). Despite these concerns, there is a growing acceptance that rapid review processes may improve the coherence of research evidence, have only a low risk of bias, and offer effective conclusions that do not differ substantially from more traditional reviews (Haby et al., 2016; Watt et al., 2008). To explore the practical and methodological features of rapid reviews further, we will now introduce a frequently used rapid review approach, the rapid realist review (RRR), and highlight opportunities for its use in the context of cardiovascular care.

### Rapid Realist Review

The RRR is an emerging review methodology that supports research teams in the generation of explanations for what works best, when, and for whom (Pawson et al., 2005; Saul et al., 2013). Akin to traditional realist review approaches, the RRR has also evolved to provide valuable insight into the effectiveness of various health interventions, but it does so in a shortened time frame (Rycroft-Malone et al., 2012; Saul et al., 2013). The application of RRR methods

**Table 1.** Advantages and Disadvantages of Rapid Reviews Compared to Systematic Reviews

| Advantages  | Disadvantages/<br>Limitations  | Citations  |
|---|--|--|
| Effective in synthesizing and disseminating information in a timely fashion to inform evidence-based practice | Accelerated review process often leads to a search that is less comprehensive with the potential for limited validity or generalizability of the results | Ganann et al., 2010; Haby et al., 2016; Hailey et al., 2000; Hartling et al., 2015; Hartling et al., 2017; Khangura et al., 2012; Patnode et al., 2018; Polisena et al., 2015; Tricco et al., 2015; Watt et al., 2008        |
| No concrete methodology allows for flexibility and adaptability of the review process                         | Narrowing, restricting, or omitting parts of the review process may introduce bias, error, or result in missing evidence                                 | Ganann et al., 2010; Haby et al., 2016; Hartling et al., 2017; Khangura et al., 2012; Patnode et al., 2018; Polisena et al., 2015; Schünemann & Moja, 2015; Tricco et al., 2015; Tsertsvadze et al., 2015; Watt et al., 2008 |
| Less expensive and requires less resources or sustained investment compared to a systematic review            | Research teams should engage content experts in the field to ensure accuracy of results due to limited time for training or quality control              | Ganann et al., 2010; Haby et al., 2016; Khangura et al., 2012; Marshall et al., 2019; Polisena et al., 2015; Tricco et al., 2015   |

has been described as generating: “guiding rules for policy-making, knowledge quantification, understanding tensions/paradoxes in the evidence base, and reinforcing or refuting beliefs and decisions” (Saul et al., 2013, p. 1). This differs largely from other forms of knowledge synthesis, such as systematic reviews, which may be used to generate generalizable and transferable data (Marshall et al., 2019; Polisena et al., 2015; Saul et al., 2013).

The RRR is also comprised of similar steps compared to other forms of rapid reviews. These have been delineated by Saul et al. (2013) into: 1) development of project scope, 2) development of specific research question(s), 3) identification of how the findings and recommendations will be used, 4) development of search terms, 5) identification of articles and documents for inclusion, 6) quality review, 7) extraction of data, 8) validation of findings with content experts, 9) synthesis of findings into a final report, and 10) dissemination of results (Figure 1). Rapid Realist Reviews may also be adapted iteratively at any stage of the process to accommodate the specific requirements of stakeholders (Ganann et al., 2010; Haby et al., 2016). However, to ensure methodological rigour and reliability of findings, it is also common for RRRs to require the engagement of experts, including consultation with knowledge-users, librarian scientists, researchers, and stakeholders, to shape the scope, methods, and interpretation of results (Saul et al., 2013).

Arising from its unique focus and approach, the RRR has become widespread in examining complex health system challenges, including those related to cardiovascular disease (CVD) prevention and management. For example, Minian and colleagues (2020) undertook a RRR to examine the context and underlying mechanisms of various smoking cessation interventions. In this review, the authors were able to identify what interventions were most successful for smoking cessation, along with recommendations to support the most effective planning and delivery of health behaviour interventions. In another RRR, Mewes et al. (2018) evaluated the effectiveness of various integrated care programmes for patients with CVD, COPD, depression, diabetes, and other multi-morbidity conditions. From this, the authors were able to develop theories to explain the mechanisms for the success or failure of various integrated care programs, which, in turn, can be used to inform future research and practice on chronic disease management (Mewes et al., 2018).

While RRRs offer considerable strengths and have been widely adopted, there are also inherent risks and limitations that must be considered. For instance, RRRs have the potential to lack comprehensiveness compared to traditional review approaches and may be more prone to bias and error (Khangura et al., 2012; Patnode et al., 2018; Saul et al., 2013; Tricco et al., 2015). Other possible limitations include the inability to fully theorize or delineate complex interactions between context and outcomes due to less engagement with the literature, insufficient involvement of experts, or other

consequences resulting from their condensed timeline (Saul et al., 2013; Tricco et al., 2015). This said, the strengths of the RRR and rapid reviews highlighted throughout this article are compelling; including that they are time efficient, grounded in context, iterative, adaptable, and produce findings that are applicable to stakeholders’ concerns. The RRR approach can also be scaled to reflect the time and resources available, further maximizing opportunities to respond to the needs of knowledge users and stakeholders facing time-sensitive and emergent health issues (Ganann et al., 2010; Marshall et al., 2019; Polisena et al., 2015; Saul et al., 2013; Tricco et al., 2015).

## Implications

As knowledge synthesis approaches continue to develop, research teams, end-users, and stakeholders are presented with an increasing number of options to address their knowledge requirements. As outlined, rapid reviews represent a set of methodologies that have evolved in response to diverse demands for timely evidence and have been widely adopted by researchers to address complex and time-sensitive healthcare issues (Watt et al., 2008).

Before undertaking a rapid review, it is important to consider its intended outcomes and audience, the requirements of knowledge users, and whether the approach will be appropriate to address questions of particular clinical complexity. As an example, research conducted by Khangura et al. (2012) and Marshall et al. (2019) described the potential deliverables of rapid reviews and suggested that they may be used to: 1) inform briefings that prepare stakeholders for discussions on policy issues, 2) support the direction and evidence base for various health policy initiatives, 3) assist in the development of clinical interventions and/or health services programs, 4) develop health guidelines and recommendations, and 5) perform health technology appraisals (Table 2). Practically, the dissemination of rapid review results may also include stakeholder meetings, workshops, conference presentations, forums, social media posts, video summaries, webinars, email distributions, and publications in peer-reviewed journals, online databases, or newsletters (Polisena et al., 2015).

Several recent rapid reviews illustrate these applications within the context of CVD. For instance, Neubeck et al. (2020) examined the literature surrounding different approaches that may be taken to reduce cardiovascular morbidity and mortality during periods of social isolation and the COVID-19 pandemic. The authors concluded that digital healthcare solutions could reduce the effects of quarantine on mental and physical well-being, recommending that access to remote healthcare services be provided to support patients living with CVD. In another recent rapid review, Thomas et al. (2020) also investigated the effectiveness of digital health interventions to support the management and care of health disparity populations with atherosclerotic-related

**Table 2.** Various Uses for Rapid Reviews and Systematic Reviews

| Use  | Rapid Review | Systematic Review |
|--|--------------|-------------------|
| For broad research topics                                |              | X                 |
| For an in depth understanding of topics                  |              | X                 |
| As informative briefings for stakeholders                | X            | X                 |
| To support evidence for policy initiatives               | X            | X                 |
| To assist in development of health programs              | X            | X                 |
| For development of health guidelines and recommendations | X            | X                 |
| For health technology appraisals                         | X            | X                 |
| For use in areas with limited literature                 | X            |                   |
| For quick decisions on timely or urgent topics           | X            |                   |

Note. Citations: Ganann et al., 2010; Haby et al., 2016; Hailey et al., 2000; Hartling et al., 2017; Khangura et al., 2012; Marshall et al., 2019; Patnode et al., 2018; Polisena et al., 2015; Schünemann & Moja, 2015; Tricco et al., 2015; Tsartsadze et al., 2015; Watt et al., 2008.

CVD. The authors identified that digital health interventions might improve outcomes in racial, ethnic, and socioeconomic groups disproportionately affected by CVD through increased access to quality and personalized care (Thomas et al., 2020). These examples highlight the utility of rapid reviews in responding to the current climate of COVID-19 and how they may influence change in nursing practice by demonstrating the efficacy of cardiovascular-related interventions. Moreover, this approach may prove useful as cardiovascular complications resulting from COVID-19 continue to be identified, and COVID-19 related health system challenges will likely continue for the foreseeable future (Bansal, 2020; Minga et al., 2020).

## Recommendations

Due to their highly varied scope and diverse applications, it is clear that there are no universally validated methodologies for conducting rapid reviews. Indeed, a single methodological approach may not be appropriate and it is, therefore, important that researchers provide detailed descriptions of the methods used, discuss implications of their results, and ensure transparency throughout the review process (Ganann et al., 2010; Hartling et al., 2015). This ability to adapt and tailor the methods employed throughout a rapid review is an inherent strength but also warrants careful consideration due to potential bias, inaccurate or missing evidence, and a lack of methodological rigour, validity, or generalizability of review results and their applications (Ganann et al., 2010; Haby et al., 2016; Patnode et al., 2018).

Because of these inherent potential issues, all rapid reviews should seek to incorporate several critical features. For example, a rapid review should: 1) originate from a reliable source, 2) address clinically relevant questions, 3) reflect up-to-date knowledge, 4) be produced and disseminated in a format that is clear and accessible, and 5) incorporate the input of relevant knowledge users and stakeholders (Hartling et al., 2017). This last point is particularly relevant during situations of clinical urgency, such as the COVID-19 pandemic, where policymakers, decision-makers, and stakeholders require contextualized solutions to urgent healthcare challenges (Khangura et al., 2012). By consulting with key stakeholders, researchers can also ensure the appropriate allocation of resources, mobilization of skilled and experienced staff, and that review outcomes reflect the needs of all intended audiences (Hartling et al., 2017; Watt et al., 2008).

In summary, our views align with those of Polisena and colleagues (2015) who argue that rapid reviews should not be viewed as inherently inferior to full systematic reviews since they can be “fit for purpose” (p. 2) and tailored to reflect the individualized needs of end-users, including imposed deadlines, available resources, and the complexity and sensitivity of research topics. As described in the context of cardiovascular nursing, rapid reviews represent a valuable tool that can be used to meet the time-sensitive needs of those involved in the management and planning of patient care. They may also assist in the development of evidence-informed initiatives and interventions to address a new and rapidly changing healthcare landscape. As these critical health challenges continue to unfold, further research may also be valuable to explore the application and impact of rapid reviews.

## Conclusion

Since the emergence of COVID-19, health organizations across the world have been faced with unprecedented challenges. As part of these challenges, there has been a push to identify effective disease prevention and management strategies, along with increasing calls for responsive evidence to inform the development of health systems. In this paper, we have presented an overview of knowledge synthesis and have identified how rapid reviews can be a valuable tool in informing cardiovascular nursing care while also responding to diverse and emergent healthcare issues. Through this, we have highlighted how rapid reviews may be of particular benefit during times of urgency, such as the COVID-19 pandemic, and described their underlying purposes, methodologies, advantages, and limitations. Despite potential weaknesses, rapid reviews can provide a flexible approach to addressing some of the many complex healthcare challenges related to CVD prevention and management, and facilitate the timely synthesis of knowledge and mobilization of evidence.

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# Optimizing Telemetry Monitoring for Inpatient Units: Using a Gap Analysis Tool to Standardize a Telemetry Program

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## Abstract

**Background:** The American Heart Association recently updated guidelines for continuous telemetry monitoring in the hospital setting. Organizational practices within our institution did not align with these guidelines, leading to inefficiencies and gaps in patient care.

**Purpose:** A gap analysis was undertaken to assess the current state of the telemetry program at our multi-site organization, to update the telemetry program, and to benchmark best practices for patients on telemetry.

**Results and Implementation:** Gaps identified related to our telemetry programming included outdated protocols and order

sets, absence of a policy, lack of training for healthcare professionals, and a paucity of educational resources for patients. To address these gaps, we developed and implemented evidence-based protocols and order sets, an organizational policy, educational resources, and a digital solution to optimize telemetry monitoring.

**Conclusion:** The gap analysis process supported efforts in expanding telemetry resources and improving the overall care delivery for telemetry patients in our organization.

**Key words:** telemetry monitoring, practice standards, gap analysis, hospital, nurse education, patient education

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## Key Highlights

- Operational and resource issues, driven by an increased demand, were key factors leading to inefficiencies in telemetry patient care within our organization.
- A gap analysis tool was central to identifying variations and inefficiencies in practices, protocols, and standards in our telemetry program.
- The gap analysis and AHA best practice standards were fundamental to the implementation of revised protocols, a telemetry program policy, order sets, and nursing and patient education resources.
- Stakeholder engagement, best practice policies, and work processes that ensure execution of the policies were central to optimizing organizational and patient outcomes.

## Background

Cardiac telemetry has been used as a clinical tool to remotely monitor patients' heart rate and rhythm in the hospital setting for more than 40 years. Telemetry is the transmission of continuous cardiac signals in real-time to a receiving location, where technicians monitor patients'

rhythms (Falun et al., 2020). Over the years, telemetry monitoring has expanded to identify changes in rhythms, assist as an early indicator for myocardial ischemia, and provide QT monitoring in various patient populations (Drew et al., 2004; Sandau et al., 2017). The American Heart Association (AHA) originally published practice guidelines for electrocardiographic (ECG) monitoring for hospitalized patients in 2004, and subsequently updated these guidelines in 2017 (Drew et al., 2004). This 2017 update of the AHA guidelines evolved to include the underuse and overuse of arrhythmia monitoring, alarm management, and recommendations for digital solutions for monitoring and documenting events in the electronic health records (Sandau et al., 2017). The goal of updating these guidelines was to improve and advance the management of patients on telemetry and to provide clinicians with recommendations that can be translated easily into practice (Sandau et al. 2017). However, evidence suggests that despite these recommendations, misuse of telemetry monitoring continues to be prevalent in hospital settings (Flanders & Hudson, 2020, and our organization was no exception.

Over the course of the last several years, the inpatient telemetry monitoring program at our large, multi-site healthcare organization has significantly expanded, from covering only inpatient cardiac units to now covering 23 units and six services outside of cardiology and cardiovascular surgery. This growing demand for telemetry resources had contributed to the increasing misuse of monitoring and highlighted variances in monitoring practices across the program. Similarly, Falun et al. (2013) observed that telemetry workflow processes can be challenged by increased demand for monitoring requests, discrepancies in monitoring practices among staff and variances in rhythm recognition and report generation. Conversely, recent evidence suggests that implementing telemetry orders supported by the AHA guidelines can reduce healthcare associated costs and support the provision of cost-effective and high-quality patient care (Brownell et al., 2020).

Therefore, a working group was established to evaluate our telemetry program. Two authors (MK and ZS) were members of this group and responsible for identifying gaps in the program and opportunities for improvement. The goal of our novel approach was to conduct a gap analysis to assess the current structure and processes of the telemetry program at our multi-site organization, and to optimize telemetry monitoring for inpatient units by benchmarking best practices for patients on telemetry, based on the most recent AHA guidelines.

### Gap Analysis Methods

The Agency for Healthcare Research and Quality (2020) describes a gap analysis as a method of comparing best practices with what is currently in place within an organization. We chose to undertake a gap analysis, as this method supported our goal of identifying variances between best practices and current processes in our telemetry program. An adapted version of the tool developed by Johns Hopkins Medicine's Armstrong Institute for Patient Safety and Quality (Golden et al., 2017) was used as the guide for the implementation of the best practices in our program. The analysis was completed by comparing current clinical processes with recognized best practices, as outlined in the literature, and "gaps" were identified when these processes deviated from recognized best practices. The gap analysis process included a review of the entire organizational program structure, which included policies and procedures related to telemetry ordering practices, nursing roles and responsibilities, and education and training for both healthcare professionals and patients.

### Telemetry Program Setting

The telemetry project was conducted in a major health centre in eastern Canada between March 2016 and April 2017. This hospital has a total of 504 inpatient beds and is part of a large, four-site health science academic centre.

Telemetry monitoring takes place within a centralized monitoring station, where telemetry nurses are able to simultaneously monitor up to 40 telemetry channels/patients. Our organization staffs 25 telemetry nurses, with one telemetry nurse per 12-hour shift. Telemetry coverage occurs 24 hours/day, 7 days/week. The telemetry nurses are registered nurses (RNs) with supplementary cardiac training obtained through a certification program at a post-secondary institution. In addition, for staff to be deemed competent in telemetry monitoring, they must obtain at least an 80% passing grade on a dysrhythmia test and successfully complete an orientation on the logistics of telemetry monitoring.

The telemetry monitoring program includes two types of patient monitoring: (1) the cardiac patient on a cardiology/cardiovascular unit who requires closer observation; and (2) the patient with a cardiac concern or a history of a cardiac concern located on a remote unit. Remote units outside of the cardiology department that have monitoring capability, such as general internal medicine, surgery, nephrology, transplant, oncology, and psychiatry are located either in the same building as the central monitoring station or in another building.

### Literature Review

The first step in our gap analysis process was to review the literature. A review of the literature on the use of the AHA guidelines for ECG monitoring in the hospital setting revealed that the guidelines were based on expert opinion and offer limited data obtained from clinical trials. Although this is a limitation, the consensus of experts from the multi-disciplinary and multi-institutional panel is currently the best available evidence for clinical decision making and management of ECG monitoring for hospitalized patients (Flanders & Hudson, 2020; Sandau et al., 2017). Yeow et al. (2018) suggest that these recommendations be used as guidance for hospitals to transform the culture of telemetry use and to enhance quality and efficiency.

However, despite the publication and availability of guidelines, misuse of telemetry is prevalent in hospital settings (Flanders & Hudson, 2020). The overuse of continuous monitoring predisposes patients to potential harm; over-monitoring specifically can lead to alarm fatigue and can further have a negative effect on resource use and workflow efficiencies, as patients requiring telemetry monitoring are often moved to various levels of care or units (Flanders & Hudson, 2020). In addition, Chen et al. (2017) found that an increased number of telemetry monitors can directly impact workflow and workload for the nurse and, thus, over-utilization of monitoring can predispose negative effects on patient care. The overuse of telemetry can further contribute to increased healthcare costs and wasted financial resources in equipment and infrastructure, as well as excessive and unnecessary diagnostics work-up and invasive diagnostic catheterizations (Yeow et al., 2018). These findings lent further

support for our decision to use the AHA guidelines as a benchmark for updating our hospital's monitoring practices.

Our review of the literature also examined standards of care, staff competency and training, workflow efficiencies, and patient educational resources. Specific to standards of care, George et al. (2015) concluded that a clearly written and evidence-based facility policy is key to appropriate and safe telemetry monitoring among clinicians. In addition, Ivo-nye et al. (2010) found that using a telemetry policy based on a standard guideline resulted in telemetry admissions that were appropriate in 80% of cases.

Review of the literature on nursing staff competency and staff education and development revealed that competency standards, compliance, and professional development curriculum are essential for safe practice (Dowling Dols et al., 2017; Funk et al., 2017; George et al. 2015; Keller et al., 2020). Dowling Dols et al. (2017) emphasize the development of educational resources, computerized posters, and scenarios for demonstration and mini-tests to support the process of benchmarking best practices with nursing staff. In a large randomized trial ( $N = 3,013$  nurses; 4,587 patients), Funk et al. (2017) tested the effect of an online ECG monitoring education program for nurses on their knowledge, quality of care and patient outcomes, and found those who had additional education demonstrated significant improvements in patient monitoring practices. This study further found a significant decline of in-hospital myocardial infarction following the intervention, which was sustained for 15 months (Funk et al., 2017).

In a recent retrospective study of workflow efficiencies related to the overuse of telemetry, Rubins et al. (2019) found that implementing digital solutions for the purpose of creating telemetry monitoring orders was associated with a significant decrease in telemetry ordering. In this study, telemetry orders decreased from 79.1% of patients to 21.3% of patients in the 7.5 months after the intervention (Rubins et al., 2019). Similarly, Stoltzfus et al. (2019) found that placing a hard stop in the admission orders (i.e., forcing the admitting physicians to indicate a reason for telemetry monitoring from a list of pre-determined indications, based on the AHA guidelines) resulted in a 17.8% reduction in inappropriate telemetry orders for patients.

Lastly, a review of educational resources emphasized that patient education improves outcomes for patients by improving communication, patient satisfaction, and documentation for the purpose of accreditation, while supporting fewer hospital readmissions (Rice et al. 2018). Lampert et al. (2016) underscores that factors within the content and the design of educational materials are important. Appropriate reading level, the layout of information and illustrations, as well as cultural appropriateness all contribute to high quality written patient information.

In summary, the literature review process provided the foundation of best practices required to optimize operations

in the program. This enabled the team to benchmark current evidence against structures and processes that were currently in place and allowed for an opportunity to consider improvements.

### **Review of Telemetry Program Structures & Processes**

The next step in our gap analysis process was to review our telemetry program structures and processes. First, meetings held between the telemetry project leads and the medical team leadership in the General Medicine department revealed that the telemetry ordering system, which included faxing referrals, emailing results and calling by phone to remind physicians to discontinue telemetry, combined with a busy clinical workflow, presented significant barriers to a timely review of reports and discontinuation of telemetry.

We subsequently elicited the nursing perspective through several strategies. A 37-item survey was developed by the authors (MK: nurse educator, ZS: nurse manager, TK: staff nurse and DD: cardiologist) and distributed to 24 nurses (7 telemetry nurses and 17 nurses in the remote program). This survey contained a combination of Likert-scale and open-ended questions, which assessed previous cardiac education, views on role clarity and responsibilities, expectations related to telemetry monitoring, and suggestions for improvements to the telemetry monitoring program (see Table 1). Informal interviews with telemetry nurses were conducted to elicit perceptions of roles and responsibilities, as defined by job requirements, and documentation standards, as defined by nursing and resources available to support decision making on telemetry. Chart audits were carried out by the nurse educator (MK) to elicit rhythm interpretation and documentation accuracy and, finally, observations of clinical practice of telemetry nurses were conducted to gather data on the communication strategies used by telemetry nurses in an inter-professional setting.

In addition, a review of protocols from each clinical care area was carried out related to monitoring specifics such as: skin preparation, placement and frequency for change of electrodes, accurate electrode positioning, telemetry monitor functionality overview, and timeliness of alarm management. The current telemetry order set was also reviewed.

Lastly, informal qualitative data were elicited from patients on the cardiac inpatient unit receiving telemetry monitoring. Fifteen inpatients completed a two-item open-ended questionnaire, which sought to elicit patients' perceptions of telemetry monitoring and what should be included in an informational brochure. All assessment strategies were compiled and evaluated by the nurse educator (MK) and clinical manager (ZS) of the program. The following section will highlight the results of our review and outline how the identified best practices were used as guidance for practice change.

**Table 1.** Gap Analysis Data Collection Methods

| Method   | Target Sample   | Details   |
|--|---|---|
| Needs assessment survey: 27 Likert scale and 10 open-ended questions | Cardiac unit RNs ( $n = 7$ )<br>Remote RNs ( $n = 17$ )                                       | 27 Likert scale questions including demographics, education, role clarity, and clinical responsibilities, and documentation protocols<br>10 open-ended questions explored suggestions for improving training, education and documentation; currently available resources, and suggestions for what should be included in a new policy   |
| Needs assessment survey: open-ended questionnaire                    | Patients ( $n = 15$ )   | Explored benefits of monitoring and information patients would like to see created to support other patients and families in similar situations   |
| Informal interviews and clinical practice observations               | Cardiac unit RNs ( $n = 7$ )<br>Remote RNs ( $n = 17$ )<br>Patients and families ( $n = 15$ ) | Explored topics related to communication protocols, roles and responsibilities of telemetry nurses and staff nurses, and need for professional development<br>Explored patient and family experiences of receiving telemetry monitoring and what could be done to improve the experience (i.e., patient education, communication, etc.) |
| Random chart audits  | Prior to policy implementation ( $n = 7$ )<br>Following policy implementation ( $n = 7$ )     | Evaluated documentation competencies and compliance with updated standards after new policy implementation  |

## Gap Analysis Results

### Program Structure

The main practice issues identified in the gap analysis included: length of time for monitoring, telemetry ordering practices, and telemetry and bedside nurse responsibilities. The first gap in AHA practice standards identified in our program structure was inconsistency in the length of telemetry monitoring time. Informal interviews with telemetry nurses revealed that this variation was associated with inconsistencies in the use of the latest reassessment protocols for assessing the need for ongoing telemetry. This inconsistency resulted in delays in removing patients from telemetry. This finding is consistent with the literature where Falun et al. (2013) discovered that when a patient is on a remote unit, telemetry nurses may experience challenges assessing whether or not the patient meets AHA practice standards for discharge.

The gap analysis also revealed variability in telemetry ordering practices in the remote program. Variations were identified by reviewing the remote telemetry order forms and determining if the request for monitoring aligned with the guidelines outlined by AHA. This review revealed that monitoring was at times requested for reasons contrary to current guideline recommendations; for example,

telemetry monitoring for a patient with chronic atrial fibrillation who is admitted for a non-cardiac reason. In addition, we noted inconsistent processes in communicating the need for reassessing or discontinuing telemetry, causing delays in the allocation of telemetry monitors to other patients.

Finally, chart audits and informal interviews with nurses disclosed issues related to telemetry and bedside nurse responsibilities. Chart audits determined that there were gaps in the telemetry nurses' ability to recognize and correctly interpret rhythms and to document the events of a cardiac event in detail in the patient record. For example, chart audits revealed that documentation consistency was lacking during rhythm interpretation, such as providing the PR, QRS, QT, QTc measurements with cardiac events. Moreover, documented details on cardiac events, such as nurse-performed actions were missing. These findings were consistent with a study by Funk et al. (2016), where monitor watchers were asked about their practice and only 58% of respondents reported that they were responsible for documenting the rhythm events in the patient record.

In addition, informal interviews with nurses in the remote program highlighted that bedside nurses were not addressing requests related to telemetry monitor issues in

a timely fashion. This included delays in addressing low battery alarms, replacing leads, and assessing the monitored patients' clinical status when an observed change in rhythm occurred. Despite relatively high scores on survey responses, informal interviews with nurses regarding their ECG monitoring practices also indicated that some felt a degree of uncertainty in their roles and responsibilities when caring for monitored patients, including uncertainty surrounding documentation processes and their ability to respond to information from the telemetry nurse. Our lack of monitoring protocols has also been reported by others in the literature. Funk et al. (2016) found significant variances in electrocardiographic monitoring practices depending on the unit- and hospital-specific protocols. Based on 413 respondents, 53% had a battery change protocol, while 65% had an electrode change protocol and, lastly, 77% reported that they did not have a protocol for alerting staff when an alarm signals.

### **Program Processes**

Practice gaps identified with protocols, policies, and order sets included inconsistent use of protocols, lack of hospital-wide policies and outdated order set. A review of daily log sheets containing all patients currently on monitors revealed that telemetry nurses' requests for reassessment and discontinuation orders from physicians were neither consistent nor timely, which impacted monitor availability and resource allocation.

A review of all the hospital clinical policies revealed that there was no formal telemetry monitoring policy to outline role requirements for staff. Informal nursing interviews and chart audits revealed inconsistencies in response to cardiac events and communication gaps between clinicians. Nurses in the remote program did not consistently recognize the urgency of requests sought by the telemetry nurse to assess a change in condition, which resulted in treatment delays. In a study by Bonzheim et al. (2011), where two modalities of communication technologies were compared to assess the response time of bedside nurses in remote units, it was noted that timeliness of response and communication loop closure were negatively affected when pager technology was used. Moreover, communication loop closure was achieved in 100% of clinical alarms using the badge technology (i.e., a voice-activated communication device that the caregiver would wear clipped on their clothing or lanyard) in the study versus 19% with the pager. This study is relevant to gaps identified in our organization, as phone and pager technologies were used to communicate alarm events to corresponding bedside nurses and physicians caring for the monitored patient.

Finally, the gap analysis revealed that the order set used to guide clinicians to order telemetry for patients was outdated and did not reflect the latest AHA recommendations. In addition, the order set did not provide reassessment guidelines

to support the telemetry nurse in facilitating discussion with physicians regarding discontinuation of monitoring, as recommended by Yeow et al. (2018). In addition, our order set did not include an option to order telemetry post-procedure for some transcatheter procedures, such as transcatheter aortic valve implants, as recommended in the AHA guidelines (Sandau et al., 2017).

### **Health Professional Education and Training**

Gaps identified in our program, included the lack of educational opportunities available related to rhythm interpretation, critical thinking, and closed-loop communication strategies. Similarly, Nickasch et al. (2016) found that a lack of educational opportunities was associated with confusion and uncertainty among nurses related to knowledge, concluding that more frequent multi-modal training, such as online learning, and hands-on experience on specific guidelines is necessary.

In addition, nurses expressed concern regarding a lack of understanding of their role during escalation of cardiac events and of the protocols related to stakeholders involved (e.g., the telemetry nurse observes an abnormal rhythm on telemetry, cannot establish contact with the nurse caring for the patient, and does not follow the protocol by escalating concern to unit management and the physician). In a study that compared technology for communicating telemetry alarms to bedside nurses, Bonzheim et al. (2011) developed an algorithm for paging nurses and closing communication loops. What we learned from this study was that developing clear, time-specific protocols regarding escalating concerns is critically important. Moreover, it is imperative for all stakeholders (i.e., management, nurses, and physicians) to be included in the protocol to elicit clarity on roles and responsibilities.

Finally, the gap analysis revealed inconsistencies in telemetry nurses' documentation of actions following cardiac events, which were related to event detail and the timeliness of documentation. The need to provide additional nursing documentation education to our telemetry nurses was also highlighted by Nkechi and Azikiwe (2021) who found that clear, precise, and timely documentation had a significant impact on quality assurance, and was an essential element of safe, quality, and evidence-based nursing practice.

### **Patient and Family Education**

An overview of all staff and patient educational materials revealed that no formal telemetry monitoring information was available to support standardized education for patients at our organization. Informal nursing staff interviews revealed that they relied on foundational knowledge obtained from their post-secondary nursing education and their clinical practice experience to educate patients. This resulted in considerable inconsistency in patient and family education across units, programs, and sites. Moreover, as educational materials were not available, patients did not

receive any formal printed information regarding the importance of continuous telemetry monitoring practices, which may explain the frequent disruptions in their monitored time (e.g., patients removing the monitor without notifying the nurse). Lastly, informal surveys obtained from inpatients monitored on telemetry revealed that an informational brochure and formal educational materials are needed and are essential in patients feeling more knowledgeable and, ultimately, less anxious with the nursing care that is provided.

### Implementation of Interventions

The gap analysis identified numerous opportunities for program improvement. Once the results were collated by the members of the telemetry working group (MK and ZS), strategies for improvement were discussed with program stakeholders, including medical directors, associated managers, telemetry nurses, and nurse educators. The purpose was to determine execution of strategies for the gaps identified within program structure and processes.

#### Program Structure

To standardize the practices for telemetry ordering and monitoring, a digital solution platform was adopted to replace the current hybrid system using forms, paper, and clinical messaging systems. All interpretation and documentation of cardiac events of monitored patients on telemetry are now available in the patient's electronic health record. In addition, this digital solution supports closing the loop in communication among clinicians, as all telemetry order activities, including time on monitor, are time stamped and visible to all staff with access to the electronic patient health record.

#### Program Processes

A hospital-wide policy was created utilizing the key recommendations from Dowling Dols et al. (2017) and George et al. (2015), along with consultation from organizational stakeholders (i.e., staff nurses, clinical educators, managers, advanced practice nurses, and physicians). The newly created policy includes three significant changes in the telemetry program monitoring protocols.

First, the clinician roles and responsibilities are now clearly delineated and the protocol on communicating a change in rhythm during cardiac events was revised to provide step-by-step actions for clinicians. For example, if sustained ventricular tachycardia is noted on the monitor, the protocol provides clear, action-orientated steps, directing the nurse to perform a patient assessment and report the findings. The policy also highlights the role and responsibilities of the telemetry nurse and the physician in caring for the patient to help support clinicians in urgent situations.

Second, we developed a standardized communication protocol, using the Situation, Background, Assessment, Recommendations (i.e., SBAR) communication

tool (Shahid & Thomas, 2018). For example, the telemetry nurse may request further assessment of a patient using the following framework: *Situation*: there is a change in rhythm; the patient is now in a third-degree heart block; *Background*: the patient was admitted on telemetry for syncope; *Assessment and Recommendations*: assess the patient's response, obtain vital signs, and report findings to the telemetry nurse and physician. In addition, this protocol also requires the bedside nurse caring for a monitored patient to obtain patient rhythm information at each caregiver transition point. Prior to the implementation of this policy, no such practice existed.

Lastly, the new telemetry policy supports clinicians at our organization by providing a chart-based summary of the AHA guidelines to inform ordering practices and indications for telemetry (Yeow et al., 2018). As an example, Class I patients benefit from continuous monitoring; Class II patients may benefit from telemetry monitoring, but it is not expected to be lifesaving; and Class III patients are very low risk for serious events and the risk for telemetry may outweigh the benefit (Yeow et al., 2018). In addition to the policy, the hospital-wide order set was updated to include the latest revisions from the AHA guidelines to inform ordering practices during computer down time.

#### Health Profession Education and Training

Keller et al. (2020) emphasize that annual cardiac dysrhythmia education and competency testing are necessary for a safer level of practice in telemetry nursing. Therefore, based on our gap analysis findings and recommendations from Keller et al. (2020), a mandatory annual competency test for telemetry nurses (where a passing grade of at least 80% must be achieved), was created as part of our annual education for nurses. In addition to the competency testing, annual dysrhythmia education was designed to include: the process of rhythm interpretation, a review of challenging rhythms, case scenarios, documentation expectations, and closed-loop communication strategies (Keller et al., 2020).

After the policy implementation, and based on recent evidence (Falun et al., 2020), nurses in the remote programs received a review of the protocol and their roles and responsibilities with monitored patients. Additional resources created to support protocol-driven responsibilities were provided to the remote units, including a step-by-step computerized instruction poster reviewing skin preparation protocols, placement and frequency for change of electrodes, accurate electrode positioning, and a telemetry monitor functionality overview. Falun et al. (2020) concluded that these clear standards are key to raising quality to arrhythmic surveillance and to ensure patient safety and better outcomes. In addition, nurses now have a formal printed informational brochure that can be provided to patients.

Lastly, medical residents now receive training on the telemetry order sets during their orientation to the hospital. This strategy was supported by recent research (Sendelbach et al., 2019), which found that medical residents who received training on electronic order sets, as per AHA practice standards, had significant improvement in appropriate monitoring.

### Patient and Family Education

In collaboration with the Patient and Family Education department and the information collected from surveying our patients, an organization-wide brochure for telemetry patients and their families was created. As recommended by others (Behar-Horenstein et al., 2005; Lampert et al., 2016; Squires et al., 2000), the brochure was designed with vocabulary at the sixth-grade reading level, with medical terms in parentheses and the use of artistic illustrations to support high-quality patient information. Information covered in the brochure included an overview of what telemetry monitoring is, how the telemetry monitor works, and what to expect while being monitored.

### Discussion

Our gap analysis identified key targets for interventions in advancing telemetry monitoring standards and creating operational standardization in our organization. This was a novel approach, using a gap analysis to benchmark optimal clinical practices for the telemetry patient and cardiac care at our organization. Consistent protocols and policies that reflect evidence-based best practice and the execution of the new policies were key in the operationalization of this project. This project also highlighted that digital solutions for monitoring patients allow for timely and detailed information to be available to clinicians and provide immediate benefits regarding the management of cardiac patients. We have since seen a decrease in the number of occasions that patients are waiting for an available telemetry monitor, as well as an improvement in documentation and communication processes between nurses and program stakeholders.

Nurses are the foundation to best practice and their organizational commitment to improvements by identifying gaps and supporting solutions was imperative for this project to be a success. As reported by Karami et al. (2017), we also found that cardiovascular nursing can be enhanced, through an understanding of opportunities available to nurses, to become key change agents in benchmarking unit, program, and organizational practices and standards of care for patients on telemetry.

### Lessons Learned and Future Directions

Our leaders are using the findings from this project to continue to improve the telemetry program and monitor standards of care at our organization. We learned that it is essential for us to regularly review the AHA recommendations for updates on ECG monitoring in hospital settings, as well as to remain current on evidence, in order to ensure we are providing optimal, up-to-date, quality care to our telemetry patients. Revisions should be promptly assessed for their relevance to organizational protocols, policies, training, and resources. We also found that engaging the medical team and the telemetry and bedside nursing staff, as end users, from the beginning of the project, was essential in supporting change.

The initial objectives for this project were vast and although informal data were collected for the purpose of identifying gaps, formal qualitative and quantifiable data would have aided in drawing more impactful conclusions to current program outcomes. Therefore, moving forward, we plan to collect data that will contribute to improve initiatives, to support evaluation strategies, and to encourage current evidence-based practices with telemetry monitoring.

### Conclusion

Driven by an increasing demand for telemetry monitoring, along with complex hybrid communication systems and a lack of overarching telemetry monitoring standards, operational inefficiencies had developed within our telemetry program and caused practice challenges for our nursing and medical staff. To address these growing concerns, our multi-site, large academic health science centre initiated a gap analysis of the telemetry program to identify key targets for intervention in advancing telemetry monitoring standards within the organization. The project achieved the goal of optimizing telemetry monitoring for the inpatient units by elevating program structures and processes, and delineating responsibilities of all staff across units, programs, and sites. Implications for nursing practice include the development of clear and standardized protocols, improved opportunities for education and training for those caring for patients on telemetry, and most importantly, achieving our overall goal of supporting patient care and improving safety outcomes.

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# Étude descriptive du soutien à l'autonomie perçu par les personnes atteintes d'hypertension artérielle et leur motivation à adhérer aux traitements

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## Résumé

**Contexte:** Mieux comprendre l'adhésion aux traitements des personnes atteintes d'hypertension artérielle (HTA) selon la perspective de la théorie de l'auto-détermination (TAD).

**Objectifs:** Décrire la perception de soutien à l'autonomie (SA), les types de motivation et l'adhésion aux traitements, et explorer l'effet de médiation de la motivation autonome entre le SA et l'adhésion.

**Méthodes:** La perception de SA, les types de motivation et l'adhésion ont été mesurés par l'entremise d'un questionnaire en ligne.

**Résultats:** Les participants ont présenté une perception de SA et une motivation autonome élevées et un niveau d'adhésion relativement élevé aux traitements. Toutefois, aucun effet de médiation de la motivation autonome n'a pu être démontré entre le SA et l'adhésion aux traitements.

**Conclusion:** Cette étude souligne l'importance de faire plus de recherches basées sur la TAD, celles-ci ayant le potentiel de guider les infirmières dans leurs interventions pour faciliter l'adhésion aux traitements.

**Mots-clés:** Hypertension, autonomy support, motivation, patient adherence

## Descriptive study of autonomy support perceived by people with high blood pressure and their motivation to adhere to treatments

### Abstract

**Background:** To better understand adherence of people with high blood pressure (HBP) to treatment from the perspective of self-determination theory (SDT).

**Purpose:** To describe the perception of autonomy support (AS), types of motivation and adherence to treatments, and explore mediation effect of autonomous motivation between AS and adherence.

**Methods:** AS perception, types of motivation and adherence were measured through an online questionnaire.

**Results:** Participants exhibited a high perception of AS and autonomous motivation, and a relatively high level of treatment adherence. However, no mediating effect of autonomous motivation could be demonstrated between AS and adherence.

**Conclusion:** This study highlights importance of more research based on SDT with potential to guide nurses in their interventions to facilitate treatment adherence.

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### Points saillants

- L'HTA constitue la principale cause de mortalité et de diminution de l'espérance de vie dans le monde. Bien que plusieurs interventions aient été mises en place en vue d'optimiser la prise en charge de cette maladie, plusieurs personnes n'adhèrent pas aux recommandations émises.

- L'adhésion aux traitements tant pharmacologiques que non pharmacologiques est essentielle à la prise en charge de l'HTA et l'infirmière occupe un rôle déterminant à cet égard.
- Cette étude souligne l'importance de procéder à davantage de recherches basées sur la TAD et le SA, car cela aurait le potentiel de guider les infirmières dans leurs interventions pour faciliter l'adhésion aux traitements.

## Contexte

L'hypertension artérielle (HTA) constitue un défi de santé publique majeur au Canada, considérant le nombre de personnes atteintes, les conséquences et les coûts associés. À l'échelle nationale, un adulte sur cinq en est atteint (DeGuire et al., 2019). L'HTA est souvent désignée comme « un tueur silencieux » en raison de la rareté des symptômes qu'elle occasionne à ses débuts (Organisation mondiale de la santé, 2013, p. 5). Une revue systématique d'études qualitatives réalisées auprès de personnes atteintes d'HTA rapporte d'ailleurs que celles-ci considèrent que leur pression artérielle (PA) s'améliore en l'absence de symptômes, renforçant chez ces personnes le sentiment d'inutilité de suivre un traitement (Marshall et al., 2012). Cela peut donc entraver l'adhésion aux traitements, dont le traitement pharmacologique (TP), la pratique régulière d'activité physique (AP) et le respect de la diète hyposodée (DH).

Selon une revue systématique incluant 22 essais randomisés contrôlés et un total de 8,967 participants, 50 à 80% des personnes traitées par un médicament antihypertenseur adhèrent faiblement au traitement prescrit (Morrissey et al., 2017). Concernant la pratique de l'AP, seuls 16.7% des personnes âgées de 18 à 79 ans respectent les recommandations canadiennes d'un minimum de 150 minutes d'AP aérobie d'intensité modérée à élevée par séances d'au moins 10 minutes, chaque semaine (Colley et al., 2018). Enfin, pour ce qui est de la consommation de sodium, selon les résultats obtenus lors de l'Enquête de 2015 sur la santé dans les collectivités canadiennes, 58 % de la population canadienne excède l'apport quotidien recommandé de sodium, soit 2,300 mg (Gouvernement du Canada, 2018). Bien que plusieurs interventions aient été mises en place en vue d'améliorer l'adhésion aux traitements pharmacologiques et non pharmacologiques, 30% des personnes atteintes d'HTA au Canada demeurent avec une HTA non contrôlée, dont 16% ignorant qu'elle est trop élevée (Padwal et al., 2016). En somme, les données probantes ci-haut suggèrent qu'il pourrait être profitable que les infirmières impliquées dans la gestion de l'HTA orientent leurs interventions de façon à favoriser et optimiser l'adhésion aux traitements ci-haut mentionnés, puisque cette adhésion est déterminante pour le contrôle de la maladie (Leung et al., 2016; Ma, 2018; Salman Alsaigh et al., 2018).

Mieux comprendre les mécanismes sous-jacents à l'adhésion, autrement dit, les déterminants, paraît approprié. Plusieurs déterminants influencent l'adhésion, mais la motivation semble être essentielle. En HTA, la majorité des études portant sur la motivation se sont intéressées à la force de motivation en explorant si la personne est faiblement ou fortement motivée. Or, des études suggèrent que le type de motivation pourrait également, au-delà de la force, constituer un déterminant important de cette adhésion (Ng et al., 2012). Cela justifie ainsi le choix de la théorie de l'autodétermination (TAD) dans le cadre de la présente étude (Deci et Ryan., 1985). Brièvement, la TAD propose de conceptualiser

la motivation le long d'un continuum allant de l'amotivation, à la motivation contrôlée, puis à la motivation autonome. Plus la motivation est autonome, plus le comportement sera autodéterminé, c'est-à-dire réalisé par choix, favorisant par le fait même sa persistance dans le temps.

Pour les personnes atteintes d'une maladie chronique, la plupart des comportements de santé (prise de médicaments, DH ou alimentation faible en glucides) ne sont pas des activités plaisantes et intrinsèquement motivées (Ryan et al. 2008). Selon la TAD, si de tels comportements doivent être adoptés et maintenus en dehors d'un environnement de traitement contrôlé (p. ex. centre hospitalier), une personne doit en venir à approuver personnellement leur importance. C'est exactement ici que le rôle primordial de l'infirmière est mis à contribution. Pour permettre aux patients de développer cette motivation autonome, les infirmières doivent leur offrir du soutien. Concrètement, il s'agit de leur offrir le choix de s'engager dans un changement de comportement, d'expliquer le raisonnement derrière le choix offert et d'exprimer de l'empathie en reconnaissant les sentiments et les perspectives de l'autre (Deci et Ryan., 1994). D'ailleurs, pour la plupart des études basées sur la TAD, les résultats démontrent que soutenir l'autonomie des personnes dans leurs traitements, qu'ils soient pharmacologiques ou non pharmacologiques, favorise le développement de la motivation autonome, facilitant ensuite l'adhésion (Hagger et al., 2014; Ng et al., 2012; Paquet et al., 2016). À cet effet, bien que ces recherches démontrent des résultats encourageants, en HTA, nous avons identifié une seule étude à ce jour (Wiseman., 2012). La présente étude vient ainsi combler un manque en ce sens et pourrait contribuer à l'avancement des connaissances sur l'adhésion aux traitements en HTA.

## Objectifs

L'étude avait d'abord pour objectif de décrire la perception des personnes atteintes d'HTA du SA reçu; les types de motivation pour le TP, la pratique régulière d'AP et le respect de la diète hyposodée; et l'adhésion à ces trois traitements. Le second objectif était d'explorer l'effet de médiation de la motivation autonome entre le SA et l'adhésion à chacun des traitements.

## Méthodes

Un devis descriptif corrélational transversal a été utilisé afin d'explorer l'effet de médiation de la motivation autonome entre le SA et l'adhésion. Le projet de recherche a été approuvé par le comité d'éthique de la recherche avec des êtres humains de l'Université du Québec à Trois-Rivières (UQTR; CER-2-264-10.01) ainsi que par celui du Centre intégré de santé et de services sociaux de la Mauricie-Centre-du-Québec (CÉRM-2019-009).

### Échantillon—recrutement

Le projet de recherche ciblait les personnes âgées de 18 à 65 ans inclusivement, atteintes d'HTA depuis cinq ans

ou moins. Cette tranche d'âge avait été choisie, car les personnes s'y retrouvant sont plus susceptibles d'avoir nouvellement reçu le diagnostic d'HTA et d'ainsi devoir adhérer aux traitements tant pharmacologiques que non pharmacologiques afin d'atteindre les valeurs cibles de PA. En effet, au Québec, l'augmentation de l'incidence de l'HTA devient plus marquée à partir de la mi-quarantaine (Blais et Rochette., 2011). Les participants devaient être capables de lire, écrire et comprendre le français, avoir accès à un ordinateur, un téléphone ou une tablette électronique, être connectés au réseau Internet et, enfin, être en mesure de compléter un questionnaire en ligne. Les personnes n'ayant pas reçu de prescription de médication pour l'HTA étaient exclues, puisque l'adhésion aux TP faisait l'objet de questions dans l'étude. Les participants ont été recrutés par l'en-tremise d'affiches distribuées dans des cliniques de santé, sur le campus de l'UQTR, à des regroupements de personnes à risque de maladies cardiovasculaires ainsi que par les réseaux sociaux. Le lien URL et le « code QR » présents sur l'affiche de recrutement dirigeaient les participants vers une page Internet où ils pouvaient alors prendre connaissance de l'étude, donner leur consentement et avoir accès au questionnaire.

### Instruments de mesure

Au total, trois grands concepts ont été opérationnalisés en huit variables. Le Tableau 1 résume ces variables, les instruments de mesure et les versions utilisées, tous validés. Les analyses descriptives relatives aux instruments de mesure utilisés ont été réalisées selon les lignes directrices des

auteurs. Des autorisations pour l'utilisation des questionnaires ont été obtenues auprès des auteurs concernés.

### Analyse des données

De façon à répondre au premier objectif de l'étude, des analyses de tendance centrale et de dispersion ont été réalisées sur les variables à l'étude. Chaque type de motivation (au nombre de trois) était isolé avec chacun des traitements, au nombre de trois également. Pour le second objectif, des analyses de médiation simple ont été réalisées à l'aide de la macro PROCESS (version 3.3 de Hayes., 2018). Le logiciel IMB SPSS (version 26) a été utilisé pour l'ensemble des analyses susmentionnées. En ce qui a trait à la taille de l'échantillon, en supposant une puissance statistique de 0.80, une valeur alpha de 0.05 et un total de sept variables indépendantes, le progiciel G\*Power a permis de déterminer qu'un total de 105 participants était nécessaire pour les analyses de médiation, à savoir la vérification du lien entre la perception du SA reçu, la motivation autonome et l'adhésion pour chacun des trois traitements (SA à motivation à adhésion aux traitements; Faul et al., 2007).

### Résultats

Entre le 4 décembre 2019 et le 30 mars 2020, un total de 51 adultes âgés de 29 à 64 ans ( $M = 51.7 \pm 9.8$ ) ont participé à l'étude. En regard des événements exceptionnels survenus le 13 mars 2020 (l'arrêté ministériel décrétant un état d'urgence sanitaire dans tout le territoire québécois en raison de la COVID-19), le recrutement de participants a dû être arrêté le 30 mars 2020 (Centre d'accès à l'information

**Tableau 1.** Variables, instruments de mesure, description, versions utilisées et qualités psychométriques associées

|             | Variables  | Instruments de mesure   | Description  | Versions utilisées  | Qualités psychométriques  |
|-------------|--|---|--|---|---|
| 1           | Soutien à l'autonomie  | <i>Health Care Climate Questionnaire</i> (Williams et al., 2000)                    | Évalue la perception des participants du SA promu par les professionnels de la santé envers le traitement de leur HTA.   | Version de 6 items traduite et validée en français par Czajkowska et al. (2017).  | Cohérence interne ( $\alpha = 0,90$ )<br>Coefficient de corrélation intraclass = 0,55 |
| 2<br>3<br>4 | Amotivation;<br>Motivation autonome;<br>Motivation contrôlée | <i>Treatment Self-Regulation Questionnaire</i> (Ryan et Connell, 1989)              | Évalue dans quelle mesure la motivation d'un participant pour un traitement spécifique (soit : TP, l'AP, DH) est soumise à une régulation contrôlée ou autonome. | Version de 15 items, adaptée et validée par Levesque et al. (2007), puis inspirée de la version traduite par Kayser (2019). | Cohérence interne ( $\alpha = 0,73-0,93$ )  |
| 5           | Adhésion au TP   | <i>Hill-Bone Compliance to High Blood Pressure Therapy Scale</i> (Kim et al., 2000) | Mesure le niveau d'adhésion autorapporté des personnes atteintes d'HTA pour le TP, la DH et le suivi médical.  | Version de 14 items, traduite en français par trois évaluateurs distincts.  | Cohérence interne ( $\alpha = 0,84$ )   |
| 6<br>7<br>8 | Respect de la DH<br>Suivi médical<br>Pratique d'AP           | <i>International Physical Activity Questionnaire</i> (Craig et al., 2003)           | Évalue les types d'intensité d'AP afin d'estimer l'AP totale en MET (Metabolic Equivalent Tasks) – min / semaine.  | Version française courte de 6 items   | Cohérence interne ( $\alpha = 0,65 à 0,88$ )  |

juridique, 2020). Cette décision relève du bouleversement de l'état d'esprit de la population québécoise; le stress et la peur occasionnés auraient pu avoir un impact sur les réponses données au questionnaire, puisque les habitudes de vie des citoyens ont été affectées (Taylor et al., 2020). Par ailleurs, certains n'ont pas répondu à l'entièreté du questionnaire, ce

qui expliquait les différences dans le nombre de réponses qu'on peut observer entre les items analysés. L'échantillon était majoritairement composé de femmes, d'un niveau de scolarité universitaire et dont le suivi de PA était effectué par un médecin. Les caractéristiques des participants sont présentées au Tableau 2.

Par souci de présenter un maximum de résultats relatifs aux deux objectifs de la présente étude, les auteurs ont convenu de finalement conserver les données obtenues des participants atteints d'HTA depuis plus de 5 ans, même si initialement ceux-ci ne répondraient pas à l'ensemble des critères d'inclusion. Néanmoins, un peu plus de la moitié des participants avaient reçu le diagnostic d'HTA depuis 5 ans ou moins et prenaient des médicaments pour l'HTA depuis autant d'années. Les analyses descriptives réalisées procurent donc des données pertinentes en lien avec le premier objectif, c'est celles-ci qui sont exposées dans cette section.

### **Perception du SA**

En premier lieu, concernant le SA, la moyenne ( $M$ ) et l'écart-type ( $ET$ ) des scores obtenus sur les six items était de  $5.44 \pm 1.18$ . À titre d'exemple, un participant présentant une perception de SA très élevée répondait 7 (*Fortement en accord*) pour l'item suivant: « Je me sens compris par le professionnel de la santé. »

### **Types de motivation selon les traitements**

En deuxième lieu, concernant les types de motivation, tout comme pour la perception de SA, les participants répondaient aux différents items selon une échelle de type Likert variant entre 1 (*Fortement en désaccord*) et 7 (*Fortement en accord*). Chaque item énonçait une raison motivant l'adhésion à un traitement donné et était associé à un type de motivation (autonome, contrôlée, amotivation). Les résultats démontrent que, tant pour le TP que pour la pratique d'AP et la DH, la motivation autonome était plutôt élevée ( $M = 5.99$  à  $6.21 \pm 1.10$  à  $1.25$ ), la motivation contrôlée plutôt faible ( $M = 2.69$  à  $3.15 \pm 1.39$  à  $1.50$ ) et l'amotivation plutôt faible également ( $M = 2.56$  à  $2.94 \pm 1.26$  à  $1.38$ ). Des analyses secondaires ont été effectuées afin de comparer les types de motivation selon le nombre d'années d'atteinte d'HTA. Ces dernières ont été justifiées par le fait que, selon les résultats d'une méta-analyse incluant 184 études ayant utilisé la TAD dans des contextes de soins de santé, lorsqu'une personne reçoit un nouveau diagnostic, elle est confrontée à des défis exigeant l'adhésion nouvelle à des traitements pour lesquels elle ne dispose pas de motivation autonome (Ng et al., 2012). Dans le cas présent, aucune différence statistiquement significative n'a été observée entre les personnes atteintes d'HTA depuis 5 ans et moins et celles atteintes depuis plus de 5 ans pour le TP ( $t(45) = 0.199$ ,  $p = 0.566$ ), l'AP, ( $t(44) = 0.034$ ,  $p = 0.071$ ), et la DH, ( $t(45) = 0.191$ ,  $p = 0.399$ ).

**Tableau 2.** Caractéristiques des participants

|   | n (%)     |
|---|-----------|
| Sexe (N = 48)   |           |
| Femme   | 33 (68,8) |
| Homme   | 15 (31,3) |
| Âge (N = 46)  |           |
| Moins de 35 ans   | 4 (8,7)   |
| 35 à 44 ans   | 7 (15,2)  |
| 45 à 54 ans   | 10 (21,8) |
| 55 à 65 ans   | 25 (54,3) |
| Niveau de scolarité (N = 48)  |           |
| Secondaire  | 2 (4,2)   |
| Collégial (ou équivalent)   | 19 (39,6) |
| Universitaire   | 27 (56,3) |
| Professionnel de la santé qui effectue le suivi de PA (N = 48)      |           |
| Médecin   | 31 (64,5) |
| IPS   | 2 (4,2)   |
| Médecin et IPS  | 7 (14,6)  |
| Médecin et infirmière   | 5 (10,4)  |
| Autres  | 3 (6,3)   |
| Nb d'années d'atteinte HTA (N = 48)                                 |           |
| Moins de 1 an   | 9 (18,8)  |
| 1 à 4 ans   | 17 (35,4) |
| 5 à 9 ans   | 12 (25,0) |
| Plus de 10 ans  | 10 (20,8) |
| Nb d'années de prise de médicaments pour l'HTA (N = 48)             |           |
| Moins de 1 an   | 11 (22,9) |
| 1 à 4 ans   | 18 (37,5) |
| 5 à 9 ans   | 11 (22,9) |
| Plus de 10 ans  | 8 (16,7)  |
| <i>Note.</i> Nb = Nombre; IPS = Infirmière praticienne spécialisée. |           |

## Adhésion aux traitements étudiés

En dernier lieu, des analyses descriptives ont été réalisées afin de mesurer le niveau d'adhésion à chacun des traitements étudiés. Pour le TP, le score théorique variait de 9 à 36 et pour la DH, de 3 à 12. Un niveau d'adhésion élevé se reflétait par un score faible, alors qu'un niveau d'adhésion faible se reflétait par un score élevé. Les résultats démontrent que pour le TP, le niveau d'adhésion était élevé ( $M = 10.28 \pm 1.80$  [9.00-19.08]), ce qui suggère que les participants prenaient leur médication telle que prescrite. Pour la DH, le niveau d'adhésion était modérément élevé ( $M = 5.87 \pm 1.03$  [4.00-8.00]). Pour ce qui est de la pratique d'AP, les participants ont été répartis selon leur niveau d'AP respectif (IPAQ Research Committee, 2005). Un niveau « élevé » d'AP équivaut à 60 minutes par jour ou plus d'AP d'intensité modérée à élevée. Un niveau « modéré » équivaut à au moins 30 minutes d'AP d'intensité modérée la plupart du temps, alors qu'un niveau « bas » était attribué à ceux ne répondant pas aux critères des deux premiers niveaux. Les résultats démontrent que 44% des participants présentaient un niveau élevé d'AP, 36% un niveau modéré d'AP et 20% un niveau bas. Ces résultats suggèrent que les participants étaient plutôt actifs.

## Analyses de médiation

En ce qui a trait au deuxième objectif, soit les analyses de médiation, les corrélations entre les différentes variables sont d'abord présentées. Pour l'adhésion au TP, les corrélations suivantes ont été observées entre le SA et l'adhésion ( $r = 0.15$ ;  $p = 0.30$ ), entre le SA et la motivation autonome ( $r = 0.23$ ;  $p = 0.12$ ), et entre la motivation autonome et l'adhésion ( $r = 0.25$ ;  $p = 0.08$ ). Ensuite, en ce qui a trait à l'adhésion à l'AP, les corrélations suivantes ont été observées entre le SA et l'adhésion ( $r = 0.14$ ;  $p = 0.32$ ), entre le SA et la motivation autonome ( $r = -0.10$ ;  $p = 0.50$ ), et entre la motivation autonome et l'adhésion ( $r = 0.28$ ;  $p = 0.04$ ). Finalement, pour l'adhésion à la DH, les corrélations suivantes ont été observées entre le SA et l'adhésion ( $r = -0.29$ ;  $p = 0.04$ ), entre le SA et la motivation autonome ( $r = -0.11$ ;  $p = 0.93$ ), et entre la motivation autonome et l'adhésion ( $r = 0.09$ ;  $p = 0.53$ ).

Les résultats n'ont pas permis par ailleurs de conclure que la motivation autonome exerçait un effet de médiation entre la perception des personnes atteintes d'HTA du SA reçu et l'adhésion à chacun des traitements. Par exemple, pour le TP, l'effet de médiation de la motivation autonome entre le SA et l'adhésion ne s'est pas révélé statistiquement significatif ( $\beta$  standardisé = 0.05; IC de 95% = -0.06 à 0.15 obtenu par une procédure de *bootstrapping*). Cet effet de médiation est considéré comme non statistiquement significatif, car la valeur zéro est comprise dans l'IC (Hayes., 2018). Des résultats de l'effet de médiation non statistiquement significatifs ont également été observés pour l'adhésion à l'AP ( $\beta = -0.03$ ; IC 95% = -0.12 à 0.04) et la DH ( $\beta = 0.00$ ; IC 95 % = -0.05 à 0.04).

## Discussion

L'étude avait pour objectifs : 1) de décrire la perception des personnes atteintes d'HTA du SA reçu, les types de motivation et l'adhésion aux traitements ciblés en premier lieu; et 2) de vérifier l'effet médiateur de la motivation autonome entre la perception de SA et l'adhésion au TP, à l'AP et à la DH. Pour les trois traitements, aucune corrélation statistiquement significative n'a pu être démontrée entre les trois variables à l'exception de celle entre le SA et l'adhésion à la DH, où une corrélation négative a été obtenu ( $r = -0.29$ ;  $p = 0.04$ ). Rappelons que, dans le contexte de l'étude, le score théorique de la DH variait de 3 à 12 et qu'un score faible reflétait un niveau d'adhésion élevé. Toutefois, vu la faible corrélation, il serait imprudent de spéculer que plus la perception de SA est élevée, plus le niveau d'adhésion élevé à la DH est élevé. En regard du second objectif, la présente étude n'a trouvé aucun effet de médiation de la motivation autonome mais, comme la taille de l'échantillon était petite, d'autres études avec un échantillon plus important peuvent être utiles pour déterminer si un effet de médiation réel existe.

Bien que ces résultats ne puissent confirmer ceux qui ont été obtenus par d'autres études réalisées dans le domaine, leur publication est essentielle à l'avancement des connaissances. En effet, les études publiées servent de déclencheurs à d'autres, mais permettent également aux chercheurs de formuler des hypothèses de recherche. Ainsi, la publication de résultats tant statistiquement significatifs que non statistiquement significatifs permet de diminuer les biais de publication et d'augmenter la rigueur scientifique (Nair., 2019). Ainsi, dans le cas de la présente recherche, la recension des écrits et la démarche méthodologique effectuées ont une valeur scientifique importante. Par ailleurs, la seule autre étude quantitative semblable identifiée a également obtenu des résultats non statistiquement significatifs en regard du postulat de la TAD (SA → motivation autonome → adhésion), avec un échantillon de 78 personnes atteintes d'HTA (Wiseman., 2012). Toutefois, la méta-analyse de Ng et al. (2012) qui regroupait des études ayant utilisé la TAD dans des contextes de soins de santé a, pour sa part, obtenu des résultats encourageants en démontrant l'existence d'une médiation statistiquement significative de la motivation autonome sur la relation entre SA et l'adhésion à des comportements en matière de santé. Il convient de mentionner que la taille de l'échantillon des études inclus dans cette méta-analyse variait entre 126 à 1 433 participants.

Néanmoins, la tendance des résultats de la présente étude (pour le SA, les types de motivation ou l'adhésion), se range du côté de la littérature portant sur la TAD. D'abord, pour ce qui est du SA, les participants avaient une perception modérément élevée du SA promu par les professionnels de la santé et donc, relativement positive en regard de la gestion de leur HTA. Ceci va dans le même sens que la majorité des études basées sur la TAD dans d'autres domaines de santé

(Ng et al., 2012; Russell et Bray, 2010). À titre d'exemple, l'étude de Williams et al. (2006) réalisée auprès de femmes (âge moyen: 45 ans) faisant usage du tabac, a également mis en lumière qu'une perception de SA élevée se transposait en une meilleure utilisation de la médication et une plus grande abstinence tabagique.

Ensuite, ce qui a trait aux types de motivation pour les trois traitements ciblés (TP, AP, DH), les participants de la présente étude ont présenté une motivation autonome plutôt élevée, alors que la motivation contrôlée et l'amotivation étaient plutôt faibles. En général, ces résultats sont en cohérence avec ce qui est observé dans la littérature portant sur les types de motivation en regard de différents comportements en matière de santé et d'autres maladies (Fortier et al., 2007; Ng et al., 2012; Russell et Bray, 2010; Shigaki et al., 2010). À titre d'exemple, une étude réalisée en Ontario auprès de patients d'un centre de santé en soins de première ligne (âge moyen: 47,3 ans, majoritairement de sexe féminin) a mis en lumière qu'une motivation autonome élevée vis-à-vis l'AP s'est transposée subséquemment par un niveau plus élevé d'AP (Fortier et al., 2007).

Finalement, pour ce qui est de l'adhésion aux différents traitements, les résultats obtenus démontrent que le niveau d'adhésion était plutôt élevé pour le TP, très élevé pour la pratique d'AP et modérément élevé pour la DH. Cette différence d'adhésion entre les traitements n'est pas surprenante. En effet, les résultats de plusieurs études tendent à démontrer que l'adhésion peut varier d'une personne à l'autre et d'un traitement à l'autre (da Silva Ferreira et al., 2016; Herrera et al., 2017; Klinovszky et al., 2019). Selon une étude réalisée auprès de 192 personnes atteintes d'HTA âgées de 20 à 80 ans, 85% ont déclaré avoir une bonne adhésion pour leur TP comparativement à 60% pour le respect de la DH (Al-daken et Eshah, 2017). D'ailleurs, selon les résultats d'une étude qualitative s'intéressant également à la population atteinte d'HTA, le niveau d'adhésion variait en fonction de la signification accordée à chacun des traitements (Herrera et al., 2017). Cette donnée pourrait permettre de formuler une hypothèse quant au niveau d'adhésion élevé des participants de la présente étude. En effet, les scores élevés de motivation autonome pour les trois traitements témoignaient de la valeur significative accordée à ces traitements, corroborant ainsi l'un des postulats la TAD (Deci et Ryan., 2000).

## **Limites**

Cette étude comporte certaines limites. D'abord, la non-représentativité de l'échantillon sur le plan de la proportion hommes-femmes (majoritairement de sexe féminin) et du niveau de scolarité (plus élevé) limite, d'une certaine façon, la généralisation des résultats. Une autre limite concerne le type de recrutement utilisé. Rappelons qu'il s'agissait d'un échantillonnage non probabiliste, de convenance et par réseaux. Le projet de recherche a surtout

été affiché sur le campus de l'UQTR, diffusé par les réseaux sociaux et transmis via les contacts de la chercheure principale de l'étude. Or, ceci pourrait avoir mené à un recrutement de participants ayant un plus haut niveau de scolarité – comme on peut d'ailleurs le constater dans les résultats – et donc entraîner un biais de sélection ou de désirabilité sociale. Notons toutefois que ces limites (majorité de femmes et participants plus scolarisés) sont également rapportées dans les études similaires (Fortier et al., 2007; Kauniskangas et al., 2001; Williams et al., 2006). D'autre part, tel que mentionné précédemment, la petite taille de l'échantillon a influencé la puissance statistique pour l'analyse reliée au deuxième objectif, quoiqu'il ne soit pas certain que des résultats différents auraient été observés avec une plus grande puissance. Ce constat de l'influence de la faible puissance statistique soulève la possibilité d'une erreur de type 2 sur le plan statistique, soit la conclusion d'un effet de médiation non statistiquement significatif alors que, dans les faits, cet effet était présent, mais non détecté en raison de la petite taille de l'échantillon. Aussi, le manque de participants a été une entrave majeure à la réalisation du projet de recherche et a principalement été victime d'un événement exceptionnel (COVID-19) qui a, par le fait même, mis fin au recrutement. Ce constat nous rend donc optimistes quant à ce qui pourrait être observé si, avec une taille d'échantillon appropriée et plus représentative de la population, davantage d'études basées sur la TAD étaient effectuées pour mieux comprendre la difficulté d'adhésion aux traitements pour les personnes atteintes d'HTA. Finalement, les mesures autorapportées pour les trois traitements constituent également une limite de cette étude.

## **Contribution pour la pratique infirmière**

Les infirmières œuvrent à différents niveaux et dans de multiples domaines dans le système de santé canadien. Étant donné l'importante prévalence de l'HTA, elles côtoient assurément régulièrement les personnes qui en sont atteintes. De toute évidence, l'adhésion aux traitements est déterminante pour optimiser le contrôle de la maladie. Les interventions infirmières doivent donc aller en ce sens, mais encore faut-il qu'elles soient appropriées. Bien que la présente recherche n'ait pas été en mesure de tirer la même conclusion que plusieurs travaux de recherche basés sur la TAD (à savoir que le SA facilite le développement d'une motivation autonome qui, à son tour, favorise l'adhésion aux traitements pharmacologiques et non pharmacologiques), la tendance des résultats d'une perception de SA, de motivation autonome et d'adhésion élevées corrobore la littérature et laisse donc croire qu'il pourrait être bénéfique pour les infirmières de prendre conscience de l'approche utilisée lorsqu'elles interviennent auprès de personnes atteintes d'HTA.

## Conclusion

Bien que plusieurs interventions aient été mises en place en vue d'optimiser la prise en charge de l'HTA, la difficulté d'adhésion aux traitements par les personnes atteintes demeure un sujet d'actualité. Dans d'autres domaines de santé, une approche de SA favorise le développement d'une motivation autonome qui, à son tour, facilite l'adhésion aux traitements. Dans le cas de la présente étude, bien que ce postulat n'ait pu être confirmé, les scores élevés obtenus pour la perception de SA, la motivation autonome et l'adhésion

corroborent les observations des précédentes recherches basées sur la TAD. Comme il s'agit de l'une des premières études réalisées auprès de personnes atteintes d'HTA, la pertinence de procéder à davantage de recherches utilisant cette théorie est soulevée. Celles-ci pourraient potentiellement permettre de mieux guider les infirmières exerçant en première ligne dans leurs interventions en promotion de la santé et en prévention des maladies cardiovasculaires, en l'occurrence, les complications associées à l'HTA.

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