

Implementation Science to Support Nursing Research and Practice

A Ciência de Implementação para apoiar a pesquisa e prática de Enfermagem
Ciencia de la Implementación para apoyar la investigación y práctica de Enfermería

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Implementation science is a relatively new approach to research and continues to evolve as does its use in nursing. Currently, there is a substantial delay, often more than a decade⁽¹⁾, in translating research evidence into practice and policy. As a result, patients do not receive the best care available, providers are unable to use the latest evidence in their practice, and the health system is left to provide care as it always has been done. Implementation science has the potential to better support the mobilization of evidence into practice and policy, subsequently improving health outcomes for patients, healthcare providers, and health systems overall. In this editorial, we introduce the concept of implementation science, discuss the benefits of this approach to implementing practice and policy change, and outline challenges as well as considerations to mitigate the same. We will use the example of an implementation science approach for a current research project in British Columbia, Canada to exemplify these points. Our aim is to facilitate guidance on the use of this methodology for health researchers.

Implementation science research is defined as “the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services(2),”and focuses on the behaviours of health professionals and organizations in implementing and evaluating the effectiveness of interventions⁽²⁾. Three hybrid models are suggested for conducting this type of research: Hybrid 1 – focus on effectiveness where implementation is explored but not the focus; Hybrid 2 – concentrates on effectiveness and implementation outcomes; and Hybrid 3 – emphasizes implementation with less emphasis on effectiveness outcomes⁽³⁾. Implementation science studies are informed by various frameworks (e.g., CFIR⁽⁴⁾, RE-AIM⁽⁵⁾, PRISM⁽⁶⁾) that have a more specific focus on different components or approaches such as context or implementation processes. Choosing a framework depends upon the researcher’s goals, the type of intervention, and the intervention’s setting. When conducting implementation science research, another important consideration is de-implementation defined as an intervention to de-implement practices and programs that are of low value or harmful to patients⁽⁷⁾. Likewise, before implementing new interventions, consideration must be given to what practices, policies or programs need to be de-implemented before a new intervention can be implemented or implemented successfully.

A number of considerations and challenges should be attended to by nursing researchers in developing and implementing implementation science research. At the start of a

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study, nursing researchers should investigate potential implementation science frameworks and determine which one will best facilitate the needs of the research and the uptake of the intervention including who the intended knowledge-users are. Nurse researchers must carefully choose theories and implementation science frameworks that align with the goals of research partners, the characteristics of the intervention, and the intervention setting. At this point, it is important for nursing researchers to provide evidence and rationale for why they are studying the particular intervention – why it is needed and the differences it will make for patients, providers, and the health system. Furthermore, researchers must also describe and provide rationale for how the project will be conducted (e.g., implementation activities, time needed, data required). When determining the nature of the project, researchers should also account for the context of the intervention and its environment. Taking the time to learn about the context, and to speak with staff and leadership about the intervention, is essential. Additionally, researchers should spend time where the intervention was or will be implemented (e.g., nursing unit, health clinic), taking detailed notes to document the different components of the context. The importance of context cannot be underestimated in implementing an intervention.

As nurses, and especially as novice researchers, we often want to undertake more than might be feasible for our research project. Implementation science research is complex and has various foci, which can make it challenging to conduct. When planning the research, it is essential to consider what is feasible given one's knowledge and skills, what data can be obtained, and the time and funding available. Researchers might need to consider narrowing their focus, dividing the project into different steps, and working in partnership with others to manage resource and financial needs. They should also contemplate the timing of the project – is it the right time to introduce a new intervention or adaptations to an existing one? Finally, researchers should include a mentor on the research team who has the knowledge, skills, and track record in implementation science to assist in designing and conducting the study.

It can be challenging to engage all parties who may be impacted by the intervention and how it is implemented, but the importance of engagement cannot be understated⁽⁸⁾. Partners may include decision-makers, policy-makers, healthcare providers including but not limited to nurses, and other organizations that may be impacted by the intervention (e.g., not-for-profit, industry). Importantly, patients are also partners and need to be engaged to ensure that the intervention will be effective in meeting their needs⁽⁹⁾. People with lived and living experience are an essential part of the development, testing, implementation, and evaluation of an intervention. For such engagement to occur, researchers must consider the substantial time investment involved in genuine relationship building with all parties; one-time consultation is not enough to create the relationships required for successful, collaborative implementation or adaptations.

In British Columbia, Canada we conducted an implementation science study to evaluate an intersectoral (university, health authority, and community) harm reduction drug checking program as part of a doctoral dissertation. At this point-of-care service on a university campus and in the community, staff used technology (e.g., spectrometry, immunoassay strips) to analyze clients' drugs and tell them the ingredients, reducing their risk of harm from unexpected contaminants. We had to account for stigma, worsening harms from the unregulated drug crisis, and inequitable impacts of this crisis on historically marginalized groups^(10,11). We used the RE-AIM (reach, effectiveness, adoption, implementation, and maintenance) implementation science framework for its pragmatic approach, inclusion of intersectional perspectives, and attention to power imbalances^(5,12,13). RE-AIM is particularly useful for closing the research to practice gap⁽⁵⁾.

We engaged all parties (people with lived and living experience of substance use, service providers, intersectoral decision-makers) prior to the start of the study through an advisory committee, research team, and in ways that felt safe and comfortable for the individual (McGreevy et al., 2023). Potential barriers to engagement such as finances, power imbalances⁽¹⁴⁾, and capacity⁽¹⁵⁾ were mitigated via collaborative decision making and grant funding. These individuals provided input on the study design (to evaluate the implementation and effectiveness of the drug checking program) and interpretation of the results.

Mixed methods were used to collect data for each of the RE-AIM components: reach of the service, effectiveness of the service, adoption by staff and decision makers, implementation facilitators and barriers, and maintenance recommendations⁽⁵⁾. Data were collected from all parties via interviews, surveys, arts-based methods, and program administrative data.

The study produced detailed insights for each of the RE-AIM components as they related to this intersectoral drug checking program, particularly for how leadership might enhance the service's infrastructure and accessibility. We found that the program was effective in supporting clients' health and that it positively impacted the broader community. However, the reach of the service was inhibited by limited hours and locations that were a result of limited funding. Decision makers thought insufficient funding might stem from the lack of policy for drug checking at provincial and institutional levels, and

this lack of policy was cited as an adoption barrier. Regardless, they valued working with different sectors as they could engage in resource sharing (e.g., technology, grant funding), learn from diverse, interprofessional experts, and provide experiential learning opportunities for students. They believed the program was implemented as best it could within the policy and funding limitations but recommended that drug checking be standardized and protected by policy for sustainability.

By using the RE-AIM framework, we were able to understand what aspects of the program were working well and why, as well as what areas needed strengthening and how this might be done. For example, the program was effective for the people who accessed it, but it was not being accessed by certain populations because of accessibility limitations. Incorporating individual and organizational considerations also allowed us to understand why the program had limited accessibility, and how this might be resolved. Because of the research team and advisory committee, we were able to integrate findings and recommendations into the program as they arose.

Using this framework also came with limitations. It was challenging to understand the differences between some of the RE-AIM components, requiring us to revisit the definitions several times and to think about the definitions differently from different perspectives. For example, the 'reach' of the program only applied to the population the intervention was serving, not the reach of how many staff were recruited and retained. Additionally, we believe the exclusion of context from this framework was a weakness. While it may not need to be part of the components explored with participants, it would be beneficial to have the context of the program (e.g., physical, political, and social environments) articulated (16). Finally, trying to explore five dimensions of a program at one time with four different populations made it challenging to keep the study feasible and time bound. However, this challenge likely reflects how we should have made realistic goals that aligned with the time and resources available for meaningful community-engaged research.

As demonstrated by this case study and the literature, implementation science is a valuable research methodology for nursing and reducing the research-to-practice/policy gap. There are many frameworks that researchers can choose from, and it is essential that they choose frameworks that align with the health care organization/community-partnered research goals. Well planned and realistic implementation research studies facilitate the mobilization of knowledge into practice and policy. Indeed, researchers should consider using this approach to better understand implementation, what is needed, the influence of different contexts, and facilitators and barriers for implementation. As nurses, it is essential we conduct pragmatic research that has the potential to close the research to practice gap for the wellbeing of patients/partners, providers, and the health system.

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