Editorial

Dissemination and Implementation Science in Portuguese speaking countries – Why should we care about it?

Why do the results of scientific research take so long to be incorporated into the usual care of health services and by the general population? What is needed to improve the utilization of scientific knowledge in practice?

Communication through scientific journals is not sufficient for the dissemination and implementation of science. Often, information is considered inaccessible and incomprehensible to professionals, health managers, health users and their families, politicians, and other stakeholders. It is estimated that scientific knowledge takes about 17 years to be incorporated into clinical practice, reaching only 14% of the target population. (1)

The implication of this scenario is that, in addition to the non-academic community having difficulty accessing this knowledge, interventions resulting from studies are likely not to be implemented in health services, schools, among others, due to numerous barriers (e.g., motivation, resources) and in multiple levels (e.g., individual, interpersonal, community, organizational, systemic), increasing challenges in population health care and generating inequities. (2,3) Thus, recently, researchers have developed a field of knowledge called “Dissemination and Implementation Science” (D&I). This term originates from the United States. (3) In Canada, this area is called “Knowledge Translation,” and in Europe, it is referred to as “Implementation Science.” This nomenclature may vary depending on its theoretical, methodological, and contextual foundation. (3,4) As an emerging field, many terms, concepts, and tools are constantly being developed, adapted, and refined. (6)

What is Dissemination and Implementation Science?

The field of Implementation Science studies how intentional actions promote the incorporation of evidence-based intervention into usual care, while Dissemination Science examines how to intentionally share information about evidence-based intervention. It is important to clarify that scientific research results are understood as effective interventions or innovations (e.g., practices, programs, policies, procedures, products, medications, etc.) that are evidence-based. (7)
To implement and disseminate an intervention in usual care, one of the models of D&I proposes the following stages: exploration, preparation, implementation, and sustainability. As part of an implementation process, we identify barriers and facilitators to implement an intervention, and then identify or create strategies to overcome these difficulties and enhance the facilitators. For instance, in the case of breast cancer screening, if professionals are unaware of the correct age and interval to request a mammogram, a strategy would be to improve knowledge about breast cancer screening through courses, workshops, computerized clinical decision support systems, etc. The idea behind this process is that the strategy aims to optimize the implementation and sustainability of the intervention (e.g., conducting mammography screening for breast cancer at the correct age and interval) and, ultimately, result in positive impacts on population health and in healthcare services (e.g., increased coverage of mammographic screening in the target population, reduced mortality rate from breast cancer).

At times, in certain health scenarios, there are interventions already implemented in practice that are no longer beneficial, or may even become (or are) harmful to the population's health, such as mammography screening in individuals outside the target age range for the breast cancer program. In such cases, the use of strategies for de-implementation can be extremely useful to reduce, replace, restrict, or eliminate implemented interventions that are proven to be ineffective and costly for the population and healthcare services.

In summary, starting from a well-defined problem, determinants of the success or failure of the uptake of interventions are identified, strategies are developed to improve the process of implementation, de-implementation, or dissemination, and their expansion and sustainability are evaluated. A goal of the D&I field is to develop effective strategies to optimize the implementation of evidence-based intervention, aiming to improve health outcomes. Recently, an article presented recommendations that can assist researchers in developing research grounded in D&I in Latin American countries.

**D&I in Portuguese-Speaking Countries: Advances and Challenges**

In recent years, (D&I) has gained prominence in the academic sphere in Portuguese-speaking countries, making valuable contributions to adapting strategies, stakeholder analysis, large-scale implementation studies, multilevel implementation, conceptual and methodological debates, and in various topics, including breastfeeding, infant nutrition, physical activity, immunization strategy, cancer screening, chronic diseases in migrant communities, neonatal pain, and infection prevention.

The construction of this knowledge highlights the multidisciplinary nature of the field. In Brazil, there are currently seven research groups focusing on Implementation Science, with around 100 researchers from Brazil
and abroad registered and certified in the National Council for Scientific and Technological Development (CNPq) directory working in this area. According to the catalog of the Brazilian Federal Foundation for Support and Evaluation of Graduate Education (CAPES), nearly 50 theses or dissertations have been produced in this field since 2017. In descending order, the prominent areas include Nursing, Public Health, Pharmacy, Medicine, Biological Sciences, Physical Education, Physiotherapy, Occupational Therapy, Nutrition, Psychology, Administration, Social and Political Sciences, and Education.

One of the challenges for advancing the D&I field is that almost all materials are published in English. Therefore, for the appropriate use of these materials in Portuguese-speaking countries, there is a need to translate and test them, adapting them to the sociocultural context. In Lusophone countries, there are some translations of tools, scales, and theoretical structures: Implementation Research Development Tool (ImpRes-BR) \(^{(26)}\); Evidence-Based Practice Attitude Scale (EBPAS-15) \(^{(27)}\); Organizational Readiness for Implementing Change Questionnaire (ORIC) \(^{(28)}\); Consolidated Framework for Implementation Research (CFIR) \(^{(29)}\); and Reach, Effectiveness/Efficacy, Adoption, Implementation, and Maintenance Evaluation Framework (RE-AIM) \(^{(30)}\). These are examples of advancements that strengthen the Community of Portuguese Language Countries (https://www.cplp.org/id-2595.aspx).

Even for researchers accustomed to reading texts in English, it is often challenging to understand some words and concepts due to cultural differences in the meaning of certain terms in Portuguese. Thus, it is necessary for researchers interested in this area to not only translate and validate references into Portuguese (with appropriate methodology and in collaboration with experienced researchers, preferably from different Portuguese-speaking countries) but also to back-translate, test, adjust, refine, and deepen concepts, theories, models, structures, measures, and scales in our cultural context.

Furthermore, it is imperative to question the capacity of the D&I toolbox to address equity, social inequalities, racism, power relations, political, socioeconomic structure, healthcare system, among other factors that make the implementation of interventions challenging. We need to understand the limits of the D&I lens and produce studies that legitimize the reality of these countries to emancipate Lusophone territories from the epistemologies of the Global North, aiming especially at decolonizing this knowledge.\(^{(31)}\)

Another crucial point of debate in the field of D&I is the dialogue about what it entails to have “evidence” in the science. Scholars have cautioned for critical thinking about how the evidence is produced, the participation of different members of the society in the production of the evidence, and the contribution of the evidence to public health. Such considerations are important when addressing equity, and social and political nuances in each country, and within country.\(^{(32)}\)

The field of D&I can be an opportunity for academic, governmental, and civil society sectors, among others, to address these questions and build
paths to improve access and quality of the healthcare system. Some of these paths include: (1) developing studies for the production of new evidence; or (2) adapting evidence to the sociocultural context to address identified gaps (32), including approaches aiming at equity (2). The evidence of the field needs to be adapted to the context to be implemented. (2) Invariably, the participation of different community members is essential in building an agenda of action, developing various forms of engagement, and improve health and healthcare.

**Future of D&I in Portuguese-Speaking Countries**

The growth in D&I research in Portuguese-speaking countries has the potential to assist policymakers in making more informed and effective decisions, ensuring that resources are allocated appropriately, and desired outcomes are achieved, considering the plurality and heterogeneity of healthcare scenarios. In this regard, the establishment of funding lines that align with the specificities of studies in various areas of knowledge emerges as a powerful avenue for collaboration among academic, governmental, and civil society sectors. Research grounded in D&I should consider different stages, objectives, and theoretical and methodological approaches to investigate the implementation of interventions. (3) Some pathways include: (1) preliminary studies to identify knowledge gaps, understand the context in which these gaps occur, and establish a solid foundation for implementation; (2) real-time monitoring studies to collect data on project execution and assess operational challenges; and (3) impact evaluations, cost-benefit analyses, and sustainability studies.

As a specialized field, D&I has its own foundations, terminology, and concepts, which can hinder the dialogue between theory and practice. Therefore, it is crucial for D&I learners to possess knowledge and skills that facilitate this dialogue, rooted in the science and practice of implementation, as a tool for collaborative work and effective intervention implementation. To achieve this, capacity building in D&I becomes necessary, with practical spaces where individuals can apply the acquired knowledge in their daily work. Clarity in the terms and concepts used, as well as in the choice of models, theories, and frameworks, is essential to understand how different contexts, actors, and strategies influence results, ensuring the generalization of research findings.

In response to these calls, the Group of Researchers Interested in Dissemination and Implementation Science in Portuguese-Speaking Countries has convened to form a strategic network committed to: (1) bringing people together to facilitate and strengthen collaborations and partnerships; (2) promoting initiatives; (3) collaborating, rather than duplicating, translations and validations of materials into Portuguese; (4) development of training and events; (5) advancing the development of a vocabulary in Lusophone countries; and, consequently, (6) promoting the development,
consistency, and identity of D&I in these countries. As the group and the science in our countries grows, we will incorporate member’s feedback on the name, mission and goals of the group.

On an open platform, these researchers have shared their thematic areas and studies in the D&I field in the link https://osf.io/wpqyj/. The group is open to everyone. To join the group, add your name on the platform, so we can map the network in a similar fashion as other networks such as the Brazilian Network of Implementation Science (BRAIMS). Relatedly, we invite readers to explore the thematic call for Implementation Science in the Acta Paulista de Enfermagem journal.

We hope you find inspiration for future studies and connect with researchers and networks in the D&I field.

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