

## Knowledge Translation, Science of Implementation and Nursing

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Nursing as science aims to expand knowledge about human experiences through research and the creation of concepts<sup>1</sup>. And although nursing researchers are constantly engaged in producing and disseminating knowledge, there is a need to translate their research findings into actions in clinical practice to improve the health and life quality of individuals assisted by nurses in different contexts<sup>1</sup>.

Traditionally, researchers tend to transfer or disseminate knowledge by publishing articles in refereed journals or presenting the results of studies at scientific events<sup>2</sup>. However, this format is not readily accessible to most users or consumers of that knowledge, such as health professionals, patients and their families, managers, among others. Numerous factors hamper the access to scientific publications, such as insufficient knowledge or even ignorance concerning electronic databases and bibliographic search, reduced number of open access publications, the language of articles or publications (use of technical/scientific terms and foreign language), among other.

There is an estimate that scientific knowledge takes about 17 years to reach clinical practice, result in practice changes and directly benefit users. Therefore, in a recent crusade, the researchers' attention has gone beyond knowledge generation and dissemination and has reached translation and implementation actions<sup>3</sup>. It is crucial to offer the benefits of knowledge production to as many people and institutions as possible, evaluating the intervention impact on both perspectives of health promotion and harm reduction, besides replacing and eliminating actions proven inefficient and costly<sup>2</sup>.

The terms knowledge translation and implementation science are, in some contexts, used interchangeably. Knowledge translation is a dynamic and iterative process that includes the synthesis, dissemination, exchange, and ethical and grounded application of knowledge to improve health, provide more efficient health services and products and strengthen the health care system<sup>2</sup>. On the other hand, implementation science refers to the study of factors determining the use of knowledge, besides studying effective methods for promoting its use and evaluating the outcomes<sup>4</sup>.

Knowledge translation and implementation need to be carefully planned and substantiated by models, frameworks, and theories to be successful, especially in practice change.

Translation and implementation models such as Knowledge to Action Cycle<sup>5</sup>, recently translated into Portuguese as *Ciclo do Conhecimento a Ação*<sup>2</sup>, are commonly used to describe and guide the process of translating research results into practice<sup>3</sup>. The models are generally used to create interventions or programs. Furthermore, some models can inform and evaluate the implementation by itself and its distribution and expansion, such as the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance)<sup>6</sup> and the implementation outcomes proposed by Proctor et al<sup>7</sup>.

On the other hand, frameworks describe the factors determining the implementation. These factors are either barriers or facilitators' that can influence the implementation outcomes and include the context, characteristic of the intervention, characteristic of the individuals in the process, local and organizational support, among others. Exploring these factors is important to plan or evaluate an intervention implementation. Promoting Action on Implementation Research in Health Services (PARIHS)<sup>8</sup> and Consolidated Framework for Implementation Research (CFIR)<sup>9</sup> are examples of frameworks.

Theories provide a clear explanation of how and why specific relationships result in specific events<sup>3</sup>. Implementation theories are fundamental to understanding how the science of implementation applied in the praxis and are derived from areas such as psychology, sociology and organizational theories, seeking to assess behavior change at the individual and collective level. The Theory of Innovation Diffusion<sup>10</sup> is considered the most influential in knowledge use and the most widespread in the science of implementation<sup>3</sup>.

Knowledge translation and implementation are multifaceted and complex actions. Therefore, researchers believe that no insulated structure, model or theory is sufficient to address every aspect of those actions. Thus, it is recommended the combined and collaborative use of models, structures and theories. For example, one can base the development of a knowledge translation strategy, such as an instructional video, a educational sheet, or a clinical protocol, on a model, and then explore the facilitators and barriers described in a framework by initially informing and later assessing the process of implementing such strategy.

Other aspects include fulfilling the user's needs, both in knowledge production itself and knowledge translation and implementation so that changes in practice occur. Moreover, efforts are needed to initially synthesize knowledge in an attractive, dynamic and accessible format and, subsequently, implement effective actions so that changes in practice happen in different contexts and situations. Finally, the incorporation of knowledge translation and implementation products in researchers' productivity evaluation may contribute to legitimizing these activities and outputs.

Knowledge translation and implementation do not occur spontaneously, but their success contributes to equity and excellence in care while minimizing the gap between knowledge and practice. Nurses can collaborate at different levels on behalf of knowledge translation and implementation in the health area, given their insertion in different contexts and versatility in work.

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