



## Implementation science for oral health promotion



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Implementation science aims to facilitate and improve the adoption of evidence-based research into practice.<sup>1</sup> Despite the growing body of evidence-based knowledge, evidence-based practices are not always applied in the clinical setting.<sup>1</sup> Implementation science intends to identify the barriers and present implementation strategies in an effort to enhance the uptake of these approaches. Basically, it is about making an effort to implement the knowledge we have into daily practice, ensuring our patients are receiving evidence-based treatments. The employment of evidence-based research is required to provide optimal treatment for patients and is used in the field of medicine. For example, pediatric neurocritical care recognizes that specialized care delivery is necessary and beneficial for patients; however, this care is poorly implemented.<sup>2</sup> This particular study concluded that evidence-based care could be effectively implemented and sustained in this setting with the use of implementation strategies from six categories: planning, educating, restructuring, financing, managing quality, and attending to policy context.<sup>2</sup> A more specific example involves the use of therapeutic hypothermia for neonatal patients.<sup>3</sup> Upon completion of an implementation focused research study, it was found that this therapy was being utilized outside the limits that were used in the research.<sup>3</sup> The study alluded to the potential misuse of the therapy and called for action on neonatal healthcare professionals.<sup>3</sup> The study concluded that individuals who are part of a healthcare team should continually evaluate the quality of the care they are delivering with respect to the current evidence.<sup>3</sup>

Research solidly supports bacteria as the major etiology of the two most common diseases in dentistry: caries and periodontal disease. Effective removal of the bacteria with oral hygiene tools and instructions are simple yet successful preventative measures. The European Federation of Periodontology guidelines emphasize the need for frequent patient recalls, professional maintenance, oral hygiene, and fluoridated toothpastes.<sup>4</sup> Other clinical practice guidelines establish the effectiveness of pit and fissure sealants in preventing caries in children and adolescent patients.<sup>5</sup> Although there is a generous amount of research supporting oral hygiene and fluoride application for preventing oral health disease, there remains an overwhelming prevalence of both periodontitis and caries. Somewhere between the strong evidence and clinical practice, this knowledge seems to fall through the cracks. This gap between evidence-based research and clinical practice can be addressed through implementation science.

Several models and frameworks exist for the purpose of implementation science.<sup>1</sup> One strategy involves a “bottom up” approach in which the population at stake is involved in the initial research process, versus a “top down” or “researcher driven” approach.<sup>1</sup> This strategy may be useful in the application of evidence-based research in underserved, low resource populations. Another strategy involves interdisciplinary teamwork.<sup>1</sup> Smoking cessation is an excellent example of how several healthcare disciplines can support and educate patients on tobacco cessation. Oral hygiene, which is one of the most successful preventative measures for oral disease, should also be communicated



across several healthcare disciplines. These are only a few of the several strategies that could aid in improving the implementation of evidence-based research in the dental field.

Research is undeniably critical for patient care; however, we must be able to apply it. There is a need for implementation science in the field of dentistry. Oral hygiene is established as an important preventative measure, yet it is not always emphasized enough in the clinical setting. As healthcare professionals we are obliged to provide quality, patient-centered care. Therefore, we must be able to implement and apply the new and innovative as well as the old and well-established oral health knowledge that arises from our cutting edge research.

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