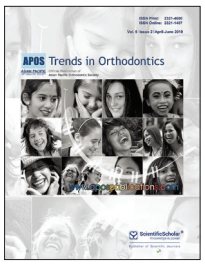
ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

www.apospublications.com

APOS Trends in Orthodontics



Editorial

Scoping studies: *Should there be more in orthodontic literature?*

Nikhilesh Vaid

Department of Orthodontics, European University Dental College, Dubai, UAE.

***Corresponding author:**
Nikhilesh Vaid,
Department of Orthodontics,
European University Dental
College, Dubai Healthcare City,
Dubai, UAE.

apospublications@gmail.com

Received : 20 September 19
Accepted : 20 September 19
Published : 28 September 19

DOI
10.25259/APOS_118_2019

Quick Response Code:

The last issue of APOS Trends had a scoping review on surgery-first orthognathic approach.[1] This was, probably, one of its first kind in orthodontic literature. I did receive a few questions, comments, and intrigue from colleagues across the world. The authors did a systematic analysis of more than 500 papers published on the subject and concluded that the development of the technique does not preclude extensive research. An evaluation of the outcomes assessed in these studies made an interesting read! The authors were *systematic in their approach*; however, the paper was "not a systematic review"! Confusing, isn't it?

In an editorial more than 5 years ago,[2] I stated – *"Less than a third of orthodontists today understand or can explain the meaning of a systemic review, a meta-analysis, prospective trials, cohorts, odds ratio, sample power, confidence intervals, specificity, null hypothesis, to name a few. Probably less than 10% can explain what PICO means. In light of this reality, when we can't analyze what we are reading or teaching, would not reading, analyzing and writing about EBP, Research Protocols or Clinical Trials augment a better future for a well-trained and molded orthodontist of the 21st century? To a question that often surfaces when asked about whether a research or a literature search project should even be a part of a Masters' program that is training students for being clinicians and practitioners, my answer is simple. Research Methodology, Basic Biostatistics, and EBPs are to a clinical science what "grammar is to a language." You might not surface it every day, but you still unknowingly need to understand and apply it well, if you need to use the language!"*

I still stand by what I said then, and I am sure the numbers quoted then have not drastically changed even now. However, in contemporary orthodontic literature and academia,[3,4] there is a sure but slow trend toward evidence-based practices.

The methodology for conducting secondary or tertiary research, based on existing literature, has also refined itself over a period of time. This has resulted in numerous terminologies that describe the various approaches. They are (full) systematic review; meta-analysis; rapid review; (traditional) literature review; narrative review; research synthesis; and structured review.[5] There aren't any consistent definitions, which may result in researchers using them loosely. For instance, there is a risk that reviews defined by their authors, as "systematic" may not all adopt the same high standards in terms of protection against bias and the quality assessment for the selection of primary research. On this basis, the appropriate nomenclature would be a "literature review" and not "systematic review."[5]

Arksey & O'Malley, in 2005,[5] described the "scoping" study as step further than literature review. Until recently, hardly any emphasis has been placed on the scoping study as a technique

to "map" relevant literature in the field of interest. The main differences between a systematic review and a scoping study are that a systematic review might typically focus on a well-defined question where appropriate study designs can be identified in advance, while a scoping study tends to address broader topics where many different study designs might be applicable. Second, the systematic review aims to provide answers to questions from a relatively narrow range of quality-assessed studies, while a scoping study is much less likely to seek to address very specific research questions nor, consequently, to assess the quality of included studies.

Pham *et al*. stated that a "Scoping Review" is commonly undertaken to examine the extent, range, and nature of research activity in a topic area; determine the value and potential scope and cost of undertaking a full systematic review; summarize and disseminate research findings; and identify research gaps in the existing literature.[6] He states three differences: (1) A scoping review seeks to present an overview of a potentially large and diverse body of literature pertaining to a broad topic, whereas a systematic review attempts to collate empirical evidence from a relatively smaller number of studies pertaining to a focused research question. (2) Scoping reviews generally include a greater range of study designs and methodologies than systematic reviews addressing the effectiveness of interventions, which often focus on randomized controlled trials. (3) Scoping reviews aim to provide a descriptive overview of the reviewed material without critically appraising individual studies or synthesizing evidence from different studies. In contrast, systematic reviews aim to provide a synthesis of evidence from studies assessed for risk of bias. Furthermore, scoping review provides a particular benefit when applied to newer disciplines with emerging evidence, in which the dearth of randomized controlled trials preclude the researcher to conduct systematic reviews. Some newer fields of orthodontics are clear aligner therapy (i.e Invisalign), rapid maxillary expansion in adults, 3D assisted technology efficiency and reliability (i.e desktop printing and soft tissue evaluation), etc., that would benefit from scoping reviews.

The first methodological framework for conducting scoping reviews with the aims of clarifying when and how one might be undertaken was published in 2005.[5] They proposed an iterative six-stage process: (1) Identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data, (5) collating, summarizing, and reporting the results, and (6) an optional consultation exercise. Arksey and O'Malley intended that their framework stimulated discussion about the value of scoping reviews and provided a starting point toward a methodological framework. Since its publication, few researchers have proposed enhancements to the framework based on their own experiences with it or a review of a selection of scoping reviews.

In recent years, scoping reviews have become an increasingly adopted approach. They have been published across a broad range of disciplines in social sciences and fields of health care. Orthodontics has been a slow starter on this terrain.[1]

The role of a scoping study in relation to other types of literature reviews is a topic for interesting discussions! I see many young academics wanting to teach "Evidence-based Literature" to residents focusing on published systematic reviews (which are far and few in our specialty) in orthodontic literature. Most of these reviews conclude with observations that include statements like "*future trials need to have more scientific rigor*" or "*methodological soundness of included studies do not warrant definitive conclusions.*" These conclusions, though true, frustrate me as a reader, looking for the highest grade of evidence to apply in clinical decision-making! An indication for orthodontic researchers and potential authors that it is probably time for optimizing research resources, and scoping literature before we start systematically analyzing it!

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of the Journal or its management.

REFERENCES

1. Gandedkar NH, Dávila MM, Chng CK, Liou EJ, Darendeliler A. Surgery-first orthognathic approach: A "scoping review" for mapping outcomes and plausible recommendations to develop core outcome sets. APOS Trends Orthod 2019;9:77-88.
2. Vaid NR. Application of evidence in teaching and clinical protocols: Do we still nurture the "ostrich mindset"? APOS Trends Orthod 2014;4:1-2.
3. Vaid NR. The orthodontic blogosphere! APOS Trends Orthod 2018;8:55-6.
4. Vaid N, Doshi V, Vandekar M. What's trending in orthodontic literature? APOS Trends Orthod 2016;6:1-4.
5. Arksey H, O'Malley L. Scoping studies: Towards a methodological framework. Int J Soc Res Methodol 2005;8:19-32.
6. Pham MT, Rajić A, Greig JD, Sargeant JM, Papadopoulos A, McEwen SA. A scoping review of scoping reviews: Advancing the approach and enhancing the consistency. Res Synth Methods 2014;5:371-85.

How to cite this article: Vaid N. Scoping studies: *Should there be more in orthodontic literature?* APOS Trends Orthod 2019;9(3):124-5.