



EDITORIAL

SYSTEMATIC REVIEWS: THE WORLD THAT DIDN'T STOP DURING THE PANDEMIC

Humanity has experienced several pandemics that in the past had spread chaos, death and much suffering across the planet. Among the worst in history can be cited the Black Death that devastated about 1/3 of the world's population in the 14th century; Smallpox that killed more than 300 million people in the 20th century and the Spanish flu that began in 1918, being responsible for the death of about 50 million people across the earth. In March 2020, the World Health Organization officially declared the Covid-19 worldwide pandemic, a disease caused by the coronavirus (Sars-Cov-2). Until the publication of this editorial, this pandemic would have been responsible for about 4.5 million deaths worldwide. Since then, health authorities have focused on preventing the disease based on curbing the circulation of the virus, with measures related to personal hygiene, the use of masks and, above all, social distance.

Such measures, despite being fundamental for the control of the disease, generated social, economic, cultural and political impacts unprecedented in the recent history of epidemics. The chaotic scenario inherent to the pandemic exposes socially vulnerable groups to the disease, affects the economy with increased unemployment, compromising family financial support, as well as generating emotional impacts due to confinement and fear of the risk of illness and death. The insecurity and statistics related to deaths are possibly not the greatest in history because, in the 21st century, humanity is experiencing the peak of its technical-scientific

development, being strongly responsible for the alleviation of the current unfavorable scenarios.

Within this, the scientific community also suffered from the deleterious effects of the pandemic. Measures of social distancing kept researchers out of the labs for many months, proportionally increasing distancing from further researches. This panorama can be clearly seen by the numbers. A quick search performed in PubMed (<https://pubmed.ncbi.nlm.nih.gov/>) with the descriptor "dentistry" and restricting the search to "Clinical Trials" articles, showed in the pre-pandemic period (from January 1st, 2019 to August 1st, 2019) a total of 1115 published studies. On the other hand, the same search conducted over the same periods in 2021 showed a 35% drop with a total of 724 manuscripts published. But Clinical Trials are in this case just an example used to show that all scientific production in dentistry decreased during the pandemic, affecting from laboratory, animal and observational studies to randomized clinical trials, as these depend on the presence of the researcher in the laboratory or in direct contact with the patient in the dental office.

On the other hand, despite the panorama that disfavored the realization of primary studies, the need for social distancing and telework led the scientific community to seek scientific production methods that were alien to the restrictions imposed by the pandemic. It was when the world experienced the great "boom" of Systematic Reviews and these numbers will be presented at the end of this editorial.



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Systematic Reviews are secondary studies that can be carried out far from laboratories and dental clinics and, in a simplistic way, seek all available scientific information on a given subject, to then compile and analyze its results, generating a unique conclusion about the question initially formulated^{3,5}. For this reason, Systematic Reviews present a high level of scientific evidence, even when compared to any isolated study, regardless of its experimental design and methodological quality. However, despite its great importance, the design and conduction of this type of study have stages with many particularities that make a Systematic Review profoundly different from other types of scientific articles and this fact may wrongly discourage researchers from engaging with this research method and ask: Is this type of study feasible?

However, the demand for scientific publication has been increasing, as has the search for stronger scientific evidence, such as that obtained through Systematic Reviews. However, this is not always an easy task. Currently, many Systematic Reviews are performed without respecting the fundamental principles, leading researchers to frustrated attempts at publication or bringing to the scientific community information with levels of scientific evidence below those expected for this type of publication⁴.

Therefore, the purpose of this editorial is also to show to the most fearful researcher that even with all the difficulties inherent to the pandemic, Systematic Reviews can undoubtedly be a feasible method of generating strong and reliable scientific evidence, since that 3 requirements are met: 1) that the researcher has technical mastery of the method, 2) that there is

a good key question and 3) that the researcher is able to pass through the monsters that can hinder him on the way.

Among the 3 requirements mentioned above, the need for technical mastery of the method is probably the one that most frightens beginning researchers in this type of study. However, despite the need to go through a learning curve that involves all steps from designing to conducting a Systematic Review (clinical doubt, key question, preliminary information search, research protocol, literature search, definition of eligibility criteria, data collection, meta-analysis, qualitative analysis and conclusion) support materials such as guides³, books⁵ and articles⁷ that enable the training of the most inexperienced researchers are plentiful.

The aim of any Systematic Review should be to answer an important clinical question. Thus, once the decision is made to carry out this type of study, the first step is to formulate a clear question focused on the main doubt that permeates the study^{1,8}. Usually a specific question will help to carry out more specific searches of different databases and also to create unambiguous criteria for the selection of studies. Thus, the first step towards the success of a Systematic Review is the formulation of a relevant and original key question, since the work arising from it will add significant value to science, not serving as "more of the same".

Finally, to make a Systematic Review feasible it is necessary for the researcher to overcome the monsters that can hinder him. Among them, the main one is the originality. However, unlike other types of publications, the Systematic Review does not have to be 100% inedited and



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the researcher should not give up immediately if he finds a previously published Systematic Review containing the same key question that he has just written⁵. Before that, it is necessary to know if that the previously published Review is: 1) updated, that is, if it was published less than 2 years ago^{2,6}, 2) if the method is suitable according to the main guides about this research method^{3,4,7} and 3) if, in the end, it allowed for the generation of robust scientific evidence on the subject. If the answer is no to one of these items, there is no plagiarism and unethical conduct, and therefore a new Systematic Review must be remade containing this key question. These are considered the biggest monsters that can make Systematic Review unfeasible for a large number of researchers, but they shouldn't.

Therefore, if they go through the initial inertia barrier, even the most inexperienced researchers will be able to realize how feasible Systematic Reviews are, especially in the midst of a global pandemic that makes difficult to carry out primary studies.

But more than encouraging novice researchers to venture into the world of Systematic Reviews, the purpose of this editorial is also to share with BDS readers the data that show the growth of this research method, as fortunately, during the pandemic, many researchers around the world have realized how fantastic this method can be for generating strong levels of scientific evidence, even with the need for social distance.

The numbers presented in PubMed (Figure 1) show that with the same searches described above performed with the descriptor "dentistry", restricting the search now only to "Systematic Review" articles in the same periods indicated a total of 1055 studies published in 2019 with a

31% growth in 2021 (1382 Systematic Reviews published).

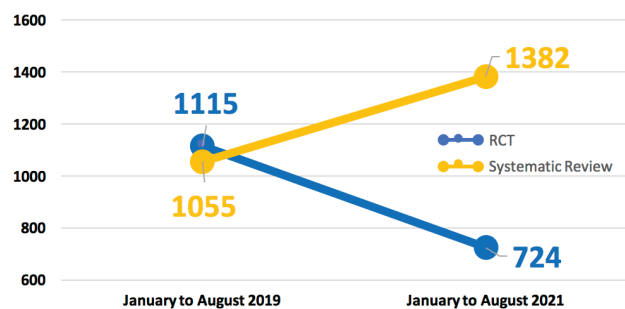


Figure 1 - Randomized Clinical Trials and Systematic Reviews published in dentistry in 2019 and 2021 (from January to August). Font: <https://pubmed.ncbi.nlm.nih.gov>

Therefore, it can be seen that despite the numerous difficulties imposed by the Covid-19 pandemic, fortunately the international scientific community knew how to be resilient and reinvented itself, seeking this fantastic research method to maintain the generation of strong levels of scientific evidence, despite the need for social distancing. For this reason, Systematic Reviews can be considered the "World that didn't stop during the Pandemic".

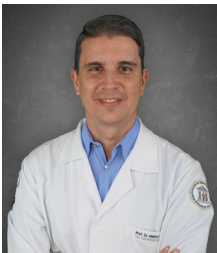
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