

## Towards thirty years of evidence-based practice (V): A critical reflection on the higher education in health sciences.

Hacia treinta años de práctica basada en evidencia (V):  
Una reflexión crítica sobre la educación superior en ciencias de la salud.

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From the very beginning, the promoters of the evidence-based practice began to highlight a series of needs for its effective implementation. These needs are directly related to the educational sphere, namely, the development of new professional skills for the successful undertaking of activities required for its integration into daily work, the finding of ways of incorporating evidence-based practice into the corresponding undergraduate, postgraduate and continuing education programs, and the evaluation of the effectiveness of training interventions in order to produce evidence on the best teaching-learning methods of such approach.<sup>1-3</sup>

Regarding the first aspect, a high development of skills for the generation and the undertaking of tasks at the different levels and spheres of activity of the health systems, which can facilitate and spread the appropriate use of valid and relevant knowledge, is one of the key factors for transforming evidence-based practice into significant improvements in the quality of life of entire communities. Therefore, it is not surprising that, with the passing of the years and the adoption of this approach in a growing number of professional fields involved in the provision of health services, not only have the educational experiences related to it increased, but also has the concern about how to meet the challenges posed by that underlying need for more and better skills for its widespread implementation.

For example, the General Dental Council of the United Kingdom, as part of the priority requirements for the improvement of undergraduate education in dentistry, stated in 2002 that it had to enable students to determine the intrinsic value of evidence, and to critically evaluate its relevance to the planning, recommendation and provision of dental care. However, a few years later this was still one of the aspects in which less progress had been made in both undergraduate and graduate programs in that nation. This was mainly due to the insufficient number of teachers with the skills to successfully guide the teaching-learning process in this direction, and also to the lack of transversal integration of evidence-based practice in the curricula, beyond its inclusion in certain courses thanks to the individual initiative of members of the academic-scientific community who were aware of its importance.<sup>4</sup>

This trend towards the emergence of individual initiatives to improve the quality of care observed in the United Kingdom reflects what has been

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predominantly the reality of higher education in the field of health sciences from the perspective of evidence-based practice. This was confirmed by a study in which the first results of an initiative of this nature were reported. The initiative emerged in 2009 for the incorporation of content on research, critical appraisal, and use of evidence in the first year of the dentistry program in a Latin American university.<sup>5</sup> Its impact was very positive given that, apart from improving the performance of the participants, it contributed to the development of some skills favorable to the use of evidence. This was well demonstrated by several subsequent studies presented at two scientific conferences at the end of that year.<sup>6-9</sup>

This does not seem to be the exception, since a semester-long research course given in 2013 to first-year students at the Cedarville University School of Pharmacy, in the United States, as part of an initiative that emerged within that institution, had a similar impact.<sup>10</sup> Results along the same lines were also derived from another training experience that took place in that country, within the framework of a pilot project that was implemented between 2014 and 2015, and that consisted of the participation of students from the University at Buffalo and the SUNY Buffalo State, who were in the clinical stages of their respective programs (eight programs in total), in two online modules on evidence-based practice.<sup>11</sup>

However, this type of educational interventions in strategic decision-making at universities, which are often seen as exemplary but anecdotal experiences rather than as starting points for the transversal inclusion of evidence-based practice in the corresponding study plans, are not enough to generate the capabilities required in the health systems for a massive and effective implementation of this approach, especially if it is considered that these capabilities do not refer only to the fact that the direct care providers need to find, evaluate and apply highly reliable evidence, for preventive, diagnostic, prognostic and therapeutic purposes, but also to other research and managerial skills.

Additionally, to the lack of transversal integration of evidence-based practice in the university curricula in the field of health sciences, mostly in undergraduate programs, another problem has been added, namely, that the training experiences in this matter have often been limited in terms of the skills expected for their development. This poses an enormous obstacle to the generalization of the use of evidence in health systems.

Furthermore, not all educators in the aforementioned field consider that the development of those or other skills involved in the implementation of that approach is important, especially in undergraduate programs. This was highlighted by a study in which nursing professors from Latin American countries, who were teaching research courses, guiding theses or had experience or knowledge about scientific work, were asked to indicate the skills related to different aspects of their work whose development they considered essential (in an advanced or basic degree), appropriate but not essential, or not appropriate according to the level of training (bachelor's, master's and doctorate). The results allowed to determine that in effect, according to the average value of the scores corresponding to the answers obtained on the matter, the participants considered appropriate but not essential the development of skills for the use of evidence in undergraduate programs.<sup>12</sup>

In any case, if apart from these weaknesses is added the implausibility involved in expecting that all or most of the graduates of undergraduate programs in health sciences are inclined to attend, as part of their postgraduate training, some of the evidence-based practice programs that have been created in recent years in various countries (whose number is not so abundant), or even more traditional programs in health research capable of facilitating the approach to evidence-based practice by the type of skills that these programs develop, the enormity of what still needs to be done in education, in order for evidence-based decision making to become the common denominator at all levels of health systems around the world, is quite obvious.

Notwithstanding the above, it is equally true that undergraduate educational interventions such as those aforementioned, and some of a different nature, as well as the existence of these postgraduate programs and other continuing education programs, reveal that the evidence-based practice approach has produced certain changes in higher education in health sciences in the last three decades. However, considering the many needs that still exist at the global level, in terms of skills for quality implementation, and on a scale that leads to remarkable improvements in the results of the provision of care for entire populations, much progress is needed in the faster identification and implementation of the most effective strategies for the teaching-learning process.

The experience gained so far in the academic field

concerning this training, as well as the advantages provided and the new opportunities that information and communication technologies are offering, which in fact have been the key to success of several of the most effective educational interventions in this sphere,<sup>13</sup> may contribute to the achievement of that goal.

However, two factors will be essential for this: sufficient willingness and openness both in the governing bodies of the universities and in the health systems to work together for the development of their communities and nations.

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