ELEARNINGNEWS ARTICLE

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e-Learning in medicine: what medical practices say

Online training is increasingly used in all fields. But what are the impacts of eLearning courses in medical education?

E-Learning in medicine is an educational practice that has emerged as a result of the pandemic. The benefits it promises are appreciated by students in several countries, both advanced and developing. In the best scientific approach, these benefits are also being evaluated by medical research.

What is CME

Staying up-to-date is an important requirement for every health professional. The term 'Continuing Medical Education' refers to the process of constant review that professionals follow to ensure that their skills and knowledge are up-to-date.

CME is a deontological obligation to provide a useful and effective healthcare service. It would be a mistake to think that only doctors are subject to this obligation. The list of health professions required to undergo continuing education is divided into several categories:

- Health professions
- Nursing health professions
- Midwifery health professions
- Technical health professions
- Prevention healthcare professions
- Rehabilitation healthcare professions

Each of these categories includes precise professions, each regulated by specific regulatory references. Health professions include figures such as pharmacists, surgeons, dentists and psychologists. To these are added nursing professions, with nurses and paediatric nurses, and midwives. In the technical health professions are listed all those roles that support in diagnostic analyses and care assistance such as, radiology and laboratory technicians or orthopaedists, dental hygienists or dieticians. Health care assistants and prevention technicians in the workplace take care of the prevention of injuries and illnesses while in rehabilitation there are figures such as podiatrists, physiotherapists or psychiatric rehabilitation technicians.

This non-exhaustive list gives an idea of the heterogeneity of health professions, to which corresponds a wide and organic range of notions, skills and competences that need to be kept adapted to the needs of care and updated according to the latest health practices and discoveries. Continuing education is too delicate and important an issue to leave it to the dedication of individual professionals, who are not lacking. The National Commission for Continuing Education has been set up to ensure that training objectives are organic. In agreement with the Ministry of Health, it contributes to the implementation of the National Continuing Medical Education (CME) Programme. The Commission is entrusted with the task of defining training credits, the guidelines and organisation of programmes, and the evaluation of training experiences and the accreditation requirements of scientific societies. The training content provided must cover the development of technical and professional knowledge, the improvement of healthcare production procedures and the increase of safety in healthcare systems.

CME abroad

The practice of CME accords with international standards, defined by the US-based International Association for Continuing Education and Training (IACET) and the European Accreditation Council of Continuing Medical Education (EACCME), for Europe. It is thanks to the work of these bodies that there is a certain level of consensus and convergence towards a common standard of content and evaluation of the training competences acquired. A standard that is also widespread in other geographical areas.

Having uniform standards has undoubted advantages because it facilitates the dissemination of skills and knowledge, as well as the possibility of international cooperation.

This has a further positive effect when one considers the different methodologies with which training content can be administered. These can be delivered on-site, in the form of conferences or seminars; in the field, in medical facilities; or at a distance, in the e-Learning format. The latter format showed its merits in the aftermath of the Covid-19 pandemic, when in-person courses were discontinued. And that e-Learning can be a useful tool to improve access to continuing education is confirmed by research on its **diffusion in some developing countries**. In countries such as India, Rwanda or Peru, the overall assessment of e-Learning technology is positive, due to its ability to meet specific local needs.

e-Learning for CME

Being able to benefit from training content remotely is undoubtedly a great advantage, minimising travel costs and optimising time utilisation with a busy schedule like that of professionals. But these are not the only advantages that an e-Learning CME course can provide.

The electronic tool allows different formats to be channelled into a single channel that connects the content provider to the learner being trained. With just a few gestures, it is possible to attend a webinar, download and read a powerpoint presentation, consult a volume in e-book, follow a surgical procedure performed by a long-standing professional, dispel doubts thanks to simulations and infographics.

The combinations are those that the content providers, in the figures of the Instructional Designer, the course designer, and the Subject Matter Experts, the experts in the subject matter of the course, decide to adopt in order to make it easier to use and learn. In this, e-Learning courses in the health sector do not differ from those in other sectors. If anything, the complexity of the subject matter requires particular caution in planning the course and in checking that the information provided is true and up-to-date.

On the other hand, this complexity does not prevent some courses from being provided according to the synthesis needs of the learners: microlearning courses can balance expository synthesis with the complexity of the subject matter. One of the advantages is to keep the learner's attitude active, which benefits the ability to make diagnoses and prognoses.

A review of e-Learning in medicine

Medicine is a field of knowledge where notions and practices must be tested and examined before, during and after their adoption. The stereotype of the medieval doctor, who stubbornly subjects the patient to improbable and deleterious treatments is precisely a stereotype: erroneous practices and beliefs have been abandoned once the merits of alternative procedures or knowledge have been demonstrated. Even in medicine, progress follows the rules of the scientific method of hypothesis formulation, empirical verification and scientific statement.

It is therefore natural that e-Learning as a medical training tool should also be analysed to assess its impact and scope. The study " **Advances in e-Learning in undergraduate clinical medicine: a systematic review**" is intended to help medical educators in the implementation of teaching strategies.

The paper considered studies that evaluated the impact of e-Learning courses in undergraduate clinical medical education over a 30-year time span, from 1990 to 2021. In all, the forty-two studies that were considered differed in their aims, subjects covered by the courses and their course design choices, as well as their levels of quality and evaluation. The main approaches adopted by the e-Learning courses observed included the use of multimedia platforms, in 33 per cent of the cases; the presentation of clinical cases, in 26 per cent of the cases; interactive teaching approaches, in 83 per cent of the cases; and an asynchronous mode of interaction between lecturer and students, in 71 per cent of the cases. All those cases that evaluated the usability of the technology - twelve out of the forty-two presented - reported positive feedback. Key characteristics of the feedback included competence in the use of technology, high motivation and an open attitude of both students and teachers.

The conclusion reached in the presented paper is that e-Learning is based on an effective and cost-effective pedagogical approach to teaching university clinical medicine in which the involvement of students and lecturers, the faithful synthesis of subjects into teaching content and the ubiquity of use can make a difference.

In Summary

E-Learning has long been an established reality. In the corporate environment, the training courses provided by industry professionals cover a wide range of professions and specific tasks. In larger companies, specific figures can be found in the human resources department who are in charge of selecting e-Learning training courses for their staff, depending on the company's needs and competitive strategy.

This practice is also becoming established in the health sector. The adoption of the Continuing Medical Education (CME) programme has made it possible to coordinate at ministerial level the adoption of the practice of continuing education for healthcare professionals. This has made it possible to standardise the procedures and training content to be administered, to the benefit of both end-users and those responsible for creating training content.

That CME is an important element in healthcare is confirmed by its adoption in the international arena: the standards defined by the US-based International Association for Continuing Education and Training (IACET) and the European Accreditation Council of Continuing Medical Education (EACCME) for Europe, are then adopted by numerous third countries. Healthcare is a field in which skills, knowledge and practices need to be shared so that they can be better evaluated and verified frequently. E-Learning, as an educational technology and methodology, is no exception. And the fact that cases of adoption and review can be found in different countries is a factor that speaks in favour of its adoption.

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