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Breast imaging e-learning courses help radiographers

E-learning is widely considered a useful tool for specific training and continuing education of health professionals. Therefore, like traditional learning, this teaching approach needs continuous evaluation in order to validate its effectiveness and impact. New research from Portugal found that an **e-learning** Course on Breast Imaging for radiographers was helpful in improving their knowledge and skills in **mammography**. The study highlights the role of continuous education models in order to improve delivery of mammography services.

Continuing medical education has been highly recommended by international organisations in order to improve the performance and routine work of health professionals, including radiographers or radiologic technologists. With regard to **breast imaging**, the radiographer has a key role in performing mammographic examinations. Also, mammography is currently considered the best imaging technique for breast cancer screening and the most effective tool for early detection of this disease. Thus, education and training programmes are needed to help radiographers improve their professional competencies.

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Compared to traditional learning methods, e-learning or web-based approach offers some unique advantages, for example, the ability to learn at any time from any location, without having to travel or spend time away from work. This individualised learning approach also allows learners to skip information that they already know and move on to less familiar topics. Several studies have demonstrated that radiographers are very receptive to this learning method.

Recognising that it is important to demonstrate the outcomes of substantial investments in health worker training, as well as considering the lack of material resources in mammography for radiographers in Portugal, the researchers designed an E-learning Course on Breast Imaging and assessed its effectiveness based on the first three levels of Kirkpatrick's framework: reaction, learning and behaviour. The Kirkpatrick's model is one of the best evaluation methods and widely used by health information management instructors.

For the current study, the researchers developed an e-learning course to provide an easy-to-understand, succinct and current overview in breast imaging, namely mammography technique and image interpretation. The programme structure was built based on the guidelines proposed by the European Society of Breast Cancer Specialists (EUSOMA). Learners' satisfaction was assessed through a questionnaire and knowledge gain was assessed using pre- and post-testing. Six months after completing the course, the learners were contacted through a questionnaire in order to give feedback on whether their behaviour changed in the workplace.

In all, 64 learners completed two editions of the breast imaging course. The majority of participants (97%) stated that the programme content was "very good" or "excellent", and all learners said the content was delivered in a very good or excellent way. In addition, 94% of learners reported that they were satisfied with the distribution of the content in each module, and 86% stated that their level of dedication to learning was high or very high.

Regarding improvement of knowledge, the researchers found an increase of 4 percentage points between pre and post-tests ($p = 0.001$). The learners identified two main changes in their practice: the first one was related with patient care, improving communications and positioning skills; and the second one regarding image interpretation, improving the image processing and analyses.

According to the research team, an important result of this study is that radiographers are more capable to answer questions that the patient could have, highlighting the knowledge improvement achieved after completing the online course. They explain: "Besides technical issues, the radiographer is usually the first professional to be consulted by women in primary healthcare needs, at the time of breast cancer screening, and therefore he should be able to answer questions about the examination and the implications of its results, if the patient asks. For this reason, learning outcomes of this course will benefit patients through radiographers' improved knowledge, namely on patient safety, dose, time of imaging, less repeated images, less anxiety and better image quality assurance."

The researchers also say further effort is needed to improve overall content or even to provide learners with a free e-book to be downloaded after performing the course, which can be easily used at the clinical setting.

Limitations of this study need to be considered, including the small sample size that affects the generalisation of the results, and the limited implementation time, as the learners have their own agenda and priorities.

Source: European Journal of Radiology
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