Review Article

Investigating Common and Effective Teaching Methods in Continuing Medical Education: A Review Study

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Abstract

Given that medical science is always advancing, continuing education programs are designed to ensure that all practitioners in the medical and healthcare professions are updated with new developments. According to the issues raised, the present study has been conducted to review the common and effective educational methods in the subjects of continuous education to introduce effective methods to increase sustainable learning and effective education. This study is a review type and was conducted during the years 2000-2023 through searching articles in databases: Google Scholar, Elsevier ISI (Web of Science), and Scopus. The search was conducted using the keywords: "Educational Method", "Continuing education", and "Common Method of Teaching". The results have shown that one of the most important factors influencing continuous education is teaching methods and teaching methods. So the importance of teaching methods in the continuous education programs of doctors has been emphasized in several researches. Considering that the role of new teaching methods in the effectiveness of learning during healthcare activities cannot be ignored, common methods in medical science education along with new methods are one of the effective approaches in sustainable learning among employees. Using this method, sustainable learning will encourage people to continue and carry out correct healthcare and treatment and will create sustainable performance. In addition to lectures, effective educational methods such as group discussion, problem-solving methods, cooperative educational models, clinical education, e-learning, simulation-based medical education, and evidence-based medicine can be used.

Keywords: Teaching methods, Effective teaching methods, Continuing education, Continuing medical education

Introduction

The main mission of medical science education is to train capable and competent personnel who have the necessary knowledge, attitude, and skills to maintain and improve the health of society members [1]. This is not possible without regular and continuous training, because receiving health and medical training is always necessary for the personal and work life of employees. In providing healthcare services to clients, mere skill is not enough because the art of care requires knowledge, skill, and expertise [2]. Certainly, the goals will not be achieved unless trained human resources are equipped with modern science and technology [3-5]. Based on this, new methods should be used along with the old methods in the direction of successful education and the necessary reforms should be applied in the system of providing healthcare services. Some countries are thinking about new models in medical education and have adopted reform strategies in education [4-6], because people's awareness of information decreases over time, and a large amount of scientific and experimental information is available every day. The world of science is increasing and this scientific information and new achievements in the field of medicine are more than other sciences. Therefore, continuous education in universities of medical sciences is felt as a need, because every 4-5 years, on average, 50% of medical knowledge and 75% of it becomes obsolete in 8-10 years, and the workers in the field of health services and therapists should be regularly in contact with medical advances and update their knowledge during their service [3-

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How to cite this article: Tătaru DA, Bonțea MG, Matei C, Buzlea C. Investigating Common and Effective Teaching Methods in Continuing Medical Education: A Review Study. Arch Pharm Pract. 2024;15(1):1-6. https://doi.org/10.51847/pGml55AJA0

5]. Based on this, continuous education is considered a necessity in the world, many countries are looking for effective training and methods to reduce the costs of healthcare services and fill the gap between science and practice [7-10], because they believe there are even if we consider university training to be sufficient for the correct performance of students, the average life of useful knowledge is not long. Therefore, continuous training courses should be conducted regularly and more often using twin training methods and tools to reduce costs and improve the effectiveness of continuous training programs. In this way, it is possible to reduce the loss of medical science graduates' information for them and society as much as possible [11-13]. Continuing education refers to activities after graduation that are designed to increase knowledge, and skills and improve professional competence [14, 15] and the purpose of implementing this program is to optimize health and treatment services and achieve optimal standards to provide services. It is suitable for society [16-18]. Continuing education is considered a general principle and necessity in the world, and it is necessary to find the most effective methods of continuing education that can increase the clinical skills of doctors and improve the conditions of providing services to patients [19, 20]. The most important criterion used by specialized centers to reconfirm the medical certificates of graduates is participation in continuing education programs and obtaining annual points [21]. Given that medical science is always advancing, continuing education programs are designed to ensure that all practitioners in the medical and healthcare professions are updated with new developments. According to the issues raised, the present study has been conducted to review the common and effective educational methods in the subjects of continuous education to introduce effective methods to increase sustainable learning and effective education.

Materials and Methods

This study is a review type and was conducted during the years 2000-2023 through searching articles in databases: Google Scholar, Elsevier ISI (Web of Science), and Scopus. The search was conducted using the keywords: Educational Method, Continuing education, and Common Method of Teaching by one of the authors of this article. After screening the title and abstract, materials, methods, and results, the articles meeting the inclusion criteria were selected and analyzed.

Results and Discussion

One of the most important factors affecting continuous education is teaching methods. So the importance of teaching methods in continuous training programs of doctors has been emphasized in several researches. Based on the results of a study that examined the experiences of the first five years of the continuous education program of the medical community, it was determined that not considering the appropriate times for questions and answers and compression contents are among the factors of dissatisfaction of the participants, which are mainly related to the weakness of teaching methods of continuous education programs [22]. Therefore, identifying the studies that are aimed at influencing the teaching method in universities of medical sciences helps to provide the correct approach to the implementation of continuous education. In line with the implementation of reforms in medical science education, the Makarem *et al*. study showed that despite the many strengths in the continuing education program for dentists, there were also problems in this program that can be improved by validating and correcting cases. These reforms include teaching methods, selection of appropriate and practical topics, and up-to-dateness of topics that suit the needs of dentists [23]. The study of Ahmadijouybary *et al*. which was conducted to compare the efficiency of the continuing education program to two methods of workshop and lecture on raising the awareness of general practitioners, showed that the workshop method had a greater effect than the lecture method on increasing the average level of awareness of doctors [24]. Karimi Moghani *et al*.'s study, which was conducted to investigate the effectiveness of new teaching methods in universities of medical sciences, showed that new teaching methods, which include problem-solving methods, group discussion methods, metacognitive package methods, and concept map methods, in The increase in learning has affected student satisfaction and the durability of learning [25]. In this regard, the research of Ahmadijouybary *et al.* showed that a significant relationship was observed between the level of knowledge of general practitioners before and after the workshop and lecture. These results show that the workshop training method had a greater effect on increasing the average level of knowledge of doctors than the lecture method [24]. The results of Baghcheghi *et al*.'s study about the effect of group discussion and lectures also had a similar result [26]. Likewise, the results of this study were in line with the results of Javadi *et al*.'s study on the impact scale of workshops and lectures [27]. The findings of other studies have shown that the combined method of education, which includes: question and answer, group discussion, and the pre-organizer model, is more effective in the sustainable learning of learners than the traditional method of education [28]. The effect of learning by group discussion method is greater than

lecture [29]. Due to the effective and stable effect of this educational model, it can be used in various fields of educational research, management, and the bedside of medical sciences [30]. In the study of Kakoei *et al*. the use of audio tapes and participation in seminars, congresses, and the use of the Internet were selected as the least effective methods of implementing continuing education programs for oral and dental diseases [31]. In Sadeghi and Bakhshi's [18] study, the participants did practical work in an educational workshop, observed practical work in an educational workshop, observed practical work and lecture with a video showing, watched an educational video, and a seminar and congress were more suitable for the implementation of a continuing education program in restorative dentistry [31]. In this regard, the results of a study have shown that the priority of general practitioners in the method of implementing educational programs was non-attendance and journal, and the next priorities included practical training on how to deal with patients, workshop implementation, and lectures, respectively [32]. Also, in Butterworth's study, doctors found practical work to be the best choice for teaching methods, and the lecture was ranked last [33]. Yousefy and Rezaie in their study titled "Continuous education of the medical community as a platform for improving the quality of healthcare services" by introducing the dimensions of quality services in the healthcare system points out the central role of continuous education in increasing and improving the quality of services and makes it a suitable platform for It introduces quality improvement [34]. In a study conducted by Bordji *et al*. [35] to collect the opinions of general practitioners about the content of written continuing education programs, 78.8% of the participants requested the presentation of practical materials and 7.2% were interested in prior knowledge of the topics and resources used. 76.3% wanted to present seasonal and local topics and select topics based on surveys. The findings show that there is a long way to reach the desired goals of these programs. To improve continuous education programs, factors and things such as accuracy in choosing the type of topics, proper regulation of the time allotted for each topic, priority in presenting materials about endemic and seasonal diseases, and using polls to select topics should be considered. It should be considered to inform the participants in advance about the outlines and resources used [35].

It seems that the use of interactive methods will increase the satisfaction of the participants. As mentioned in some studies. The results of Arash *et al*.'s study indicated that less than half of the doctors were satisfied with the level of participation in discussions [36]. Davis *et al*. in reviewing 50 articles related to the evaluation of the impact of continuing education programs [37], and Safa *et al*. [38] in the evaluation of continuing education programs have pointed out that the use of interactive methods that provide more opportunities for discussion, to It is more effective than passive methods such as lectures, and general practitioners prefer group discussion teaching methods. The study of Saffarian-Hamedani *et al*. [39] also had a similar result. The results of this study showed that different methods can be used in any continuing education program. The lecture method is the most common and preferred method by the continuing education instructors of the medical community, but the above method is by no means a desirable and completely optimal method for developed and developing countries. Hosseini *et al*.'s study showed that the participants in the continuing education program emphasized changing teaching methods using questions and answers and holding workshops [40]. It seems that if various teaching methods are used, the level of satisfaction of the participants may also increase. One of the reasons for dissatisfaction with continuing education programs and reducing the motivation of participants in the programs is the lack of use of educational aids in the study that was conducted, the lack of use of educational aids was mentioned as one of the negative points of continuing education programs. Have. In Arash *et al*.'s study to evaluate general practitioners from the continuing education programs of Golestan University of Medical Sciences, more than half of the doctors were very satisfied with the use of educational aids in the continuing education programs of this university [36]. Also, the participants expressed the use of educational aids as the most effective method [35]. In the study of Saffarian-Hamedani *et al*. [39], effective methods for providing education in medical sciences are also mentioned. In this study, the common and effective methods of medical education are introduced by examining the fields of medical sciences. These methods include lectures, collaborative models, group discussions, problem-solving, e-learning, clinical education, evidence-based medicine, and medical-based simulations. According to the above methods, three methods of clinical education, evidence-based medicine, and simulation-based medicine are specific to medical sciences, and the rest of the methods are common in other fields. However one of the major dissatisfactions of participants in continuing education programs is the low compatibility of the topics raised in these programs with their job needs [16, 41]. One of the reasons for using the lecture method by professors is their lack of familiarity with new teaching methods and patterns, especially collaborative methods [42]. Therefore, it is necessary to provide needs assessment from various sources and methods to ensure objective, reliable, and valid information. Therefore, it is necessary to review the

implementation methods of continuous education programs. Finally, the use of active learning and problem-oriented methods is recommended [43]. In addition, it is recommended to emphasize the use of interactive methods in the design of formal continuing education programs and to create effectiveness, because lectures alone have no effect in changing the physician's behavior with health care. It is worth noting that the methods that involve the learners more (such as workshops and practical demonstrations) provide more opportunities for discussion and have been significantly more effective than lectures [37]. Therefore, it is necessary to review the teaching methods of continuous education programs and emphasize the implementation of active learning methods [42], because interactive methods provide more opportunities for discussion [25, 26].

Learning is one of the fruits of education so in today's fast-paced world, lifelong learning has become an integral part of human life [44]. One of the types of continuous and lifelong education is continuous education. Continuing education has undergone many changes in theoretical foundations and methodology in recent years, this change in theoretical foundations reflects the new needs that have been created on how to provide medical services and medical education [21]. Therefore, the requirement to establish continuous and effective training programs is a necessity, because of the very rapid change of treatment protocols, the continuous entry of new drugs into the market, the use of new technologies that change treatment methods every day, new diagnoses of diseases Emerging and re-emerging, changing the way of health care and treatment, new diagnostic and treatment methods, etc. leave no way except continuous education [34]. In addition, people's information decreases with time, and a large amount of scientific and experimental information is added to the world of science every day. This scientific information and new achievements in the field of medicine are more than other sciences, so continuous education in universities of medical sciences is felt as a need. Continuous education in medical and health sciences is one of the categories that has gained an important position in the world, especially during the last few decades, which has a direct impact on the health of people in society. On the other hand, a lot of time and money is spent on continuous education programs, and if it is not accurately planned and managed, it can cause a waste of capital. One of the important elements that is effective in improving the quality of continuing education programs and is also the common thread of research is emphasizing the issue of teaching methods in continuing education programs for doctors [45]. In addition, it is necessary to review the teaching methods of continuous education programs and the use of active learning methods has been emphasized. Because interactive methods that provide more opportunities for discussion are far more effective than passive methods (such as lectures) [37]. Although none of the teaching methods are good or bad in themselves, it is the manner and conditions of their use that make them strong or weak. There is no best teaching method, best coaching method, and best learning method, but according to the proportion of elegance and consequences of what happens in the class, one can choose the appropriate behavior and teaching method [46]. The standards of the World Federation of Medical Education WFAME also include teaching and learning methods, including courses, seminars, lectures, and training based on problem-solving and case presentation, practical training, training in new diagnostic and treatment methods, participation in conferences, and personal studies. On the Internet, research projects and clinical experiences have been introduced. Also, internet networks where discussions about treatment techniques and problems take place can be a part of teaching and learning methods. In addition to choosing the educational method, preparing educational content suitable for the needs of learners will also lead to an increase in the awareness of the attitude and performance of doctors. Of course, the implementation of the program is based on the needs of doctors, the participation of doctors in the management of the class, the presentation of practical and scientific materials, the presentation of questions, etc. [42-46]. It should be known that the method of indoctrination strengthens internal motivation and increases the learning and satisfaction of learners. Considering that the implementation of continuous education leads to an increase in compliance with ethical principles, creating a more targeted and better relationship with patients [45], increasing awareness of the attitude and knowledge of general practitioners [19], creating motivation to learn, etc. [35, 47]. The choice of teaching method and educational content for learners and the optimal implementation of the program may be effective in the process of healthcare and treatment and improving the quality of life of patients and doctors. In addition, the results of various studies have shown that the correct application of the implementation method with complete content, and the teaching method of continuous education, is the most important success factor in achieving the goals. Therefore, developing countries need new and efficient changes in providing health and medical services.

Conclusion

Considering that the goal of continuous training is based on increasing workability, this type of training must be

systematic. Therefore, with the rapid development of medical science education, the need for practical methods is already felt. It is suggested that approaches such as applying practical methods instead of theoretical knowledge, using new educational technologies, hidden educational approaches, influencing effective but uncommon educational methods, injecting new teachers into the body of the educational system, easy access to data sources Medical information, inexpensive access to data, increasing the speed of access to sources and data, and the use of educational methods based on clinical evidence, etc., are the requirements of organizational education. In addition to lectures, effective educational methods such as group discussion, cooperative educational models, problem-solving methods, e-learning, clinical education, evidence-based medicine, and simulation-based medical education can be used. Due to the closeness of the level of continuous education to the level of learning during activity and influencing the creation of behavior, behavior change, and the continuation of correct health and treatment behavior during activity, this type of education is one of the best types of education. Of course, if various methods with the approach of creating deep and lasting learning are used in education the effectiveness of education can be measured with health criteria and indicators during the activity period, so that the effectiveness of education can be investigated.

ACKNOWLEDGMENTS: None
CONFLICT OF INTEREST: None
FINANCIAL SUPPORT: None
ETHICS STATEMENT: None

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