

Short Communication

Short Training Program for Neurosurgery Tools as a Solution for Better Performance of Residents in the Operating Room

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Abstract

Introduction: In this study, we investigated the need for learning name of neurosurgery tools and their application among resident students of Arak University of Medical Sciences.

Methods: The study is a descriptive analytical and cross-sectional. Samples were all assistants of neurosurgery. The surgeon as a teacher used Short Training Program for teaching 50 neurosurgery tools. After that, Kirkpatrick model was used for evaluation the program. The data collection tool was a researcher-made questionnaire to assess the level of knowledge, and the level of satisfaction with this Program.

Results: The average score of knowledge of tools was 2.15 out of 5. The mean score of assistants feeling the need to learn tools before the start of the course was 3.7 out of 5. Residents' satisfaction was over 80%.

Conclusion: Teaching surgical instruments before starting neurosurgery training in the operating room is effective and valuable educational method.

Introduction

Surgery is an art that requires hand skills and, like handicrafts, tools have been developed to facilitate exercises that facilitate exercises where the hands and fingers alone are clumsy and inadequate [1]. Neurosurgery is a good example to show this artistry. The neurosurgeon deals with complex structures in the brain and spinal cord that sometimes are unknown mechanisms. Surgical instruments reliably help him to see and understand the mechanism behind the diseases [2].

According to the instructions of the Accreditation Council of Medical Education Graduates, the purpose of the surgical residency course is to prepare a person to act as a qualified surgical practitioner at the level of a licensed specialist [3]. The operating room is the main focus of learning for surgical trainees and surgeons give them a large part of the training in this room [4,5]. One of the things that a surgical residency student should be fully acquainted with is the Proper use of surgical instruments. Because the patient's safety during the operation depends on the skills and abilities of the surgeon [6].

The importance of resident education has been studied in many studies. Researchers are trying to design a resident education course that can cover all aspects of education. Pugh et al. [7] conducted a study to assess student and faculty perceptions of educational needs. One of the important results of this research is the surveys of students about how to teach and how much they learn. Residency training course has many shortcomings that can be addressed with the help of evaluation and opinion polls of students.

Gillellamudi et al. [8] conducted a study with the aim of implementing a surgical skills training program for medical residency students in India. After a short lecture, the course was divided into 5 sections of practical training, including the use of tools and opening and closing the abdomen, and the like. Students completed pre-test and post-test on a five-point Likert scale to measure their confidence in performing selected surgical procedures. One of the advantages of this course was the training of skills in a stress-free environment and outside the operating room where the student has the enough time to learn without stress. Students were asked to perform the activities of the course before and after their proper training. Students reported an increase in readiness and eagerness to participate in surgery after completing the course. Some of them believed that they use the surgical instrument properly for the first time.

Despite the great advances in robotic surgery, the old and common tools are still widely used all over the world. Whereas an important part of medical education for resident students is neurosurgery and practical surgery, Students should be familiar with these tools and how they work. Therefore, in this study, we investigated the need for learning and their knowledge about neurosurgery tools and their application among resident students in Arak University of Medical Sciences and students' satisfaction of Short Training Program for neurosurgery tools.

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Methods

This is a descriptive analytical and cross-sectional study. Samples were all neurosurgery assistants registered two academic years before, who participated in Short Training Program for learning surgery tools. Kirkpatrick model was used for assessing the effectiveness of this program. The Kirkpatrick Model is a globally recognized method of evaluating the results of training and learning programs. It assesses both formal and informal training methods and rates them against four levels of criteria: reaction, learning, behavior, and results. In this study we evaluated the first and the second levels. The data collection tool was a researcher-made questionnaire to assess residents' knowledge, feeling needs to learning 50 tools about neurosurgery tools and student's satisfaction for this Short Training Program. The content validity of the questionnaire was assessed by 5 professors in surgery and medical education. This questionnaire was used after Short Training Program about learning neurosurgery tools for surgical assistant students. It was used for assessing three indicators: 1) the level of knowledge of all residents about the name of the tool, 2) application of the tool and 3) the necessity of training before going to the operating room. For each instrument, a score of 1 to 5 was given for these three indicators, 1 for the lowest and 5 for the highest. In assessing the level of satisfaction with teaching the tools before entering the operating room, a researcher-made satisfaction questionnaire was used, which was included of questions about effectiveness of this method, performance improvement and recommendation to repeat the use of this method and similar cases. The results were analyzed using SPSS software version 16 and Excel.

Results

In this study samples were 10 medical assistant students in the fields of neurosurgery and neurology with an average age of 38.8 years (minimum 29 years, maximum 50 years) and standard deviation of 6.4 years participated. The average experience of medical work before the residency period was 7.16 years (minimum experience zero and maximum 19 years) with standard deviation of 6.8 years. The average

score of knowledge of the name of tools was 2.15 out of 5 points. The mean score of assistants feeling the need to learn tools before the start of the course was 3.7 out of 5 point. The results of assessing the satisfaction of residents showed that residents had more than 90% satisfaction to use this method.

Conclusion

Based on the results of this study and residents' self-declaration, it can be concluded that where the majority of students, even residents with medical work experience, before using this Short Training Program, were not familiar enough with the name of all neurosurgery tools and their application; therefore, training program for reviewing the name and application of neurosurgical tools could be as an effective and valuable method.

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