Effectiveness of Standardized Training for Anesthesiology Residents

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Abstract

Objective: To study the effectiveness of standardized training for anesthesiology residents. Methods: A total of 50 residents who received standardized training of anesthesiology residents in our hospital from April 2020 to June 2022 were included as the research objective. All residents received standardized training, and the effect and training performance of standardized training were evaluated and analyzed. Results: The scores of comprehensive theory and practical skills of residents who received standardized training in anesthesiology department were improved before leaving the department, and the difference was statistically significant compared with that before entering the department (P < 0.05). The excellent and good rate of standardized training was 98%. The excellent and good rates of anesthesia informed notification, doctor-patient communication, anesthesia operation, intraoperative anesthesia monitoring, postoperative treatment and other aspects were all above 90%, and the training performance was ideal. Conclusion: The standardized training of anesthesiology residents has an outstanding effect in improving the theoretical knowledge and practical skills of anesthesiology residents, and the training effect is ideal.

Keywords

Anesthesia, A resident physician, Standardized training, effectiveness

Has a long history, resident standardization training is essential to every medical students in clinical work of course, include the main content of the standardized training of professional and public required course, clinical practice, etc. [1], for all levels of medical institutions to cultivate high-level doctors, improving the quality of medical institutions in our country medical treatment plays an extremely important role in [2]. The Department of anesthesiology is an important department in medical institutions at all levels. Its daily work is closely related to surgery, obstetrics and gynecology, emergency department, etc., and it is a department with high requirements for comprehensive quality [3]. Due to the influence of Chinese population base, the daily work of medical institutions at all levels in China is often in a state of saturation or even supersaturation [4], which also puts forward higher requirements for medical workers in various departments, including anesthesiology department. Therefore, anesthesiologists are often in a state of high load, high pressure and strong stress in daily life, which is especially obvious in the face of emergencies and emergencies. In any case, anesthesiologists are required to make professional and accurate judgments [5] so as to ensure the smooth operation. Standardized residency training plays an important role in providing professionals for clinical practice. In order to further explore the effectiveness of standardized residency training in anesthesiology, this study analyzed the data of some residents who received standardized training.
1. Data and Methods

1.1 General Information

A total of 50 anesthesiology residents who received standardized residency training in our hospital from April 2020 to June 2022 were included as the research objective, including 23 male residents and 27 female residents, aged 25-33 (28.85±3.10) years old, 32 with bachelor's degree and 18 with master's degree.

1.2 Methods

All resident standardization training, on the basis of the guidance on establishing resident standardization training system ”, the recognition criteria of resident standardization training base (try out) "the relevant requirements to establish standardized training of teachers, which served for more than three years of attending physician, anesthesi- sia professional theoretical knowledge and rich clinical experience, Have strong teaching ability. The specific standard- dardized training methods are as follows:

(1) Admission education: Before residents enter the department of anesthesiology to receive standardized train- ing, the residents' standardized training teaching team will conduct the admission education, mainly including the daily work content, work process, rules and regulations, professional quality of anesthesiologists, medical ethics and so on. The purpose of the admission education is to help each resident to have a certain understanding of the standardized training of anesthesiology department and facilitate the development of later teaching activities.

(2) Arrange regular teaching activities: The standardized training of residents is mainly self-study, supplemented by professional guidance and teaching by teachers. Therefore, regular teaching activities should be arranged according to the daily work of anesthesiology department, and the leader of the teaching group should coordinate and coordinate the teaching activities according to the actual situation. It is necessary to classify teaching activities and determine the time of each week, such as discussion of special cases in the department of anesthesiology on Monday, summary report of common adverse events in the department of anesthesiology on Tuesday, teaching ward round on Wednesday, authoritative literature interpretation and update of frontier knowledge related to anesthesiol- ogy on Thursday. Among them, authoritative literature and cutting-edge knowledge of specialty are uploaded to the wechat group and public account of standardized training for residents, which is convenient for residents to consult at any time.

(3) Overall management of standardized training: Residents receiving standardized training for anesthesiology residents come from different universities, majors and educational backgrounds, so there are great differences in professional knowledge level and clinical skills. In the standardized training of residents, it is necessary to implement homogeneous teaching, which requires teachers to combine the specialties of each resident to teach, and improve the effect of the overall standardized training of residents through hierarchical and hierarchical teaching mode. Mentor resident standardization training system is to meet the requirements of the new training system, can according to the resident overall situation and characteristics, in combination with the premise of teacher specialty, to carry out the "one to one" or "a second" training, the training mode with the teacher can more complete understand- ing of the residency, improve teaching responsibility, while increasing resident belonging. According to the basic requirements of resident standardized training, the teachers carry out the basic teaching and professional teaching of anesthesiology. The basic teaching content mainly focuses on the daily auxiliary work of anesthesia, such as the preparation of anesthetic items, pre-anesthesia visit, perioperative pain management, and document re- cording, etc. By combining theory with practice, it helps each resident to get familiar with the work process of anesthesiology department as soon as possible.

Professional teaching focuses on the operation methods and professional skills of various types of anesthesia to improve the professional level of anesthesiology residents. In the course of training, it is necessary to combine the actual cases and typical cases to carry out teaching and discussion, and gradually improve the residents' theoretical knowl- edge application ability and clinical thinking.

(4) Improvement of standardized training methods: in the process of standardized training, it is necessary to con- tinuously improve the standardized training methods, so as to continuously improve the effect and quality of time training. When teachers carry out standardized training, various methods such as problem-oriented and anesthesi- ology simulation teaching activities can be carried out according to the situation to improve the teaching effect. Such as problem oriented teaching method, in the process of teaching, combining with the typical cases of typical problems in the teaching content of modularization, standardization to anesthesiology training content refinement and list key, such as anesthesia induction related adverse reactions and processing, the causes and treatment of asthma during anesthesia, the uncontrolled hemorrhagic shock or septic shock treatment etc, To gradually improve the residents’ ability to deal with emergencies or critical events in the department of anesthesiology. Simulation
teaching activities can improve residents' practical skills and clinical operation level through video teaching, simulation clinical teaching and simulation human teaching, and lay a solid foundation for later clinical work.

1.3 Observe

1.3.1 Effect evaluation of standardized training for residents

The comprehensive theory and practical skills of anesthesiology were tested before admission and before leaving the department. The difficulty of the two tests was the same, and the total score was 0-100. Group accept standardized training of resident summary comparison on two stages exam, according to the grade and is given before the improvement effect of resident standardization training evaluation, improve index = (given test scores - into the division before the exam) present in the former test scores by 100%, improve for optimal index at 15% or more, Improvement index between 5 and 14.9% is good, otherwise it is poor.

1.3.2 Performance evaluation of standardized training for residents

After the end of resident standardization training, around the main content of the anesthesia work performance evaluation for each resident standardization training, mainly including anesthesia informed told, doctor-patient communication, anesthesia, intraoperative anesthesia monitoring operation, postoperative treatment, etc., adopt evaluation grade 1 ~ 4, all aspects are outstanding, good, pass, fail to pass the exam.

1.4 Statistical Methods

SPSS23.0 statistical software was used for processing, measurement data were expressed as (\( \bar{x} \pm s \)), comparison was performed by t test, count data were expressed as percentage, comparison was performed by \( \chi^2 \) test, P < 0.05 was considered statistically significant.

2. Results

2.1 Analysis of the effect of standardized training for residents in this group: Before leaving the department, the scores of comprehensive theory and practical skills of residents who received standardized training in the department of anesthesiology were improved, and the difference was statistically significant compared with that before entering the department (P < 0.05), as shown in Table 1. The improvement index showed that among the 50 residents who received standardized training in anesthesiology department, 19 cases were excellent, 30 cases were good, and 1 case was poor. The excellent and good rate was 98%.

<table>
<thead>
<tr>
<th>time</th>
<th>cases</th>
<th>Comprehensive theory(score)</th>
<th>Practical skills(score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The family before</td>
<td>50</td>
<td>78.53±4.20</td>
<td>74.39±4.85</td>
</tr>
<tr>
<td>Given before</td>
<td>50</td>
<td>87.81±4.38</td>
<td>88.61±5.10</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td>10.813</td>
<td>14.287</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

2.2 Analysis of the performance of standardized training for residents in this group: The evaluation of the training effect of residents who received standardized training in the department of anesthesiology before leaving the department showed that the excellent and good rates of informed notification of anesthesia, doctor-patient communication, anesthesia operation, intraoperative anesthesia monitoring, postoperative treatment and other aspects were all above 90%, and the training performance was relatively ideal, as shown in Table 2.

<table>
<thead>
<tr>
<th>Evaluation dimensions</th>
<th>cases</th>
<th>optimal</th>
<th>good</th>
<th>pass</th>
<th>Don't pass</th>
<th>The excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informed notification of anesthesia</td>
<td>50</td>
<td>18(36.00)</td>
<td>30(60.00)</td>
<td>1(2.00)</td>
<td>1(2.00)</td>
<td>48(96.00)</td>
</tr>
<tr>
<td>Doctor-patient communication</td>
<td>50</td>
<td>22(44.00)</td>
<td>25(50.00)</td>
<td>2(4.00)</td>
<td>1(2.00)</td>
<td>47(94.00)</td>
</tr>
<tr>
<td>Anesthesia operation</td>
<td>50</td>
<td>21(42.00)</td>
<td>24(48.00)</td>
<td>3(6.00)</td>
<td>2(4.00)</td>
<td>45(90.00)</td>
</tr>
<tr>
<td>Intraoperative anesthesia monitoring</td>
<td>50</td>
<td>20(40.00)</td>
<td>26(52.00)</td>
<td>3(6.00)</td>
<td>1(2.00)</td>
<td>46(92.00)</td>
</tr>
<tr>
<td>Postoperative treatment</td>
<td>50</td>
<td>21(42.00)</td>
<td>24(48.00)</td>
<td>4(8.00)</td>
<td>1(2.00)</td>
<td>45(90.00)</td>
</tr>
</tbody>
</table>
## 3. Discussion

In the past for a long time, lack of resident standardization training system in our country, the medical students directly after finish medical school curriculum was assigned to medical institutions in clinical work, due to lack of secondary discipline develop [6], resident level of professionalism and business will be directly influenced by the limitation of the whole medical conditions such as in medical institutions, This situation will hamper the construction and development of China's medical system [7]. Since THE 1980s, THE pilot work of standardized training of residents has been expanded in various parts of China, and through many years of practice and development, a system of standardized training of residents has been gradually formed which meets the actual situation in China. The standardized training system of residents in China has experienced development from nothing, and the combination of theoretical knowledge and clinical practice has always been attached importance in the training work [8]. With resident standardization training at the same time there are many differences between the teaching of medical school, residency must has the ability of autonomous learning, supplemented by teaching and teacher professor counselling [9], in the process of standardization training learning combined with clinical work, gradually improve resident professional level, thus for our country regional medical institutions conveying a high level of medical talents. The combination of theory and practice is one of the basic principles in the standardized training of residents. As the department of anesthesiology, which has a high requirement for clinical practice and operation ability, it is of profound significance to carry out the standardized training of residents. This study showed that residents who received standardized training in anesthesiology department improved their scores of comprehensive theoretical and practical skills before leaving the department, and the excellent and good rate of standardized training was 98%. The effect of standardized training was ideal. At the same time, the evaluation of training effect before leaving the department showed that the excellent and good rates of anesthesia informed notification, doctor-patient communication, anesthesia operation, intraoperative anesthesia monitoring, postoperative treatment and other aspects were all above 90%. The training performance of residents in this group was relatively satisfactory.

In conclusion, the standardized training of anesthesiology residents is helpful to improve the professional level of anesthesiology residents. In the standardized training, it is necessary to continuously improve the training methods in combination with the practice, so as to improve the quality of standardized training. At the same time in the work of resident standardization training, also attaches great importance to the resident humanistic care ability and the level of doctor-patient communication training, sometimes go to heal, often to help, always to comfort epitaph is a doctor, also illuminate the essence and connotation of the medical service, the cultivation of the ability of humanistic care nots allow to ignore. The concept of humanistic care should be fully integrated into the standardized training work, so as to improve the professional quality of residents and improve their humanistic care level, so that each resident can solve the physical pain for patients in the future work, while maintaining respect for disease and life, and improve the quality of life of patients.

## References


