

Research on Improvement of Rotation Teaching in Otolaryngology Department of General Discipline

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Abstract: In order to observe the improvement mode, existing problems and effects of rotation teaching in otolaryngology department, 80 general practice residents were selected for analysis and random grouping from December 2021 to December 2023. Traditional teaching methods were adopted in the control group, and new teaching methods such as endoscopy combined with case teaching, analysis of key diseases and explanation of diagnosis and treatment ideas were adopted in the experimental group to study the teaching effect of resident doctors after practice in general practice. Test scores, subjective ability, teaching quality and teaching satisfaction were compared. The results showed that the experimental group was superior to the control group in the evaluation scores of students' knowledge ability, problem solving ability, teamwork ability and problem finding ability, and superior to the control group in exam scores, teaching quality and teaching satisfaction ($P < 0.05$). It is concluded that the implementation of otolaryngology rotation teaching improvement mode can effectively improve the learning enthusiasm of medical students, ensure students' learning ability, promote the improvement of teaching quality and teaching satisfaction, and improve the ability of medical students to find problems, unite and cooperate and solve problems.

Keywords: General discipline training; Otolaryngology; Rotational teaching; Improvement methods; Existing problems; Teaching effect

1. Introduction

The standardized training of resident doctors, which originated in 1993, is an important teaching stage for medical students after graduation, covering professional courses, public required courses, professional required courses, clinical practice and so on. Through the standardized training of residents, the medical quality can be guaranteed and the comprehensive level of clinicians can be actively improved. At present, with the continuous progress of medical technology in China, attention should be paid to the quality characteristics, basic ability and knowledge structure of new medical talents during the training, so as to further promote the leapfrog growth of medical students to doctors [1]. According to statistics, most of the professional knowledge of clinicians in China is acquired in post-graduation medical education, which pays more attention to on-the-job training of medical students, so that residents can improve their clinical skills and enrich their theoretical knowledge with high learning efficiency. However, there are great challenges in the teaching period. The traditional teaching mode is universal, lacks pertinency, and ignores the learning initiative and enthusiasm of medical students during the teaching period [2]. General practitioners are medical personnel who provide public health services for all walks of life, and there are at least half of all general practitioners in the world. Otorhinolaryngology diseases have a high incidence in clinical practice. Especially, emergency treatment and diagnosis by doctors are required after the occurrence of acute diseases, such as laryngeal obstruction and nose bleeding. Improper treatment will lead to serious consequences and increase the risk of serious illness of patients [3]. Therefore, the rotation teaching of otorhinolaryngology is of great significance in the training of general practitioners. In this paper, 80 resident doctors receiving standardized training in general medicine were selected to study and evaluate the effect and quality of education and training. For details, please see below.

2. Data and methods

2.1. Clinical data

A total of 80 resident physicians with standardized training in general medicine from December 2021 to December 2023 were selected and randomly divided into the control group, including 21 male and 19 female doctors, aged 23-36 years old, with an average age of (29.87 ± 2.66) years old. The experimental group was aged from 24 to 35 years old, with an average age of (29.66 ± 2.78) years. Among the 40 doctors in the experimental group, 19 were males and 21 were females. There was no statistical significance in age and gender data comparison ($P > 0.05$), indicating comparability.

Inclusion criterias: (1) All signed informed consent; (2) Do not quit during the period; (3) Do not go out during the period.

Exclusion criterias: (1) Inability to communicate normally; (2) Quit the study; (3) With infectious diseases.

2.2. Method

(1) Control group - routine teaching: teachers should be in charge of patients in their own group, make routine rounds and write medical records, participate in duty, pass the assessment of theoretical knowledge and skills after the training, and check the final assessment results.

(2) Experimental group - New teaching method: ① 40 trainee doctors can be divided into 5 groups, each group of 5 people, by the intern self-assessment to select a leader. Before the next class, teachers should publish the contents of the cases to be taught and put forward corresponding questions, guide and train medical student members to search for materials with questions, analyze and summarize the case data, solve problems through group discussion and network, and summarize the problems that cannot be solved into ppt for targeted analysis and discussion, which can be summarized by teachers. Finish the summary. (3) Teachers should establish teaching scenarios according to typical clinical cases and select experienced teachers to assist them. Based on the teaching outline, they should integrate the basic contents of cases, physiological knowledge, pathological knowledge, anatomical content, diagnosis points, treatment methods, prognosis, complication management, disease characteristics, clinical reactions, and complications into the scenario analysis. According to the problems existing in the actual clinical diagnosis and treatment, the problems of the imported pathology were summarized, and other circumstances were added to enhance the interest and vitality of the pathology, such as humanistic knowledge, local customs, and interesting stories. (4) Assessment of thinking mode: Weekly training of diagnostic thinking was conducted for resident physicians in the department of otolaryngology. Patients with symptoms of dyspnea, nasal congestion, hoarseness and sore throat were selected for diagnostic research during the training. ⑤ Study of cases and diseases: Study of diagnosis and treatment methods and explanation of diagnosis thinking for severe patients in otolaryngology, including laryngitis, pharyngitis, acute and chronic rhinitis, acute and chronic otitis media, acute epiglottitis, laryngeal obstruction, nasal bleeding, allergic rhinitis.

2.3. Observation index

(1) Test scores: The test questions are designed in the way of professional physician examination and basic teaching outline content feeding device, the implementation of unified evaluation standards and test content, the three-way evaluation includes case analysis, clinical practice such as medical record writing, physical examination, basic theoretical knowledge, each score is 100 or more, the higher the score, the more ideal the score.

(2) Ability assessment: evaluate students' ability to master knowledge, solve problems, work in teams and find problems. The score is up to 100 or more. The higher the score, the better the ability of students.

(3) Teaching quality: The teaching quality assessment analyzed the improvement of enrolled students' interest, knowledge consolidation effect, literature search and learning, clinical thinking improvement, and doctor-patient communication ability improvement, all of which were evaluated according to yes or no, and the proportion of answers answered yes was summarized.

(4) Teaching satisfaction: Before evaluating teaching satisfaction, relevant literature should be collected, questionnaires created, and an anonymous survey was given to enrolled interns. The self-made

questionnaires covered four categories: very satisfied, generally satisfied, relatively satisfied and dissatisfied. Among them, the unsatisfactory score was 30 points or less, 31-60 indicated general satisfaction, and 61-90 indicated relatively satisfied; A score of 90 or above is considered very satisfactory; The total satisfaction is the number of interns who are relatively satisfied + generally satisfied + very satisfied divided by the total number of interns multiplied by 100%.

2.4. Statistical significance

The analysis data were analyzed using SPSS 23.0 software, the rate (%) was used to describe the counting data, and the comparison between groups was tested by 2 lines. The measurement data were described by (\pm s), and the independent sample t test or paired t test was used for comparison between groups. $P < 0.05$ was considered statistically significant.

3. Results

3.1. Examination result

The scores of case analysis, clinical practice such as medical record writing, physical examination and basic theoretical knowledge were significantly different ($P < 0.05$). (As shown in Table 1)

Table 1: Comparative analysis of case analysis, clinical practice, such as medical record writing, physical examination, and basic theoretical knowledge data of the two groups of interns ($\bar{X} \pm s$)

Group	Number of cases	Case analysis	Medical record writing	Physical examination	Basic theoretical knowledge
Control group	40	64.37 \pm 1.34	70.37 \pm 1.57	72.46 \pm 1.46	80.65 \pm 2.89
Experimental group	40	82.58 \pm 1.33	87.66 \pm 1.22	90.45 \pm 1.45	94.36 \pm 2.71
t		61.0015	54.9977	55.2945	21.8861
P		<0.05	<0.05	<0.05	<0.05

3.2. Ability assessment

The scores of students' ability of mastering knowledge, solving problems, teamwork and finding problems in the experimental group were better than those in the control group ($P < 0.05$). (As shown in Table 2)

Table 2: Comparative analysis of data on students' ability to grasp knowledge, solve problems, work together and find problems in the two groups of interns ($\bar{X} \pm s$)

Group	Number of cases	Students master knowledge	Problem solving skills	Teamwork	The ability to spot problems
Control group	40	55.65 \pm 2.77	60.43 \pm 2.19	74.43 \pm 2.07	79.43 \pm 2.97
Experimental group	40	65.43 \pm 2.16	68.69 \pm 2.47	80.76 \pm 2.05	81.71 \pm 3.02
t		17.6091	15.8254	13.7418	3.4043
P		<0.05	<0.05	<0.05	<0.05

3.3. Teaching quality

The improvement of students' interest, knowledge consolidation, literature search learning, clinical thinking and doctor-patient communication ability in the control group was less than that in the experimental group ($P < 0.05$). As shown in Table 3

Table 3: Students' interest improvement, knowledge consolidation effect, literature search learning, clinical thinking improvement, and doctor-patient communication ability improvement of the two groups of interns (%)

Group	Number of cases	Student interest promotion	Knowledge consolidation effect	Document search learning	Clinical thinking enhancement	Improved doctor-patient communication
Control group	40	30(75%)	31(77.5%)	32(80%)	29(72.5%)	33(82.5%)
Experimental group	40	39(97.5%)	38(95%)	40(100%)	37(92.5%)	40(100%)
X ²		8.5375	5.1647	8.8889	5.5411	7.6712
P		<0.05	<0.05	<0.05	<0.05	<0.05

3.4. Teaching satisfaction

After evaluation, the clinical teaching satisfaction of the experimental group was higher than that of the control group ($P < 0.05$). As shown in Table 4

Table 4: Teaching satisfaction of interns in the two groups (%)

Group	Number of cases	Very satisfied	Relatively satisfied	General satisfaction	Dissatisfy	Satisfaction
Control group	40	8	8	17	7	82.5%
Experimental group	40	20	15	4	1	97.5%
X2		-	-	-	-	5.0000
P		-	-	-	-	<0.05

4. Discuss

During the training of hospital residents, it is necessary to ensure the independent decision-making ability and individual autonomous learning ability of residents after the training, so that they can timely solve medical problems in the future^[4]. In particular, the standardized training and guidance of residents in otorhinolaryngology and the clinical practice ability of interns are extremely important. Once the personal ability of general practitioners is insufficient, it will not only affect the life, health and safety of patients, but also lead to the decline of the hospital's reputation^[5]. General practitioners, also known as family doctors in clinical practice, are comprehensive physicians with high-level chronic disease management capabilities, disease rehabilitation intervention, disease prevention, physical and mental health care and medical treatment. Their functions in basic units include chronic disease management, patient rehabilitation, patient health management, referral and diagnosis of frequent diseases, prevention and health care of common diseases, etc.^[6]. Otolaryngology diseases have a high incidence in clinical practice, including laryngitis, pharyngitis, acute and chronic rhinitis, acute and chronic otitis media, acute epiglottitis, laryngeal obstruction, nasal bleeding, allergic rhinitis, etc. General practitioners are required to provide high-quality, scientific and effective diagnosis and treatment services. Under normal circumstances, teachers mostly teach medical students in the mode of wards, outpatient rotation and small lectures. However, medical students in the training program have less understanding of diseases, complete diagnosis knowledge of various diseases, and cannot guarantee the diagnosis and treatment of diseases, resulting in poor comprehensive level of medical students after the training program. This paper proposes to improve the traditional teaching model, implement a new model of endoscopic combined case teaching, and innovate the rotation teaching scheme of otolaryngology, so as to ensure the teaching effect and teaching quality. According to the statistics of the research results of this paper, the experimental group was superior to the control group in the assessment of students' ability to grasp knowledge, solve problems, cooperate in teams and find problems, and the experimental group was superior to the control group in the assessment of doctor test scores, teaching quality and teaching satisfaction, $P < 0.05$. Therefore, the adoption of the new rotational teaching mode can promote the improvement of students' theoretical achievements, improve students' communication ability and thinking ability, ensure the teaching quality, enhance students' learning interest, and improve the teaching effect.

The problems of rotation teaching in otorhinolaryngology are: first, the length of time; The responsibility period of general practice training doctors is long, including the continuous management of chronic diseases after specialist diagnosis and treatment, family health management, early disease management, and community chronic prevention. Therefore, during the training rotation teaching, more attention was paid to internal medicine and other specialized fields, such as cardiovascular medicine, emergency department, geriatric department, etc., ignoring the importance of otolaryngology. In medical colleges and universities, otolaryngology is a non-compulsory course, and medical students have little knowledge and understanding content, and the clinical internship time is only half a month, resulting in unable to fully grasp the relevant disease knowledge. Another report pointed out that the otolaryngology department has a strong professional, short-term training practice courses are relatively compact, can not guarantee the combination of theoretical knowledge and practice teaching effect of medical students, resulting in the comprehensive level of training general practitioners can not meet the current needs. The second is the particularity of otorhinolaryngology organs, its anatomical structure is complex, medical students have abstract learning, coupled with the difference in the performance of different diseases, can not fully grasp the actual condition of patients. The third is that teachers and general practitioners do not pay enough attention to otolaryngology, and there are certain differences in the level of clinical practice

and attention to students during the teaching period, resulting in unsatisfactory teaching effect. Fourthly, there is no complete assessment content. After the training of general practitioners in otolaryngology department, there is no complete assessment program and plan, resulting in poor teaching quality. Therefore, it is necessary to put forward corresponding solutions under the above problems, so as to improve the teaching quality and ensure the teaching effect. The implementation measures are as follows: First, it is necessary to pay attention to the thinking training of doctor Gepei to help him clear up his thoughts, understand the diagnosis and treatment ideas, and ensure the direction of diagnosis. For example, pharyngeal pain is a common condition in otolaryngology, such as splits, epiglottitis, tonsillitis, pharyngitis, etc., which may lead to the occurrence of this condition, and general practitioners should conduct research according to the actual condition. Combined with other symptoms and reactions, diagnosis and treatment should be made, and patients with serious disease progression or obvious complications should be referred to specialists in time for treatment. Second, in terms of disease selection, general practitioner training is an important part of the current work. During the rotation of otolaryngology physicians, attention should be paid to the diagnosis and emergency treatment of common diseases and acute diseases, and general practitioner training is required to master a variety of diseases [7]. During the internship period, laryngeal obstruction, acute epiglottitis, epistaxis, allergic rhinitis, and upper respiratory tract infectious diseases are the main subjects, focusing on the above contents, including the emergency treatment of acute epiglottitis, laryngeal obstruction, and epistaxis, and the general treatment of acute and chronic otitis media and allergic rhinitis. During the study period, different cases of different diseases should be selected for clinical teaching guidance, and attention should be paid to emergency treatment measures, practice plans and preventive measures [8].

5. Conclusions

To sum up, the implementation of the improvement mode of rotation teaching in otolaryngology can effectively improve the teaching quality and teaching effect, ensure the learning initiative and enthusiasm of doctors in the general practice training, establish a teaching mode combining practice and theory, and promote the increase of teaching satisfaction.

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