ISSN 2706-6819 Vol.6, Issue 9: 62-66, DOI: 10.25236/IJFM.2024.060909

The Development of the Ability of Dialectical Thinking in the Standardized Training of Residents

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Abstract: *In order to explore the effect of dialectical thinking ability training in the standardized training of residents, 80 residents who will receive standardized training from April 2022 to April 2022 will be randomly divided into the control group (N = 40) to receive routine teaching guidance, and the experimental group (N = 40) to receive dialectical thinking training. The teaching quality, teaching satisfaction and teaching effect of the two groups were compared. The experimental results showed that the experimental group was superior to the control group in teaching quality, teaching satisfaction, thinking ability evaluation and teaching effect, and the difference between the two groups was statistically significant (p < 0.05). It is concluded that the training of dialectical thinking ability of residents can improve the comprehensive level of residents, ensure the teaching satisfaction, improve the training quality and improve the clinical thinking ability of residents.*

Keywords: *Residents; standardized training; dialectical thinking ability; training*

1. Introduction

At present, with the increase of infectious diseases such as the novel coronavirus, SARS virus and Zaire Ebola virus, people's quality of life, environmental risks, behavioral risks and uncertainties in medical activities have increased significantly. Therefore, it has promoted the progress of patient-centered medical model in China's medical field. In addition, with the change of medical model, the thinking of clinical medicine will also change, especially: the training of residents has been paid more and more attention by the medical community [1-2].Standardized resident training, which originated in 1993, is an important teaching stage for medical students after graduation, including professional courses, public required courses, professional required courses, clinical practice and other contents [3] . The standardized training of residents can ensure the quality of medical treatment and improve the comprehensive level of clinical doctors. At present, with the development of medical technology in our country, we should pay attention to the quality, basic ability and knowledge structure of new medical talents during the training, to further promote medical students to physicians across the growth. Due to the limited teaching hours and practice of medical students and the limitations of traditional teaching, the students lack the knowledge of clinical theory and practice. When they come into contact with the patients, especially the complicated cases, the students often feel helpless and afraid, which can seriously affect their initiative. According to the clinical report, it is very important to train and guide the residents, especially the clinical practice ability and dialectical thinking ability of the interns, once the situation of physicians' incompetence occurs, it will not only affect the safety of patients' life and health, but also lead to the decline of hospital's credibility [4] . In this paper, 80 cases of standardized training of residents study, record training teaching effects are as follows.

2. Data and methods

2.1. Clinical data

A total of 80 resident physicians with standardized training from April 2022 to April 2024 were selected and randomly assigned. A control group of 40 patients included 23 males and 17 females, aged 18-35 years, with an average age of (26.76±2.71) years. The age of the experimental group was 19-34 years old, with an average age of (26.77±2.68) years. Among the 40 patients in the experimental group, 18 were males and 22 were females. There was no statistical significance in age and gender data ($P > 0.05$), indicating comparability.

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

Exclusion criteria: (1) inability to communicate normally; (2) Withdrawal from the study; (3) There are infectious diseases.

2.2. Method

(1) Control group - routine teaching guidance: teachers should be in charge of interns in their own group, make regular 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) Training of dialectical thinking ability in experimental group: ①Training of holistic thinking: holistic thinking belongs to the TCM content of dialectical thinking. In modern medicine, it is necessary to clarify the two concepts of normal and abnormal, and require residents to understand the two medical phenomena of normal and abnormal and to have an overall abstract understanding. Through the teaching of examples, if the number of patients with urinary calculi increases, only in the obstructive state accompanied by septic shock and renal colic, indicating that infection, obstruction and calculi are mutually causative and mutually restricted, and regular review can control the progression of the disease. During the standardized training, residents are required to correctly view the abnormal and normal in a diversified way, and should not rely on medical statistics. Clinical medicine should be integrated into the philosophical basis, and dialectical thinking and individualized management should be emphasized. Clinical examination indicators of patients should not be observed during ward rounds. ②Critical thinking training: critical thinking is the review of the new progress of medical thinking, under the new research and new technology, as a resident doctor can not blindly worship, need to adhere to the "patient's life health and safety is the most important" principle, abandon the "disease medical treatment as the center" thinking. During the implementation of philosophical ideas in medicine, it is necessary to keep the inner question and follow the principles of falsification, proof, critical and explanatory. ③Cultivation of dynamic thinking: Materialist dialectics proposes that everything is in perpetual motion and change, which is the unity of relative stillness and absolute motion. This theory is also applicable to the physiological environment of the human body. During the observation of the physiological function of the patient, it is necessary to understand the hidden worries in the stable state, to perspective more medical cases, and even many lessons are derived from the neglect of the changes in the condition. For example, a patient with closed abdominal injury was given conservative treatment after the bleeding site and organ were identified, during which vital signs should be observed, and the patient's mental state and chief complaint should be actively understood through ward rounds. Once residents lack dynamic thinking and are unable to take advantage of favorable irritability in the environment, they are unable to control the risk during symptomatic intervention of patients' diseases, which has an impact on the clinical diagnosis and treatment effect. ④The cultivation of paradoxical thinking: paradoxical thinking is to actively think about a concept, a hypothesis or a theory from both positive and negative aspects in order to find out the paradox. For example, for some thyroid tumors or prostate tumors in the early pathological stage after surgery, there are many cases of significant decline in quality of life after radical surgical intervention. Advanced medical technology may not only relieve the patient's pain, but also may do nothing about the disease, or even have the opposite expected effect. Therefore, residents must learn to dialectically view the new problems brought about by the rapid development of medical science and technology. Thanks to the improvement of various detection methods and technologies at the present stage, the early detection rate of kidney tumors has increased significantly. In view of the pioneering and development of laparoscopic nephrion-sparing surgery technology, not only early kidney cancer with small diameter and volume, but also the T2 stage substantial tumors that invade the kidney collection system are constantly trying to perform partial nephrectomy. However, the 5-year survival rate, local recurrence and long-term effect of follow-up patients need to be further studied and analyzed.

2.3. Observation index

(1) Teaching satisfaction: Before evaluating teaching satisfaction, relevant literature should be collected, questionnaires created, and an anonymous survey was given to enrolled residents. The self-made questionnaires included four types: very satisfied, satisfied, generally satisfied and dissatisfied. Among them, the unsatisfactory score was 30 points or less, 31-60 indicated general satisfaction, and the relatively satisfied score was 61-90; A score of 90 or above is very satisfactory.

(2) Teaching quality: The teaching quality assessment analyzed the improvement of enrolled students'

ISSN 2706-6819 Vol.6, Issue 9: 62-66, DOI: 10.25236/IJFM.2024.060909

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.

(3) Objective results: The test questions are designed according to the requirements of the professional physician examination and the content of the basic teaching outline, and the implementation of unified evaluation standards and exam content. The three-way evaluation includes case analysis, clinical practice such as medical record writing, physical examination, and basic theoretical knowledge. The score of each item is 100 or more, and the higher the score, the more ideal the score.

(4) Evaluation score of thinking ability: the evaluation indicators of dynamic thinking, critical thinking, holistic thinking and paradoxical thinking were recorded during the standardized training of residents. The higher the score, the stronger the thinking ability.

2.4. Statistical significance

The analysis data were analyzed using SPSS 23.0 software, with a percentage (%) to describe the counting data, and the comparison between groups was conducted by 2. The measurement data were described by (±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. Teaching satisfaction

After evaluation, the clinical teaching satisfaction of experimental group was higher than that of control group (P < 0.05).(As shown in table 1)

Table 1:Teaching satisfaction of residents 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%
X^2		-	-	-	-	5.0000
P		-	-	-	-	<0.05

3.2. 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 2)

Table 2:Students' interest improvement, knowledge consolidation effect, literature search learning, clinical thinking improvement, and doctor-patient communication ability improvement of the two groups of residents (%).

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

3.3. Objective achievement

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 3)

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Table 3 Comparative analysis of case analysis, clinical practice such as medical record writing, physical examination, basic theoretical knowledge and data of residents in the two groups ($\bar{x}$ ±s)

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

3.4.Thinking ability assessment

The scores of dynamic thinking, critical thinking, holistic thinking and paradoxical thinking in test group were better than those in control group (P < 0.05).(As shown in table 4)

Table 4:Comparative analysis of dynamic thinking, critical thinking, holistic thinking and paradoxical thinking data of residents in the two groups ($\bar{x}$ ±s).

Group	Number of cases	Dynamic thinking	Critical thinking	Holistic thinking	Paradoxical thinking
Control group	40	3.43±0.77	40.21±1.44	37.98±1.33	42.65±3.15
Experimental group	40	1.31±0.65	34.76±1.35	30.52±1.21	67.77±3.23
t		13.3059	17.4627	26.2401	35.2135
P		<0.05	<0.05	<0.05	<0.05

4. Discuss

The standardized training of resident doctors is an important content of the training of clinical medical talents, especially the training of dialectical thinking ability is of great significance in the training. Dialectical thinking runs through the whole process of clinical disease treatment and diagnosis, and belongs to the core problem in the clinical medical field, which can directly image the practical ability and diagnostic level of residents [5]. At present, although residents have clinical practice experience or internship experience, under the current social development, there is less practice during residency and more theoretical knowledge learning, which makes it impossible to ensure the combination of practice and theoretical knowledge, thus affecting the cultivation of dialectical thinking ability and failing to improve the comprehensive level of residents. At the same time. In the current medical education, most of the newly graduated medical students are directly put into the society, so that their own ability cannot meet the clinical requirements, resulting in serious impact on the career of medical students, and even to the society and patients are not responsible. Once medical students go to work directly without systematic clinical training, it will lead to a serious imbalance in the level of treatment and diagnosis in hospitals. Most doctors with high qualifications in hospitals have a high level of diagnosis and treatment ability, while the diagnosis and treatment level of doctors in primary medical institutions is poor, which makes the problem of "expensive to see a doctor" and "difficult to see a doctor" appear in our country. Therefore, standardized training for residents can not only improve their comprehensive level, but also improve the current medical status and medical environment [6].

It is of great significance to pay attention to the cultivation of dialectical thinking ability during the standardized training of resident doctors. The application of dialectical thinking ability in the medical field includes paradoxical thinking, holistic thinking, dynamic thinking and critical thinking. The training of paradoxical thinking can improve the comprehensive ability of residents and enable them to explore more in-depth medical operations under the treatment of patients with advanced technology, thus ensuring the combination of advanced operating technology and theoretical knowledge. Promote effective treatment of various diseases [7]. The cultivation of holistic thinking can improve residents' correct understanding of patients and diseases, adhere to the patient-centered principle, and actually analyze diseases and patients' physiological conditions in the face of diseases, thus ensuring patients' life and health status and disease control effect. The cultivation of dynamic thinking is the risk control

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thinking of patients during disease diagnosis and treatment. It is not only necessary to observe the changes of patients' conditions, but also to understand the patients' chief complaints during ward rounds. It is not possible to simply rely on laboratory science and statistics and treat the patients' conditions according to their actual conditions, so as to timely detect the premonitory risk reactions and ensure the life, health and safety of patients. The cultivation of critical thinking is an important part of improving the comprehensive level of residents during the standardized training. During the period when residents learn new literature, new materials and new technologies, they should maintain critical thinking and explore the correctness of the content during the study, so as to understand the actual effect of the implementation of technical level, fully improve the thinking activity of residents and abandon the rigid thinking ability. The results of this experiment showed that the experimental group was better than the control group in teaching quality, teaching satisfaction, thinking ability evaluation and teaching effect, and there were differences between the groups ($P < 0.05$). It can be seen that the cultivation of dialectical thinking ability during the standardized training of residents can promote the improvement of the theoretical achievements of residents, improve the communication and thinking ability of students, ensure the quality of teaching, enhance the learning interest of students and improve the teaching effect. At the same time, the training of dialectical thinking ability can improve the rigid thinking of residents in clinical diagnosis and treatment, enhance their flexibility of thinking, make them full of enthusiasm for exploring patients, diseases and new technologies, and improve the space for progress while maintaining self-ability, which has promoting significance for the improvement of clinical diagnosis and treatment level. In addition, the rise from clinical thinking to dialectical philosophical thinking means a leap in medical thought or medical concept, which means that questions are raised from the perspective of fundamental medical thought. To achieve such improvement, rich clinical practice, certain philosophical accomplishment, strong dialectical thinking consciousness, and good habits of dialectical thinking are all indispensable [8].

To sum up, the training of dialectical thinking ability during the standardized training of residents fully improves the comprehensive level and learning ability of residents, ensures the teaching effect and clinical teaching quality, promotes the combination of practice and theoretical knowledge of residents, and actively cultivates new talents in line with the development of clinical medicine at the present stage.

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