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Research Article

Application of Standardized Measures in Clinical Teaching of Medical Imaging Department

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Abstract: ***Objective:*** To explore the application of standardized measures in clinical teaching of medical imaging department. ***Methods:*** Forty-eight medical interns in Department of Medical Imaging of our hospital from February 2018 to May 2019 were selected as research objects. They were divided into 2 groups according to random number table method, with 24 cases in each group. Routine education management was performed in clinical teaching for control group, standardized measure management was performed in clinical teaching for observational group. Performance assessment before and after intervention was compared between two groups of medical students. ***Results:*** Before intervention, there was no significant difference in assessment result between two groups of medical students (P>0.05). Assessment result after intervention was higher than before intervention in two groups of medical students. Observational group was higher than control group, the difference was statistically significant (P<0.05). ***Conclusions:*** Implementation of standardized measures in clinical teaching of medical imaging department could significantly improve assessment result of medical students, and its application can be considered in clinical teaching.

Key words: Medical imaging department; Standardized measures; Clinical teaching

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1 Introduction

Medical imaging refers to technologies and processes of acquiring image of internal tissue of human body or body part in a non-invasive manner for medical or medical research purposes. Medical imaging department includes general X-ray imaging room, CT imaging room, MR imaging room, ultrasound imaging room and intervention room[1]. With the continuous development of modern medicine, general requirements for medical students are becoming increasingly higher. Clinical teaching with standardized measures is of great significance for medical students. Standardized management measures have four characteristics: systematic thinking, personnel participation, comprehensive system and robust structure; they are becoming more widespread in clinical application. The objective of this study was to explore the application of standardized measures in clinical teaching in medical imaging department. The report is as follows.

2 Materials and method

2.1 General information

Approval was obtained from Medical Ethics Committee of our hospital. Forty-eight medical students attended internship in medical imaging department of our hospital from February 2018 to May 2019 were selected as the research objects. They were divided into 2 groups by random number table method, each with 24 patients. Control group consisted of 14 males and 10 females; aged 19–25 years, mean age of (21.13 ± 1.24) years old. Observational group consisted of 15 males and 9 females; aged 19–26 years, mean age of (21.24 ± 1.33) years old. General information of the two groups was compared, the difference was not statistically significant (P>0.05) and comparison could be made.

2.2 Methods

Routine education management was performed in

clinical teaching for control group. Explanation of medical imaging theoretical knowledge was carried out and regular assessments were conducted for medical students. Standardized measure management was conducted in clinical teaching for observational group. The specific content was as follows. Establishment of tutor group: head of department served as tutor group leader, deputy chief physician served as tutor, and attending physician with clinical experience served as assistant tutor. Teaching content: tutor was responsible for implementation of teaching work which included theoretical knowledge of internship outline (2–3 times per week), daily standard practical operation and clinical diagnosis report writing. Assistant tutor assisted the tutor and was responsible for specific guidance on daily internship practice of medical students. Assessment management: head of department guided educator work of tutor through weekly medical student symposium to understand teaching situation. Assessment of professional theoretical knowledge and practical assessment of medical students were conducted every two weeks according to teaching syllabus of department for understanding of learning situation of medical students. Teaching management team of department evaluated tutor's teaching situation through medical students' feedback and assessment result. Outstanding individuals were given a reward system, which included distribution of tutoring allowance, arrangement for further studies, and recommendation as advanced tutor.

2.3 Comparison of evaluation indicators

Imaging theoretical knowledge, study plan, operation skill, and diagnostic report writing of two groups of medical students before invention and after 2 weeks of intervention were evaluated and compared. Each subject accounted for 100 marks; higher score indicated better understanding of the medical student.

2.4 Statistical methods

SPSS 18.0 software was used for data processing. Measurement data was expressed in $\bar{x} \pm s$. Independent sample t-test was used for comparison between groups, and paired sample t-test was used for comparison within group. $P<0.05$ was considered to be statistically significant.

3 Results

There was no significant difference in evaluation result before intervention between two groups of medical students ($P>0.05$). Evaluation result after intervention was higher than before invention in two groups of medical students. Observational group was higher than control group; the difference was statistically significant ($P<0.05$). See Table 1.

Table 1. Comparison of assessment result between two groups of medical students ($\bar{x} \pm$ s, marks)

Time	Group	Theoretical knowledge	Study plan	Operational skills	Diagnostic report writing
Before intervention	Control (n=24)	73.59±1.47	75.14±2.23	61.45±3.38	57.48±3.17
	Observational (n=24)	73.62±1.38	76.03±2.05	61.77±3.01	56.74±3.38
	t	0.073	1.439	0.346	0.782
	P	0.942	0.157	0.731	0.438
After intervention	Control (n=24)	81.09±2.13*	80.33±1.49*	71.61±2.44*	70.47±3.18*
	Observational (n=24)	92.47±1.56*	89.53±2.26*	90.55±1.09*	87.53±1.18*
	t	21.116	16.650	34.720	24.640
	P	0.000	0.000	0.000	0.000

Note: Comparison with before intervention within the same group, *$P<0.05$

4 Discussion

Medical imaging is biological imaging. It includes imaging diagnosis, radiology, endoscope, medical thermal imaging technology, medical photography and microscope. It refers to technologies and processes of acquiring internal tissue image of human body or body part in a non-invasive manner for medical or medical research purposes. Medical imaging has an irreplaceable role in diagnosis of patient condition. Clinical internship in imaging department represents a process of translating theoretical knowledge into clinical practice for medical students. It is a key stage for medical students to develop into qualified clinical imaging physicians, thus it is necessary to attach importance to clinical education of medical students.

Results of this study showed that evaluation score before intervention was higher than after intervention in two groups of medical students, and that observational group was higher than control group. This showed that implementation of standardized measures in clinical teaching of medical imaging department could significantly improve assessment result of medical students, and it is valuable to be applied in clinical teaching. Conventional clinical teaching in medical imaging department uses single teaching mode in which teaching is carried out according to student's aptitude and there is lack of comprehensive development of medical students. With increasing work pressure in imaging department, tutors may be inattentive in management of medical student teaching. Based on existing insufficiencies of education, standardized management measure integrates participation of medical student and tutor to establish a comprehensive structure and a series of systems led by standardization[2]. Medical imaging students must possess solid theoretical basic knowledge skills and professional skills. Clinical teaching of standardized measure strictly follows requirement of teaching plan; trains for theoretical knowledge, positioning of conventional scanning and operating procedures of various instruments; and also trains medical students in writing imaging reports, to truly combine theory with practice. At the same time, establishment of tutor group can enable monitoring of teaching situation of tutor to medical student, and usage of reward system can better encourage tutoring enthusiasm and effectiveness of tutors[3].

In summary, implementation of standardized measures in clinical teaching of medical imaging department can significantly improve assessment result of medical students, and it is valuable to be applied in clinical teaching.

References

[1] Zhang W, Su D, Wei HB. A qualitative study on relationship between supply and demand in clinical teaching of postgraduates with degree in medical imaging [J]. Guangxi Medical Journal, 2019, 41(17): 2273–2277.

[2] Huang J, Jiang HN, Zhan SH, et al. Application of Massive Open Online Course (MOOC) in standardized training teaching of medical imaging resident physicians [J]. Medical and Health Equipment, 2019, 40(6): 91–95.

[3] Zhao JQ, Pan CX, Huang YJ, et al. Exploration of PBL and PACS reading in standardized training of imaging residents under MDT mode [J]. Continuing Medical Education, 2017, 31(12): 51–52.