



Exploration of Clinical Practice Teaching Management in Orthopedics from the Perspective of TQM

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Authors' contributions

This work was carried out in collaboration among all authors. Authors SE and LS contributed equally to this work. All authors read and approved the final manuscript.

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ABSTRACT

Orthopedics is a discipline with particularity and complexity, and clinical practice teaching in orthopedics is an important link in cultivating orthopedic doctors. With the improvement of medical quality and safety awareness, how to improve the educational quality, teaching effectiveness, and management level of orthopedic clinical practice teaching has become an urgent problem to be solved in the current orthopedic education field. Our orthopedics department has integrated TQM (Total Quality Management) into the management of clinical practice teaching in orthopedics, formulated a comprehensive teaching quality management system for orthopedics, and embarked on a new path for clinical medical talent cultivation.

Keywords: Total quality management philosophy; orthopedics; clinical practice teaching.

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1. INTRODUCTION

Orthopedics is a highly practical profession with high complexity, high risks, and a long teaching cycle. Against the backdrop of a series of new medical teaching methods and ideas, the current clinical teaching of orthopedics appears relatively outdated and cannot fully reflect the requirements of modern medical education development, which is somewhat incompatible with modern medical models. The main manifestation of teaching management concepts in clinical internship teaching, clinical internship teaching, and other links is the lack of a holistic perspective, often limited to a certain link, unable to scientifically and comprehensively manage, and unable to fully utilize modern information technology for comprehensive management and evaluation. Therefore, it is particularly important to apply TQM (Total Quality Management) to the clinical practice teaching process of orthopedics.

2. TQM (TOTAL QUALITY MANAGEMENT CONCEPT) AND ITS APPLICATION IN THE MEDICAL FIELD

TQM is an abbreviation for Total Quality Management, which is an enterprise management method that pursues excellent quality, meets customer needs, improves work efficiency, and employee satisfaction through full participation, comprehensive management, and continuous improvement [1]. The main characteristics of TQM include a focus on customer needs. TQM emphasizes understanding customer needs and expectations, continuously improving products and services, meeting customer requirements, and increasing customer satisfaction. In the medical field, patient centeredness is the core of clinical practice and teaching, and the needs and expectations of patients are also important factors affecting the effectiveness of clinical medicine and teaching. Therefore, clinical practice teaching management should also be patient centered, starting from the needs and expectations of patients, providing high-quality medical and educational services to meet their needs and improve patient satisfaction. TQM believes that every employee is a creator and guarantor of quality, and requires them to participate in quality management to promote teamwork and employee engagement. In the field of clinical teaching, teamwork and full participation are also very important. Clinical doctors, nurses, technicians, management personnel and other personnel in various

positions should participate in clinical practice teaching management, play their respective roles, and improve management efficiency and teaching quality. Continuous improvement. TQM emphasizes the continuous pursuit of excellent quality, continuous improvement of products and services, and the continuous improvement of quality through feedback and correction of errors, process optimization, and efficiency improvement. In the medical field, clinical medicine and teaching also need continuous improvement and optimization to adapt to the constantly changing medical and educational needs. Therefore, clinical practice teaching management should also focus on continuous improvement, achieving continuous improvement in management and teaching quality through feedback and correction of errors, optimizing processes, and improving efficiency.

3. THE CURRENT SITUATION AND PROBLEMS OF CLINICAL PRACTICE TEACHING MANAGEMENT IN ORTHOPEDICS

3.1 Characteristics and Difficulties of Orthopedic Clinical Practice Teaching Management

Orthopedic clinical practice teaching management is a highly challenging task, and its characteristics and difficulties are mainly manifested in the following aspects: ① High complexity: Orthopedic clinical practice teaching management involves multiple disciplines and majors, and its teaching links and medical processes are very complex. TQM can help coordinate and cooperate with various aspects of orthopedic clinical practice teaching management by emphasizing holistic, systematic, and process management, reducing management complexity High risk: The management of clinical practice teaching in orthopedics is directly related to the safety and health of patients, and once errors occur, the consequences will be unimaginable. TQM can predict, identify, and manage potential risks by introducing risk management concepts and methods, thereby reducing the risk of teaching management work Strong practicality: The management of orthopedic clinical practice teaching requires students to learn through practice, and through continuous practice and reflection, they can improve their medical practice abilities. TQM can continuously improve the medical practice ability and teaching level of

students and teachers and students by emphasizing continuous improvement and training education Long teaching cycle: The management of clinical practice teaching in orthopedics requires a longer teaching cycle, which takes several years from students' entry to graduation, making the requirements for teaching management more stringent. TQM can establish sound teaching management systems and standards, develop scientific and reasonable teaching plans and processes, ensure the scientific and standardized teaching process, and improve teaching efficiency and quality. Difficulties: ① Teaching quality assurance: Orthopedic clinical practice teaching management needs to ensure teaching quality, ensuring that every student can master the necessary medical skills and knowledge, thereby improving clinical practice ability. ② Standardization of teaching management: Clinical practice teaching management in orthopedics requires the establishment of sound teaching management systems and standards, the development of scientific and reasonable teaching plans and processes, and the assurance of scientific and standardized teaching processes Construction of teaching staff: The management of orthopedic clinical practice teaching requires the establishment of a high-level teaching staff, who need to have rich medical practice experience and teaching experience, and can effectively guide students in practical operations and teaching activities Teaching equipment and environmental protection: The management of orthopedic clinical practice teaching needs to provide good teaching equipment and environment, including operating rooms, laboratories, etc., to ensure that teaching equipment is intact, the environment is clean and tidy, and meets teaching needs.

3.2 Problems and Challenges in the Management of Orthopedic Clinical Practice Teaching

The management of clinical practice teaching in orthopedics is an important component of medical education, which directly relates to the cultivation of students' professional literacy and clinical abilities. However, in practice, there are also a series of problems and challenges in the management of orthopedic clinical practice teaching, mainly including the following aspects:

- ① Insufficient teaching resources: orthopedic clinical practice teaching requires a large amount of teaching resources, including

teaching venues, teaching equipment, teaching personnel, etc., but in reality, there are problems of insufficient resources and uneven distribution.

- ② Backward teaching content: Orthopedics has developed rapidly, but the updating speed of teaching content does not match it, and the teaching content lags behind practical needs, making it difficult to meet students' learning needs [2].

4. Application OF TQM IN ORTHOPEDIC CLINICAL PRACTICE TEACHING MANAGEMENT

4.1 The Application Value of TQM in Orthopedic Clinical Practice Teaching Management

Orthopedic clinical practice teaching management is an important link in medical education and one of the important ways to cultivate medical professionals. As a comprehensive quality management concept, TQM can provide a lot of application value for the management of orthopedic clinical practice teaching. Firstly, TQM emphasizes patient-centered service quality management, while in orthopedic clinical practice teaching, students and patients are directly involved. Through the TQM method, students can understand the needs and expectations of patients, provide high-quality medical services, improve patient satisfaction, and thereby enhance their medical practice ability and service awareness. Secondly, TQM emphasizes process control and continuous improvement, and in orthopedic clinical practice teaching, medical processes and teaching processes are closely related. Through the TQM method, standardized teaching processes and management procedures can be developed, teaching processes can be optimized, teaching quality and efficiency can be improved, and teaching errors and risks can be reduced. In addition, TQM emphasizes employee participation and teamwork, and in orthopedic clinical practice teaching, teaching teams are crucial. Through the TQM method, teachers and students can be encouraged to participate in teaching quality management, promote teamwork and employee engagement, and improve teaching quality and efficiency. Through the method of TQM, teaching quality and efficiency can be improved, and students' medical practice ability and service awareness can be enhanced, thereby

contributing to the cultivation of orthopedic medical professionals.

4.2 Application Mode of TQM Thought in Orthopedic Clinical Practice Teaching Management

Full Staff Participation: TQM emphasizes full staff participation and considers all employees as a part of quality management. In the management of orthopedic clinical practice teaching, all participating teachers and students should participate in the improvement of teaching quality

Process management: TQM focuses on process management, focusing on every step of the process, in order to achieve the goal of improving overall efficiency and quality. In the management of orthopedic clinical practice teaching, it is also necessary to pay attention to each link in the teaching process, including teaching plan, teaching design, teaching implementation, teaching evaluation, etc., in order to achieve the optimization of teaching effectiveness

Data analysis: TQM optimizes quality management by collecting and analyzing data. In the management of orthopedic clinical practice teaching, it is also necessary to optimize and improve the teaching process by collecting and analyzing data such as students' academic performance and teaching quality evaluation

Continuous improvement: TQM believes that quality management is a process of continuous improvement. In the management of orthopedic clinical practice teaching, it is also necessary to continuously improve the quality and effectiveness of teaching through continuous feedback and improvement. In summary, the application model in orthopedic clinical practice teaching management needs to reflect the TQM concept, with the core concepts of full participation, process management, data analysis, and continuous improvement, to achieve continuous improvement of teaching quality.

4.3 Specific Application Measures of TQM Concept in Orthopedic Clinical Practice Teaching Management

Its application measures should be a continuous cycle process, including the following steps:

- ① Determine teaching objectives: clarify the goals and requirements of orthopedic clinical practice teaching, ensure the controllability and measurability of teaching quality.

- ② Analyze teaching needs: Based on teaching objectives and requirements, analyze teaching needs and resources, determine teaching plans and course content, and ensure the scientific and effective teaching content
- Design teaching plans: Based on teaching needs and resources, design teaching plans and methods, pay attention to cultivating students' comprehensive abilities and innovative spirit, and promote the development and innovation of orthopedic disciplines
- Implement teaching plan: Organize teaching implementation according to the teaching plan and teaching methods, pay attention to monitoring and evaluating the teaching process, timely identify problems and adjust the teaching plan, and ensure teaching quality and effectiveness.
- ⑤ Evaluating teaching effectiveness: Through teaching evaluation and feedback, collect opinions and suggestions from students and teachers, evaluate and improve teaching effectiveness, and continuously optimize teaching quality and efficiency. This cyclic process is dynamic and continuous, requiring close cooperation and connection among various links. Through continuous feedback and improvement, teaching quality and efficiency can be continuously improved, further promoting the development and innovation of orthopedic clinical practice teaching management. In short, clarify the teaching and research department and guidance teachers. Intern responsibilities include initially ensuring the quality of orthopedic clinical practice teaching, standardizing teaching and training rules, and conducting unified planning and implementation of multiple systems such as mid-term and final assessment of internship quality.

4.4 The Optimization and Innovation of TQM Concept in Orthopedic Clinical Practice Teaching Management Mode is Mainly Reflected in the Following Aspects

- ① Establishing a student-centered teaching mode: TQM emphasizes user centeredness, encourages enterprises to pay attention to consumer needs and provide products and services that meet their needs. In the

management of orthopedic clinical practice teaching, TQM ideology can guide educators to be student-centered, listen to and pay attention to students' needs and feedback, design and implement teaching plans that meet students' needs, and improve teaching quality and effectiveness. Introducing advanced teaching techniques and methods: TQM emphasizes technological innovation and continuous improvement, advocating the use of the latest technologies and methods to improve quality and efficiency. In the management of orthopedic clinical practice teaching, TQM ideology can guide educators to introduce advanced teaching technologies and methods, such as virtual simulation technology, remote teaching, etc., in order to innovate teaching modes and improve teaching effectiveness. Strengthen data analysis and evaluation: TQM emphasizes the importance of data, and continuous improvement can be achieved through data collection and analysis. In the management of clinical practice teaching in orthopedics, TQM ideology can guide educators to establish a scientific teaching evaluation system. By analyzing data such as students' academic performance and teaching effectiveness, problems can be identified in a timely manner and measures can be taken to optimize teaching quality. Promote a culture of teamwork and continuous improvement: TQM emphasizes full participation and continuous improvement, encourages enterprises to establish a culture of teamwork, and jointly promotes quality management in the enterprise. In the management of orthopedic clinical practice teaching, the TQM concept can guide educators to establish a team cooperation culture, encourage teachers and students to collaborate and learn from each other, and promote continuous improvement of teaching quality [3]. In summary, the optimization and innovation of the TQM concept in the management mode of orthopedic clinical practice teaching are reflected in the student-centered teaching mode, the introduction of advanced teaching technologies and methods [4-5].

5. CONCLUSION

There are many problems and challenges in the clinical practice teaching of orthopedics, such as chaotic management and unequal resource allocation. At the same time, the introduction of TQM concept provides a new approach and method for clinical practice teaching in orthopedics, which can effectively solve these problems and challenges. Based on the TQM

perspective, the management mode of orthopedic clinical practice teaching is optimized and innovated through measures such as full participation, emphasis on process management, continuous improvement, and strengthening student orientation. This model has certain feasibility and effectiveness, providing a new perspective and method for the management of orthopedic clinical practice teaching, and has certain reference value for improving the quality and level of orthopedic clinical practice teaching [6-7].

CONSENT AND ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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