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Nursing Interdisciplinary Research and Cooperation, Interconnection to Promote the Development of Nursing Discipline

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ABSTRACT

This paper deeply discusses the significance of interdisciplinary research and cooperation in nursing, and discusses the integration strategies of different disciplines and nursing fields, so as to promote the development of nursing disciplines in the direction of more specialization, diversification and innovation. To realize the interdisciplinary cooperation from nursing and informatics, nursing and economics respectively, this paper puts forward the guarantee mechanism of establishing the interdisciplinary cooperation management organization, strengthening the interdisciplinary team construction and promoting the interdisciplinary cultural integration, so as to realize the continuous progress and high-quality development of nursing.

1. Introduction

With the rapid development of modern medicine and science and technology, the knowledge and skills of a single discipline have been difficult to meet the complex needs of medical care. Nursing interdisciplinary research and cooperation came into being. This kind of interdisciplinary integration breaks the boundaries of traditional disciplines, injects new vitality into nursing disciplines, and opens up a broader space for development^[1]. It enables nursing to examine problems from different disciplinary perspectives, seek solutions, improve nursing quality and effect, and has a profound impact on the development of the whole nursing discipline. Therefore, this paper will

deeply explore the interdisciplinary research and cooperation between nursing and informatics, economics, psychology and other disciplines, and explain its important significance and concrete practice in promoting the development of nursing.

2. Significance of interdisciplinary nursing research cooperation

2.1 Broaden the nursing knowledge system

The intersection of nursing and medical disciplines, such as cooperation with internal medicine, surgery, pathology, etc., enables nurses to have a deep understanding

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of the occurrence and development mechanism of diseases^[2]. Nursing staff can make more targeted care plans based on more accurate medical diagnosis and pathophysiological knowledge. For example, in oncology care, working with oncologists to understand the biology of different types of tumors enables better implementation of chemotherapy care, radiation care, and psychological support for patients.

2.2 Innovative teaching methods

The application of information technology in nursing is becoming more and more extensive. The development of nursing information systems, the use of electronic medical records, and the development of telemedicine nursing technologies all depend on cooperation with computer science and information management disciplines^[3]. Through this cooperation, nursing staff can realize the information management of nursing process and improve the efficiency and quality of nursing work. For example, the remote monitoring system is used to conduct real-time monitoring and nursing guidance for home rehabilitation patients.

2.3 Improve the quality of nursing teaching

Interdisciplinary research and collaboration enable a comprehensive assessment of patients. Multidisciplinary team members assess patients from their own professional perspectives and are able to identify patients' problems more accurately. For example, in geriatric care, a team composed of doctors, nurses, rehabilitation therapists, dietitians, etc., can conduct a comprehensive assessment of the physical function, disease status, nutritional level, psychological state of the elderly, and develop a more comprehensive care plan. The combination of knowledge and skills from different disciplines allows the care program to be tailored to the individual differences of the patient.

3. Nursing interdisciplinary research cooperation strategy

3.1 Nursing Informatics cooperation strategy

3.1.1 Establish new standards and data sharing mechanism

First of all, informatics experts and nursing staff should work together to develop nursing information standards. This includes the classification of patient information, coding, input format and other aspects of the specification. For example, for information such as patient symptom descriptions and records of nursing measures, terminology and expression should be unified to ensure data compatibility and interoperability between different information

systems. Secondly, it is necessary to establish a safe and reliable data sharing platform. Under the premise of protecting patient privacy, nursing institutions work with information technology departments to develop platforms that enable the integration and sharing of multi-source data. This platform can connect each nursing unit of the hospital, different levels of medical institutions and community care centers, so that nursing staff can timely obtain and update the information of patients in different medical links.

3.1.2 Strengthen research and development training of nursing information system

A dedicated nursing information system development team can be formed, including nursing experts, informatics engineers, and clinical front-line nursing staff. The team will have a deep understanding of nursing workflows and needs, and develop information systems that meet the realities of nursing. For example, the development of a nursing scheduling system with intelligent reminder function can automatically adjust the scheduling plan according to factors such as changes in patient conditions in the ward, nursing staff skills and working hours, and push important nursing task reminders to nursing staff^[4]. Systematic training in the application of nursing information systems can also be carried out on a regular basis. Develop personalized training programs for nursing staff at different levels and positions. The training includes the basic operation of the information system, data entry and query methods, and how to use the system to analyze nursing quality indicators. The training method combining online and offline can be adopted to improve nursing staff's application ability of information system through simulation operation and case analysis.

3.1.3 Integration of information and communication technology in nursing education

Nursing informatics has been described as an integration of basic computer skills, information literacy, and information management which are indispensable components of modern nursing practice^[5]. The current healthcare environment is a dynamic nature and rapid evolution changing in line with modern technological breakthroughs. The nursing profession must respond and integrate adequate technologies, peculiarly in educational settings. Or add information-related courses to the curriculum of nursing schools. For example, courses such as "Basis of Nursing Informatics" and "Application of Medical Information Technology" are offered to teach nursing students the basic knowledge of information technology

and application cases in the field of nursing. These courses can be taught jointly by informatics teachers and nursing teachers with extensive experience in the application of information systems. For example, Nwozichi CU et al^[6]. concerned ICT has been viewed as an essential facilitator of nursing education in the Southeast Asian nations. ICT has been manifested to be a very effective tool in the enhancement of nursing education. Positive attitude was also observed among faculty and nursing students. The research demonstrates that virtual reality (VR) simulations have the potential to be integrated across all facets of nursing education, advocating for a revamp of current educational practices to incorporate this technology. It is imperative to develop and implement tailored scenarios that span a variety of subjects within the nursing curriculum. It is crucial to allocate ample time for students to master the necessary VR skills prior to training, provide expert guidance from educators, and offer support to those who may encounter challenges within the simulation program^[7]. VR technology is used to simulate complex nursing scenes, such as first aid sites, intensive care units, etc., so that students can practice nursing operations in a virtual environment, and at the same time, information systems are used to record and analyze the operation process of students, providing a basis for teaching improvement.

3.2 Nursing Economics cooperation strategy

3.2.1 Analysis of nursing cost effectiveness and resource optimization

Through the establishment of nursing cost accounting model. Work with economists and nursing managers to conduct cost analysis of all aspects of nursing services, including human costs (nursing staff salaries, training costs, etc.), material costs (nursing equipment acquisition and maintenance, medical consumables, etc.) and indirect costs (hospital management cost sharing, etc.). Through this model, the costs of different care items and services are accurately calculated and compared with the corresponding benefits (such as patient rehabilitation, improved satisfaction, etc.). Then, according to the results of cost-benefit analysis, the allocation of nursing resources is optimized. For example, resources can be appropriately increased for cost-effective nursing services, such as pressure ulcer prevention care and self-management education for diabetic patients. For some projects whose benefits are not obvious or costs are too high, process optimization or resource adjustment are carried out. At the same time, between different departments in the hospital, according to the severity of the patient's condition and nursing needs,

reasonable allocation of nursing staff and equipment resources.

3.2.2 Formulate a reasonable nursing service price system

Combined with the value theory of economics, this paper analyzes the value contribution of nursing service to the health recovery of patients and the improvement of life quality. For example, the value weight of nursing services was determined by investigating patients' willingness to pay for different nursing services and evaluating the effect of nursing services on reducing patient complications and readmission rates. On this basis, we will cooperate with the price department and medical insurance institutions to formulate a scientific and reasonable nursing service price system. This price system should fully consider the cost of nursing, market demand, social affordability and other factors, not only to ensure the quality and sustainable development of nursing services, but also to allow patients to obtain reasonable price services. At the same time, explore diversified nursing service payment model, such as pay by nursing project, pay by disease combined with the quality of nursing service payment.

3.2.3 Training nursing economic management professionals

Add nursing economics related courses and professional directions in nursing education. For example, courses such as "Introduction to Nursing Economics", "Nursing Financial Management" and "Nursing service marketing" are offered to cultivate interdisciplinary talents who understand both nursing and economic management. These courses can be taught by teachers in the field of economics and experts with practical experience in nursing economic management, focusing on the integration of theory and practice. The study indicated that the functions and responsibilities of Nurse Managers have evolved significantly, now encompassing a robust financial role. This study aims to highlight the critical involvement of nurses in the financial management of healthcare organizations. It is essential for Nurse Managers to grasp financial management concepts and principles prior to imparting this knowledge to other nursing staff. By mastering the organization's financial management, Nurse Managers can effectively disseminate this information to all nurses and exemplify best practices. The developed framework will aid Nurse Managers in acquiring the necessary competencies to fulfill their financial management responsibilities^[8].

3.3 Guarantee mechanism for nursing interdisciplinary research cooperation

3.3.1 Establish an interdisciplinary cooperation management organization

The establishment of an interdisciplinary cooperation management committee composed of representatives of nursing, informatics, economics and other related disciplines. This committee is responsible for formulating the master plan, objectives and strategies for interdisciplinary cooperation, coordinating the interests of all parties, and monitoring the progress of cooperative projects. The members of the committee shall include senior experts in each discipline, discipline leaders and heads of relevant management departments. Set up a project management office under the Management Committee, responsible for the day-to-day management of specific cooperation projects. Including project organization and implementation, resource allocation, progress tracking, quality control, etc. The project management office shall establish a sound project management system and process to ensure the smooth progress of cooperative projects as planned.

3.3.2 Strengthen interdisciplinary team building

Select and develop core team members with interdisciplinary backgrounds and competencies. These members should have good communication skills, teamwork spirit and the ability to learn interdisciplinary knowledge. For example, nursing professionals who have a strong interest in informatics or economics can be selected for targeted training and training, so that they can become the backbone of interdisciplinary teams. Establish an incentive mechanism for interdisciplinary teams. The team members who perform well in interdisciplinary cooperation will be rewarded both materially and spiritually, it provides a good working environment and development space for team members, and encourages them to actively participate in interdisciplinary research cooperation.

3.3.3 Promoting interdisciplinary cultural integration

We will vigorously carry out cross-disciplinary cultural exchange activities, and promote mutual understanding and trust between personnel of different disciplines through the organization of academic lectures, cultural salons, team building activities and other forms. In these activities, the development process, research methods and values of various disciplines are shared to enhance each other's cultural identity. As for the disciplinary cultural conflicts arising in the process of cooperation, they should

be resolved through communication and negotiation, and a cooperative culture of mutual learning and mutual promotion should be formed.

Conclusion

Nursing interdisciplinary research collaboration is a challenging but significant undertaking. Through the implementation of the above-mentioned cooperation strategies for nursing informatics and nursing economics, as well as the strategy of strengthening interdisciplinary coordination and management, the integration of nursing and other disciplines can be effectively promoted, resources can be shared, advantages can be complementary, and new vitality will be injected into the development of nursing. In practice, we need to constantly adjust and improve these strategies to adapt to the changing medical environment and patient needs, and promote the development of nursing discipline towards a more scientific, efficient and sustainable direction.

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