

Exploration of Continuous Nursing Mode for Infectious Disease Patients Based on “Internet plus Nursing”

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Abstract

The infectious disease department is a key department in hospitals, where patients usually need to receive antibiotics and other treatments, and their immune systems are already in a weak state. The characteristics of continuous nursing work in the infectious disease department are the need for professional skills, patience, and care. With the continuous development of medical technology and the increasing demand for medical care, the traditional nursing model has some shortcomings in the management of infectious disease patients, such as poor information transmission and limited nursing resources. Therefore, a scientific and systematic nursing model is needed for comprehensive nursing intervention. The “Internet + Nursing” mode is a modern humanistic nursing concept. On the basis of the network information platform, continuous nursing is integrated into the whole process of patients after discharge. This article focuses on the “Internet plus Nursing” based continuous nursing model for patients in the infectious disease department, describes the development background of this model, analyzes its advantages and challenges, introduces its specific implementation methods, and discusses its effect evaluation methods, aiming to provide more high-quality and efficient continuous nursing services for patients in the infectious disease department, and promote patient rehabilitation.

Keywords

Internet plus nursing; Infectious Disease Department; Continuity of care; Recovery

1. Introduction

In the composition structure of hospitals, the infectious disease department is an important component and one of the more specialized departments in clinical practice. Due to the large number of patients admitted to the infectious disease department and the diverse types of diseases, clinical nursing work is more complicated, and the nursing staff bears greater responsibilities. In addition, the risks faced in nursing are relatively high, and even a slight mistake can lead to infection events, seriously threatening physical and mental health [1]. In the face of the treatment and control of various infectious diseases, nursing work is particularly important. Due to the particularity of the disease, infectious disease patients often require continuous care and health management after discharge to promote recovery, prevent complications, and reduce disease recurrence. The traditional continuity of care model is limited by time and space, making it difficult to meet the needs of infectious disease patients [2, 3]. With the rapid development of Internet technology, its application in the field of medical care is increasingly widespread, and the “Internet plus Nursing”

model came into being. The “Internet plus Nursing” continuous nursing mode refers to the use of Internet, Internet of Things, big data and other technologies to provide remote monitoring, online consultation, health guidance, rehabilitation training and other nursing services for patients in the infection department through intelligent devices, mobile medical applications and other platforms, so as to ensure that patients can still receive continuous and professional nursing support after discharge. Therefore, it is of great practical significance to explore the continuous nursing mode of infectious disease patients based on “Internet plus nursing”.

2. Development Background

2.1 Policy support

In recent years, the state has introduced a series of policies to promote the development of “Internet plus nursing services”. In order to implement the relevant requirements of the State Council on promoting the development of “Internet plus nursing services” and actively respond to the national strategy of population aging, the National Health Commission has successively issued the Notice on Carrying out the Pilot Work of “Internet plus Nursing Services” and the Notice on Further Promoting the Pilot Work of “Internet plus Nursing Services” [4]. Through pilot exploration, it has timely summarized experience and gradually promoted the work [5, 6]. The National Nursing Development Plan (2021-2025) further defined the expansion of the coverage of the “Internet plus Nursing Service” pilot, and promoted it as one of the main tasks of innovating the nursing service model and promoting high-quality nursing development. The Action Plan for Further Improving Nursing Services (2023-2025) again proposes to expand the coverage of “Internet plus Nursing Services”, gradually increase the number of “Internet plus Nursing Services” medical institutions and on-site nursing services, benefit more people, and provide a policy basis for the development of “Internet plus Nursing” model [7, 8].

2.2 Social demand

With the intensification of population aging and the increase in the number of chronic disease patients, the number of infectious disease patients is also increasing. These patients still require professional nursing guidance after discharge, such as wound care, medication guidance, rehabilitation training, etc. However, the traditional nursing service model is difficult to meet the diverse needs of patients, who often need to travel frequently to and from the hospital, increasing time and economic costs [9, 10]. Meanwhile, some patients in remote areas have difficulty accessing timely nursing services due to inconvenient transportation. The “Internet plus Nursing” model can break the time and space constraints, provide convenient and efficient nursing services for patients, and meet the needs of society for nursing services.

2.3 Technological development

The rapid development of the Internet, big data, cloud computing, Internet of Things, and other technologies provides technical support for the implementation of the “Internet plus Nursing” model. Through wearable devices, mobile medical applications, etc., real-time physiological data of patients can be collected and transmitted to the terminal devices of medical staff, achieving remote monitoring and health management. At the same time, using big data analysis technology, it is possible to mine and analyze patients’ health data, providing personalized nursing plans for patients.

3. Advantage Analysis

3.1 Optimize nursing processes and improve service quality

The traditional nursing process is complex, requiring patients to queue up for registration, wait for medical treatment, and receive care, which consumes a lot of time and energy. The “Internet plus Nursing” mode directly connects patients and nursing staff through cloud computing, mobile Internet, and other technologies, simplifying the intermediate process [11, 12]. For example, patients can make online appointments for nursing services through mobile applications. Nursing staff prepare in advance based on the appointment information and provide services to patients on time, improving service efficiency and quality.

3.2 Realize personalized care

With the help of big data analysis technology, nursing staff can develop personalized nursing plans for patients based on their personal health data and needs. For infectious disease patients, different types of diseases, severity of

conditions, and physical conditions require different nursing measures. By analyzing patients' medical records, examination reports, physiological data, etc., nursing staff can provide accurate nursing services to patients and improve nursing effectiveness.

3.3 Expand the scope of nursing services

Traditional nursing services are mainly limited to hospitals, while the "Internet plus nursing" model can extend nursing services to patients' families and communities. For infectious disease patients, especially those with limited mobility and weakened immunity, receiving nursing services at home can reduce the risk of cross-infection and improve patient comfort and safety. At the same time, this model can also provide nursing services for patients in remote areas and solve the problem of uneven distribution of medical resources [13].

3.4 Improve patient satisfaction

Through online platforms, patients can communicate more conveniently with medical staff and receive timely health guidance and services. Nursing staff can answer patients' questions at any time, understand changes in their condition, and adjust nursing plans in a timely manner. This interactive nursing model enhances patients' trust and satisfaction with medical services and improves their treatment compliance.

4. Challenges Faced

The "Internet plus Nursing" mode requires nurses not only to have solid professional knowledge and skills, but also to master information technology and Internet application ability. The application of "Internet plus Nursing" in the continuous nursing of patients in the infection department will encounter many challenges.

4.1 Internet security risks

The "Internet plus Nursing" model relies on highly developed Internet technology, but the security of Internet information cannot be ignored. The personal health data of patients involves privacy and security, and if the data is leaked, it may cause unnecessary trouble and losses to patients. Meanwhile, network attacks, virus infections, and other factors may also affect the normal operation of nursing information systems, leading to interruptions in nursing services [14]. Infectious disease nursing also requires nursing staff to have professional knowledge and protective skills to deal with infectious diseases, but some nursing staff lack training in this area, which affects the quality and safety of continuity of care.

4.2 Insufficient training and technical support for medical staff

With the aging population and the increasing number of chronic disease patients, the demand for nursing services continues to grow, and the problem of relatively insufficient nursing staff is becoming increasingly prominent. Under the "Internet plus Nursing" mode, nursing staff need to undertake more online consultation, remote guidance, and door-to-door services, which further increases the workload of nursing staff [15, 16].

At the same time, the "Internet plus Nursing" model requires medical staff to have certain information technology and artificial intelligence knowledge. However, currently, most medical staff's training mainly focuses on clinical nursing skills, with relatively little mastery of information technology [17]. Therefore, it is necessary to strengthen the training of medical staff, improve their information technology application ability, and raise their network security awareness. In addition, the implementation of this model also requires a comprehensive technical support system, including hardware equipment, software systems, network communication, etc., to ensure the smooth progress of nursing services.

4.3 Differences in patient cognition and acceptance

There are differences in the cognition and acceptance of the "Internet plus Nursing" model among patients of different ages and educational levels. The elderly patients may have low acceptance of this model due to their limited understanding of Internet technology. Some older nurses may not be familiar with the operation of smartphones and find it difficult to provide services to patients through mobile medical apps [18, 19]. Meanwhile, some patients may have doubts about the quality and safety of online nursing services and are unwilling to try new nursing models. Therefore, it is necessary to strengthen the promotion and education of patients and improve their awareness and acceptance of this model.

4.4 Incomplete service standards and specifications

At present, the “Internet plus Nursing” model is still in the development stage, and the relevant service standards and norms are not perfect. For example, the lack of clear regulations on the content, quality standards, and fee standards of nursing services can easily lead to uneven service quality and disputes. Nurses may not receive timely supervision of their service behavior and operational norms during on-site services, which may result in risks such as non-standard services and inaccurate operations [20]. In addition, the quality of online consultation services is also difficult to evaluate, and patients’ feedback on service effectiveness may be delayed or inaccurate, which affects the continuous improvement of nursing quality. Therefore, it is necessary to establish unified service standards and norms, strengthen supervision of nursing services, and safeguard the rights and interests of patients.

5. Specific Implementation Method

In the process of continuous nursing, nurses learned about patients’ condition changes and nursing effects in a timely manner through online communication on the Internet nursing platform, on-site follow-up, and other ways. According to the actual situation of the patient, dynamically adjust the nursing plan to ensure the pertinence and effectiveness of nursing services. If the patient develops new symptoms or complications, adjust nursing measures in a timely manner and advise the patient to seek medical attention promptly.

5.1 Establish an Internet nursing platform

Medical institutions can establish a special Internet nursing platform to provide patients with online appointments, health consultations, remote monitoring, and other services. The platform should have a user-friendly interface that is convenient for patients to use. At the same time, the platform should be integrated with the hospital’s electronic medical record system, nursing information system, etc., to achieve the sharing and interoperability of patient health data [21].

Set up a quality control team composed of the nursing management department, infection department experts, quality control personnel, etc., and formulate detailed quality control standards of “Internet plus Nursing”. Conduct comprehensive quality control of continuity of care services from the aspects of nurse qualification review, service process standardization, nursing operation standards, and service effectiveness evaluation. Regularly hold quality control meetings, analyze quality control data, explore improvement measures, and continuously improve service quality.

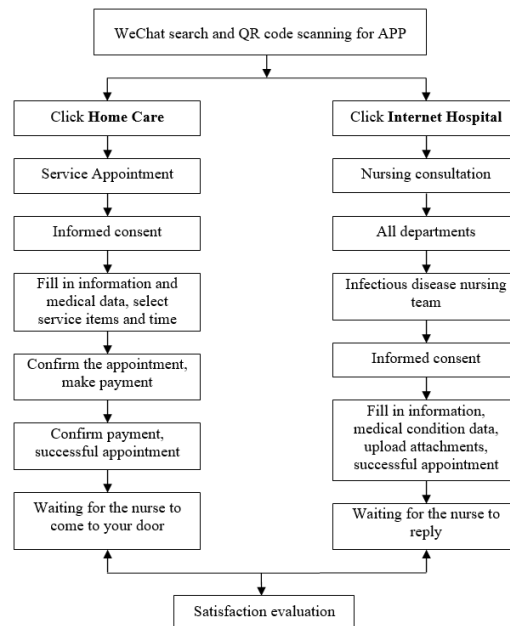


Figure 1. The flow chart of the internet platform nursing appointment process.

5.2 Carry out remote nursing services

Introduce artificial intelligence technology and develop intelligent nursing assistants. Intelligent nursing assistants can answer common questions from patients and provide health consultation services; Remind patients to take medication on time and undergo rehabilitation training based on their condition and nursing plan; It can also automatically analyze and evaluate patients' nursing records, providing reference for nurses.

By utilizing wearable devices, mobile medical applications, etc., real-time physiological data of patients can be collected and transmitted to the terminal devices of medical staff. Medical staff can monitor and analyze the health status of patients in real-time through remote monitoring systems, detect abnormal situations in a timely manner, and provide guidance. For infectious disease patients, remote monitoring of temperature, blood pressure, heart rate, and other indicators can be used to understand changes in the patient's condition.

5.3 Provide online health education

Using big data technology to analyze patient nursing data and uncover patterns and trends behind the data. By analyzing data such as changes in patients' condition, nursing effectiveness, medication use, etc., provide decision support for nurses, helps nurses optimize nursing plans, and improves nursing quality. At the same time, it provides a data basis for the management and scientific research of medical institutions.

Through the Internet platform, provide patients with rich health education content, including disease knowledge, medication guidance, rehabilitation training, diet, and nutrition. Various forms, such as graphics, videos, and audio, can be used to improve the effectiveness of health education. At the same time, medical staff can regularly communicate with patients online, answer their questions, and enhance their self-management abilities.

5.4 Implement community mutual assistance and communication

Strengthen the cooperation and communication among various departments within the medical institution, such as the Infection Department, Nursing Department, Information Department, Logistics Support Department, etc., and jointly promote the implementation of the "Internet plus Nursing" model. At the same time, strengthen cooperation with other medical institutions, community health service centers, elderly care institutions, etc., achieve information exchange and resource integration, and provide continuous and collaborative nursing services for patients [22].

Establish an Internet community so that patients in the infection department can communicate and share with other patients in the community. Patients can share their treatment experience, rehabilitation insights, etc., and encourage and support each other. This model of community mutual assistance and communication helps to enhance patients' confidence in rehabilitation and improve their quality of life.

6. Effect Evaluation

6.1 Patient satisfaction evaluation

Through questionnaires, interviews, and other ways, we can understand patients' satisfaction with the "Internet plus Nursing" model. Evaluation can be conducted from aspects such as service attitude, technical level, health education, communication effectiveness, etc., to analyze patients' recognition of this model and provide improvement suggestions.

6.2 Nursing quality evaluation

Establish a nursing quality evaluation index system to evaluate the process and results of nursing services. For example, we can evaluate the standardization of nursing operations, the effectiveness of health education, the incidence of complications, and other indicators, and evaluate the effect of the "Internet plus Nursing" model on the improvement of nursing quality.

6.3 Medical cost evaluation

To analyze the impact of the "Internet plus Nursing" model on medical costs, on the one hand, this model can reduce the number and duration of hospital stays for patients, and lower medical expenses; On the other hand, implementing this model requires investment in certain hardware equipment, software systems, and human resources, which increases costs. Therefore, it is necessary to comprehensively consider cost-effectiveness and evaluate the sustainability of this model.

6.4 Health indicator evaluation

Monitor patients' health indicators, such as temperature, blood pressure, blood sugar, blood routine, etc., and evaluate the improvement effect of the "Internet plus Nursing" mode on patients' health. At the same time, observe the patient's rehabilitation process, the occurrence of complications, etc., and comprehensively evaluate the promoting effect of this model on patient rehabilitation.

7. Conclusion

The continuous nursing model for patients in the infection department based on "Internet plus Nursing" has the advantages of optimizing the nursing process, realizing personalized nursing, expanding the scope of services, and improving patient satisfaction, but it also faces challenges such as Internet security risks, insufficient training of medical staff, poor patient cognition, and imperfect service standards. The "Internet plus Nursing" model can be effectively carried out by establishing an Internet nursing platform, carrying out remote nursing services, providing online health education, and implementing community mutual aid exchanges. Meanwhile, the effectiveness of this model can be comprehensively evaluated through methods such as patient satisfaction evaluation, nursing quality evaluation, medical cost evaluation, and health indicator evaluation. In the future, we should further strengthen policy support, technological innovation, and talent training, constantly improve the "Internet plus Nursing" model, and provide more high-quality and efficient continuous nursing services for patients in the infection department.

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