ISSN: 2664-9640

Research On Medical Information Management System Based On Artificial Intelligence

Andan Li, Yanbin Long

Liaoning University of Science and Technology. China

Abstract

This project provides a medical information management method and system based on artificial intelligence, which involves the field of data processing technology. By generating evaluation tags based on historical nursing information, users' nursing needs are obtained and initial nursing interaction information is generated. Based on basic information, initial nursing interaction information impact assessment is conducted, and nursing interaction information is generated and adjusted according to the impact assessment results,Modify and adjust nursing interaction information according to user evaluation tags, generate nursing tasks according to the modification results, conduct task analysis according to nursing tasks and real-time tasks, determine the collection of nursing staff and send nursing tasks for nursing task response and management.To solve the technical problems in the existing technology, such as the lack of rationality in the work distribution of nurses, the risk of doctor-patient conflict, and the high pressure on nurses.It achieved the technical effect of reasonable distribution of nursing tasks, mobilizing the enthusiasm of nursing staff, and eliminating the risk factors of doctor-patient conflict.

Keywords

Artificial intelligence, medical information, management system.

1. Preface

Medical care is an important part of medical and health work. Good and effective medical care ensures the safety of the medical environment in which patients live, so as to avoid the deterioration of patients' diseases and help patients recover.

With the continuous improvement of China's medical system construction, the education level and nursing concept of medical and nursing practitioners continue to improve. At the same time, the construction scale of hospitals for treatment and diagnosis continues to expand, and the number of patients who can accept diagnosis and treatment increases. As a result, the number of medical and nursing practitioners does not match the needs of patients and the rationality of medical and nursing staff task allocation is insufficient,As a result, the nurses' work pressure is high and the service experience of patients receiving nursing services is reduced.

In the existing technology, there is a lack of rationality in the assignment of nursing tasks to nursing staff, which leads to greater work pressure on nursing staff. At the same time, due to the unreasonable assignment of nursing tasks, there is a technical problem that patients' nursing is not performed in time and there is a risk of doctor-patient conflict.

2. Project content

The medical information management method and system based on artificial intelligence are used to solve the technical problem that the existing technology has insufficient rationality of nursing task allocation for nursing staff, which leads to greater work pressure for nursing staff.

ISSN: 2664-9640

At the same time, due to unreasonable nursing task allocation, there is a risk of medical conflict between patients and patients due to the untimely implementation of patient care.

Medical information management method and system based on artificial intelligence.

In the first aspect, it provides a medical information management method based on artificial intelligence. The methods include: collecting the basic information of target users and entering the basic information into the intelligent control system;Obtain the historical nursing information of the target user, evaluate the target user based on the historical nursing information, and generate user evaluation tags;Obtain the nursing demand information of the target user, and generate the initial nursing interaction information according to the nursing demand information. The initial nursing interaction information has the nursing grade and nursing time identification;The impact assessment of initial nursing interaction information is conducted based on basic information, and the nursing interaction information is generated and adjusted according to the impact assessment results;According to the user evaluation tag, the nursing interactive information identification was adjusted, and the nursing task was generated according to the identification correction result;Call the real-time task data of nursing staff, analyze the tasks according to the nursing tasks and real-time tasks, and determine the set of nursing staff;Send the nursing task to the signal receiving equipment gathered by the nursing staff, and conduct nursing management according to the response results of the signal receiving equipment.

In the second aspect, the medical information management system based on artificial intelligence is provided. The system includes: user information collection module, which is used to collect the basic information of target users and input the basic information into the intelligent control system;The user evaluation execution module is used to obtain the historical nursing information of the target user, evaluate the target user based on the historical nursing information, and generate user evaluation tags;The interactive information acquisition module is used to obtain the nursing demand information of the target user, and generate the initial nursing interactive information according to the nursing demand information. The initial nursing interactive information has the nursing grade and nursing time identification; Interactive information adjustment module is used to evaluate the impact of initial nursing interactive information based on basic information, and generate adjusted nursing interactive information according to the impact evaluation results;The nursing task generation module is used to adjust the nursing interactive information identification correction according to the user evaluation tag, and generate the nursing task according to the identification correction result;The nurse determination module is used to call the real-time task data of nurses, analyze the tasks according to the nursing tasks and real-time tasks, and determine the set of nurses;The nursing management execution module is used to send nursing tasks to the signal receiving equipment of the nursing staff collection, and carry out nursing management according to the response results of the signal receiving equipment.

3. Medical information management method based on artificial intelligence

The method is applied to the intelligent control system, and the intelligent control system is connected with the signal receiving equipment through communication. The method includes:

S100: Collect the basic information of the target user and input the basic information into the intelligent control system;

The target users are patients who have diseases and are currently in the stage of disease treatment or recovery.The basic information of target users includes the current physical status information, specific disease information and treatment plan information of target users. Based on the basic information, the current physical status of target users can be more accurately

ISSN: 2664-9640

understood, and when patients have nursing needs such as drinking water, assisted getting up, they can judge whether to perform nursing tasks and determine the time limit for performing nursing tasks.

The intelligent control system is a data intelligent analysis and processing system that can integrate various information analysis and output nursing task execution levels that meet the nursing needs of target users and match the physical conditions of target users, and select better nursing task executors to perform nursing.Input the basic information of the target user into the intelligent control system for subsequent implementation of nursing tasks in combination with other information.

S200: Obtain the historical nursing information of the target user, evaluate the target user based on the historical nursing information, and generate user evaluation tags;

The historical nursing information includes the response time of nurses, bed attendants and other nursing executive users to respond to and execute the nursing demand information after the patient sent the nursing demand information in history, and the attitude of patients and their families to the nursing executive users under different response times.

Exemplary, if the historical nursing information shows that the patients and their families understand the work of the nursing executive users, and their attitudes towards the nursing executive users are kind and respectful under any nursing demand response time, it indicates that the doctor-patient relationship is harmonious,It is less likely that medical trouble will endanger the life safety of medical staff or dispute with medical staff in the hospital will affect the normal work of medical staff.If historical information shows that, with the extension of the time span for nursing executive users to respond to nursing needs, the emotions of patients and their families fluctuate and there are complaints, feedback or other emotional behaviors when the nursing executive users arrive at the patient's hospital bed to perform nursing needs, indicating that there is a possibility of disputes between doctors and patients.If the historical information shows that the patient and his family members have always been alert, questioning and irritable towards the nursing executive users, it indicates that the doctor-patient relationship is tense. If the patient's nursing needs are not met in time, there is a high probability of doctor-patient conflicts breaking out, interfering with the normal operation of the medical system and even affecting other patients to receive assistance.

Obtain the historical nursing information of the target user. Based on the historical nursing information, evaluate the target user from the multi-dimensional perspective of the response time of nursing demand information and the attitude of patients and their families to the nursing executive user under different response times, and generate user evaluation tags. The user evaluation tags are divided into multiple grade tags according to the probability of the occurrence of doctor-patient conflicts,The higher the grade, the higher the possibility of doctor-patient conflict.

S300: Obtain the nursing demand information of target users, and generate initial nursing interaction information according to the nursing demand information. The initial nursing interaction information has nursing grade and nursing time identification;

The nursing demand information refers to the physiological demand that the target user needs nurses, bed attendants and other nursing personnel to assist the user to complete, including but not limited to sitting up, turning over, eating, drinking water, and going to the toilet.This embodiment defines different nursing levels according to the physiological endurance of healthy people when different nursing needs are not met, and each nursing need has a corresponding nursing level.

The target patient initiates the nursing demand information through the electronic screen or entity keys, and the intelligent control system obtains the nursing grade according to the type of nursing demand information initiated, and obtains the nursing time according to the

ISSN: 2664-9640

initiation time of the target patient initiating the nursing demand information, and generates the initial nursing interaction information,The initial nursing interaction information includes the nursing grade identification that reflects the nursing demand information level and the nursing time identification that reflects the initiation time of the nursing demand information.

S400: Evaluate the impact of initial nursing interaction information based on basic information, and generate and adjust nursing interaction information according to the impact evaluation results;

It should be understood that the human body has a high degree of tolerance for hunger, thirst and other physiological needs in health, but after the occurrence of disease, the human body is in a fragile state, and the psychological and physiological tolerance for hunger, thirst and other needs has declined to varying degrees. The specific degree of decline is related to the specific disease type and disease degree.

The impact assessment includes judging whether the nursing needs of the target users should be met and the physiological tolerance of the target users to the nursing needs in their current physical state.

Therefore, according to the basic information of the target user, the current body status information, specific disease information and treatment plan information of the target user are obtained, and based on the basic information, it is judged whether the nursing needs of the target user should be met. For example, patients with liver cirrhosis and other diseases are not recommended to take a lot of water, and patients with urine tests in a short period of time are not recommended to urinate currently,According to the patient's basic information, the nursing demand information that is not conducive to the patient's medical care is rejected with reasons for rejection.

After judging that the nursing demand information of the target user will not affect the patient's healing progress, determine the physiological tolerance of the current target user to the nursing demand based on the analysis of the target user's basic information, so as to adjust the nursing level of step S300, complete the impact evaluation, and obtain the adjusted nursing interaction information with a high degree of fit with the target user,Adjusting the nursing interaction information includes the initiation time of the target user's nursing demand information and the adjusted nursing demand level.

S500: Adjust nursing interactive information identification according to user evaluation labels, and generate nursing tasks according to identification correction results;

The method step S500 also includes:

S510: When the target user sends the nursing demand information, the image acquisition command is generated;

S520: Collect the monitoring image of the target user through the image acquisition command, and generate the image acquisition results;

S530: Evaluate the status of the target user based on the image acquisition results, and generate the first impact parameter based on the status evaluation results;

S540: Adjust the identification correction result through the first influencing parameter, and obtain the nursing task according to the adjustment result.

Based on the doctor-patient relationship, the adjustment of nursing interaction information was identified and corrected to reduce the probability of doctor-patient conflict.Adjust the identification of nursing interaction information according to the user evaluation tag, and conduct preliminary identification correction for the adjustment of nursing interaction information according to the specific level of doctor-patient conflict outbreak of the user evaluation tag of the target user.

ISSN: 2664-9640

At the same time, an image acquisition device is arranged near the target user's hospital bed, which can conduct relatively complete image acquisition for the target user. When the target user initiates the nursing demand information, the intelligent control system generates image acquisition commands, starts the image acquisition device, collects the monitoring image of the target user, and generates image acquisition results.

Get the body features and facial expression features when the target user initiates the nursing demand information based on the image acquisition results. According to the body features and facial expression features of the target user, evaluate the urgency of the target user to achieve the nursing demand, obtain the status evaluation results, and generate the first impact parameter according to the status evaluation results,The first influencing parameter is the reduction ratio of the response time for the nursing task executors to respond and implement the nursing demand information.

According to the specific level of physician-patient conflict outbreak in the user evaluation tag of the target user, the preliminary identification correction is made to adjust the nursing interaction information, and the waiting time for the target user to receive nursing services is generated according to the preliminary identification correction, that is, the response time interval for the nursing executive user to respond to the nursing demand information,The response time interval is adjusted twice through the first influence parameter to obtain the adjustment result, and the nursing task is generated according to the adjustment result. The nursing task includes the time specification for the nursing executive user to arrive near the target user to implement the nursing demand journey and the specific implementation of the nursing demand information.

This embodiment generates a nursing task to balance the physiological and psychological needs of patients and the doctor-patient relationship by integrating the physiological tolerance of the current physical condition of the target user to the nursing needs, the current urgency of the target user to the nursing needs, and the risk of conflicts between doctors and patients,So as to achieve the technical effect of improving the nursing experience of target users and reducing the risk of doctor-patient conflict.

S600: Call real-time task data of nursing staff, conduct task analysis according to nursing tasks and real-time tasks, and determine the set of nursing staff;

4. Conclusion

The method provided by the embodiment of this application is to collect the basic information of the target user, input the basic information into the intelligent control system, and provide reference information for the subsequent management of nursing task assignment.Obtain the historical nursing information of the target user, evaluate the target user based on the historical nursing information, and generate user evaluation tags;Obtain the nursing demand information of the target user, and generate the initial nursing interaction information according to the nursing demand information. The initial nursing interaction information has the nursing grade and nursing time identification;To provide reference for setting response time for subsequent generation of nursing tasks and reducing the risk of doctor-patient conflict in the nursing process, conduct impact assessment on initial nursing interaction information based on basic information, and generate and adjust nursing interaction information according to the impact assessment results;According to the user evaluation tag, adjust the identification of nursing interaction information, and generate nursing tasks according to the identification correction results. Nursing tasks are better nursing tasks that balance the physiological and psychological needs of patients and the doctor-patient relationship.Call the real-time task data of nursing staff, analyze the tasks according to the nursing tasks and real-time tasks, and determine the set of nursing staff;Send the nursing task to the signal receiving equipment gathered by the nursing

ISSN: 2664-9640

staff, and conduct nursing management according to the response results of the signal receiving equipment.It has achieved the technical effect of improving the rationality of nursing task distribution, reducing the work intensity and pressure of nursing staff, easing and avoiding the possibility of doctor-patient conflicts in patient care, so as to ensure the stability of hospital operation.

References

[1] ABC SVM community disease prediction method based on data fusion [J]Pang Weiqing;He Ning;Luo Yanhua;Yu Xi. Journal of Zhejiang University (Engineering Edition), 2021 (07).
[2] Application status and prospect of smart medicine in orthopaedics [J]Zhao Jianning. Journal of Medical Postgraduates, 2021 (05).
[3] Research on embedded intelligent computing system based on ARM+DLP+SRIO [J]Zhao Erhu;Wu Jiwen;Crystal searching;Guo Zhen;Xu Yongjun. Journal of Electronics, 2021 (03).
[4] Research and application of tactile sensing based on nano generator in flexible wearable electronic devices [J]Wang Chuang;Bao Rongrong;Pan Caofeng. Journal of Physics, 2021 (10).
[5] Design of attitude solution complementary filter of STM32 controller [J]He Wentao;Yang Rui;Qin Rui. Application of MCU and Embedded System, 2020 (10).
[6] A wearable ECG monitoring system that can eliminate motion artifact [J]Hu Zhenyuan;Liu Chengyu;Li Jianqing, Electronic Measurement Technology, 2020 (15).
[7] Key technology of wearable multi parameter monitor [J]Liu Yang;Liu Lixia;Wang Zhongda;Wu Jianhui. Chinese Journal of Medical Devices, 2020 (04).
[8] Research on power battery SOC estimation based on particle swarm optimization neural network [J]Wang Chen;Wang Qi;Zhang Meng. Application of Microcontroller and Embedded System, 2020 (06).
[9] Design of NB IoT temperature monitoring cloud platform service system [J]Deng Haoran;Liu Lei;Ma Yahui;But Chengfu;Xie Yidao;Zhang Xinlong. Microcontroller and Embedded System Application, 2020 (05).
[10] Wearable ECG: development history, core technology and future challenges [J]Liu Chengyu;Yang Meicheng;Di Jianan;Xing Yantao;Li Yuwen;Li Jianqing. Chinese Journal of Biomedical Engineering, 2019 (06).