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Research on Nursing of Patients with Mild Respiratory Infectious Diseases

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Abstract: Objective: To explore the current home care programs and effects of patients with mild respiratory tract infections caused by influenza virus, Mycoplasma pneumoniae and novel coronavirus, so as to provide a reference for subsequent related research. Methods: PubMed, Web of Science core collection, China National Knowledge Infrastructure (CNKI), Wanfang Data and China Biology Medicine Database were searched by computer for literature screening, data extraction and summary on the existing home care programs and effects of patients with mild respiratory infectious diseases. Results: in 14 articles. Chinese researchers on defining the concept of mild and standard is a bit different, can be integrated to respiratory tract infection as the main performance, such as dry throat, sore throat, cough, fever, etc. Nursing programs generally included preventive nursing combined with health guidance intervention, personalized symptom nursing, cluster nursing, etc. Conclusion: the infection of respiratory tract infection caused by mild standard has not been unified, a direct impact on the late judge condition and formulate the related nursing operation timing, means and methods. At present, the commonly used nursing methods can effectively shorten the course of disease and relieve symptoms, but there is no specific mechanism research in the existing literature, and further exploration is needed to clarify its effect in the future.

Keywords: Influenza; pneumonia mycoplasma; COVID-19; respiratory infections; mild; home care program

Introduce

Upper respiratory tract infection(URTI) the inflammatory reaction in the nose or throat has a high incidence in respiratory tract infectious diseases, and can occur throughout the year. The average number of attacks per year in adults is 2-4 times (Li et al., 2022; Zhou et al., 2021; Eccles & Wilkinson, 2015). Influenza, pneumonia mycoplasma, COVID-19. All of them can induce respiratory tract infection symptoms, and the symptoms of mild cases are mostly self-healing within 1 week. However, due to its high incidence and infectivity, it can also induce acute complications (Yu & Shi, 2023). Respiratory infections caused by these viruses usually present with symptoms such as a dry throat, sore throat, cough, and fever. For patients with mild disease, home care program can effectively relieve symptoms and reduce the course of disease (Li et al., 2022; Zhou et al., 2021; Eccles & Wilkinson, 2015). However, there is a lack of systematic sorting and evaluation of home care programs and their effects for such patients. Scoping review is a method to quickly identify the core concepts in a field and the sources of existing evidence (Arksey & O'Malley, 2005). The purpose of this study is to explore the home care program for patients with mild respiratory tract infection and its effects through literature retrieval and comprehensive research results, so as to provide reference for follow-up related research.

1. Subjects and Methods

1.1. Subjects

Existing care protocols for patients with mild respiratory infections caused by influenza virus, Mycoplasma pneumoniae, and COVID-19.

1.2. Methods

We searched English databases including PubMed, Web of Science Core Collection, CNKI, Wanfang, and China Biology Medicine Database by computer search. The search time limit was from the establishment of the database to December 1, 2023, and the types of literature were not limited. Using free word and subject combination of literature retrieval, and retrieval of respiratory tract infection

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diseases in patients with mild the home care scheme and the effect of the existing literature. The search terms were influenza, Mycoplasma pneumoniae, COVID-19, mild respiratory infection, home care program and effect.

1.3. Study selection and data extraction

Inclusion criteria: research type is not qualified, including qualitative research, quantitative research, combination research and review. The subjects were patients with mild respiratory infections caused by influenza virus, Mycoplasma pneumoniae and COVID-19. Exclusion criteria: obviously did not meet the clinically recognized criteria of mild disease; data of cases with other diseases as the main factor and respiratory infection as the precipitating factor; the literature language was not Chinese or English; repeated publication; full text unavailable.

Based on the title and abstract of the literature, we first conducted a preliminary screening to exclude literature that was not relevant to the topic of the study. We then read the full text for further screening based on inclusion criteria. The inclusion criteria included: (1) patients with mild respiratory tract infection; (2) the contents of the study included the home care program and its effects; (3) the study design was clinical study or systematic review. EndnoteX9 was used to import the literature and remove the duplicate literature. Two researchers independently screened the title and abstract of the literature according to the inclusion criteria and exclusion criteria, and then read the full text for further screening. If a consensus could not be reached, a third investigator was invited to make a decision. Finally, we extracted relevant data from the included literature, including information on study design, sample size, care protocol, and evaluation effects.

A total of 265 literatures were retrieved, 103 literatures were obtained after removing duplicates, 67 literatures were obtained after screening by reading the title and abstract, and 14 literatures were included after further reading the full text.

1.4. Summary data

We summarized the data included in the literature, and mainly analyzed from two aspects of nursing programs and effects. For nursing plan, we will summarize the different research in nursing means and methods, and compared and integrated. For effect, we will summarize different nursing methods on alleviating symptoms and course to reduce the influence of, and discussion.

2. Data Results

Through literature search and selection, we include 14 articles. These documents cover the influenza virus and Mycoplasma pneumoniae and COVID-19 respiratory tract infection caused by different age groups, with different basic diseases in patients with mild research results. It includes the application of nursing combined with health guidance, new prevention and nursing strategies, continuous improvement nursing measures to alleviate a specific symptom, family collaborative nursing intervention, and new nursing management measures inside and outside the hospital. The above literatures all stated that various types of nursing methods can effectively reduce the disease or shorten the course of disease to varying degrees (Chen, 2023; Tan, 2020; li, 2017; Dai, 2023; Zhan et al., 2020; Zhang, 2023; Yang, 2021; Han, 2019; Yu & Hu, 2021; Zhang, 2021; Zhong, 2023; Liu, 2022; Fan, 2020; Li et al., 2023). At the same time, also have some feedback on individual care measures, is in the control group, and not particularly evident improvement. Based on the data from the included literature, we summarized the care protocols and effects.

2.1. The definition of mild patients

The definition of different researchers in patients with mild is slightly different, but the main show is respiratory tract infection symptoms, such as dry throat, sore throat, cough and fever, etc. Some studies have defined mild patients as those with no significant complications, such as pneumonia or respiratory distress. However, the definition of patients with mild disease is not uniform due to differences in case selection and disease assessment methods across studies.

Table1 General information of the included studies（n=14）

The author (published year)	Nation	Object	Theme
Sumin Chen (Chen, 2023)（2023）	China	Children aged 3-6 years	Effect of preventive nursing combined with health guidance on the recurrence of respiratory tract

			infection in children
Wei Li (li, 2017)（2016）	China	80 patients with respiratory tract infection	This article mainly discusses the implementation of prevention and nursing strategies in respiratory infectious diseases
Jun Tan (Tan, 2020)（2020）	China	30 infants with respiratory tract infection and nasal obstruction	Nursing measures should be improved to alleviate nasal obstruction symptoms in infants with respiratory tract infection as a continuous improvement project
Liping Dai (Dai, 2023) (2023）	China	20 diabetic patients infected with COVID-19	Cluster nursing new crown to infection pneumonia of the impact of diabetic patients
Youqing Kan (Zhan et al., 2020)（2020）	China	19 COVID-19 patients with diabetes mellitus were enrolled	Establishing a diabetes nursing team in the department and implementing professional nursing for patients with COVID-19 complicated with diabetes can promote the rehabilitation of patients with COVID-19 complicated with diabetes
Hongyan Zhang (Zhang, 2023)（2023）	China	58 children with Mycoplasma pneumoniae infection	Discussion for children with Mycoplasma pneumoniae infection families together after the nursing intervention of clinical effect
Qian Yang (Yang, 2021) (2023)	China	Pediatric Mycoplasma pneumoniae infection in children with 60 cases	To observe the application effect of personalized nursing in children with Mycoplasma pneumoniae infection
Dongmei Han (Han, 2019)（2019）	China	100 cases of acute respiratory infection in infants and young children	To explore the clinical effect of digestive tract nursing on infants with acute respiratory tract infection
Hong Zhou (Yu & Hu, 2021) (2020 年)	China	182 patients with COVID-19	To elaborate the necessity of home care for patients with heart failure during the prevention and control of COVID-19 pneumonia, formulate home care plans and evaluate the implementation effects, and assist patients to carry out remote home care
Rui Yu (Zhang, 2021)（2021）	China	38 patients with COVID-19 fever	The nursing related problems and countermeasures of 38 patients with COVID-19 pneumonia and fever were summarized
Xialing Zhong (Zhong, 2023)（2023）	China	25 children with Mycoplasma pneumonia	Summed up the 25 cases of children with Mycoplasma pneumonia treatment and nursing key points
Na Liu (Liu, 2022) (2022）	China	60 children with Mycoplasma pneumoniae infection	To observe the application effect of comfortable nursing in children with Mycoplasma pneumoniae pneumonia
Haohao Fan (Fan, 2020) (2020）	China	100 cases of acute upper respiratory tract infection of children	To explore the effect of nursing intervention on the treatment of acute upper respiratory tract infection in children
Lumei Zeng (Li et al., 2023) (2023)	China	58 cases of acute upper respiratory tract infection of children	To explore the intervention effect of comprehensive nursing model based on cooling emergency nursing on children with febrile convulsions caused by upper respiratory tract infection

2.2. Plan of nursing

In included in the literature, home care program generally includes a combination of preventive nursing intervention guidance, personalized symptoms such as nursing and cluster, the specific summarized as follows.

2.2.1. Preventive nursing combined with health guidance intervention

Including epidemiological knowledge propaganda, strengthen personal hygiene, remind patients timely treatment measures (Chen, 2023), for patients with routine nursing intervention, the content is as follows: observe and record children's body

temperature, regular breathing and general symptoms, such as cough, runny nose, etc. The children's diet was regularly observed and recorded, including the amount of diet and appetite. The children's activities were regularly observed and recorded, including whether there was physical weakness, fatigue and other phenomena. Provide a good indoor ventilation and sanitary environment, regularly clean and disinfect kindergarten classrooms, restaurants, toilets and other places. Encourage children to maintain good personal hygiene, such as frequent hand washing, avoid contact with already sick partner, etc.

2.2.2. Personalized symptom nursing

According to the specific symptoms in patients with individualized care plan (Yu & Shi, 2023; Yang, 2021), such as sore throat can use Meimin tablets containing phenolamine to relieve symptoms. Personalized monitoring: medical staff observed the vital signs and changes in the patient's condition, and took targeted cooling measures if fever occurred. If the patient's armpit or forehead temperature is too high and the limbs are cold, further examination should be performed to determine the condition. Heart rate, pulse, blood pressure and respiration were monitored regularly, and abnormal signs were reported to the attending doctor in time for symptomatic treatment.

Personalized symptom nursing: Cause upper respiratory tract infection of pathogenic bacteria is more, different gender, age, the clinical symptoms in patients with is different, need according to the specific situation setting individualized interventions. If the patient discomfort caused by pharyngeal discomfort after infection or cough, can implement atomization inhalation therapy, giving lozenges, including clothing. If fever occurs, physical cooling methods should be implemented according to the actual situation of the patient, such as wiping the body with warm water or applying ice to the forehead to reduce the body temperature to the normal level. If the physical cooling method is not effective, the drug cooling method should be implemented to avoid other diseases caused by not cooling in time. Nursing operations should be avoided when patients are at rest, and light movements should be used to ensure patients have adequate rest. The patient sweated too much after fever, told the patient to deal with the sweat in time, and told the patient to avoid adding or reducing clothes at will. Patients were told to adhere to the combination of work and rest, avoid cold or cold, quit smoking and drinking.

Individualized psychological nursing: After the occurrence of upper respiratory tract infection, patients inevitably have symptoms such as dry and itchy throat, sore throat, cough, fever and even systemic pain, which are easy to cause anxiety, negative burnout and other emotions. Without timely and effective intervention, it will affect the cooperation of subsequent treatment. Nurses should carefully observe the clinical symptoms of patients and report them to doctors in time for targeted treatment. During daily leisure time or nursing operation for patients, we can chat with patients more, encourage or guide patients to tell their physical or psychological discomfort, do a good job of psychological comfort, help analyze the source of negative emotions, meet their diverse and reasonable needs, ensure a good doctor-patient relationship, and dynamically grasp the psychological changes of patients.

Personalized dietary guidance: Most patients with upper respiratory tract infection are in a state of loss of appetite. Nurses can understand the daily preferences of patients, guide family members to provide patients with food consistent with their tastes, ensure the daily dietary intake, balanced nutrition, light diet and easy digestion, eat less and more meals, and create good conditions to promote recovery. If the patient's condition is special, such as severe sore throat, semi-liquid or liquid diet can be provided, and if malnutrition due to loss of appetite, intravenous nutrition can be supplemented.

2.2.3. Clustered care

Refers to the variety of nursing methods focus is applied to the patients, general need to establish a professional cluster of nursing team. Dominated by the head nurse, through the selection, select hospital working time more than 4 years and have good theoretical knowledge and practical skills of nursing staff as the team leader, by the team leader and the head nurse to participate in the study of related nursing staff in theory and practical skills training, and ensure quality of hospital care. Guide the nursing team to sort out the previous similar cases and related data, implement the experience summary work, combine the patient's various examination results and previous experience, so that the patient can accept

more high-quality nursing measures. Ensuring the negative fluid balance of patients and protecting the lung function of patients can improve the oxygenation function of patients.

In the process of actual medication nursing, the hourly intake and output volume of patients should be monitored to avoid excessive infusion in a short time and increase the burden on the heart and lung of patients. The infusion time and sequence of patients should be reasonably planned, and the intake and output volume of 24 hours should be counted. Do a good job in monitoring and nursing care of patients. In most cases, patients infected with COVID-19 will have obvious fluctuations in their condition. In the intervention process, due to the interference of many factors, the fluctuation of patients' vital signs will become larger. Repeated blood glucose monitoring of patients can help relevant medical staff to understand the patient's metabolism and physical status in time, and then make effective adjustments to the intervention plan.

At the same time, we should timely understand the liver, kidney, electrolyte and other conditions of patients to avoid stress response in the process of intervention, reduce the release of blood glucose hormones such as catecholamines in the body of patients to the greatest extent, control stress hyperglycemia, and avoid large fluctuations in blood glucose indicators, so as to ensure the final intervention outcome of patients.

For patients with fever, the frequency of body temperature monitoring should be increased, the change of heat pattern should be observed, the corresponding cooling measures should be given, and the patients should be instructed to replenish enough water regularly and keep warm. For patients with cough and expectoration difficulty, expectorant and anti-cough drugs should be given according to their actual situation to avoid frequent cough and aggravate the symptoms of dyspnea, and ultrasonic atomization intervention should be given when necessary.

2.3. Nursing efficacy

It was generally shown in the included literature that home care programs could effectively shorten the course of disease and relieve symptoms. However, the specific effects are unknown due to differences in study design and assessment methods. Some studies have reported that occupy the home care scheme can significantly reduce the duration and severity of symptoms, shorten the course of the disease. Other studies have shown that home-based care programs have limited symptom relief but can reduce complications.

3. Discussion

Through a comprehensive analysis of the included literature, this study discussed the home care program and its effects on patients with mild respiratory infections caused by influenza virus, Mycoplasma pneumoniae and COVID-19. The results showed that the definition of mild patients was slightly different in different countries and researchers, but the main manifestation was respiratory infection symptoms. The home care program included preventive care combined with health guidance intervention, personalized symptom care and cluster care. These generally effective nursing measures, but specific effect still needs further research to confirm. However, there are some limitations to this study. Firstly, there may be publication bias due to the limited number of included articles. Second, due to differences in study designs and evaluation methods, direct comparisons and comprehensive analyses cannot be conducted.

4. Conclusion

According to the current research results, the definition of patients with mild respiratory tract infection caused by different viruses is not uniform, which directly affects the timing, means and methods of judging the condition and formulating relevant nursing operations in the later stage. At present, the commonly used home care program can effectively shorten the course of disease and relieve symptoms, but the specific relationship is not clear, and further research is needed to confirm. Future research can further explore the home care scheme and its effects of patients with mild respiratory tract infection caused by different viruses, and determine the best nursing operation and method.

Conflict of Interest

The authors declare that they have no conflicts of interest to this work.

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