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Meta Analysis of the Effect of Nursing Intervention on Chronic Wound

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Abstract: The process of chronic wound healing is often affected by some factors, resulting in the delay of wound healing and repeated attacks. The purpose of this paper is to use meta analysis of the effect of nursing intervention on chronic wound treatment. Firstly, the theory of dry healing and wet healing are summarized, and the big data framework based on multiple meta-analysis is introduced. Revman 5.3 was used to bring into the literature. The experimental results showed that the intervention mode of the experimental group was remote nursing guidance, and the intervention mode of the control group was community traditional nursing. The combination homogeneity test p = 0.31, I2 = 17%, and the combination effect [RR = 1.43, 95% CI (1.12, 1.83), P = 0.004]. The results showed that the traditional community nursing intervention mode was superior to remote nursing, which could promote the healing of chronic wounds. The results of subgroup analysis showed that no matter how long the intervention time was (more than or less than 6 months), traditional community therapy was better than remote therapy. Descriptive statistical analysis showed that there was no significant difference in the curative rate and quality of life between nurses' outpatient service and on-site guidance (P > 0.05), and peer education significantly improved the quality of life scores of patients with chronic wounds compared with on-site guidance (P = 0.014).

1. Introduction

The condition of patients with chronic wounds is usually very complex, and the wounds can not be healed in normal time (time > 2 weeks). The common chronic wounds in clinic are pressure ulcer, diabetic foot ulcer or severe burn wound, which will cause great trouble to patients, and also affect their daily life and quality, and will cause greater mental pressure or negative emotions to patients after a long time. The wound nursing knowledge of patients with chronic wounds is closely related to wound healing and repair. The patients with high level of health knowledge and self-care skills, self-care responsibility, self-concept and self-care ability, and wound nursing knowledge have good wound recovery status, which has a significant role in promoting rehabilitation.

Continuous nursing is a new nursing mode that extends the inpatient nursing service to the family or community. It has been applied to many kinds of diseases in the United States and China. It has been found that it can improve the health prognosis, improve the self-management ability of patients to diseases, improve patient satisfaction and trust of medical staff. For this reason, researchers at home and abroad have developed a series of continuous treatment methods for chronic wounds, among which the more widely used intervention methods are continuous nursing center, nurse clinic, patient association, telephone follow-up and health education based on network platform. However, at present, the focus of each intervention measures and clinical effect are quite different. Therefore, this study is based on evidence-based to find the best evidence, to explore the therapeutic effect of different continuous nursing methods on chronic wounds, and to provide evidence support for the selection of clinical continuous nursing methods for chronic wounds.

Yati Afiyanti randomly divided 160 outpatients with chronic trauma into the control group and the intervention group, 80 cases in each group. The control group was treated with conventional dressing. The effect of comprehensive nursing intervention on anxiety and pain of patients with chronic trauma was observed. On the basis of conventional dressing therapy and nursing, the patients in the intervention group were treated with comprehensive nursing intervention. The anxiety and pain degree and self-assessment scale of anxiety were compared between the two groups The score was significantly lower than that of the control group (P0.05). The patients with moderate and severe anxiety were significantly lower than that of the control group. The pain improvement of the intervention group was better than that of the control group (P0.05). The chronic wound could significantly improve the anxiety of the patients and reduce the pain [1]. For most types of chronic wounds, the degree of chronic wound pain is more or less, but so far the research on this topic is very limited. Angeles Morales-Fernandez proposed an empirical model, including the theoretical definition of chronic wound pain experience (cwpe) and its subcomponents (non periodic acute wound pain, periodic acute wound pain and chronic wound pain). The model links cwpe with nursing process and nursing diagnosis, and proposes intervention scheme to optimize the treatment effect of patients, which points out the direction for future research [2].

This paper analyzes the effect of traditional community nursing compared with remote guidance and the effect of peer education compared with door-to-door guidance on the healing rate of chronic wounds. The results show that traditional community guidance can improve the healing rate of chronic wounds more effectively than remote expert group guidance, and door-to-door guidance can improve the healing rate of wounds more than companion education, However, the continuous nursing intervention of peer education is more effective in psychological intervention. The effect of outpatient and on-site guidance of nurses on the healing rate and quality of life of chronic wounds is basically the same. This study can provide reference for future nursing work, but it still needs long-term clinical research to confirm the effect of continuous nursing intervention on the cure rate, quality of life and pain control of various types of chronic wounds.

2. Proposed Method

2.1. Chronic Wound

Chronic wound refers to the wound whose healing process is blocked due to wound infection, foreign body residue and other factors, and the healing time is more than two weeks, including pressure ulcer, diabetic foot ulcer, venous ulcer, granulation wound injury caused by trauma, III ° burn or scald wound, etc[3].

For a long time, the wound has been regarded as a small problem but not taken seriously by the

patients. The patient's action does not cooperate, coupled with the lack of knowledge of the patients, which delays the healing time of the wound. It has become a complex medical and nursing practice for the medical staff, bringing heavy economic and psychological burden to the patients, and it is a challenge for the medical staff and patients [4-5]. With the development of society, the incidence of chronic non communicable diseases is increasing rapidly due to various factors such as aging and industrialization. The incidence rate of chronic wounds is 1%~2%. Although the incidence rate is not high, the problem of chronic wound is becoming a serious health problem and burden in the world because of its high risk. The non healing of patients' wounds is a problem worthy of attention for the health care system all over the world. The problem of chronic wound is serious and needs to be solved urgently [6].

The tissue damage or defect of normal skin caused by the function of wound factors is called wound. The appearance of wound not only damages the integrity of skin and some normal tissues, but also damages the normal function of skin. According to the length of wound healing time, some factors that are not conducive to wound healing, such as infection, foreign bodies, ischemia, etc., can partially or completely stop wound healing. Wounds with healing time more than two weeks are defined as chronic wounds, including venous ulcer, pressure ulcer, diabetic ulcer, third degree burn or scald wound, granulation wound injury caused by trauma, etc[7].

Chronic wound is defined as a wound whose healing process is blocked due to wound infection, foreign body residue and other factors, and the healing time is more than 2 weeks, which is generally recognized in China [8]. Foreign scholars also think that chronic wound refers to the wound whose skin integrity is damaged, which lasts for more than 6 weeks without healing or repeated attack. From the perspective of patients' health and economic development, chronic wounds have brought great impact. Another important risk factor leading to disability and death of patients is the non healing of chronic wounds, which also leads to the decline of patients' quality of life [9-10]. With the increasing incidence rate and mortality rate, prolonged hospitalization and increased treatment cost, it has become a serious burden on patients themselves, families and even health and health care system. In the United States, more than 600000 patients suffer from venous ulcer every year; in the United Kingdom, the cost of wound care is also very high every year, reaching 9.89 million pounds in recent years.

2.2. Effect of Chronic Wound Healing

Local tissues need to be filled, connected and replaced by regeneration and proliferation. Such a series of pathological repair process is called wound healing. Normal wound healing needs good blood supply, oxygen tension, nutrition, immunity and so on. The process usually takes 3-14 days to complete, including bleeding stage, inflammation stage, hyperplasia stage and repair stage. However, due to the influence of different tissue cells' ability of regenerating tissue and various internal and external factors, the growth of wound is stagnant, which can not be cured at one time. Usually, secondary infection occurs. Its repair is often manifested as a stagnant or deteriorating pathological healing process, which is called chronic wound healing, also known as pathological healing.

There are many factors affecting the healing of chronic wounds, which can be roughly divided into four aspects: physical factors, psychological factors, social factors and individual factors.

With the increasing impact of chronic wounds on patients and families, and the increasing pressure and challenges for medical staff, more and more people began to pay attention to the study of chronic wounds from different perspectives. Among the factors affecting the healing of chronic

wounds, the research on the mechanism of physical factors has been very thorough, some of which can be controlled by regulating daily life behavior, while the research on psychological and social factors needs to be further strengthened; not only medical workers need to invest more time and energy in patients with chronic wounds, Patients with chronic wounds should also learn and master the knowledge and skills of chronic wound care, so as to better cooperate with medical workers and achieve the best healing of chronic wounds.

(1) Theory of dry healing

After decades of research and development, the concept of chronic wound care has changed dramatically, from the traditional concept of dry healing to the concept of wet healing. The theory of dry healing is to keep the part clean and dry as much as possible during wound care. The methods often used in nursing include local oxygen blowing, baking lamp and dry gauze filling. Under the guidance of the dry healing theory, because the gauze dressing is too dry, the wound exudate is absorbed by it, which makes the new granulation tissue adhere to it. In the process of dressing change, the gauze dressing takes away the new granulation tissue, causing pain and bleeding. The dehydration and scab of dry wound healing are not conducive to the crawling of epithelium, and the loss of bioactive substances slows down the wound healing. The concept of dry scab healing has a long history, the non professionals know little about the new knowledge in the field of specialty, and there are few channels to obtain the latest knowledge in the field of specialty, so it is difficult to change the popular concept to the theory of wet wound healing. Some studies have pointed out that promoting wound healing in a dry way is a big mistake in wound treatment, but people still stay in the traditional concept of "scab is wound healing", which can not exclude the infection caused by bacteria colonization under the black scab, resulting in the phenomenon of wound non healing. Influenced by the traditional concept of dry healing, the concept of the public still stays in the traditional concept of "the wound should be kept dry", "the skin around the wound should not be cleaned to prevent the wound from touching the water". The skin around the wound is not clean enough, causing bacteria to enter the wound after implantation around the wound, causing or further aggravating wound infection, such a vicious cycle, extending the healing time of the wound.

(2) Theory of wet healing

Wet healing theory refers to the use of a variety of new dressings to soften, dissolve and remove necrotic tissue, creating an environment conducive to wound healing. The core of the concept of wet healing is to maintain the appropriate temperature and humidity, the appropriate pH value of the wound, and the reasonable use of the wound exudate to deal with the wound. Keeping a certain degree of wetness in the wound can prevent the epidermal cells from crawling around the scab, maintain the normal potential gradient from the wound edge to the center of the wound, stimulate the growth of endothelial cells, capillaries and fibroblasts, facilitate the division and proliferation of keratinocytes, promote the combination of growth factor receptor and growth factor, and accelerate the wound healing.

Driven by the traditional concept, patients still think that ventilation is conducive to wound healing. After using new dressing to care for chronic wounds, they often uncover the dressing to "ventilate the wound". After uncovering the dressing, due to the failure to maintain the appropriate temperature of the wound and to ensure the sealing of the wound environment, this wrong concept of wound care leads to the poor application of the wet healing theory, and the new dressing is difficult to achieve the desired effect.

(3) Development of wound cleaning fluid

With the development of wound care research, the application concept of wound cleaning

solution has changed greatly. Traditional disinfectants such as chlorhexidine, 75% ethanol, tincture of iodine, hydrogen peroxide, etc. are no longer used for wound cleaning, but some medical personnel are still using them. Because chlorhexidine is easy to produce drug-resistant strains after long-term use, it is rare in clinic. At present, the most commonly used wound cleaning solutions are iodophor, alcohol, hydrogen peroxide and saline. When the concentration of iodophor is 5%, the blood flow can be blocked, and it is easy to be inactivated by body fluids. When it is used in a large area of deep wound or for a long time, it has the risk of systemic absorption. Iodophor can stimulate wound, easily damage new granulation tissue, and often produce drug-resistant strains and cytotoxic effects. When cleaning wounds, alcohol can easily lead to cell dehydration and capillary damage, affecting wound healing; hydrogen peroxide has a case report of pulmonary embolism when washing deep tissues, so these disinfectants are not recommended for cleaning wounds. At present, saline is considered to be the most suitable solution for cleaning wounds.

Physiological saline is considered to be the solution closest to the physiological index of human body fluids. Its component is 0.9% sodium chloride, which is isotonic solution and has no stimulation to human body. Both chloride and sodium ions are important trace elements of human body. Therefore, it is harmless for human body to absorb a small amount of physiological saline, and it can be discharged with urine and sweat without accumulated poisoning. There is no stimulation in normal saline. When it is used for wound cleaning, the patient's pain is low. It has been reported that when using normal saline and 0.5% iodophor solution to wash the episiotomy wound, the pain, swelling, induration, exudation and other reactions of the puerperal wound will be reduced, and the infection rate will be reduced. Using normal saline to wash the wound is also effective in reducing bacterial contamination and wound infection.

2.3. Meta Analysis and Introduction

In many scientific research fields, for the same problem, there are often different scholars using the same or different scientific methods for research and experiment, but the final conclusions are not the same. Meta analysis is a statistical method to analyze and summarize multiple research data collected to provide quantitative average effect to answer research questions. Its advantage is to increase the sample size to increase the reliability of the conclusion, and to solve the inconsistency of the research results. It is a quantitative review of literature. It takes the results of multiple independent studies of the same subject as the research object. On the basis of strict design, it uses appropriate statistical methods to make a systematic, objective and quantitative comprehensive analysis of multiple research results.

In order to carry out meta analysis, the first step is to determine the effect value of the research results, that is, the statistics that can be used to measure the quality of the research results. Generally, the correlation coefficient, relative ratio and standardized relative difference can be used as the effect value. Consistent effect value is the basis of meta analysis. Only when the effect value is unified, comprehensive analysis of the results is possible and reliable. In practical research, evaluation of the results of an experiment or study often requires more than one effect value. For example, in the field of education, to evaluate a student's performance, we should not only look at the scores of one subject, but also need the synthesis of multiple subjects; in the field of medical treatment, to test hypertension drugs, we should measure not only the blood pressure when the heart contracts, but also the blood pressure when the heart relaxes; in the field of finance, The indicators that reflect the liquidity risk of an enterprise include current ratio, quick ratio, short-term cash repayment multiple, etc. When synthesizing the above research results, many researchers will

choose to make a meta-analysis of each effect value separately, and then summarize the results as a total estimate. However, for the same population, different effect values are often correlated. If each effect value is regarded as an independent individual, and each effect value is analyzed by meta-analysis, the correlation between the effect values will be ignored, which may lead to overestimation of effect value variance, biased effect value estimation and other problems. Multivariate meta-analysis solves the problem of neglecting the correlation of evaluation indexes by analyzing multiple effect values at the same time, which makes the estimation result more accurate. In addition, compared with the isolated element meta-analysis, the multi-element meta-analysis considering the correlation between the effect values will get more information. Therefore, when there is a lack of effect values in some studies, or there is inevitable potential reporting deviation in each study, this correlation will provide more accurate inference, or reduce the deviation.

2.4. Big Data Framework Based on Multi Meta Analysis

First of all, large data sets need to be divided into a proper number of independent data sets, corresponding to different researches that need to be comprehensively summarized during meta-analysis; then each data set is analyzed separately, and the model parameters obtained from each data set analysis are regarded as the effective values of the study; finally, the effect values are combined by meta-analysis to get the summary results. Since there are more than one model parameter, we choose multiple meta-analysis to combine the effect values.

There are two main reasons for the segmentation of big data sets: one is that sometimes a computer with too much data does not have enough memory to store all the data, or even if it does not have more memory for analysis and calculation. At this time, we need to segment the data in order to analyze the data under the condition of existing computer equipment; The second is that the data is stored in different stacks, but we can't get all the data, so we can only process them separately. At this time, we don't need to divide the data artificially. We can treat the data stored together as an independent data set and directly analyze the second step.

We choose two methods to segment the dataset, one is random segmentation, the other is segmentation according to a certain feature. When data sets can be clearly classified according to time, place, country and other characteristics, we can choose to divide them according to a certain characteristic. This method is mostly applicable to the data stored in separate stacks, because the data stored in separate stacks is usually stored according to a certain characteristic. If there is no obvious feature category in the dataset, or the feature is not related to other features of the dataset, and has no impact on the analysis results, then we can choose random segmentation. The two segmentation methods will lead to different results in the final meta-analysis.

3. Experiments

3.1. Inclusion and Exclusion Criteria

(1) Inclusion criteria

1) Type of study: RCT and clinical control trials were selected to compare the effects of different continuous nursing programs on chronic wounds. 2) Subjects: Patients with age > 18 years old, wound greater than 6 weeks without healing or lower extremity venous ulcer, pressure sore, fat liquefaction, postoperative infection, diabetic foot, necrosis gangrene, ulcer. 3) Intervention measures: the experimental group adopted the continuous nursing intervention method, remote guidance, patient association or nurse clinic. The control group adopted another nursing method

different from the experimental group, community traditional nursing or door-to-door guidance. Specific implementation plan content: remote guidance is to evaluate the wound data by the wound specialist nurses, transmit the evaluation data to the remote experts by means of communication tools for professional help, and help the patients to complete the wound care in the environment without pollution; patient fellowship refers to that in the non-medical environment, the patients visit the community place at any time, share and treat together with the patient's friends, The traditional nursing in community is that patients are evaluated and treated by wound therapists (doctors or nurses) in communities, clinics, hospitals and other places according to plans. When the evaluation results show that the wound needs further treatment, the help of professional wound nursing team can be sought; Door-to-door guidance is to regularly arrange professional nursing personnel to visit for evaluation and care, including psychological care, wound care, medication care, etc. 4) Main outcome indicators: cure rate; secondary outcome indicators: quality of life, cure time, pain, at least one of them.

(2) Exclusion criteria

1) The intervention measures were not implemented by nurses; 2) The literature belonged to letters, case reports, meeting abstracts, etc; 3) The specific intervention measures for continuous nursing were not explained, the statistical data in the original research could not be transformed and used, the experimental design was not rigorous, and the sample data was not explained clearly, etc; 4) The wound was a patient with diabetes grade 0 and pressure sore stage I.

3.2. Statistical Methods

Using the software revman5.3, if the outcome measurement index of the included literature is a binary variable, the relative risk rate is used as the statistics of efficacy analysis; if the outcome measurement index of the included literature is a continuous variable and the same measurement tool is used, the weighted mean difference analysis is used; if the measurement tools used in the trial are different, the standardized mean difference analysis is used. 95% confidence interval (95% CI) was calculated for all data, and the heterogeneity was determined by chi square (χ^2) test. When $p > 0.1$, $I^2 < 50\%$, it is considered that there is no statistical significance in the heterogeneity between the studies, and fixed effect model is selected for meta-analysis; if $P \leq 0.1$, $I^2 \geq 50\%$, it is considered that there is statistical significance in the heterogeneity between the studies, and random effect model is selected for meta-analysis; the low, medium and high degree of heterogeneity are expressed by I^2 statistics 25%, 50% and 75%, respectively, if $I^2 > 75\%$, and the source of heterogeneity cannot be determined, The meta-analysis was abandoned and descriptive study was used.

3.3. Results and Quality Evaluation of Literature Retrieval and Screening

A total of 7377 articles were collected in the initial examination, and 5190 articles were obtained after weight removal, including 589 articles in Chinese and 4601 articles in English. Finally, 9 studies were included, with a total of 805 patients. The general information of the included documents is shown in Table 1.

Table 1. General information included in the literature (n = 9)

Included in literature	Sample size (n)		Place of intervention	Outcome indicators
	Experience group	Control group		
Zarchi	50	40	Community	cure rate
Stern	159	91	Community	cure rate
Vowden	22	11	Community	cure rate
Terry	62	51	Community	Cure rate, cure time
Chu Ting	25	12	Community	Cure rate, pain
Edwards	28	28	Sick friends Club	cure rate
Edwards	16	17	Sick friends Club	cure rate
Edwards	34	33	Sick friends Club	Cure rate, quality of life
Harrison	61	65	Nurse clinic	Cure rate, cure time, quality of life, pain

4. Discussion

4.1. Results of Traditional Community Nursing Compared with Remote Guidance

(1) The effect of traditional community nursing on the healing rate of chronic wounds

Among them, the intervention mode of the experimental group was remote nursing guidance, while the intervention mode of the control group was community traditional nursing. The combined homogeneity test p = 0.31, I^2 = 17%, and the combined effect [RR = 1.43, 95% CI (1.12, 1.83), P = 0.004], as shown in Figure 1. The results showed that traditional community nursing intervention was better than remote nursing, which could promote the healing of chronic wounds.
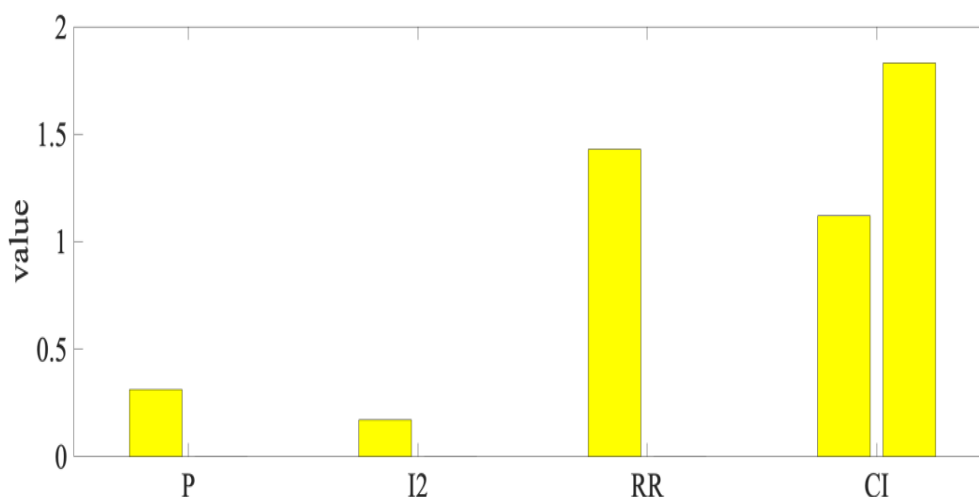

Figure 1. Comparison between remote nursing guidance and community traditional nursing

(2) The effect of remote guidance with different intervention frequency on community traditional nursing

Among them, the intervention frequency of three literatures is once a week, the intervention

mode is community traditional nursing, the control mode is remote guidance, the combination homogeneity test P = 0.1, I^2 = 56%, the combination effect [RR = 1.49, 95% CI (0.57, 3.90), P = 0.42], as shown in Figure 2. The results showed that there was no significant difference between remote guidance and traditional community nursing. The frequency of intervention in two articles was once every two weeks. The intervention mode was community traditional nursing. The control mode was remote guidance. The combination of homogeneity test p = 0.59, I^2 = 0%, and the combination effect [RR = 1.42, 95% CI (1.09, 1.86), P = 0.01]. The results showed that the traditional community intervention could promote the healing of chronic wounds compared with remote guidance.
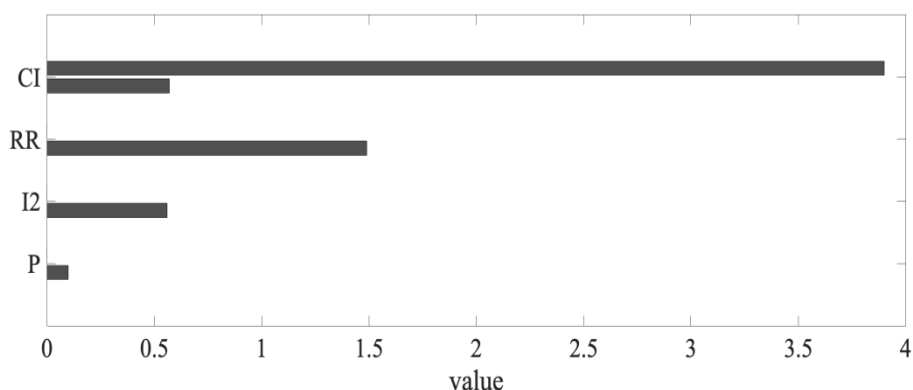

Figure 2. Effect of different intervention frequency

(3) The effect of remote guidance in different intervention time on community traditional nursing

Among them, the intervention time of 3 articles was longer than 6 months, the intervention measure was remote guidance, the control measure was community traditional intervention, the combined homogeneity test p = 0.32, I^2 = 12%, the combined effect [RR = 1.33, 95% CI (1.03, 1.72), P = 0.03], the results showed that the remote guidance of community traditional intervention for more than 6 months could promote the healing of chronic wounds. Among them, the intervention time of 2 literatures is less than (including) 6 months, the intervention measures are remote guidance, the control measures are community traditional intervention, the combination homogeneity test P = 0.23, I^2 = 31%, the combination effect [RR = 2.46, 95% CI (1.07, 5.61), P = 0.03], as shown in Figure 3. The results showed that the traditional community intervention less than (including) 6 months could promote the healing of chronic wounds.
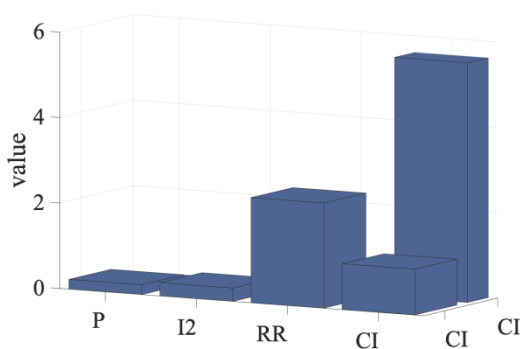

Figure 3. Effect of different intervention time

Meta analysis combined with the results showed that the traditional community group was better than the remote treatment group in improving the healing rate of patients with chronic wounds. The results of subgroup analysis showed that the traditional community treatment was better than the remote treatment regardless of the length of intervention time (greater than or less than 6 months). However, when the frequency of intervention was analyzed by subgroup analysis, the results showed that there was no significant difference in the cure rate between the experimental group and the control group when the intervention was conducted once a week, which may be related to the smaller sample size (183 cases) and the greater heterogeneity of the combined effect (56%), leading to the poor reliability and authenticity of the combined results, which needs more high-quality, large sample RCT to confirm. In the process of treatment, all the evaluation and treatment of the remote guidance nursing group are directly conducted by the wound specialist nurses. The decision-making ability of the nurses may be limited by the expert group, and at the same time affect the cure rate of the patients. The clinical randomized controlled trial concluded that there was no significant difference between remote guidance and traditional community continuous nursing intervention in the cure rate of patients with chronic wounds, which proved that although the hospital could organize an expert wound team to guide nurses to treat patients remotely, the members of the expert team could only face the image and text data of patients, so the role of experts was not significant. In the future, China should learn from the relevant experience of developed countries and reserve more specialized and high-quality talents to facilitate the development of community nursing and specialized nursing.

4.2. Peer Education Comparison on-site Guidance

(1) The effect of peer education on the healing rate of chronic wounds

Among them, the intervention mode of the experimental group was peer education, while that of the control group was door-to-door guidance, with homogeneity test $P = 0.91$, $I^2 = 0\%$, and combined effect [RR = 1.62, 95% CI (1.04, 2.52), $P = 0.03$]. The results showed that the intervention mode of door-to-door guidance was better than that of peer education, which could promote the cure of lower extremity ulcer.
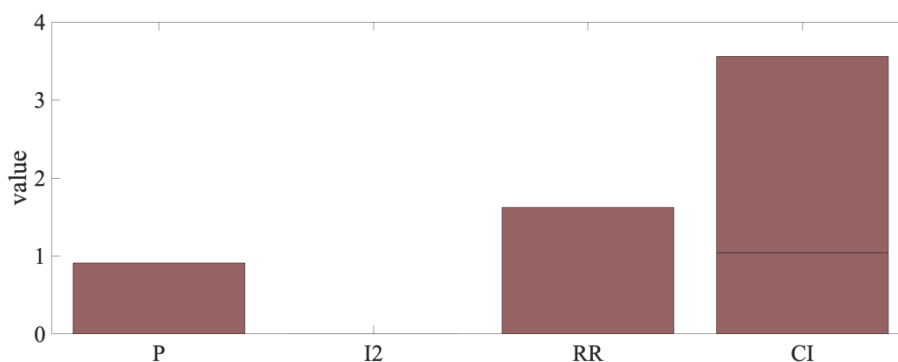

Figure 4. Comparison of peer education and door-to-door guidance

The results of meta analysis show that home-based instruction is better than peer education in promoting chronic wound healing; descriptive statistics show that peer education can alleviate pain symptoms and improve the quality of life of patients better than home-based instruction. The results showed that the quality of life score, anxiety and depression score and self-efficacy score of the experimental group were significantly improved compared with the control group. The above

results all highlight the advantages of peer education in self-management and psychological nursing. Because wound healing is a series of complex biological reaction processes, peer education may lack professional nursing operations and the implementation of treatment programs, so the impact on wound healing rate is not as good as door-to-door guidance. Some studies have shown that peer education, as a continuous, flexible and low-cost way of chronic disease management, is more deeply felt by other patients and friends because the interveners have their own experience of managing a certain disease. Peer education can provide information, evaluation and emotional support anytime and anywhere, so as to effectively improve patients' psychology and behavior, enhance self-confidence and improve the quality of life. At present, peer education model has been used to improve the quality of life of patients with chemotherapy after breast cancer surgery, and improve the self-management ability of elderly patients with chronic obstructive pulmonary disease. Its research scope has been expanding, and gradually become an important way of continuous nursing intervention in psychological and behavioral aspects. If we use peer-to-peer education to improve the psychological state and self-management ability of patients while carrying out door-to-door guidance for professional wound evaluation and treatment, it may further accelerate the healing of chronic wounds and improve the outcome of patients.

5. Conclusion

Chronic wound refers to the wound that can not be repaired in a normal, orderly and timely manner to achieve the anatomic and functional integrity, mainly including venous ulcer, diabetic foot, pressure sore, wound infection and fat liquefaction. In this paper, we searched Cochrane Library, PubMed, web of science, nature, CINAHL, EMBASE, EBSCOhost, CNKI, Wanfang, VIP and CBM databases to evaluate the quality of the literature. RevMan 5.3 was used to meta analyze the included literature.

Nine studies were included in this meta-analysis, including 4 of A-level and 5 of B-level. The baseline of all studies was comparable. In the study, we found that there were quality problems in the Chinese literature, among which the withdrawal and loss of interviewees were not mentioned, and the carelessness and detail of some research baseline data were prominent, so there might be some publication bias in this study. It is suggested that in the future, we should standardize the research design, strictly implement the intervention methods, and standardize the research design of nursing RCT to improve the quality of follow-up research.

Results totally 805 patients were included in 9 studies. The results showed that traditional community nursing was more helpful to the healing of chronic wounds than distance guidance ($P = 0.004$), and door-to-door guidance was more helpful to the healing of chronic wounds than peer education ($P = 0.03$). Descriptive statistical analysis showed that there was no significant difference in the curative rate and quality of life between nurses' outpatient service and on-site guidance ($P > 0.05$), and peer education significantly improved the quality of life scores of patients with chronic wounds compared with on-site guidance ($P = 0.014$). In the continuous nursing program for patients with chronic wound discharged from hospital, traditional community nursing can promote wound healing more than remote expert group and door-to-door guidance, while peer education is more effective in psychological intervention. The healing rate and quality of life of nurses' outpatient and door-to-door guidance are basically the same.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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