

## **Systematic Review of The Application Effect of Self-Management Nursing Intervention in Patients with Recurrent Oral Ulcer and Its Influence on Self-Efficacy**

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**Introduction.** To systematically review the effects of Self-management nursing interventions on patients with recurrent oral ulcers and their impact on self-efficacy.

**Methods.** Chinese and English literatures related to the effects of Self-management nursing interventions on patients with recurrent oral ulcers and their impact on self-efficacy were searched in databases such as PubMed, Ovid, Embase, China National Knowledge Infrastructure (CNKI), and Wanfang Data. The search time range was set from the establishment of the database to August 1, 2024, and the studies were meta-analyzed using RevMan5.3 software.

**Results.** A preliminary search yielded 1004 articles in total, and 8 articles were finally selected. 7 articles involved the effects of Self-management nursing interventions on patients' self-efficacy. The heterogeneity between different articles was small. The fixed-effects model was used for analysis, and the results showed that Self-management nursing interventions can improve the self-efficacy level of patients with recurrent oral ulcers. 4 articles involved the effects of Self-management nursing interventions on patients' negative emotions, and the heterogeneity between different articles was small. The fixed-effects model was used for analysis, and the results showed that Self-management nursing interventions can reduce anxiety and depression in patients with recurrent oral ulcers.

**Conclusion.** Self-management nursing interventions for patients with recurrent oral ulcers can reduce patients' anxiety and depression, help improve patients' self-efficacy, and is worthy of

promotion and further application. However, given the number and quality of included literature, further research and discussion is needed.

**Keywords.** Self-Management Nursing Interventions, Recurrent Oral Ulcers, Self-Efficacy, Anxiety, Depression, Meta Analysis

## INTRODUCTION

Recurrent oral ulcer has a high clinical incidence rate and is often manifested as recurrent round or oval ulcers. They are cyclical, recurrent, and self-limiting, seriously affecting patients' normal eating, speech, and emotions, and even affecting their work and life [1]. At present, the pathogenesis of recurrent oral ulcers has not been elucidated clinically. It is generally believed that it is related to immune, genetic, environmental, and psychological factors. The size of the ulcers ranges from the tip of a needle to the size of a soybean, and they are “red”, “concave”, “yellow”, and “painful” [2]. There are many causes of recurrent oral ulcers, and there is no radical cure. Patients are mainly treated with symptomatic supportive treatment to relieve pain, promote ulcer healing, and prolong the interval between paroxysms. Therefore, strengthening the care of patients with recurrent oral ulcers during treatment can help consolidate the treatment effect and facilitate patient recovery [3]. Self-management nursing interventions refers to the use of personal inner strength to change behavioral strategies, focusing on personal self-teaching and restraint, so that patients can make lifestyle changes based on the characteristics of the disease [4]. This study mainly systematically evaluated the application effect of self-management nursing interventions in patients with recurrent oral ulcers and its impact on self-efficacy.

### 1 Literature Search and Selection

1.1 Research Design PubMed, Ovid, Embase, China National Knowledge Infrastructure (CNKI), and Wanfang Data were used to search for Chinese and English literature related to the effects of self-management nursing interventions on patients with recurrent oral ulcers and their effects on self-efficacy. The search period

was set from the establishment of the database to August 1, 2024, with no restrictions on blinding and allocation schemes.

### 1.2 Inclusion Criteria

(1) All studies were randomized controlled trials, no limitation in language. (2) All subjects were patients with recurrent oral ulcers. (3) Intervention measures. The control group received routine care, while the observation group received routine care combined self-management nursing interventions. (4) Main outcome indicators: ① Anxiety and depression. ② Self-efficacy level [5].

### 1.3 Exclusion Criteria

(1) Duplicate publications, case reports, or observational studies. (2) Guidelines, expert lectures and forums, meeting minutes, news, evidence summaries, and case reports. (3) It was difficult to extract relevant data, and it was difficult to obtain complete data in the literature. (4) The same author published similar articles on different platforms or it was difficult to extract literature that included one of the main outcome indicators of this study.

### 1.4 Methods

#### 1.4.1 Search Strategy Chinese and English databases were searched.

The Chinese search terms were: "self-management intervention", "recurrent oral ulcers", "self-efficacy", "anxiety", "depression". The English search terms were: Self-management nursing interventions; Recurrent mouth ulcer; Self-efficacy; Anxiety; depressed. The search period was set from the establishment of the database to August 1, 2024. The search keywords were arranged and combined using the Boolean search logic AND (AND) and logic OR (OR) to search.

#### 1.4.2 Other Searching Methods

In order to ensure the completeness and scientificity of the retrieved literature, further searches were conducted manually. For literature that was difficult to obtain, manual searches were conducted by entering the title, keywords, etc., to identify the database in which the literature was collected, and the literature search was completed through the included database. For literature that was difficult to obtain through the

above methods, help was sought through the “Literature Mutual Assistance” platform to obtain the full text of the paper and distinguish and identify whether there was potential research [6].

#### 1.4.3 Chinese Search Terms

The search terms are: Self-management intervention \* recurrent oral ulcer \* self-efficacy \* anxiety \* depression

#1 Headings: Recurrent oral ulcer/All Trees/All Subheadings

#2 Self-management intervention \* recurrent oral ulcer \* self-efficacy

#3 The role of self-management intervention in improving self-efficacy in patients with recurrent oral ulcer

#4 Self-management intervention \* recurrent oral ulcer \* anxiety/depression

#5 #1OR#2OR#3

#6 Headings: Affect/All Trees/All subheadings

#7 The role of self-management intervention in reducing anxiety and depression in patients with recurrent oral ulcer

#8 #1OR#2OR#3OR#4OR#5OR#6OR#7OR

#### 1.4.4 English Search Terms

The search terms are: self-management nursing interventions \* recurrent oral ulcers \* Self-efficacy \* anxiety \* depression

#1 Headings: Recurrent canker ulcer/All trees/all sub-headings

#2 Self-management nursing interventions \* Recurrent mouth ulcers \* Self-efficacy

#3 Role of self-management nursing interventions in improving self-efficacy in patients with recurrent oral ulcers

#4 Self-management nursing interventions\* Recurrent mouth ulcers\* Anxiety\*depression

# 5 # 1OR # 2OR # 3

#6 Headings: Affect/All Trees/All subheadings

#7 Role of self-management nursing intervention in reducing anxiety and

depression in patients with recurrent oral ulcers

# 8 # 1OR # 2OR # 3OR # 4OR # 5OR # 6OR # 7OR

### 1.5 Study Selection and Data Extraction

Two researchers independently analyzed and extracted relevant data: first author, journal, number of cases, year of publication, intervention method, outcome indicators (anxiety and depression, self-efficacy), etc. The extracted data were entered into the data recording form.

### 1.6 Literature Quality Evaluation

Literature quality was evaluated according to the Newcastle-Ottawa Scale (NOS), including: research subject selection (4 points), inter-group comparability (2 points), and exposure factor measurement (3 points). Cohort studies included research subject selection (4 points), inter-group comparability (2 points), and outcome strategy (3 points). The total score was 18 points, and a score of >6 points was considered high-quality literature [7].

### 1.7 Statistic Analysis

RevMan5.3 software was used to perform Meta-analysis on the data. Q test and  $I^2$  statistic were used for heterogeneity test. When  $P>0.1$  and  $I^2<50.0\%$ , it indicated that there was no heterogeneity in the research results. The fixed effect model was used. Otherwise, the random effect model was used to merge the effect values.  $P<0.05$  was considered statistically significant.

## 2 RESULTS

### 2.1 Bibliographic Retrieval

A preliminary search yielded 1004 articles, which were imported into EndNote software and 1085 duplicate articles were automatically removed. Titles and abstracts were read, and 1085 articles were marked and dynamically deleted in real time. The full texts of 36 articles were downloaded and read, 28 articles were excluded after reading the full texts, and 8 articles were finally included (see Figure 1).

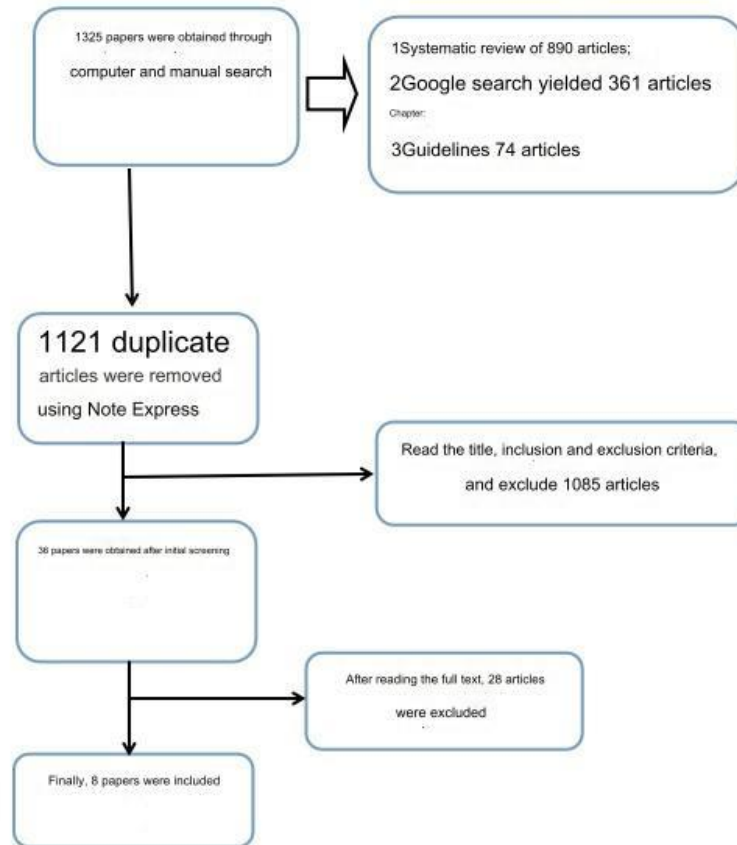


Figure 1 The Procedure of Bibliographic Retrieval

## 2.2 Literature Extraction and Quality Evaluation

A total of 812 patients with recurrent oral ulcers were included, and the quality evaluation of the included literature was completed using the NOS scale. Among them, 6 high-quality literatures were scored  $\geq 6$  points. Two literatures scored 5 points were considered low quality, see Table 1 and Table 2.

Table 1 Literature Extraction

author	Magazine	Number of cases	Years	plan	Outcome Measures
Li Baoxi	Health Education and Health Promotion	107	2020	The control group received routine care, while the observation group received combined self-management nursing intervention and strengthened health education for	Blood glucose levels and self-efficacy levels

				patients.	
Xie Xiaoyan	International Medical and Health Herald	108	2021	The control group received routine care, and the observation group received combined self-management nursing intervention	Oral ulcer healing speed, self-efficacy, and quality of life
Yang Yuqin	Mother and Baby World	144	2023	The control group received routine care, and the observation group received self-management nursing intervention based on the control group.	Anxiety, depression, self-efficacy
Ouell et GM	Journal of the American Geriatrics Society	122	2021	Oral ulcer patients were selected as subjects. The control group received routine care, while the observation group received self-management nursing intervention model.	Oral healing speed, self-efficacy, negative emotions, and satisfaction
Yu Zhengzhi	Journal of Yichun University	35	2020	The control group received routine psychological care and health education, while the observation group received combined self-management nursing intervention and enhanced narrative nursing intervention.	Level of self-efficacy
Nie Wenhan	Scientific health care	94	2021	Patients with recurrent oral ulcers were selected as subjects. The control group received oral care, while the observation group received combined self-management nursing intervention.	Negative emotions and nursing satisfaction
Jin Yingying	Chinese Journal of Modern Nursing	100	2016	The control group received conventional drug intervention, and the observation group received combined self-management nursing intervention.	Self-efficacy and anxiety and depression
Singh NV	Annals of Emergency Medicine	102	2021	The control group received routine care, and the observation group received combined self-management nursing intervention	Oral ulcer healing speed, self-efficacy and satisfaction

Table 2 Literature Quality Evaluation

Author	Objective Selection	Inter-Group Comparison	Results Evaluation	Score
Baoxi Li	1	2	2	5
Xiaoyan Xie	2	2	3	7
Yuqin Yang	2	3	3	8
Ouellet G M	2	2	1	5
Zhengzhi Yu	2	2	3	7
Wenhan Nie	3	3	2	8
Yingying Jin	2	3	1	6
Singh NV	2	3	1	6

### 2.3 Meta-Analysis of The Effect of Self-management nursing intervention on The Self-Efficacy Level of Patients with Recurrent Oral Ulcers

Seven articles involved the effect of self-management nursing intervention on patients’ self-efficacy, and the heterogeneity between different literatures was small. The fixed effect model was used for analysis, and the results showed that self-management nursing intervention can improve the self-efficacy level of patients with recurrent oral ulcers, as shown in Figure 2.

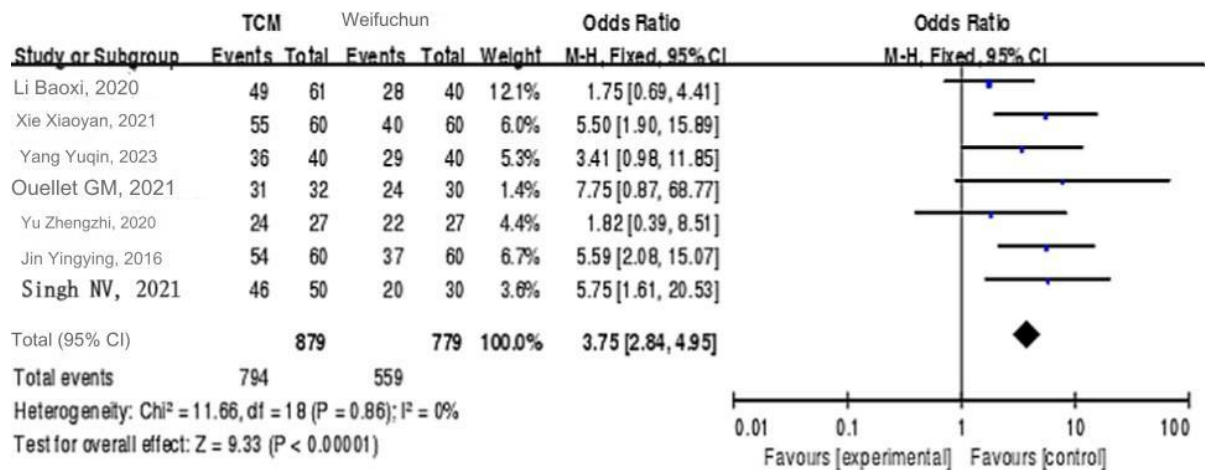




Figure 2 Meta-Analysis of The Effect of Self-management nursing intervention on The Self-Efficacy Level of Patients with Recurrent Oral Ulcers

2.4 Meta-Analysis of The Effect of Self-management nursing intervention on Negative Emotions in Patients with Recurrent Oral Ulcers

Four articles involved the effect of self-management nursing intervention on negative emotions in patients, and the heterogeneity between different literatures was small. The fixed effect model was used for analysis, and the results showed that self-management nursing intervention can reduce anxiety and depression in patients with recurrent oral ulcers, as shown in Figure 3.

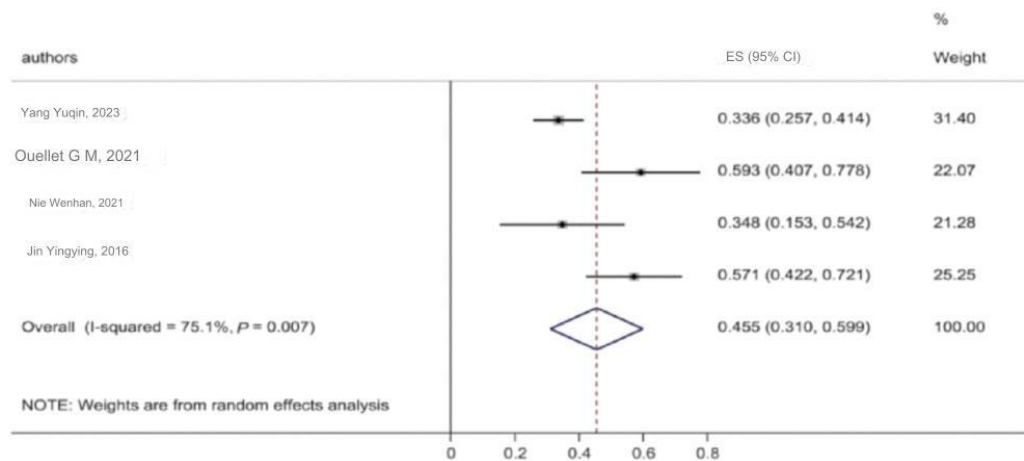


Figure 3 Meta-Analysis of The Effect of Self-Management Nursing Intervention on Negative Emotions in Patients with Recurrent Oral Ulcers

3 DISCUSSION

In recent years, oral health has become one of the diseases that the public medical system pays major attention to. Due to the lack of health knowledge and changes in residents' eating habits, the incidence of recurrent oral ulcers has been on the rise [8]. Zhang H et al.'s study [9] showed that recurrent oral ulcers often occur in the lips, cheeks, soft palate and other parts, and have the characteristics of periodicity, self-limitation and recurrence. Jin Yingying et al.'s study [10] showed that the

occurrence of recurrent oral ulcers is related to digestive system diseases and immune deficiency, and is clinically related to burning pain, lymphadenopathy and fatigue, which affects the health level of patients. In this study, 1004 articles were initially retrieved, and 8 articles were finally included. 7 articles involved the effect of self-management nursing intervention on patients' self-efficacy, and the heterogeneity between different articles was small. The fixed-effects model was used for analysis, and the results showed that self-management nursing intervention can improve the self-efficacy level of patients with recurrent oral ulcers. 4 articles involved the effect of self-management nursing intervention on patients' negative emotions, and the heterogeneity between different articles was small. The fixed-effects model was used for analysis, and the results showed that self-management nursing intervention can reduce anxiety and depression in patients with recurrent oral ulcers. From the results, it can be seen that self-management nursing intervention can improve the self-efficacy level of patients with recurrent oral ulcers, reduce negative emotions, and facilitate patient recovery. Analysis of the reasons: Self-management nursing intervention can reduce the healing of ulcers caused by implementing targeted nursing care and providing patients with personalized dietary guidance. In the nursing process, by setting goals and implementing targeted pain and medication care, patients' treatment compliance can be improved and ulcer healing can be promoted [11-12]. At the same time, the nursing process can implement targeted individual needs based on the characteristics of recurrent oral ulcers. With clear goals and nursing basis, nursing measures are more professional and help improve the quality of life of patients. The pathogenesis of recurrent oral ulcers is complex. In addition to drug treatment, the patient's ability to self-manage the disease can help prevent the recurrence of the disease, prolong the interval between attacks, and thus consolidate the treatment effect [13].

In summary, self-management nursing intervention for patients with recurrent oral ulcers can reduce patients' anxiety and depression, help improve patients' sense

of self-efficacy, and is worthy of promotion and application. However, given the number and quality of included literature, further research and discussion is needed.

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