

# A systematic review of qualitative research on the self-management experience of breast cancer patients

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## Abstract

*Objective:* To integrate the qualitative research on self-management experience of breast cancer patients, and conduct a systematic review on their self-management experience. *Methods:* Using a computer to search a series of databases such as CNKI, Wanfang, VIP, and China Biomedical Database, systematically collect and integrate qualitative research on the self-management experience of breast cancer patients, and the search time is limited to 2010 January to December 2022. The qualitative research quality evaluation standard of the Joanna Briggs Institute (JBI) Center for Evidence-Based Health Care in Australia was used as the evaluation standard of this project to complete the accurate evaluation of the literature; Meta-analysis was used to complete the effective integration of the results. *Results:* A total of 17 literatures were included in this project, and 37 research results with strong integrity were extracted accordingly. On this basis, 7 different categories were summarized, and 3 integrated results were obtained, which were experience of maintaining self-management, symptom recognition, and self-management. *Conclusion:* In the different stages of self-management of breast cancer patients, medical staff should give targeted guidance to help patients obtain good prognosis. *Patient or Public Contribution:* Patients, service users, care-givers, people with lived experience or members of the public were involved at several stages of the trial, including the design, management and conduct of the trial, but all the information was collected from public database. The statement is not applicable.

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## Abstract

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search a series of databases such as CNKI, Wanfang, VIP, and China Biomedical Database, systematically collect and integrate qualitative research on the self-management experience of breast cancer patients, and the search time is limited to 2010 January to December 2022. The qualitative research quality evaluation standard of the Joanna Briggs Institute (JBI) Center for Evidence-Based Health Care in Australia was used as the evaluation standard of this project to complete the accurate evaluation of the literature; Meta-analysis was used to complete the effective integration of the results. **Results:** A total of 17 literatures were included in this project, and 37 research results with strong integrity were extracted accordingly. On this basis, 7 different categories were summarized, and 3 integrated results were obtained, which were experience of maintaining self-management, symptom recognition, and self-management. **Conclusion:** In the different stages of self-management of breast cancer patients, medical staff should give targeted guidance to help patients obtain good prognosis.

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**Keywords:** breast cancer; self-management; Meta integration; qualitative research; systematic review

## HIGHLIGHTS:

1. During the interval between breast cancer treatment, the level of its self-management ability plays a decisive role in its recovery state.
2. Information guidance and social support can help breast cancer patients maintain self-management, alleviate their negative emotions
3. In the self-management of breast cancer patients, the key is accurate symptom identification.
4. In the process of self-management of breast cancer patients, medical staff should continue to provide scientific and effective guidance and help to improve their quality of life.

## Introduction

As a disease with the highest incidence of malignant tumors in women, breast cancer poses a serious threat to the body function and life and health of patients <sup>[1]</sup>. The current clinical treatment measures for breast cancer include surgical treatment, radiotherapy, chemical drug treatment, etc., but they will cause side effects in different aspects and degrees to breast cancer patients, such as local tissue damage, tissue dysfunction, nausea and vomiting, etc.<sup>[2, 3]</sup>. In the process of receiving treatment, breast cancer patients not only need to bear the torment caused by the development of the disease and the treatment method, but also face pressure from various aspects such as economy, family, and work. Under these conditions, patients are prone to sleep disorders, negative emotions and other negative reactions <sup>[4]</sup>. Based on this, qualitative research on the self-management experience of breast cancer patients is extremely necessary, and the current treatment methods should be transformed from a single physical treatment method to a comprehensive treatment method that pays attention to the physiological and psychological needs of patients <sup>[5, 6]</sup>. This project will adopt the method of retrieval-related qualitative research combined with Meta integration, aiming to explore the real psychological needs and emotional experience of breast cancer patients, and provide a certain reference for formulating more applicable nursing measures.

## 1 Materials and methods

### 1.1 Literature search strategy

Computer searched databases such as CNKI, Wanfang, VIP, China Biomedical Database, Web of Science, CBM, CINAHL, Theses-A&I, PubMed, and Clinical Trials.gov website. The search terms include different subject words and free words, among which the Chinese search terms include "breast cancer", "surgical treatment", "chemotherapy", "radiotherapy", "breast tumor", "self-management", "qualitative research"

etc., the English search terms include "Mammary cancer", "Breast cancer", "Chemotherapy", "Radiotherapy", "Breast tumor", "Self-management", "Qualitative research", etc., and the literature search time range is January 2010 Until December 2022. When conducting literature search on CNKI and CINAHL databases, the search strategy is shown in Figure 1.

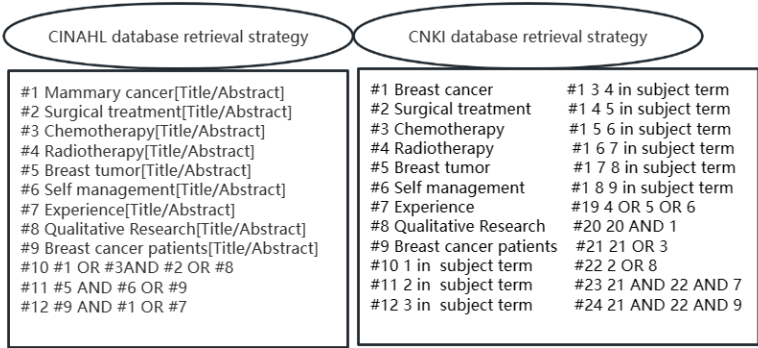


Figure 1 Schematic diagram of literature retrieval strategy

### 1.2 Literature inclusion and exclusion criteria

The literature inclusion criteria for this topic are mainly divided into five aspects: Research design: adopt the method of qualitative research, which is a systematic and subjective way of describing experiences, which covers ethnography, action research, case study, phenomenology, grounded theory, etc; Research objects: diagnosed breast cancer patients; Research phenomenon: self-management experience of breast cancer patients in different aspects, such as work, life, social interaction, etc. The sources of all research materials are Self-reported by breast cancer patients; Scenario : The whole process of self-management and experience of breast cancer patients after receiving treatment. Exclusion criteria: Not related to detailed self-management behavior; Using mixed research methods; Incomplete literature containing only abstracts; Repeatedly published literature, non-Chinese and English literature, conference papers; The research population suffers from different diseases, In addition to breast cancer, it is accompanied by other cardiovascular diseases, tumor diseases, etc. See Figure 2 for details.

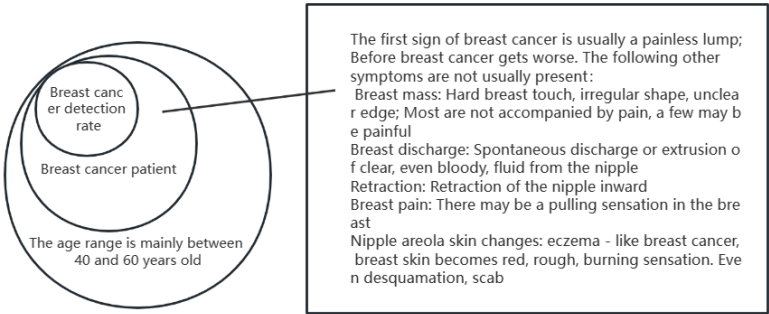


Figure 2 Diagnostic criteria for breast cancer

### 1.3 Literature screening and data extraction

Two researchers used the inclusion and exclusion criteria of the literature as the basis to independently realize

the precise screening of the literature; the rationality of the literature screening was judged by cross-checking, and if there was any disagreement between the two researchers, they needed to discuss with each other Or consult a third researcher to make the final judgment. Data extraction mainly refers to the extraction of general information, including the author of the literature, publication time, sample size, intervention measures, research results, etc.; in addition, it is necessary to check the methods used in the qualitative research, the time point of data collection, and the number of included cases etc. to extract.

## 1.4 Literature Quality Evaluation

This project uses the qualitative research evaluation criteria of the Australian JBI Evidence-Based Health Care Center as a basis to complete a reasonable evaluation of the quality of the literature. All documents included in the study need to be classified and classified into three different grades of A, B and C according to their quality. Finally, A and B documents will be included, and C-level documents will be excluded. deal with. The Chinese version of the literature quality evaluation scale (Newcastle-Ottawa Scale, NOS) was used to evaluate the quality of the literature. The total score of the NOS evaluation was 9 points, and the passing line was 6 points; the level of the NOS score was correlated with the quality of the literature Strong consistency, the two are positively correlated [7].

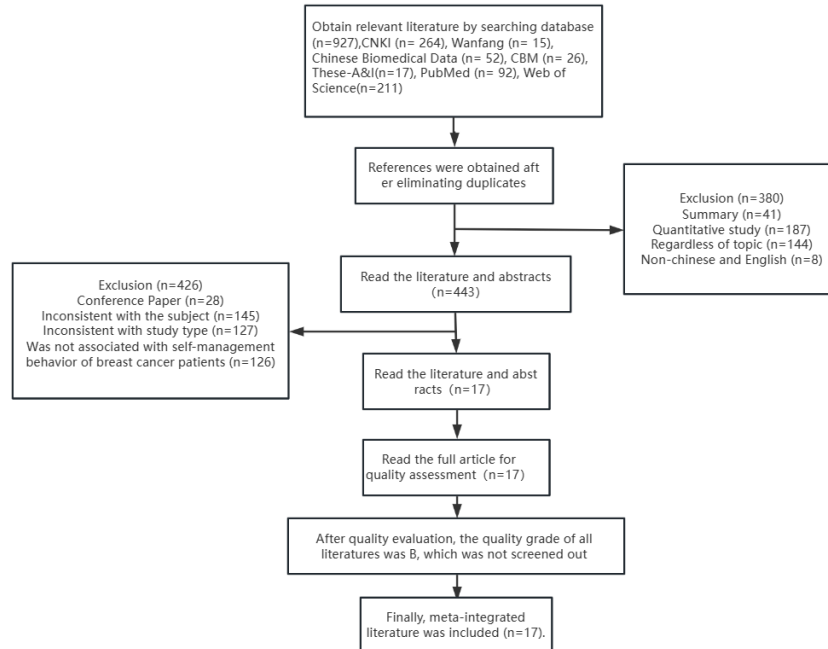
## 1.5 data analysis method

Choose the qualitative research integration method of the Australian Joanna Briggs Institute (JBI) Evidence-Based Health Care Center<sup>[8]</sup>, that is, the pooled Meta integration. This method is mainly divided into four steps. One is to carefully read all the included documents in turn and repeat them several times; the other is to analyze the relevance of the original research results in the documents. On the basis of the results, it is fully interpreted; the third is to classify and summarize according to the identity of the research results to obtain new literature categories; the fourth is to summarize and integrate all the literature categories again, then obtain a new interpretation of the phenomenon, etc., to ensure the reliability, specificity, and summary of the results [9, 10].

## 2 results

### 2.1 Literature search results

After completing the search of major databases, a total of 927 documents were obtained, including 538 Chinese and 389 English documents. Firstly, all documents were de-duplicated, 104 duplicate documents were removed, and 823 documents were obtained; then the documents whose titles or abstracts did not match were screened out, and 443 documents were obtained; finally, the documents that did not match the research object and the research type were eliminated, unrelated to patients' self-management behavior, and other literatures were screened out, and 17 papers were finally included. The literature inclusion process and its results are shown in Figure 3.



**Figure 3 Literature screening and inclusion process and results**

**2.2 Methodological quality evaluation of included literature**

Among the 17 included literatures, the data were complete, and 16 were evaluated as low risk. The quality evaluation results are shown in Table 1. In Table 1, a means "yes", b means "no", and c means "unclear". Indicates whether the methodology is identical to the research question or goal; Indicates whether the methodology is identical to the data collection method; Indicates whether the methodology is identical to the philosophical basis; Indicates whether the methodology and the elaboration form of the results are Whether the methodology and the typicality of the research object of the subject, and the data analysis methods used have the sameness; Whether it has strong typicality and representativeness; Whether it is consistent with the current ethical norms; Research Whether the conclusion is obtained through the analysis and elaboration of the data; whether the influence of the researcher on the research content is comprehensively described; whether the value and cultural background are taken as the starting point, and the researcher's own situation is explained in detail.

**Table 1 Methodological quality evaluation results**

included studies											Overview
He Xiaoling et al [7]	1	1	1	1	1	1	1	1	b	c	B
Jin Yubin and others [9]	1	1	1	1	1	1	1	1	b	b	B
Chen Xia et al [10]	1	1	1	1	1	1	1	1	b	b	B
Liang SY et al[11]	1	1	1	1	1	1	1	1	a	b	B
Heo SM et al [12]	1	1	1	1	1	1	1	1	b	b	B
Speck RM et al [13]	1	1	1	1	1	1	1	1	a	b	B
Schulman-Green D et al [14]	1	1	1	1	1	1	1	1	a	b	A
Ran L et al [15]	1	1	1	1	1	1	1	1	c	b	B
Wheelock AE et al [16]	1	1	1	1	1	1	1	1	b	a	B
Yim LS et al [17]	1	1	1	1	1	1	1	1	a	c	B

included studies	Overview										
Campos RC et al <sup>[18]</sup>	1	1	1	1	1	1	1	1	a	b	B
Cimprich B et al <sup>[19]</sup>	1	1	1	1	1	1	1	1	b	b	A
Lee MK et al <sup>[20]</sup>	1	1	1	1	1	1	1	1	b	b	A
Loh SY et al <sup>[21]</sup>	1	1	1	1	1	1	1	1	b	b	B
Berg S et al <sup>[22]</sup>	1	1	1	1	1	1	1	1	c	b	B
Van D et al <sup>[23]</sup>	1	1	1	1	1	1	1	1	a	c	B
Fu MR et al <sup>[24]</sup>	1	1	1	1	1	1	1	1	c	b	B

### 2.3 Basic characteristics of the included literature

The 17 included literatures are from 2010 to 2020, and the research objects of all the literatures are breast cancer patients. The basic characteristics of the literature are shown in Table 2.

**Table 2 Basic characteristics of the included literature**

included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
He Xiaoling et al <sup>[7]</sup>	Descriptive qualitative research, case study	116	after breast cancer surgery	Correlation between postoperative self-efficacy, coping style and quality of life in patients with breast cancer	Two themes are extracted: (1) There is a strong correlation between the three; (2) By improving the self-efficacy of patients, they can guide them to adopt appropriate coping methods, and finally improve their quality of life

included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
Jin Yubin and others <sup>[9]</sup>	Semi-structured interviews, case studies	115	Chemotherapy after modified radical surgery	Correlation between self-efficacy and quality of life in breast cancer patients undergoing chemotherapy	Two themes were extracted: (1) There is a significant correlation between the two; (2) Medical staff should pay attention to the nursing intervention of patients, and strengthen its intensity, so as to promote the improvement of their self-efficacy and quality of life
Chen Xia et al <sup>[10]</sup>	case studies, phenomenology	100	After the first radical mastectomy	To explore the psychosocial ability and coping style of postoperative breast cancer patients, and their relationship to the quality of life	Three themes were extracted: (1) Positive psychosocial adaptability and coping styles are positively correlated with quality of life; (2) Avoidance and surrender are negatively correlated with quality of life; (3) Enhancing psychosocial adaptability and coping styles of patients, help to improve their quality of life

included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
Liang SY et al [11]	Semi-structured interviews, case studies	152	breast cancer chemotherapy	Symptom management and self-efficacy scale for breast cancer patients	Two themes are extracted: (1) The self-management efficacy scale of breast cancer patients has high reliability and validity;(2) The structure of the self-management efficacy scale is complete
Heo SM et al [12]	semi-structured interview	415	After chemotherapy and radiotherapy	Self-management support for breast cancer patients after radiotherapy and chemotherapy	Two themes were extracted: (1) The self-management behavior ability of breast cancer patients needs continuous support; (2) Relying on others or the media to obtain information and support
Speck RM et al [13]	Descriptive qualitative research, semi-structured interviews	25	receive chemotherapy	Self-management of symptoms of chemotherapy-induced peripheral neuropathy in breast cancer patients	Two themes were extracted: (1) chemotherapy-induced peripheral neuropathy has negative effects;(2) self-management such as exercise and mindfulness can reduce the impact of chemotherapy-induced peripheral neuropathy



included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
Schulman-Green D et al <sup>[14]</sup>	Semi-structured interviews, case studies	15	Transition period for patients with advanced breast cancer	Self-management and transformation of breast cancer patients	Two themes are extracted: (1) Transformation promotes positive self-management of patients;(2) Medical staff should pay attention to self-management and transformation of patients
Ran L et al <sup>[15]</sup>	Descriptive qualitative research, case study	303	Breast cancer patients undergoing treatment	Patient Self-Management Efficacy Scale	Two themes were extracted: (1) The Self-management Efficacy Scale for Breast Cancer has simultaneous validity;(2) The Self-management Efficacy Scale for Breast Cancer has high reliability and validity
Wheelock AE et al <sup>[16]</sup>	Descriptive qualitative research, case study	102	Follow-up nursing after modified radical mastectomy for breast cancer	Quality and efficiency of follow-up care for patients with breast cancer	Three themes were distilled: (1) the time from symptom reporting to remote assessment of symptoms was quantified; (2) health care resource utilization was efficient; (3) symptom assessment was effective

included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
Yim LS et al <sup>[17]</sup>	Semi-structured interviews, case studies	147	When breast cancer is first diagnosed	Psychological distress and self-management of newly diagnosed breast cancer patients	Two themes were extracted: (1) The physical activity of breast cancer patients was positively correlated with their stress; (2) Self-management intervention can reduce the level of psychological distress in patients
Campos RC et al <sup>[18]</sup>	case studies, phenomenology	50	Treatment period after initial diagnosis of breast cancer	Effects of Cancer Adaptive Psychological Strategies on Patients	Three themes were extracted: (1) cancer adaptive psychological strategies have a disease-regulating effect; (2) patients' self-criticism is related to their pain level; (3) adjustment variables directly affect the patient's pain level on personality variables
Cimprich B et al <sup>[19]</sup>	descriptive qualitative research	25	breast cancer patients after treatment	Self-management program for breast cancer patients	Two themes were distilled: (1) Self-management can facilitate transition after breast cancer treatment; (2) Self-management skills have practicality

included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
Lee MK et al <sup>[20]</sup>	Semi-structured interviews, case studies	59	Breast cancer patients undergoing curative surgery	Self-management exercise and diet intervention for breast cancer patients	Two themes were extracted: (1) Web-based self-management exercise and dietary intervention can improve patients' quality of life; (2) Patients' self-management ability can be improved
Loh SY et al <sup>[21]</sup>	grounded theory	21	breast cancer patients after treatment	Self-efficacy of breast cancer patients under intervention	Two themes are extracted: (1) The survival rate of breast cancer patients is improved under the intervention; (2) Self-management can help improve their self-efficacy
Berg S et al <sup>[23]</sup>	descriptive qualitative research	170	after breast cancer treatment	Effects of adjustment after breast cancer treatment on psychological distress and empowerment	One theme was extracted: Self-management intervention can improve the self-management ability of breast cancer patients

included studies	qualitative research methods	Included cases	Data collection time point	research content	main results
Van D et al <sup>[22]</sup>	Semi-structured interviews, case studies	100	Adjustment period after primary breast cancer treatment	Improvement of breast cancer patients under self-management intervention	Two themes were extracted: (1) Breast cancer e-health breathing trial effectively realizes self-management intervention; (2) Patients' empowerment can be improved under self-management intervention
Fu MR et al <sup>[24]</sup>	Descriptive qualitative research, semi-structured interviews	30	Post-treatment intervention period for breast cancer patients	The effect of optimal lymphatic flow information system on self-management of breast cancer patients	One topic was extracted: Under the intervention of the optimal lymph flow information system, the self-management ability of breast cancer patients was significantly enhanced

## 2.4 Meta integration results of self-management experience of breast cancer patients

Through repeated understanding and analysis of the included literature, a total of 37 research results were extracted for this project, and similar results were summarized, regrouped into 7 new categories, and 3 results were integrated. Table 3 shows the integration results<sup>1</sup>. According to Table 1, it can be seen that there are two new categories, namely, information guidance and social support, both of which work together to help breast cancer patients achieve effective maintenance of self-management.

**Table 3 Consolidation Result 1 (Sustaining Self-Management)**

Category number	name	paraphrase
1	information guidance	Significant numbers of patients find treatment information helpful in maintaining
2	social support	Healthcare workers play an important role in social support

The integration result 2 mainly includes three new categories, namely physical torture, heavy psychological burden, and huge impact on life, see Table 4 for details. Suffering physically means that breast cancer patients will develop various complications under different treatment methods, such as taste changes, hair loss, nausea, insomnia, pain, etc. During the continuous appearance of various physical symptoms, breast cancer Patients

suffer physical and psychological damage. Heavy psychological burden refers to the occurrence of negative psychological emotions such as anxiety, fear, self-blame, and despair under the multiple influences of physical health, economic pressure, and difficulty in taking care of oneself. Huge impact on life means that during the treatment of breast cancer patients, various objective and subjective factors lead to the impact on their daily life.

**Table 4 Integration Results 2 (Symptom Recognition)**

Category number	name	paraphrase
3	physically tortured	Physical function is affected, resulting in various common complications
4	heavy psychological burden	Psychological negative emotions arising from the pain of treatment
5	big life impact	Disease development and treatment both affect normal life

Integration results 3 As shown in Table 5, the experience of self-management of breast cancer patients is mainly divided into three different stages. During the process of disease development and treatment, the patient's own situation will change accordingly. Ability has been significantly improved.

**Table 5 Synthesis Outcome 3 (Self-Management Experiences)**

Category number	name	paraphrase
6	process of self-regulation	Breast cancer patients can usually effectively adjust their own state within a
7	laws of self-management	In different stages of treatment, there are certain differences in the self-manage

### 3 Discussion

Breast cancer ranks first among female malignant tumors<sup>[25]</sup> and poses a great threat to the life and health of patients. The disease is more common in female patients, and the probability of male breast cancer is lower. Breast cancer is mainly caused by the abnormal proliferation of breast epithelial cells under the negative influence of various carcinogenic factors, or even uncontrolled proliferation; its main clinical manifestations include nipple discharge, breast lumps, breast skin abnormalities, and axillary lymph node enlargement wait. For breast cancer patients' self-management experience, the results of qualitative research are extremely important and help to achieve a complete interpretation of their self-management experience. In view of this, this project used the method of Meta integration to collect and summarize a large amount of research literature, and analyzed the qualitative results of the self-management experience of multiple breast cancer patients under different treatment methods and in different treatment stages, and finally formed the the new categories and integrated results deeply dissected and interpreted relevant literature and phenomena.

The integrated results show that cancer treatment has a strong stage, and there is a certain interval between each course of treatment. During the intermission period, breast cancer patients are temporarily out of the round-the-clock management of medical staff, so the level of their self-management ability is extremely important and plays a decisive role in their physical recovery during the intermission period. If the patient's cognition of their own disease, disease stage, and treatment methods is not clear enough, and they lack comprehensive information understanding, it will cause a great burden and pressure on the patient's mind, and the treatment compliance and treatment effect may be reduced. Based on this, the importance of information guidance and social support is self-evident, which can help patients maintain self-management, alleviate their negative emotions, and improve patients' enthusiasm for cooperation with treatment. In the self-management of breast cancer patients, the key lies in accurate symptom recognition. Different treatment methods will cause patients to experience various physiological adverse reactions, including sleep disorders, nausea and vomiting; and physiological discomfort will further lead to serious psychological burdens on patients, including various negative emotions such as depression, worry, and despair. Effective identification of

cancer treatment-related symptoms and analysis of the impact of different symptoms on quality of life can significantly improve treatment compliance and self-management capabilities. In addition, breast cancer patients should dig out the rules of different stages of self-management from the experience of self-management, cope well with adverse reactions and changes in physical functions in each stage of treatment, understand the treatment cycle, relieve psychological pressure, and finally realize self-care. Enhanced management capabilities.

To sum up, medical staff should pay attention to the impact of different treatment methods on breast cancer patients. During the whole process of self-management of breast cancer patients, medical staff should continue to provide scientific and effective guidance and help to promote patients' different treatment methods. The state adjustment of treatment means can improve the prognosis of patients and improve their quality of life.

Through reading a lot of literature, we believe that the quality of self-management of breast cancer patients is related to many factors, such as education, family status, marital status, income, work status, personality characteristics, etc., but the literature included in this study has not studied this, which is biased. In future research, we will seriously and scientifically formulate research plans, To analyze and study comprehensively the influencing factors of self-management quality of breast cancer patients, so as to provide sufficient theoretical basis for clinical practice.

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### **Conflict of interest disclosure**

The authors declare that they have no competing interests.

### **Ethics approval statement**

Ethical approval was waived by The Science Research Ethics Committee of The Second Affiliated Hospital of Shandong First Medical University. Users have open access to relevant data for their own research and publications. Since our investigation used public clinical data, the study encountered no ethical issues or other conflicts of interest.

### **Patient consent statement**

All the patients involved in this study were collected from public database, so the statement of consent is not applicable.

### **Authors' contributions**

Each author provided substantial contribution to the conception and design of this manuscript, drafted significant portions of the manuscripts, revised the manuscript critically for important intellectual content, and approved the final version.

### **Acknowledgments**

Professor Ben-qiang Rao designed the study and supervise the conduction of this study. He Jang, He-peng Su and professor Xiang-qi Li revised the manuscript.

### **Data availability statement**

This study data are available upon reasonable request from the first authors and the corresponding author.

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