Review Article

doi:10.31674/mjn.2024.v15i04.020

MJN

# Psychoeducational and Psychological Distress Levels in Women with Breast Cancer: A Systematic Review

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## ABSTRACT

**Background:** Psychoeducation has become a popular intervention for women who have been patients with breast cancer (BC). The effectiveness of psychoeducation on the psychological distress levels of patients with breast cancer was assessed in this systematic review comparison. The aim is a systematic review to assess the effects of psychoeducation on anxiety and depression in women with BC diagnoses. **Methods:** The Cochrane Library, Ebsco, Embase, and PubMed databases were used for RCT data collection, using various keyword combinations such as "psychoeducation," "breast cancer diagnosis," "anxiety," "depression," "psychological distress," and randomized controlled trial." Only papers focusing on interventions related to psychoeducation and psychological distress in patients with BC diagnoses were collected. Furthermore, the inclusion criteria include breast cancer women over 18 years of age who have had breast cancer diagnosis. The selected articles were all published between 2001 and 2022. **Results:** A total of 2,181 participants from fifteen RCTs (1,158 psychoeducation and 1,023 controls) were included. The risk of bias (ROB) study used the Joanna Briggs Institute (JBI) for RCT, with results in the 89.74% good category. Analysis data will describe characteristic studies, ROB, and outcome psychoeducation. Psychoeducation significantly decreased the psychological distress level associated with BC diagnosis when compared to controls. **Conclusion:** Psychoeducation has the potential to be used as an intervention to assist patients in their pathways of primary breast cancer treatment after surgery. It was discovered that psychoeducation lowers psychological distress, which benefits the patients.

***Keywords:Breast Cancer Diagnosis; Psychoeducational; Psychological Distress; Systematic Review***

## INTRODUCTION

Patients with primary breast cancer who undergo surgery report higher levels of anxiety and despair due to the trying experience (Martinez-Calderon *et al.*, 2024). Most breast conditions are not cancerous, encompassing various types of histological conditions which can be categorized into non-proliferative, proliferative without atypia, and proliferative with atypia. According to an Australian cohort study based on population involving 22,505 cancer patients and 244,000 cancer-free adults, cancer survivors who had mastectomies reported higher levels of psychological distress than those without mastectomies (Joshy *et al*., 2023). Furthermore, the amount of meta-analysis research on depression and anxiety worldwide is likewise substantial (Martinez-Calderon *et al.*, 2024), the study by Civilotti and colleagues found that 25% of patients showed substantial depression symptoms and that 40% of mastectomy patients showed clinically significant anxiety symptoms (Civilotti *et al*., 2021). Šimunovic's study also revealed that individuals undergoing radical mastectomy procedures had stressor levels 19% greater than those undergoing partial mastectomies (Šimunović & Ljubotina, 2020). These results imply that the lives of mastectomy patients must be impacted by the stress management that they experience (Ticha & Sukop, 2023). Patients who have undergone a mastectomy have to endure the stress, which will lower their quality of life, and physical impairment (Kim *et al.*, 2021).

*Received: September 5, 2023 Received in revised form: February 20, 2024 Accepted: February 21, 2024*

Anxiety and depression were linked to mortality and survival based on the conclusions of a thorough study and meta-analysis of 51 cohort studies (Wang *et al*., 2020). The impact of psychological distress on post-mastectomy breast cancer women is indicated by symptoms of disturbed anxiety, depression, pain, self-esteem and body image (Varman *et al*., 2024). Additional effects of psychological strain following a mastectomy include a 63% decline in self-esteem about one's body image, a 51.8% change in lifestyle, a 58% sense of worthlessness, and a 75% sense of receiving less care (Anim-Sampong *et al*., 2021). Therefore, the stress experienced post-mastectomy-procedure affects the psychological aspects. As a result, psychoeducational intervention is required to eliminate and prevent those risks from reoccurring. Adequate psychoeducational intervention is significant in reducing the stress level of post-mastectomy patients. Various psychoeducational interventions have been carried out for patients suffering from this kind of stress; the results, however, are varied (Boesen *et al*., 2011). Furthermore, psychoeducational interventions in numerous developing nations, including Indonesia, are not successful in lowering post-mastectomy stress (Boesen *et al*., 2011). Stress management in post-mastectomy patients is associated with oncologists, nurses, and psychologists providing psychoeducational interventions as psychosocial treatment (Sağdıç, Bozkul & Karahan, 2024). Nurses serve as educators by sharing knowledge and offering psychological support to lower post-mastectomy stress levels. This psychosocial intervention refers to psychological and social interventions that help nurses manage psychological and social components and their effects on patients' health and quality of life while maximizing physical health care (Oakley & Ream, 2024). Treatment of psychosocial needs includes services and interventions, ranging from interventions with direct nursing actions to educational interventions (Travado & Bastos, 2024). Numerous studies have proven that psychosocial interventions could benefit patients, so these interventions ought to be incorporated into physical care (Oakley & Ream, 2024). This systematic review aims to evaluate the effects of psychoeducation on depression and anxiety in women with BC diagnosis.

## METHODOLOGY

### Data Sources and Search

The authors admitted to the recommended Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) requirements in organizing, conducting, and reporting this review. The authors thoroughly searched from 12 February 2022 in the PubMed database, Embase.com, Cochrane Libraries, and Ebsco. The key terms we want to include in our search have been identified using the PICO model below: P (patient/client group): breast cancer patients over 18 years of age who have had a breast cancer diagnosis. I (intervention): psychoeducation; C (comparison): usual form of treatment or no intervention; O (results): psychological distress. The terms psychoeducation, "diagnosis," and breast cancer are utilized as index terms or word-free text, along with their synonyms and close relatives. This research method uses a systematic review approach, namely evaluating the impact of psychoeducation on the level of psychological distress in breast cancer patients, so there is no ethical clearance in this research. References from identified articles are used for searching pertinent literature. A comprehensive search plan for all databases is provided in Figure 1.

### Cochrane Results (12 February 2022)

| Query | Results |
|---|---|
| (Psychoeducational* OR psychoeducation* OR psycho -education* OR (psycho -educational NEXT intervention) OR (psychotherapy NEXT therapy) OR (psychosocial NEXT therapy*) OR (psycho-social NEXT intervention*) OR (psychosocial NEXT therapy*) OR (psychology therapy NEXT psychology treatment *) OR (educational therapy NEXT education intervention*) OR (cognitive therapy* NEXT cognitive intervention* NEXT cognitive behavior therapy*): ab,ti,kw | 5,191 |
| (Breast cancer * OR neoplasma OR breast patient OR Breast diagnosed* OR cancer OR carcinoma* OR maligna* OR malignant cancer* OR breast diagnoses* OR cancer diagnoses* OR breast cancer diagnoses* OR stadium maligna*) AND (stadium cancer* OR stage maligna* OR stage malignant*):ab,ti,kw | 18,955 |

**PubMed Session Results (12 February 2022)**

| Query | Results |
|---|---|
| "Psychoeducational"[Mesh] OR "Psychoeducation"[Mesh] OR "psycho-educational*"[tiab] OR "psycho-education*"[tiab] OR "psychosocial*"[tiab] OR "psycho-social*"[tiab] OR "psychooncology*"[tiab] OR "psycho-oncology*"[tiab] OR "psycho logy intervention"[tiab] OR "psychosocial intervention"[tiab] OR "psychology therapy *"[tiab] OR " education therapy*"[tiab] OR " cognitive therapy*"[tiab] OR "educational intervention*"[tiab] OR "cognitive behaviour therapy*"[tiab] | 264,665 |
| "breast cancer"[Mesh] OR "breast cancer diagnosed" [tiab] OR "breast cancer diagnoses"(("cancer"[Mesh] OR " carcinoma*"[tiab] OR "malignant[tiab] OR " maligna"[tiab] OR "oncology*"[tiab] OR cancer diagnoses)) | 391,446 |

**Embase Results (12 February 2022)**

| Query | Results |
|---|---|
| psychology'/exp OR 'psychotherapy'/exp OR 'psychoeducational'/exp OR psychoeducation*:ab, ti,kw OR 'psycho-therapy*':ab, ti,kw OR 'psychosocial*':ab, ti,kw OR psycho-social*:ab, ti,kw OR 'psycho oncology*':ab, ti,kw OR psycho-oncology*:ab, ti,kw OR 'psychology intervention':ab, ti,kw OR 'psychology education ':ab, ti,kw OR 'psychology therapy*':ab, ti,kw OR 'education therapy*':ab, ti,kw OR 'cognitive therapy*':ab, ti,kw OR 'educational intervention*':ab, ti,kw OR 'cognitif behavior therapy*':ab, ti,kw | 391 |
| 'breast cancer'/exp OR ((' carcinoma'/exp OR cancer*:ab,ti,kw OR maligna:ab,ti,kw OR malignant:ab,ti,kw OR oncology*:ab,ti,kw OR cancer diagnoses*:ab,ti,kw | 1,288 |

**Ebsco Results (12 February 2022)**

| Query | Results |
|---|---|
| 'psychoeducational'/exp OR 'psycho -educational'/exp OR 'psycho -education'/exp OR psycho - oncology*:ab, ti,kw OR 'psycho social*':ab, ti,kw OR 'psycho therapy*':ab, ti,kw OR psycho logy intervention*:ab, ti,kw OR 'psycho logy education*':ab, ti,kw OR psycho logy - intervention*:ab, ti,kw OR 'psychology-education':ab, ti,kw OR 'psycho – therapy intervention':ab, ti,kw OR 'psycho-therapy education *':ab, ti,kw OR 'psychosocial -intervention*':ab, ti,kw OR 'psychosocial education*':ab, ti,kw OR 'psychosocial-therapy*':ab, ti,kw OR ' behaviour educational *':ab, ti,kw OR 'cognitive educational* cognitive behavior therapy* therap*':ab, ti,kw | 5,125 |
| "Breast Cancer"[Mesh] OR (("Cancer Diagnoses"[Mesh] OR "breast cancer diagnoses*"[tiab] OR "carcinoma"[tiab] OR " maligna[tiab] OR " malignant*"[tiab] OR " stage cancer*"[tiab] OR " stage maligna*"[tiab] OR " stage malignant*"[tiab] OR " stage oncology*"[tiab] OR " stage breast cancer*"[tiab] OR " cancer oncology *"[tiab]) AND (" oncology*"[tiab] OR " breast*"[tiab] OR "cancer*"[tiab])) | 102 |

***Figure 1: The Search Strategies***

**Study Selection and Data Extraction**

To filter articles, the authors used the Mendeley web application and the search feature in the database. Three reviewers (DW, YW, and AW) manually rejected irrelevant studies after using search and reference methods to screen the identified articles. The abstracts of the remaining papers were then independently reviewed for compliance with the inclusion criteria. Reference checks were also carried out. Any disagreement with the two authors (AG and SU) was resolved through discussion amongst the parties. If consensus could not be reached, the authors turned to experts for definitive answers to the final decision. Studies were considered if they matched the following standards: The participants were breast cancer patients (defined as individuals diagnosed with breast cancer), and the RCTs were peer-reviewed scientific articles published in English. There

were studies that looked at psychosocial interventions with a main focus on psychoeducation, such as health education, self-help, and self-management interventions. There were also studies with controls that got standard care, standard treatment, or were put on a waiting list. Finally, there were studies that at least said one of the following: "Breast cancer awareness (here defined as the patient's knowledge of breast cancer) was evaluated using a knowledge test that included. The psychoeducational intervention may require a lot of time to carry out. The authors gathered the following information: Women diagnosed with breast cancer serve as both participants and recruits, as well as the intervention and group (psychoeducational approach and control group). The authors independently verified every piece of detailed information. A consultation with experts was carried out to conduct a systematic review, and the following outcome data were independently gathered: characteristic studies and outcome psychoeducation.

### Eligibility Criteria

Article analysis was obtained from articles published from 2001 to 2022. The research team initially screened articles by reading titles and abstracts and then reviewed all relevant texts of the articles to determine their eligibility for inclusion. The inclusion criteria consisted of articles that (1) focused on diagnosed breast cancer women over 18 years of age who have had breast cancer diagnosis; (2) psychological or psychoeducational interventions; (3) measurement of psychological distress, anxiety, and depression; and (4) included the original study with a randomized controlled trial method. The exclusion criteria applied are as follows: (1) articles that focus on psychoeducation with other health problems; (2) other psychological interventions; and (3) literature review, dissertation, editorial, commentary, and other expert opinion.

## RESULTS

### Study Selection and Inclusion

A total of 249 papers were discovered throughout the literature search: 103 on PubMed, 109 on Embase.com, 36 at APA PsycINFO, and one at the Cochrane Library. Forty-six articles were selected for full-text evaluation after removing any duplicates and screening the titles and abstracts, and the systematic review finally included 15 research studies (Figure 2).

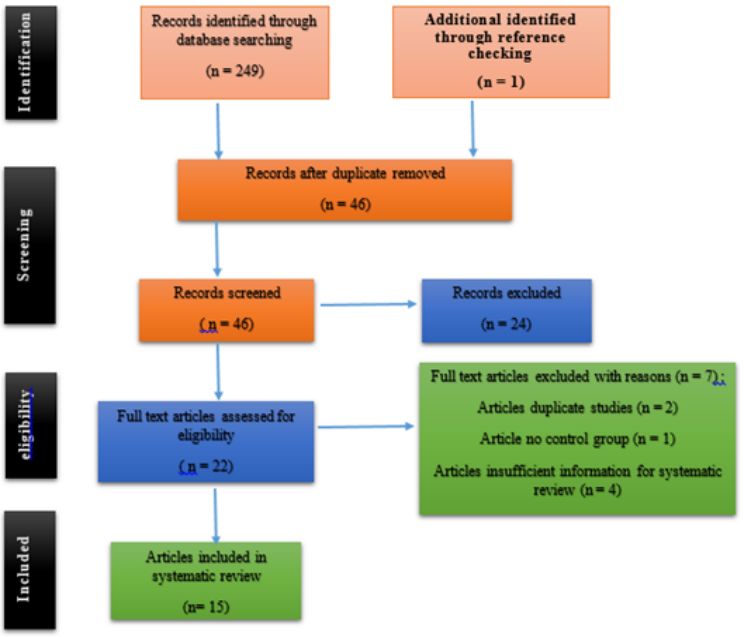


*Figure 2: PRISMA Flow Chart for the Article Selection*

### Characteristics of the Included Studies

There were 2,181 individuals in total across the 15 studies (1,158 in the intervention group and 1,023 in the

control group). The characteristics chosen from the included studies are summarized in Table 1. Patients diagnosed with breast cancer who underwent primary or postoperative curative treatment were included in the 15 studies. Of the 15 investigations, participants were chosen based on the clinical context. These studies were conducted by high-income countries (n = 15) (HIC). Eight studies in the control group compared the waitlist with conditions typical of the control group, and four compared psychoeducation with routine care. Regarding the length of intervention, six studies on interventions lasted for eight weeks or longer, and another six studies on interventions required a shorter time.

One study should have reported the number of intervention and control group participants. Seven studies aimed to find group formats for psychoeducation, whereas the other five aimed to find individual formats. Regarding professional support, most of the studies (15) viewed assistance from third parties as psychoeducation provided or assisted by one or more specialists. Most studies (10) used in-person psychoeducation; the remaining two used digital media (video). Following surgery, postoperative psychoeducational material for women with primary breast cancer includes: (a) knowledge of breast cancer, such as medical conditions and treatments (5 studies); (b) treatment of patients with breast cancer (7 studies); (c) adherence to nutrition recommendations (1 study); and (d) psychosocial support using resources (7 studies). The outcomes of anxiety (9 studies), depression (10 studies), knowledge (1 study), dietary adherence to nutrition (1 study), pain (1 study), and fatigue (1 study) were all examined.

***Table 1: Characteristics Studies***

| No | Studies | Participants | Settings | Groups Intervention | N | Time | Material | Psychoeducation format | Outcomes Psychological Distress |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Boesen *et al.,* 2011 (Boesen *et al.,* 2011) | BC diagnosed | Clinic (HIC:DK) | Psychoeducation and group psychotherapy | 89 | 10 weeks (10 sessions) | Psychoeducation and group psychotherapy with the following objectives: enhancing patients' quality of life by fostering environmental support, facilitating grieving over some losses, altering maladaptive problem solving and coping. | Face to face, helper assisted and group psychoeducation. | POMS(Anxiety and depression) |
| | | | | No intervention | 97 | | | | |
| 2 | Dastan & Buzlu, 2012 (Dastan & Buzlu, 2012) | BC diagnosed | Cclinic (LIMIC:TR) | Semi-structured psychoeducation | 41 | 6 weeks (8 sessions) | Essential facts regarding breast cancer, nutrition, psychological issues, problem solving and coping. | Face to face, helper assisted and group psychoeducation. | A test for cancer patients using the mental adjustment scale : anxiety |

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| | | | | Treatment : waiting list control | 42 | | | | |
| 3 | Dolbeault *et al.,* 2009 (Dolbeault *et al.,* 2009) | BC Patients | Clinic; FR (HIC) | Psychoeducation group<br><br>Waitlist control | 81<br><br>87 | 8 weeks (8 sessions) | The impact of treatments on body image, managing uncertainty, improving communication with loved ones, etc with psychoeducational group based problem-solving, cognitive restructuring, relaxation exercises, and general medical information and peer exchanges on causes and significance of cancer. | Face to face, helper assisted and group psychoeducation. | POMS: Anxiety and Depression |
| 4 | Edgar, Rosberger & Collet, 2001 (Edgar, Rosberger & Collet, 2001) | BC Patients | Clinic (CA: HIC) | Nu-Care individual | 30 | 24 weeks (5 sessions) | Enhancing a sense of personal control, emotional learning, and instrumental coping responses are the primary focuses of individual psychoeducational interventions: Nu-care Individual content. Meetings with research assistants every four months for evaluation, problem-solving techniques, goal-setting, cognitive reappraisal, relaxation training, social support, and resources. | Face-to-face, helper-assisted. Individual psychoeducation; face -to-face, helper assisted, group psychoeducation. | POMS: Depression. |

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| | | | | Nu-Care group | 36 | | Nu-care group content: Psychoeducational group methods focus on improving emotional learning, instrumental coping mechanisms, and one's sense of personal control. Meetings with research assistants every four months for evaluation, for solving problems, goal-setting, cognitive reappraisal, relaxation training, social support, and resource use. | | |
| 5 | Fillion *et al.,* 2008(Fillion *et al.,* 2008) | BC Patients | Clinic CA (HIC) | Group Education<br><br>Usual care | 44<br><br>43 | 4 weeks (4 sessions) | The emotional distress in BC survivors to reduce fatigue and improve energy level, QOL (mental and physical) and medical follow-up for BC patients. | Face to face, helper assisted and group psychoeducation | MOS SF -12: QOL |
| 6 | Younis, Norsa'ada & Othman, 2021 (Younis, Norsa'adah & Othman, 2021) | Patients BC | Clinic (HIC: YD) | Psychoeducation | 100 | 2 days (2 sessions) | The psychoeducation intervention program (PEIP) offers a breast cancer module covering pertinent information, a person's lifestyle or habits, problem-solving techniques, interpersonal | Face to face, helper assisted, individual psychoeducation. | Brief-COPE questionnaire for follow-up at 2 and 12 weeks; anxiety: HADS; depression: HADS. |

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| | | | | | | | interactions, and personal experiences. There are two sessions, the first of which is the nurse's instruction on relaxation techniques. The second one is b reast cancer survivors sharing their experiences and offering support. | | |
| | | | | Usual care | 100 | 1 week (2 sessions) | Support for one's mental health, spiritual guidance, and relaxation exercises are common forms of treatment. | | |
| 7 | Ploos *et al.,* 2020 (Ploos *et al.,* 2020) | BC Patients | Clinic (NL: HIC) | Waitlist control | 36 | | waiting list | Face to face, self , help individual psychoeducation. | Depression and anxiety both have HADS scores and the C-30 QOL scale. |
| | | | | NDTI | 31 | | Nurse-led DT Intervention (NDTI), which offers interventions such as emotional support, cancer education, and steps and ideas to overcome physical, psychological and social problems, includes the findings of DT measures made by nurses. | | |
| | | | | Usual care | 26 | | Frequent treatment, including follow-up appointments with medical professionals. | | |

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|---|---|---|---|---|---|---|---|---|---|
| 8 | González-Santos *et al.,* 2021 (González-Santos *et al.,* 2021) | BC Patients | Clinic (ES: HIC) | Multidisciplinary program | 31 | 24 weeks | Programs on mindfulness, physical activity, and eating habits are included in the multidisciplinary program's material, along with programs on those topics. | Face to face, helper assisted and group psychoeducation. | QLQ-C-30: QOL. |
| | | | | Waitlist control | 32 | | Waiting list. | | |
| 9 | Cipolletta, Simonato & Faccio, 2019(Cipolletta, Simonato & Faccio, 2019) | | Clinic (IT: HIC) | Psychoeducation group | 13; 5 | 3 month (12 sessions patients, 6 sessions helper) | Provide participants with informational, emotional, and relational support throughout treatment with the help of mindfulness and relaxation practices. | Face to face, helper assisted, individual psychoeducation. | Anxiety and Depression: CBA-OE. |
| | | | | Usual care | 15;16 | | Routine medical treatment | | |
| 10 | Bredal *et al.,* 2014 (Bredal *et al.,* 2014) | BC diagnosed | (HIC:NO) clinic | Group Psychoeducation | 185 | 5 weeks (5 sessions) | Psychoeducation group (PEG) content includes psychological support, stress management, problem-solving skill improvement, and health education. | Group (face to face), helper assisted. | HADS: Anxiety and Depression. |
| | | | | Care Usually | 182 | 3 weeks (3 sessions) | Patients are encouraged to express their feelings and experiences through support groups. | | |
| 11 | Reme *et al.,* 2022 (Reme | BC Patients | Clinic ( NO : HIC) | Mindfulness and ACT | 100 | 3 – 12 months | The audio file guides mindfulness a 13-minute | Individual (digital: video), helper assisted. | Pain: NRS, fatigue: FACIT-F; QOL: The EORTC QŁQ |

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|---|---|---|---|---|---|---|---|---|---|
| | *et al.,* 2022) | | | Treatment as usual (TAU) | 100 | | session through a pre-recorded audio file on a mobile phone with headphones. | | BR23, Anxiety and depression: HADS; |
| 12 | Stanton *et al.,* 2005 (Stanton *et al.,* 2005) | BC Patients | Clinic (US: HIC) | *Psychoed ucational counselling* (EDU) | 143 | 2 weeks (2 sessions) | Face-to-face session and telephone session with individual psychoeducat ion qualified cancer educators was the focus of psychoeducat ional counselling (EDU), with 143 participants. It took place over 2 weeks with 2 sessions. Reviewing cancer-related difficulties relating to interpersonal relationship, emotional and physical health, and attitude toward life in session one. In session two, you will assess the action plan's development and discuss how to apply the method to other problems. | individual (digital: video), - self help. | Depression: CES-D, QOL: SF. |
| | | | | VID intervention | 139 | 1 week (1 session) | Four life domains: physical health, emotional well-being, interpersonal connections, and life perspectives with four breast cancer survivors who participated | | |

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| | | | | | | | in peer modelling talked about their experiences and how they overcame difficulties. | | |
| | | | | National Cancer Institute print material (CTL) standard printing materials | 136 | 1 week (1 session) | The content booklet with managing emotions, general information, cancer safety, illness, managing emotions, and financial difficulties after cancer treatment at home. | | |
| 13 | Stanzer *et al.,* 2019 (Stanzer *et al.,* 2019) | BC Patients | clinic (Austria: HIC) | Psychoed ucation | 30 | 8 weeks (8 sessions) | psychoeducat ion, content: LTLWC | Face to face, helper assisted and group psychoeducati on. | STAI: Anxiety and BDI -II: Depression; psychoneuroimm unology measurement: the number of immune cells (T-regulatory cells/Treg) and levels of stress hormones (serotonin). |
| | | | | Waitlist control | 22 | | Usual care | | |
| 14 | Taylor *et al.,* 2003 (Taylor *et al.,* 2003) | BC Patients | clinic (US: HIC) | Psychoed ucation group | 40 | 8 weeks (8 sessions) | Group psychoeducat ional intervention, content: There are four psychosocial topics covered: (a) how to use and maintain support social (b) relaxation techniques, (c) activities on how religion and spiritual and can help breast cancer patients overcome their problems, (d) how to deal with the issue | Face to face, helper assisted and group psychoeducati on. | Questionnaire knowledge. |

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|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | of cancer recurrence fear. | | |
| | | | | Assessment of conditions during control/group meetings for assessment only. | 33 | | Evaluation of circumstances only during control or group sessions. | | |
| 15 | Pei-Hua *et al.,* 2018 (Pei-Hua *et al.,* 2018) | BC diagnosed | (HIC:CN), clinic | Individual Psychoeducation | 20 | 18 weeks (6 sessions) | Details regarding the medical aspects of their illness and available treatments encourage self-care. | Face to face, helper assisted, individual psychoeducation. | HADS: Anxiety and Depression |
| | | | | Care Usually | 20 | | The educational pamphlet intervention | | |

BC: Breast cancer; BDI: the Beck Depression Inventory-II; CES-D: the Centre for Epidemiological Studies of Depression; BSI: the Brief Symptom Inventory; EORTC-QLQ-C-30: the Quality of Life Questionnaire developed by the European Organisation for Research and Treatment of Cancer; FACT: the Functional Assessment of Cancer Therapy; FACT-B: the Functional Assessment of Cancer Therapy for the Breast Questionnaire. HIC: High-income countries; LIMIC: Low-and Middle-Income Countries; HADS: Hospital Anxiety and Depression Scale (HADS); POMS: Profile of Mood States; Questionnaire knowledge; NRS: numeric rating scale; STAI: State-Trait Anxiety Inventory; BRIEF-COPE; MOS SF-12: QOL; and CBA-OE.

## Risk of Bias (ROB)

The Joanna Briggs Institute (JBI) utilizes the Risk of Bias (ROB) tool to assess the potential for bias in randomized controlled trials (RCTs), enhancing the reliability and validity of study results (Joanna Briggs Institute, n.d.).

## Synthesis of Results

The data based on the synthesis related to shown in the results of the effectiveness psychoeducation (table 2).

***Table 2: Summarized Results of The Reviewed Studies***

| No | References | Summarized Results |
|---|---|---|
| 1 | Boesen *et al.,* 2011 | The results of the *t*-test research in both groups showed that psychoeducation and group psychotherapy did not reduce psychological pressure and did not improve quality of life; only mental adjustment improved the patient's marital relationship. |
| 2 | Dastan & Buzlu, 2012 | A comparison of the experimental and control groups' mean scores on the mental adjustment scale for cancer before, six weeks, and six months after treatment revealed a significant and an increase in the degree of knowledge about the disease after treatment. |

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| 3 | Dolbeault *et al.,* 2009 | The study's findings indicate that Anxiety (State -Trait Anxiety Inventory/STAI, POMS) significantly decreased in both groups, with decreases noted in anger, depression, and fatigue (POMS); interpersonal strength and relationships (POMS) significantly increased; emotional function and role; and fatigue level (The European Organization for Research and Treatment of Cancer/EORTC QLQ - C30). |
| 4 | Edgar, Rosberger & Collet, 2001 | Compared to the control and intervention groups, patients with breast cancer who got Nu-care and presented individually had longer-lasting, more notable changes in their state of well-being. |
| 5 | Fillion *et al.,* 2008 | The research results show that participants in the intervention group improved fatigue, energy levels, and emotional distress at follow-up at three months, as well as physical quality of life after treatment, compared with control group participants. |
| 6 | Younis, Norsa'adah & Othman, 2021 | The intervention group's average adaptive coping score increased from 5.63 (1.3) in the pre-test to 6.42 (1.3) in the post-test; the pre-test and post-test results for the intermediate coping mechanism were 3.87 (1.1) and 3.69 (0.8), respectively. |
| 7 | Ploos *et al.,* 2020 | The results of the study showed no significant difference in patients' quality of life after two years of treatment (surgery, chemotherapy, radiotherapy) between the intervention group and control group; the average difference was $p$=0.610. The mean difference was $p$=0.610. Two years after the conclusion of treatment, NDTI can be helpful but does not improve QOL. |
| 8 | Gonzalez- Santos *et al.,* 2021 | The percentage of Intervention group (IG) and control group (CG) that had good adherence (73% of IG vs. 22% of CG, $p$ <0.001), the mean adherence score (8 for CG and 10 for IG, $p$ <0.001; the percentage of weight gain (550 g for CG vs. 720 g for IG, $p$=0.05), and the body mass index ($p$=0.04) showed a significant difference at the 6-month follow-up. |
| 9 | Cipolletta, Simonato & Faccio, 2019 | Unlike the control group, the treatment group's effect size was substantial across all scales. Specifically, the indexes had a positive sign in the cases of Anxiety (d = 1.350), Depression (d = 1.179), and Psychological Distress (d = 0.956) because the means decreased from T0 to T1, while the indexes had a negative sign in the cases of Well-Being (d = - 1.276) and Perception of Positive Change (d =- 1.522) because the means had increased at T1. |
| 10 | Schou-Bredal, Ekeberg & Kåresen, 2021 | Displayed more significant optimistic attitudes in the second and sixth months ( $p$ =0.001) and less helplessness/despair in the second month ($p$ =0.01) between intervention and control group. |
| 11 | Reme *et al.,* 2022 | The study uses an independent sample $t$-test to examine the mean levels of pain and exhaustion at a three-month follow-up. They were reviewed at the three distinct time points (post-surgery, three - and twelve-month follow-up) using linear mixed models. |
| 12 | Stanton *et al.,* 2005 | After six months of analysis, the mean change scores showed nonsignificant differences between EDU and CTL and VID and EDU and a significant effect for VID over CTL ($P$ =0.008) on SF-36 vitality. |
| 13 | Stanzer *et al.,* 2019 | The intervention group's anxiety scores (t1: median = 35.0) were significantly lower than those of the control group (t1: median = 41.0). |
| 14 | Taylor *et al.,* 2003 | The results of the study using comparative analysis of the t-test showed that in the intervention group, there was an improvement in mood, an increase in general and specific psychological functioning, more significant essential psychological stress, and lower income compared to the control group. |
| 15 | Pei-Hua *et al.,* 2018 | The EORTC QLQ-C30 and EORTC QLQ-BR23 results demonstrate significant intergroup differences in insomnia and global health status subscales at T1 ( $p$ 9.05), suggesting that the two groups pre - chemotherapy baseline scores were comparable. On the EORTC QLQ-C30 functional scales (physical function, cognitive function) and symptom scales (vomiting, nausea), the experimental group did better than the control group at T4. The same was true for the EORTC QLQ-BR23 useful scales (body images, future perspective) and symptom scales (breast symptoms). |

## DISCUSSION

This systematic review aims to discover the role of psychoeducation and its affect individuals receiving an initial breast cancer treatment following surgery. The effects of psychoeducation in reducing the levels of anxiety and depression in contrast to medical recommendations from first-time admissions of patients undergoing primary therapy following breast cancer surgery are the subject of the first systematic study. Only three studies included outcomes for anxiety and depression (Stanzer *et al*., 2019), which could account for the absence of detectable benefits. Symptomatic breast cancer patients, diagnoses, and survivors were examined in a recent study (Setyowibowo *et al*., 2022), demonstrating that psychoeducation can significantly reduce anxiety. The findings of another nine additional studies might also be included, similar to reducing other psychological issues. Since the groups were not initially equalized in terms of several psychological characteristics, similar to two previous trials

on psychoeducation, the psychoeducation did not significantly reduce depression. It also did not improve psychological discomfort when combined with group psychotherapy (Boesen *et al*., 2011).

Our research shows that following surgery, psychoeducation can help patients with primary breast cancer feel less anxious (Stanzer *et al*., 2019), and it is consistent with a prior meta-finding analysis stating that psychoeducation has a beneficial effect on reducing the level of anxiety in patients with breast cancer symptoms and breast cancer survivors (Setyowibowo *et al*., 2022). According to past studies, psychoeducation can help patients learn strategies to manage stress, improve their understanding of coping processes, not feel lonely, and find consolation through social support (breathing and relaxation exercises). In contrast to a previous meta-analysis of patients with breast cancer revealing a positive benefit of digital/video-based psychoeducation, the authors discovered that no beneficial effect on depression could be gained from it (Stanton *et al*., 2005). The interventions primarily emphasized arousal and stress-reduction strategies (such as relaxation exercises), which ignored common depression symptoms, including melancholy feelings and exhaustion. This may be the cause of the lack of psychoeducational effects on depression. Behavioural activation is more helpful in reducing depression symptoms (Stanton *et al*., 2005). Intriguingly, a subgroup analysis revealed that the methods of psychoeducation (in-person or online) had varied impacts on reducing depression, with the face-to-face format showing the most significant reduction in depression. Due to the utter differences in study sample sizes (n = 2 digital comparison versus n = 13 no digital), these results should be regarded with caution. Video-based interventions are a subset of digital interventions. This can be partially explained by the slightly higher dropout rate for digital psychoeducation (up to 33%) compared to psychoeducation conducted in person (up to 24%). A typical issue with e-health initiatives is that they have gradually become more ineffective (Stanton *et al*., 2005).

Additionally, it is more practical to try to add psychoeducation to the regularly provided psychosocial care in hospitals instead of providing it digitally or remotely for patients subject to primary care. Another reason for the decreased effectiveness of digital psychoeducation delivery could be that only some patients receiving primary care after surgery, primarily middle-aged women, have the best digital skills. However, it should be highlighted that prior meta-analyses did not reveal any evidence of variations in the efficacy of guided self-help and in-person therapies for depression (Stanton *et al*., 2005). In addition, self-help interventions, both individually and face-to-face, typically require more time and money (Setyowibowo *et al*., 2022). Patients with cancer have received psychoeducation in various digital formats (Setyowibowo *et al*., 2022), and this remains a worthwhile idea that requires additional investigation.

Another subgroup result showed that eight psychoeducational sessions had a better effect on reducing anxiety than fewer sessions. From a dose-effect standpoint, it is unsurprising that longer interventions produce a more potent interaction. It is essential to balance providing the best and most effective level of psychoeducation while maintaining its applicability and acceptability to specific patients. After all, adding more sessions means adding more effort and resources. A study with ten sessions was also undertaken. However, its results did not reduce the chance of developing breast cancer due to the low number of sessions in that one study (Stanton *et al*., 2005).

A helper assists (or guides) various health professionals as they provide psychoeducation in this manner. This diversity hampers statistical comparisons between various categories of healthcare professionals. Regarding anxiety and sadness, however, the authors tried to discover the differences in the impact of psychoeducation provided or assisted by specialists from single disciplines vs. those from multiple disciplines. In neither of these outcomes, this subgroup analysis found any distinction between psychoeducation provided by specialists from single disciplines or multidisciplinary teams. Furthermore, the authors found no differences between psychoeducation on anxiety and depression delivered within a cognitive-behavioral therapy framework and other forms of psychoeducation.

More than 15 randomized clinical trials showed that psychoeducation significantly reduced psychological distress. In 2021, research revealed that psychoeducation effectively enhanced adaptive coping strategies, and patients who received psychoeducation could use adaptive coping strategies after joining the program with significantly higher levels (Younis, Norsa'adah & Othman, 2021). Research by Cipolletta and colleagues also found that psychoeducation shows psychological changes such as decreased anxiety and depression and positive changes in increased perception (Cipolletta, Simonato, & Faccio, 2019). Research by Dastan and colleagues shows that psychoeducation has also proven positive in causing changes in the level of adjustment to cancer

(Dastan & Buzlu, 2012). Research by Wu and colleagues in a systematic review reported that nonpharmacological interventions were effective at reducing fatigue levels (Wu *et al*., 2019). Psychological interventions such as psychoeducation significantly reduced fatigue at the treatment stage for cancer patients. These results emphasized more the aspects of psychoeducation that are proven helpful to reduce depression, anxiety, and depression in breast cancer patients diagnosed.

## CONCLUSION

This analysis demonstrates the potential of psychoeducation as an intervention to assist patients in their primary breast cancer treatment pathways after surgery. This systematic review also showed that psychoeducation to reduce the symptoms of anxiety and despair, mainly when delivered over a long period of time and in person, was effective in enhancing the quality of life. It was discovered that psychoeducation has an impact on lowering psychological distress.

### Recommendations

Recommendations for further research suggest that this psychoeducational intervention can be applied to patients diagnosed with breast cancer who are undergoing medical treatment such as mastectomy, chemotherapy, radiotherapy, or other treatments for survivors.

### Conflict of Interest

The authors have no apparent conflicts of interest.

## ACKNOWLEDGEMENT

The authors are thankful to Hibah Riset-Muh Majlis Dikti Muhammadiyah for providing funding for this investigation.

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