



Psychoeducational Intervention Program for Women with Breast Cancer: A Systematic review and Meta-analysis

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General Note



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ABSTRACT

Most patients with breast cancer receive psycho-educational procedures. The feasibility of these interventions has not yet been established, however. We performed a systematic review and meta-analysis to identify the psycho-social (psychoeducational and other) supporting experimental studies with breast cancer patients. Articles have been searched in electronic scientific databases. Independently assessed and collected data from eligible studies by two review authors. Discussion resolved any disagreement. The data extracted included participant information, methods, intervention and outcome. Twelve papers that meet the inclusion criteria are subjected to review. The research included a total of 1834 breast cancer participants. Significant improvement was reported after psychoeducational intervention in multiple psycho-social factors. Meta-analysis found that a significant amount of heterogeneity with high evidence -3.96 (95% CI: -4.39 to -3.83 ; $P = <0.00001$; $I^2 = 92\%$; Chi2 test $P < 0.00001$). Our study strengthens the evidence of psychosocial support's efficacy in improving symptoms of breast cancer and psychoeducational intervention in promoting psychological well-being.

Keywords: Psychoeducational support, Quality of life, Meta-analysis, Breast cancer, Psychosocial support, Psychoeducational support

1. INTRODUCTION

Among international cancer statistics, breast cancer is the most commonly diagnosed disease among women (Jemal et al., 2011). Incidence rates in more developed countries are much higher, and improvements in the survival of breast cancer have been attributed to the systematic use of adjuvant therapies over recent decades (Youlten et al., 2012). However, breast cancer patients may experience many manifestations resulting from the disease's primary disease and/or treatment and face problems associated with coping with a multitude of physical and psychological symptoms at the same time (Denieffe & Gooney, 2011). Interventions for breast cancer after primary therapy should have several objectives. Psychosocial support can provide people with physical or emotional disabilities with assistance and encouragement. There are many research papers on the effectiveness of psychosocial interventions for quality of life (QOL). Nevertheless, most physical symptom treatments have beneficial effects on QOL at various follow-up times (Mishra et al., 2012). Meta-analysis results revealed that behavioural techniques and physical exercise enhance psychosocial functioning and QOL (Duijts et al., 2011).

The psychological and emotional support of patients and their family members should be seen as a vital part of health care so that no group feels alone when dealing with the intense neoplasia experience (Vanderwerker et al., 2005; Ussher et al., 2006; Naughton & Weaver, 2014; Badger, 2007). Psycho-oncology interventions are classified into four broad sections in the context of counseling, therapeutic approaches, natural methods, and psychotherapy. The final group may adopt the psychological-behavioural approach, the personal and social-explorative approach and psychoeducational and constructive intervention support (Sanjida et al., 2018). Another factor that arises from the literature is that many therapies are distinguished by a group structure that is helpful in providing participants with sufficient psychological support to cope with the devastating effects of neoplasia, allowing them to share their feelings and perceptions, reflect on the situation, embrace the changes and exchange information with other people (Badger, 2007). Moreover, such intervention enables people to gain a greater sense of identity, become less dependent on the medical staff, use optimized real issue-solving strategies, and develop better social ties (Gottlieb & Wachala, 2007).

In fact, the patient's impaired stigma may be reduced by educational counselling. New resources are to be found within the group in terms of confronting cancer and its associated medical treatments, as well as in support of adjusting to neoplasia by shared confrontation; in addition, everyone is giving and receiving at the same time (Sanjida et al., 2018). Listening, interaction and communicating with others minimize the feelings of lethargy and loneliness and increase the feelings of power and utility (Chou et al., 2016). One might feel the experience with others in the same dramatic situation could be depressing because of the fear of contamination in terms of the other's suffering. On the contrary, respondents disclose that the group becomes a privileged place to remedy anxiety, anger, frustration, doubts and chaos (Montazeri et al., 2001). Selflessness is a very intense experience because the group members recognize with one another and think they are worthwhile to those who are experiencing the very same way they are. They can discuss easily conflicts and consequently obtain a sense of reprieve (Chou et al., 2016). The purpose of this study was to evaluate the effectiveness of the psychoeducational interventional program for women with breast cancer patients.

2. METHODS

Types of studies, participant and intervention

Randomized controlled trials, quasi-experimental studies, mixed method longitudinal studies were comparing some form of emotional or behavioural intervention with control. A variety of psychological interventions are recommended for inclusion to prevent and mitigate psychological distress: a) cognitive and behavioural techniques; b) counseling; and c) psychoeducational interventions methods.

Ethical approval

This study was approved by the ethics committee on Universiti Sains Malaysia (USM) USM/JEPeM/18080386 & Jordan Ministry of Health (JMOH) MB/Ethics Committee 9694. The registration of the protocol was done with ACTRN registry. The registration number is: ACTRN12619000095167 date assigned 22/01/2019.

Search strategy

We searched the following databases- 1) The Cochrane Breast Cancer Group's (CBCG), 2008 to 15th August 2019; 2) The Cochrane Central Register of Controlled Trials (CENTRAL); 3) PubMed; 4) Scopus (2008 to 15th August 2019); 5) PsycINFO (2008 to 15th August 2019); 6) CINAHL (2008 to 15th August 2019). Initially, searches were conducted using keywords accompanied by searches for related articles until previously selected papers were collected. Search terms used were - ((breast cancer OR breast carcinoma "or breast tumour) AND (coping strategies OR quality of life) AND (psychological distress OR anxiety OR depression OR stress) AND (psychological distress OR psychoeducation intervention)).

Data collection and analysis

Data selection and extraction

Two authors (MARY and NB) independently evaluated each trial's titles and abstracts for inclusion in the review. After the preliminary evaluation, we got full versions of all potentially important articles. A third author (AO) have been consulted to overcome any eligibility conflicts. If the results of a study were unpublished but available, and all authors were satisfied with the results of the statistics, included the records and referred to the discussion thread. Trials were included if randomisation and arms distribution of patient preference were investigated. If these analyses were not finalised, the studies were kept separate due to the sheer risk of distribution bias. Two review authors (MARY, NB) examined all findings individually. Discussion resolved all controversy. Age, country of studies, sample size, study design, Interventions type, length of intervention and outcomes using validated instruments were taken for the characteristic table (Table 1).

Table 1 Characteristic of different psychoeducational intervention study for women with breast cancer.

Author & year	Country	Age	Sample size	Study design	Intervention tools	Duration	outcome
Kim et al., 2018	South Korea	48.1	60	Randomized controlled trial	Korean version of POMS (K-POMS-B)	6 weeks	Significant improvement
Pei-Hua et al., 2018	Taiwan	51.2	40	Randomized Controlled trial	HADS, EORTC QLQ-C30, BR23	6 weeks	Significant improvement
Urech et al., 2018	Switzerland	52.0	229	Randomized controlled trial	FACIT-F, HADS	8 weeks	Significant improvement
Bisseling et al., 2017	Netherland	52.3	90	Mix-methods of cohort study	HADS, EORTC QLQ-C30)	8 weeks	Significant improvement
Henderson et al., 2012	USA	49.8	172	Randomized controlled trial	Rosenberg Self-Esteem Scale, UCLA Loneliness Scale, Mini-MAC	16 weeks	Significant improvement
Sherman et	USA	53.8	249	Randomized	PAL-C, SRHS	6 weeks	Significant

al., 2012				controlled trial			improvement
Loprinziet al., 2011	USA	61.0	25	Randomized controlled trial	SMART	12 weeks	No significant outcome
Boesen et al., 2011	Denmark	30-70 years age group	210	Randomized controlled trial	POMS, EORTC QLQ-BR23	8 weeks	No significant outcome
David et al., 2011	Germany	48.2	235	Randomized controlled trial	Psychological distress (BSI) EORTC QLQ-C30	8 weeks	No significant outcome
Anderson et al., 2008	USA	50.8	227	Randomized controlled trial	POMS, IES	16 weeks	Significant improvement
Dolbeault et al., 2008	France	54.5	203	Randomized Controlled trial	STAI, POMS, MAC, EORTC QLQ-C30, EORTC QLQ-BR23.	8 weeks	Significant reduction in anxiety
Fillion et al., 2008	Canada	52.5	94	Randomized controlled trial	SARS, POMS	4 weeks	Significant improvement
POMS= Profile of Mood States; SARS = Subjective Appraisal Rating Scale; MAC= Mental Adjustment to Cancer Scale; STAI = State-Trait, Anxiety Inventory; EORTC= European Organisation for Research and Treatment of Cancer; EORTC QLQ-C30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30; HADS = Hospital Anxiety and Depression Scale; BR23 = Breast cancer module 23; FACIT-F = Functional Assessment of Chronic Illness Therapy–Fatigue; PAL-C = Profile of Adaptation to Life Clinical Scale; SRHS = Self-Report Health Scale; SMART = Stress Management and Resiliency Training; IES = Impact of Events Scale; Mini-Mac = Mental Adjustment to Cancer Scale							

Risk of bias assessment

Two research reviewers (MARY, NB) assessed and analysed each selected trial using a simple contingency design. All findings of authors have been compared, and any inconsistencies or differences have been resolved by discussion. Assessments used were: ' low risk of bias, ' ' high risk of bias, ' and ' uncertain, ' suggesting an unclear or unknown risk of bias. The domains were: 1) generation of sequences; 2) concealment of allocations; 3) blinding of respondents and staff; 4) blinding of reviewers of tests; 5) incomplete data of results; 6) Selective reporting of results, and 7) Several sources of discrimination.

Heterogeneity assessment

To evaluate statistical heterogeneity between studies, both the I² and Chi² heterogeneity test, as well as the visual inspection of forest plots, were used. The graphical viewpoint of the data was checked; if CIs are poorly overlapped for the results of individual studies, the presence of statistical heterogeneity is generally indicated. Furthermore, the Chi² test was carried out to check the discrepancies between the outcomes of each included study. A P value of 0.10 was used to determine statistical significance instead of the conventional level of 0.05. A low P value shows the heterogeneity of the effects of the intervention. The I² statistics were used in all studies to measure inconsistencies. We evaluated therapeutic heterogeneity by reviewing the study character traits, the resemblance between respondent types, and the interventions. Heterogeneity was reported as important if it was at least moderate to substantial with the I² statistics exceeding 60% (Khan et al., 2017).

3. RESULTS

Search Results

We obtained 373 study references. After examining the titles and abstracts of these studies, we removed duplicates and eliminated all those that did not meet our inclusion criteria and those that were unable to qualify. We obtained full-text versions for further evaluation of the remaining 51 potentially eligible studies. Twelve studies have shown that they are available for this review (Figure 1).

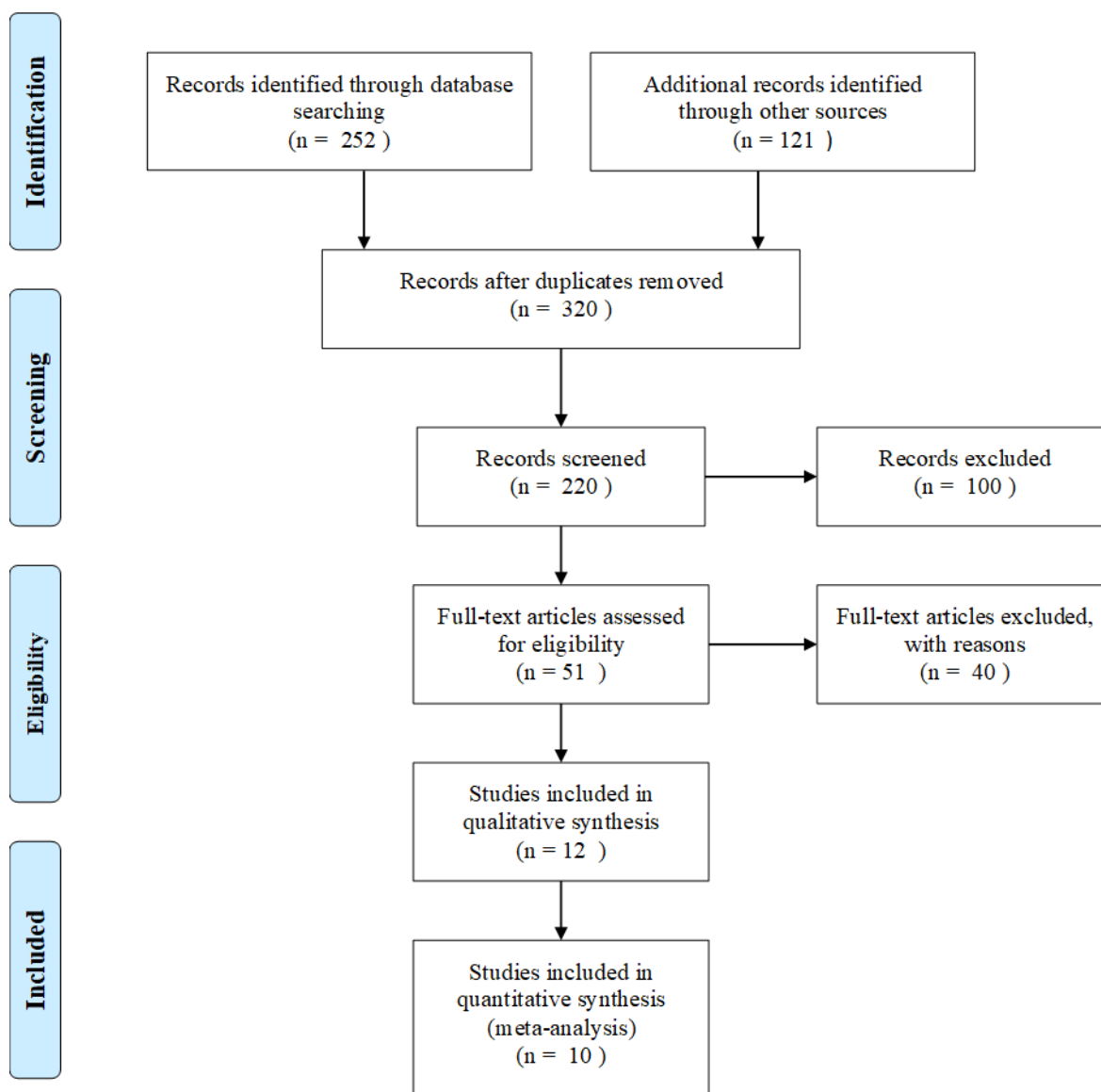


Figure 1 PRISMA study selection flow chart

Included studies

We included twelve study with 1834 participants. The outcomes in the interventions studied were very heterogeneous, the reporting of results and the point at which the results were measured. Of the studies included, four were conducted in the United States, one in the Netherlands, one in Germany, one in France, one in Denmark, one in Switzerland, one in South Korea, one in Taiwan and one in Canada. The study duration varied from 4 weeks to 4 months (Table 1).

Characteristics of the participants

The number of participants included varying considerably from 25 to 249 participants in the individual studies. The age of the participants ranged from 18 to 70 years, with 18 and 65 years being the most common lower and upper limits.

Characteristics of the interventions

A wide range of interventions were evaluated. The majority of interventions were based on cognitive behavioural theory. Mixed approaches like face-to-face and telephone calls or individual counselling were used for intervention. Most intervention sessions were delivered on a weekly basis. Most of the interventions in the studies can be categorised into the following.

- Cognitive behavioural interventions
- Psychotherapy counselling
- Informational and psycho-educational

Characteristics of the outcome measures

In particular, measurement methods and assessment timing were not consistent across studies. Even if the same tool was used, only a few subscales or domains were used in some studies. The short form of the original questionnaire was used in other cases, which further increased the heterogeneity of the data. The Hospital Anxiety and Depression Scale (HADS) depression subscale were used to measure depression. Anxiety was measured using the State Trait Anxiety Inventory (STAI), the Beck Anxiety Inventory (BAI), the HADS anxiety subscale. Most of the mood disturbance was assessed using the Mood States Profile (POMS). Not all subscales have been used in some studies, for example, in Fillion 2008 only subscales for anxiety and depression were used; Stress and depression are interchangeably used and calculated using Event Scale Impact (IES), Brief Symptom Inventory (BSI), and Mental Health Inventory (MHI). The EORTC C-30 and QLQ-BR23, the Quality of Life Index (QLI), were used to measure the quality of life outcomes. The score for the EORTC was reported as a raw score or a score for transformation. Several subscales or domains may consist of resources. In the meta-analysis, only the total score was included.

Effect of intervention between the control and experimental group

We identified twelve studies that included this outcome. From the twelve studies with this outcome, ten studies were included in our meta-analysis. The pooled change from baseline standardised mean difference (SMD) with a considerable heterogeneity between the 10 studies -3.96 (95% CI: -4.39 to -3.83 ; $P = <0.00001$; $I^2 = 92\%$; Chi² test $P < 0.00001$) (Figure 2).

Risk of bias in included studies

For each included study, we measured the risk of bias and reported decisions on the individual risk of bias domains in the 'Risk of bias' table. We have provided these in the overview of the 'Risk of bias' in Figure 3. Several studies in this review did not provide enough details to make it possible to make correct decisions. However, if the authors didn't mention about blinding or camouflage was used for randomisation or distribution, the resolution remained an unclear risk.

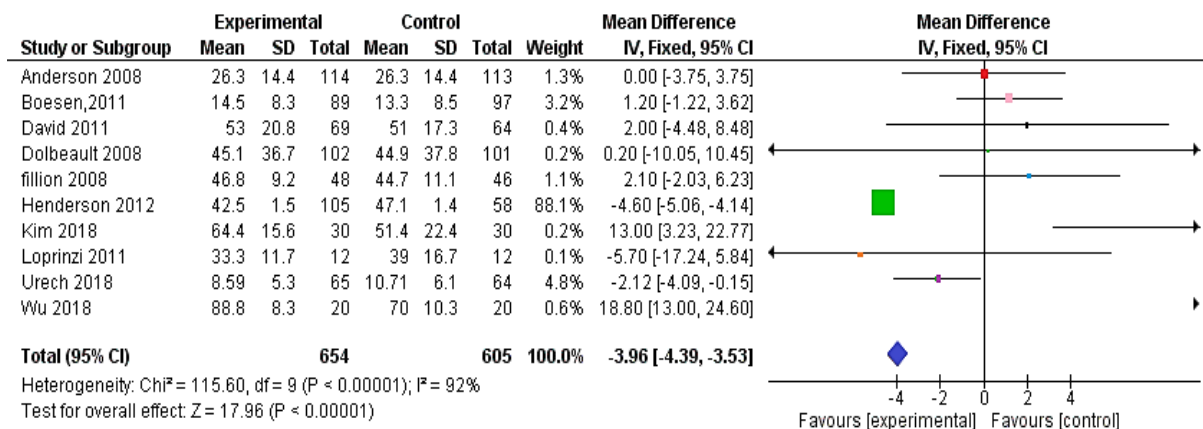


Figure 2 Comparison of different psychoeducational interventional studies

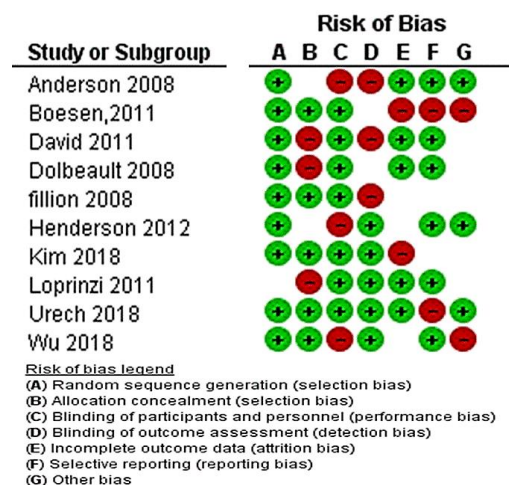


Figure 3 Risk of bias summary

4. DISCUSSION

Our meta-analysis provided evidence of significantly improved scores for psychological intervention (cognitive behavioural therapy) for anxiety, mood disturbance and depression. The intervention showed the significant quality of life improvement only in a format that was delivered individually. This review considers a wide range of psychological therapies for breast cancer for randomized controlled trials (RCTs). Participants from various countries and backgrounds who were diagnosed and treated for breast cancer were included in this review. Many factors, however, limit the generalisability of the results. Most studies were done in North America and European countries, limiting generalisability of results to the rest of the world. While we have included the full range of cognitive interventions for breast cancer, in some intervention group, insufficient data limits meta-analysis predictive outcomes. There is a larger proportion of cognitive behavioural group studies than other therapies. Consequently, all research except one (Andersen et al., 2008) did not include participants with comorbid psychological disorders such as depression and anxiety, except those who might be more difficult to handle. This may have helped to exclude people with high levels of stress who are more or less likely to benefit from the treatment.

In most of the clinical and experimental features, the studies are heterogeneous and could potentially affect the course and magnitude of the effect. The main areas of heterogeneity include the type of intervention, state of control, criteria for inclusion, assessment of outcomes, the timing of follow-up and standard of studies (Khan et al., 2017). A wide range of behavioural methods was used, and in most cases, a mixture of two or more strategies and techniques made it the most challenging variable when comparing different studies. Therefore, descriptions of the intervention's content and credibility were not always accessible (Urech et al., 2018; Bisseling et al., 2017; Henderson et al., 2012). The group of patients who enrolled in the intervention has changed significantly from the assessment of the findings. This improvement can be due to the involvement of the psychoeducational group and can be viewed as evidence of such intervention's efficacy (Chou et al., 2016). Such findings validate the results of previous studies that psychoeducational support for intervention directed towards women affected by breast cancer has the effect of reducing, on the one side, anxiety, depression, exhaustion, intrusive thoughts related to neoplasia, distress, anger, frustration and negative coping strategies and, on the other, encouraging patient development (Montazeri et al., 2001; Dolbeault et al., 2009; Park et al., 2012).

From the review of the outcomes of the treatment group of care givers, there is a significant change due to the involvement in the psychoeducational intervention, which is successful, even if it is less apparent compared to the group of patients (Naughton & Weaver, 2014; Badger et al., 2007; Sanjida et al., 2018). Such findings are also evident in the studies, provided that psychoeducational support approaches promoting oncologic patient caregivers tend to be effective in comparing different circumstances and have the effect of normalising perceived painful experiences: they appear to increase coping strategies, self-efficacy, social functioning, sense of well-being and well-being. Finally, they usually help develop relationships within and outside the family of the oncologic patient (Northouse et al., 2010; Mahendran et al., 2017; Bultz et al., 2000).

To our knowledge, very few meta-analyses have explored the impact of psychoeducational and psychological interventions on patients with breast cancer. However, the psychoeducational training used was not uniform across studies. The strengths of our study include the analysis of most RCTs and the evaluation of the magnitude of efficacy by mean differences. It is necessary to consider certain limitations of this study. The first is bias in publishing. This analysis was confined to articles in English that might have contributed to this bias. Taking into consideration that many different factors may affect the quality of psychoeducational intervention research, this drawback may be rational. Publication bias is always a concern in the meta-analysis, and although the chance may be small, this possibility cannot be denied. A second drawback to psychoeducational intervention programs is an inconsistency. Taking heterogeneity into account, we used a model of random effects as the primary analysis. While psychosocial assistance programs differed in quality and content, the results indicated that psychoeducational support was successful. A third limitation is that compared to previous studies, this meta-analysis included a small number of subjects (654 patients vs. 605 controls in our study (Duijts et al., 2011; Mishra et al., 2012).

5. CONCLUSION

Our analysis strengthens evidence of psychosocial support effectiveness in improving symptoms of breast cancer and psychoeducational assistance in improving emotional well-being. Also, interventions from Middle East countries, especially the Arab region, need to investigate the efficacy of the psychoeducational intervention to improve the emotional disturbance, anxiety and quality of life of breast cancer patients. In the future, research will concentrate on evaluating the efficacy of long-term psychoeducational intervention strategies and explore the impact of such interventions on survival time in cancer.

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Conflict of interest

The authors declare no conflict of interest.

REFERENCE

- Andersen BL, Yang HC, Farrar WB, et al., Thornton, L.M., Young, D.C. and Carson III, W.E., 2008. Psychologic intervention improves survival for breast cancer patients: a randomized clinical trial. *Cancer*. 2008 113: 3450-8.
- Badger T, Segrin C, Dorros SM, et al. Depression and anxiety in women with breast cancer and their partners. *Nurs. Res*. 2007;56:44–53.
- Bisseling EM, Schellekens MP, Jansen ET, et al., Mindfulness-based stress reduction for breast cancer patients: a mixed method study on what patients experience as a suitable stage to participate. *Support. Care Cancer*. 2017; 25:3067-74.
- Boesen EH, Karlsen R, Christensen J, et al., Psychosocial group intervention for patients with primary breast cancer: a randomised trial. *Eur J Cancer Care*. 2011; 47:1363-72.
- Bultz BD, Specia M, Brasher PM, et al., A randomized controlled trial of a brief psychoeducational support group for partners of early stage breast cancer patients. *Psycho Oncol*. 2000; 9: 303–13.
- Chou FY, Lee-Lin F, Kuang LY,. The effectiveness of support groups in Asian breast cancer patients: an integrative review. *Asia Pac. J. Oncol. Nurs*. 2016; 3:157–69.
- David N, Schlenker P, Prudlo U, Larbig W,. Online counseling via e-mail for breast cancer patients on the German internet: preliminary results of a psychoeducational intervention. *GMS Psychosoc Med*. 2011; 8:134-9.
- Denieffe S, Gooney M. A meta-synthesis of women's symptoms experience and breast cancer. *Eur J Cancer Care*, 2011;20:424–35.
- Dolbeault S, Cayrou S, Bredart A, et al. The effectiveness of a psycho-educational group after early-stage breast cancer treatment: results of a randomized French study. *Psycho-Oncol*. 2009;18:647-56.
- Duijts SF, Faber MM, Oldenburg HS, et al. Effectiveness of behavioral techniques and physical exercise on psychosocial functioning and health-related quality of life in breast cancer patients and survivors—a meta-analysis. *Psycho Oncol*. 2011;20:115–26.
- Fillion L, Gagnon P, Leblond F, et al., A brief intervention for fatigue management in breast cancer survivors. *Can Nurs*. 2008;31: 145-59.
- Gottlieb BH, & Wachala ED,. Cancer support groups: a critical review of empirical studies. *Psycho Oncol*. 2007;16,:379–400.
- Henderson VP, Clemow L, Massion AO, et al., The effects of mindfulness-based stress reduction on psychosocial outcomes and quality of life in early-stage breast cancer patients: a randomized trial. *Breast Cancer Res Tr*. 2012;131:99-109.
- Jemal A, Bray F, Center MM, et al. Global cancer statistics. *CA-Cancer J Clin*. 2011;61:69–90.
- Khan M, Nishi SE, Alam MK,. Effectiveness of various methods of tooth brush on reduction of plaque and gingivitis in orthodontic patient: Meta-analysis. *Int Med J*. 2017 24(1), pp.150-153.
- Kim YH, Choi KS, Han, K, Kim, HW, 2018. A psychological intervention programme for patients with breast cancer under chemotherapy and at a high risk of depression: A randomised clinical trial. *J. Clin. Nurs*. 2018; 27:572-81.
- Loprinzi CE, Prasad K, Schroeder DR, Sood, A, 2011. Stress management and resilience training (SMART) program to decrease stress and enhance resilience among breast cancer survivors: a pilot randomized clinical trial. *Clin Breast Cancer*. 2011;11:364-8.
- Mahendran R, Lim HA, Tan JY, et al., Evaluation of a brief pilot psychoeducational support group intervention for family caregivers of cancer patients: a quasi-experimental mixed-methods study. *Health Qual Life Out*. 2017;15:17.
- Mishra SI, Scherer RW, Geigle PM, Berlanstein DR, Topaloglu O, Gotay CC, et al. Exercise interventions on health-related quality of life for cancer survivors. *Cochrane Database Syst. Rev*. 2012;8:CD007566.
- Montazeri A, Jarvandi S, Haghighat S, et al., Anxiety and depression in breast cancer patients before and after participation in a cancer support group. *Patient Educ. Couns*. 2001;45: 195–8.
- Naughton MJ, & Weaver KE,. Physical and mental health among cancer survivors: considerations for long-term care and quality of life. *N. C. Med. J*. 2014; 75:283–86.
- Northouse LL, Katapodi MC, Song L, et al., Interventions with family caregivers of cancer patients: meta-analysis of randomized trials. *CA Cancer J. Clin*. 2010; 60:317–39.

23. Park, J. H., Bae, S. H., Jung, Y. S., and Kim, K. S. Quality of life and symptom experience in breast cancer survivors after participating in a psychoeducational support program: a pilot study. *Cancer Nurs.* 2012; 35:34–41.
24. Pei-Hua, WU, Shang-Wen WT, Chang SC, et al., 2018. Effects of a psychoeducational intervention in patients with breast cancer undergoing chemotherapy. *Nurs. Res.* 2018;26:266–79.
25. Sanjida S, McPhail SM, Shaw J, et al. Are psychological interventions effective on anxiety in cancer patients? A systematic review and meta-analyses. *Psycho Oncol.* 2018;27: 2063–76.
26. Sherman DW, Haber J, Hoskins CN, et al., The effects of psychoeducation and telephone counseling on the adjustment of women with early-stage breast cancer. *Appl Nurs Res.* 2012; 25:3–16.
27. Urech C, Grossert A, Alder J, Scherer, S., et al., Web-based stress management for newly diagnosed patients with cancer (STREAM): A randomized, wait-list controlled intervention study. *J Clin Oncol.* 2018;36:780–6.
28. Ussher J, Kirsten L, Butow P, Sandoval M. What do cancer support groups provide which other supportive relationships do not? The experience of peer support groups for people with cancer. *Soc. Sci. Med.* 2006;62: 2565–576.
29. Vanderwerker LC, Laff RE, Kadan-Lottick NS, et al. Psychiatric disorders and mental health service use among caregivers of advanced patients. *J. Clin. Oncol.* 2005;23: 6899–907.
30. Youlden DR, Cramb SM, Dunn NA, et al. The descriptive epidemiology of female breast cancer: An international comparison of screening, incidence, survival and mortality. *Cancer Epidemiol.* 2012;36:237–48