

# A Psychosocial Wellbeing Of Breast Cancer Survivors – An Overview Of Evidence Base Nursing Research

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## ABSTRACT

**Background:** *This study aimed to conduct a bibliometric analysis of published studies on the association between breast cancer survivors and psychosocial wellbeing from the period of 2011 to 2020 November. The study also aimed to determine publication patterns based on countries, institutions and to identify recent trends for the research on psychosocial wellbeing with breast cancer.*

**Methods:** *Published records on the psychosocial wellbeing of breast cancer survivors between 2011 and 2020 were identified from the Web of Science (WoS) database. Bibliometric analysis including country, institutions, word analysis, most importantly, Document Co-Citation Analysis (DCA) and integrative mapping were generated using CiteSpace software.*

**Results:** *As on 27th November 2020, 2395, published articles were identified. The United States (990; 41.336%) and the University of California System (117) was the most productive country and institution on this domain. Author Mitchell, AJ has the largest citation count (44), whereas, Author Hagedoorn, M as the top on citation burst (12.44). Based on document co-citation analysis (DCA), 'self-reported distress' as the largest cluster and 'cancer recurrence' as the second largest and the mean year of 2016, representing recent trends on this knowledge domain. Further, the keyword 'psychiatric disorder' ranked as the first for research developments with the highest citation burst (6.33).*

**Conclusions:** *The bibliometric analysis of this study concludes that various trendsetting clusters were identified through the research of document co-citation. The significant clusters, such as distinct trajectories of psychological distress, fear of recurrence, caregiving experience and screening on psychological wellbeing, would tend to help to the researchers for working with new directional research on this field.*

**Keywords:** *Psychosocial factors, distress, breast cancer survivors, wellbeing*

## 1. INTRODUCTION

Breast cancer is one of the most common malevolence diseases among women with more than 1.3 million new breast cancer cases identified worldwide annually<sup>1</sup>. The hazard to a woman is almost one in 1500 by the age of 30, and at the age of 40, it has been one in two hundred<sup>2</sup>. The high mortality and often advanced stage of disease upon diagnosis play a significant role in the treatment of breast cancer. Even though it can have a strong psychological impact on the survivors, psychological support may be only the auxiliary role on the treatment of breast cancer. Although it is well known that negative feelings and distress can cause decreases in levels of physical and biological wellbeing, a small amount of significance has been ascribed to the impacts of positive emotions and wellbeing. The distress starts with a diagnosis of cancer and continues beyond the on-treatment phase.

The growing cancer survivors' population and the related psychosocial impact reinforces the need to find the effects of breast cancer survivors' psychosocial well-being<sup>3</sup>. The recurrence and patterns of psychosocial distress that happen with breast cancer depends on which concerns related to the grief and how it is measured. However, most of the literature on the psychosocial perspectives of breast cancer suggests that a large part of women who suffers from breast cancer survivors not well to adjust the diagnosis and manage the complexity of treatment procedures.

Various psychosocial factors had involved with breast cancer survivors. A few of the foremost common psychosocial concerns detailed by women with breast cancer incorporates fear of recurrence<sup>4,5</sup>, trouble sleeping<sup>6,7</sup>, tolerance of pain<sup>8</sup>, body image disruptions<sup>9,10</sup>, sexual dysfunction<sup>11-13</sup>, treatment-related anxieties<sup>14,15</sup>, marital communication<sup>16</sup>, and thought of dying<sup>17</sup>. Moreover, the range of psychosocial issues that will emerge among breast cancer survivors who are at different points along with the treatment continuum. Besides, the psychosocial impact of breast cancer must too be caught on within the setting of other issues such as the influence of women's coping skills<sup>18</sup>, quality of life<sup>19</sup> and socioeconomic variables<sup>20</sup> as well as cultural variables including the accessibility of social support, getting to the health care, and the presence of other chronic ailment or life crises. It is evident that the role of psychosocial factors has much significant effect on understanding and treating breast cancer. However, the overview of recent related literature is not found on the psychosocial wellbeing of breast cancer. Hence, the purpose of the present study is to bibliometrically analyze the publication records obtained from the Web of Science (WoS) Core Collection with highly cited articles on breast cancer and psychosocial wellbeing

## 2. METHODS

### *Data collection*

The study was performed on the articles related to breast cancer and psychosocial wellbeing published from 2011 to 2020. Documents considered in this study come from SCI-E, SSCI and A&HCI. The search formula was "TS = (("breast cancer survivors" or "breast cancer") AND ("psychological wellbeing" or "psychological distress" or "mental health" or "wellbeing" or "psychosocial wellbeing")) and language was selected as English only, document types as Article only with the timespan of 2011-2020.

### *Analysis*

The bibliometric analysis was conducted by using CiteSpace software<sup>21</sup> and considered only document co-citation analysis (DCA) for finding recent or emerging trends on breast cancer survivors and psychosocial wellbeing. The CiteSpace software had the advantage of mapping cluster-based document co-citation analysis which helps to understand more in-depth.

### 3. RESULTS AND DISCUSSION

There were 2395 published articles retrieved based on the selection criteria mentioned earlier. The publications share the top 15 most productive countries in breast cancer and psychosocial wellbeing from 2011 to 2020. The countries were ordered as based on publication production and their percentage; such as USA (990, 41.336%), followed by Australia (244, 10.188%), Canada (166, 6.931%), England (165, 6.889%), Peoples R China (165, 6.889%), The Netherlands (156, 6.514%), Germany (114, 4.760%), Italy (87, 3.633%), Japan (71, 2.965%), South Korea (70, 2.923%), Denmark (58, 2.422%), Israel (54, 2.255%), Sweden (52, 2.171%), Spain (49, 2.046%), and Taiwan (44, 1.837%).

Moreover, the top ten institutions/organization were published with more records on breast cancer and psychosocial wellbeing between the period of 2011 to 2020 as University of California System (UCS; 117), followed by, University of Texas System (82), Harvard University (77), University of Toronto (67), Memorial Sloan Kettering Cancer Center (56), Pennsylvania Commonwealth System of Higher Education (PCSHE, 56), University of Sydney (56), UTMD Anderson Cancer Center (56), University of London (55) and University of California Los Angeles (52). Hence it is revealed that as compared to countries and organizations or institutions, the United States as the top country and more institutions were published and actively doing more research related to breast cancer and psychosocial wellbeing.

#### *Document Co-Citation Analysis (DCA)*

According to the narrative summary of CiteSpace, the networks were divided into 13 co-citation clusters (figure 1) and the largest four clusters were the highest citation burst as well as citation count that was indicating these clusters were the most active study efforts during the period of 2011-2020 on breast cancer and psychosocial wellbeing.

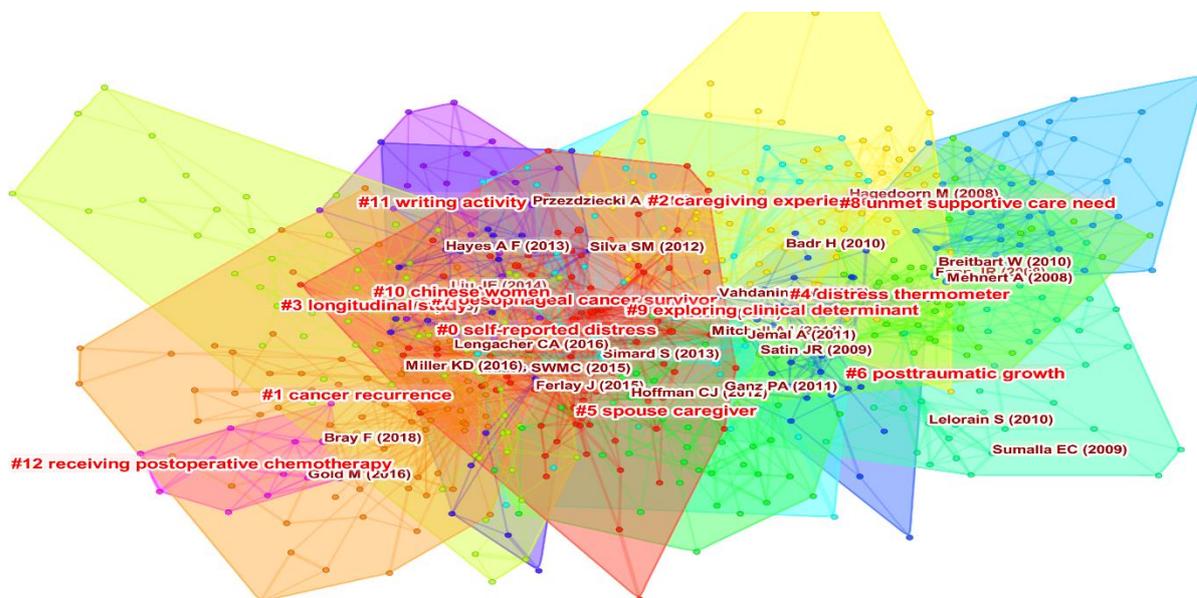


Figure 1: The cluster based document co-citation analysis (DCA) generated by top 50 per slice between 2011-2020.

The largest clusters were labelled as self-reported distress (cluster 0), followed by cancer recurrence (cluster 1), caregiving experience (cluster 2), longitudinal study (cluster 3) and distress thermometer (cluster 4). The cluster size, silhouette value, mean year, citation count (cc), centrality ( $\sigma$ ), citation burst, sigma value ( $\Sigma$ ) and trendsetting cited references were summarized on table-1. The most-cited authorities in the self-reported distress as Mitchell, AJ (2011; 44), Ferlay, J (2015; 32) Henselmans, I (2010; 30), Mitchell, AJ (2013; 28) and Carlson, LE (2012; 26). Cluster #0 had focused on identifying distinct trajectories of psychological distress in terms of depression, anxiety and other related disorders of breast cancer women. From the studies of this cluster, five different trajectories of pain were identified from the breast cancer survivors including two for anxiety and three for depression<sup>22</sup> which is contrary to earlier study identified with four trajectories such as chronic, recovery, delayed and resilience<sup>23</sup>.

The second-largest cluster as cancer recurrence (cluster 1), comprises 87 cited references and the mean year as 2016, which is the highest mean year as compared to other clusters. It indicates that it is the at most recent and active studies. The most-cited references of cluster 1 as Lengacher, CA (2016; 20), Miller, KD (2016; 16), Haller, H (2017; 13), Bower, JE (2015; 12) and van de Wal, M (2017; 12). In this cluster, researchers had more concentrated on most recent data on cancer incidence, mortality and survival of breast cancer. The fear of cancer recurrence is one of the essential factors which negatively impacts on quality of life for breast cancer survivors<sup>24</sup>.

The third cluster labelled as caregiving experience (cluster 2), mainly focused on a systematic study on related to the topic including to study the level of depression, anxiety, quality of life and perceived social support. The top five most-cited references as Hagedoorn, M (2008; 33), followed by Badr, H (2010; 19), Kim, Y (2008; 16), Manne, S (2010; 14) and Hasson-Ohayon, I (2010; 14). Furthermore, the another largest cluster labelled as longitudinal study (cluster 3). The top five most-cited references as Maass, SWML (2015; 21), Traa, MJ (2015; 20), Rottmann, N (2015; 14), DeSantis, CE (2014; 13), and Howard-Anderson, J (2012; 11). In this cluster focused mainly on systematic reviews based on three significant key domains of functioning that are particularly relevant to breast cancer survivors such as health-related Quality of Life (QoL), menopausal symptoms and behavioural outcomes.

Table 1:

The five largest DCA clusters with most active cited references

Cluster #	Cluster Size	Silhouette Value	Mean (Year)	c	Burst	$\sigma$	$\Sigma$	Most Active Cited references
Self-reported Distress	113	0.721	2013	4	10.8	0.0	1.6	Bidstrup, P. E., Christensen, J., Mertz, B. G., Rottmann, N., Dalton, S. O., & Johansen, C. (2015). Trajectories of distress, anxiety, and depression among women with breast cancer: looking beyond the mean. <i>Acta Oncologica</i> , 54 (5), 789-796.
				4	2	5	4	
				3	7.34	0.0	1.0	
				2	1	8		
				3	8.56	0.0	1.0	
0	7	0						
2	7.81	0.0	1.1	8	2	2		
2	4.69	0.0	1.2	6	5	4		
				2	6.20	0.0	1.3	Johns, S. A., Stutz, P. V.,

Cancer recurrence	87	0.799	2016	0		4	1	Talib, T. L., Cohee, A. A., Beck-Coon, K. A., Brown, L. F., ... & Miller, K. D. (2020). Acceptance and commitment therapy for breast cancer survivors with fear of cancer recurrence: A 3-arm pilot randomized controlled trial. <i>Cancer</i> , 126(1), 211-218.
				1	4.95	0.0	1.2	
				6		5	6	
				1	5.51	0.0	1.2	
				3		3	0	
1		0.0	1.0					
2		5	0					
1	5.08	0.0	1.2					
2		5	6					
Caregiving experience	76	0.828	2009	3	12.4	0.0	1.3	Fletcher, B. S., Miaskowski, C., Given, B., & Schumacher, K. (2012). The cancer family caregiving experience: an updated and expanded conceptual model. <i>European Journal of Oncology Nursing</i> , 16(4), 387-398.
				3	4	3	6	
				1	5.40	0.0	1.2	
				9		4	6	
				1	6.00	0.0	1.2	
				6		3	2	
1	3.97	0.0	1.0					
4		1	6					
1	5.43	0.0	1.2					
4		4	6					
Longitudinal study	72	0.788	2014	2	6.51	0.0	1.3	Langer, S. L., Romano, J. M., Todd, M., Strauman, T. J., Keefe, F. J., Syrjala, K. L., ... & Puleo, B. K. (2018). Links between communication and relationship satisfaction among patients with cancer and their spouses: results of a fourteen-day smartphone-based ecological momentary assessment study. <i>Frontiers in psychology</i> , 9, 1843.
				1		5	7	
				2	6.20	0.0	1.5	
				0		7	4	
				1	4.67	0.0	1.0	
				4		1	5	
1	4.08	0.0	1.0					
3		1	6					
1	4.14	0.0	1.0					
1		0	1					
Distress thermometer	51	0.825	2008	1	4.48	0.0	1.0	Mitchell, A. J., Meader, N., Davies, E., Clover, K., Carter, G. L., Loscalzo, M. J., ... & Zabora, J. (2012). Meta-analysis of screening and case finding tools for depression in cancer: evidence based recommendations for clinical practice on behalf of the Depression in Cancer Care consensus group. <i>Journal of affective</i>
				7		1	5	
				1	6.11	0.0	1.2	
				6		4	6	
				1	5.65	0.0	1.0	
				2		0	2	
1	5.65	0.0	1.0					
2		0	1					
1	5.44	0.0	1.0					
1		1	3					

								<i>disorders, 140(2), 149-160.</i>
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*Source:* The data were derived from analysis of document co-citation network using dataset retrieved from WoS. CC- Citation-count,  $\sigma$ -Centrality,  $\Sigma$ -Sigma.

The fifth and final largest cluster as distress thermometer (cluster 4), concentrated on screening based diagnosis with breast cancer outpatients, as well as psychosocial distress. The top five most-cited references of this cluster based on citation count as Breitbart, W (2010; 17), Satin, JR (2009; 16), Carlson, LE (2010; 12), Tuinman, MA (2008; 12), and Graves, KD (2007; 11). Other some clusters; including, spouse caregiver (cluster 5), post-traumatic growth (cluster 6), unmet supportive care need (cluster 8), exploring clinical determinant (cluster 9) and Chinese women (cluster 10) were notable clusters on this analysis. Based on count burst, Hagedoorn, M (2008) article as the innovative contribution on breast cancer and psychosocial wellbeing based studies. The particular meta-analysis study, focused on gender in terms of patient-partner role associated with differences in distress within couples coping with cancer, the moderate association between individuals within couples, and distress of couples with cancer patients<sup>25</sup>.

Finally, based on citation burst between 2011 and 2020, the top ten keywords were listed, which recently emerged. Scholars used on their studies such as 'psychiatric disorder' (6.33), followed by 'psychiatric morbidity' (6.31), 'long term' (6.21), 'family' (5.77), 'psychological adjustment' (5.39), 'event scale' (5.38), and 'younger women' (5.20). Hence, 'psychiatric disorder' as the most powerful citation burst (6.33) on breast cancer and psychosocial wellbeing.

#### 4. CONCLUSION

This study aimed to focus on an overview of psychosocial wellbeing of breast cancer survivors based on nursing research by using CiteSpace software. The data were derived from the web of science core collection as based on searching criteria fixed by the researcher. It helps to understand the overview of the psychosocial wellbeing, particularly identifying the recent trends on the said topic by using document co-citation analysis and other subsequent analyzing methods. The significant clusters, through the study of document co-citation analysis such as distinct trajectories of psychological distress, fear of recurrence, caregiving experience and screening on psychological wellbeing, would tend to help to the researchers for working with the new direction. Also, the results may help the investigators to determine the status of research topics and identify the latest trends for future research in the field. Analysis of keywords identified 'psychiatric disorders' as the top of the term that may represent emerging areas of research in this field.

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#### 6. REFERENCES

- [1] Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *Int J Cancer*. 2010;127(12):2893–917.
- [2] Anders CK, Johnson R, Litton J, Phillips M, Bleyer A. Breast Cancer Before Age 40 Years. *Semin Oncol* [Internet]. 2009;36(3):237–49. Available from:

<http://dx.doi.org/10.1053/j.seminoncol.2009.03.001>

- [3] Dirksen SR. Predicting well-being among breast cancer survivors. *J Adv Nurs*. 2000;32(4):937–43.
- [4] Dunn LB, Langford DJ, Paul SM, Berman MB, Shumay DM, Kober K, et al. Trajectories of fear of recurrence in women with breast cancer. *Support Care Cancer*. 2015;23(7):2033–43.
- [5] Cohee AA, Adams RN, Johns SA, Von Ah D, Zoppi K, Fife B, et al. Long-term fear of recurrence in young breast cancer survivors and partners. *Psychooncology*. 2017;26(1):22–8.
- [6] Beck SL, Berger AM, Barsevick AM, Wong B, Stewart KA, Dudley WN. Sleep quality after initial chemotherapy for breast cancer. *Support Care Cancer*. 2010;18(6):679–89.
- [7] Soucise A, Vaughn C, Thompson CL, Millen AE, Freudenheim JL, Wactawski-Wende J, et al. Sleep quality, duration, and breast cancer aggressiveness. *Breast Cancer Res Treat*. 2017;164(1):169–78.
- [8] Katz J, Poleshuck EL, Andrus CH, Hogan LA, Jung BF, Kulick DI, et al. Risk factors for acute pain and its persistence following breast cancer surgery. *Pain*. 2005;119(1–3):16–25.
- [9] Helms RL, O’Hea EL, Corso M. Body image issues in women with breast cancer. *Psychol Heal Med*. 2008;13(3):313–25.
- [10] Hopwood P, Hopwood N. New challenges in psycho-oncology: An embodied approach to body image. *Psychooncology*. 2019;28(2):211–8.
- [11] Sbitti Y, Kadir H, Essaidi I, Fadoukhair Z, Kharmoun S, Slimani K, et al. Breast cancer treatment and sexual dysfunction: Moroccan women’s perception. *BMC Womens Health*. 2011;11.
- [12] Kedde H, Van De Wiel HBM, Weijmar Schultz WCM, Wijzen C. Sexual dysfunction in young women with breast cancer. *Support Care Cancer*. 2013;21(1):271–80.
- [13] Ljungman L, Ahlgren J, Petersson LM, Flynn KE, Weinfurt K, Gorman JR, et al. Sexual dysfunction and reproductive concerns in young women with breast cancer: Type, prevalence, and predictors of problems. *Psychooncology*. 2018;27(12):2770–7.
- [14] Burgess C, Cornelius V, Love S, Graham J, Richards M, Ramirez A. Depression and anxiety in women with early breast cancer: Five year observational cohort study. *Br Med J*. 2005;330(7493):702–5.
- [15] Vahdaninia M, Omidvari S, Montazeri A. What do predict anxiety and depression in breast cancer patients? A follow-up study. *Soc Psychiatry Psychiatr Epidemiol*. 2010;45(3):355–61.
- [16] Brandão T, Pedro J, Nunes N, Martins M V., Costa ME, Matos PM. Marital adjustment in the context of female breast cancer: A systematic review. *Psychooncology*. 2017;26(12):2019–29.
- [17] Woloshin S, Schwartz LM, Black WC, Welch HG. Studies in Breast Cancer Women ’ s Perceptions of Breast Cancer Risk : *Cancer*. 2015;221–9.
- [18] Kraemer LM, Stanton AL, Meyerowitz BE, Rowland JH, Ganz PA. A Longitudinal Examination of Couples’ Coping Strategies as Predictors of Adjustment to Breast Cancer. *J Fam Psychol*. 2011;25(6):963–72.
- [19] Courneya KS, McKenzie DC, Mackey JR, Gelmon K, Friedenreich CM, Yasui Y, et al. Fatigue in breast cancer survivors: occurrence, correlates, and impact on quality of life. *J Clin Oncol [Internet]*. 2000;18(4):743–53.
- [20] Lantz PM, Mujahid M, Schwartz K, Janz NK, Fagerlin A, Salem B, et al. The influence of race, ethnicity, and individual socioeconomic factors on breast cancer stage at diagnosis. *Am J Public Health*. 2006;96(12):2173–8.

- [21] Chen C. Science Mapping: A Systematic Review of the Literature. *J Data Inf Sci.* 2017;2(2):1–40.
- [22] Bidstrup PE, Christensen J, Mertz BG, Rottmann N, Dalton SO, Johansen C. Trajectories of distress, anxiety, and depression among women with breast cancer: Looking beyond the mean. *Acta Oncol (Madr).* 2015;54(5):789–96.
- [23] Bonanno GA. Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive after Extremely Aversive Events? *Am Psychol.* 2004;59(1):20–8.
- [24] Johns SA, Stutz P V., Talib TL, Cohee AA, Beck-Coon KA, Brown LF, et al. Acceptance and commitment therapy for breast cancer survivors with fear of cancer recurrence: A 3-arm pilot randomized controlled trial. *Cancer.* 2020;126(1):211–8.
- [25] Hagedoorn M, Sanderman R, Bolks HN, Tuinstra J, Coyne JC. Distress in Couples Coping With Cancer: A Meta-Analysis and Critical Review of Role and Gender Effects. *Psychol Bull.* 2008;134(1):1–30.
- [26] \*\*\*\*\*