

Variables Contributing to the Psychological Well-Being in Breast Cancer Survivors: A
Systematic Review

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Abstract

(Background) Recent statistics indicate that approximately 12 percent of women in the United States will be diagnosed with invasive breast cancer in their lifetimes. A breast cancer diagnosis can be detrimental and produce long lasting effects to women's physical and psychological well-being. A number of variables that affect women's well-being have been identified in the literature. **(Aim)** The purpose of this research is to conduct a systematic review regarding the variables that contribute to the psychological well-being of breast cancer survivors.

(Methodology) Khan, Kunz, Kleijnen, and Antes' (2003) framework was used to conduct the systematic review. A total of 254 articles from PubMed and PsycINFO databases were extracted for review, and 29 of those articles qualified for the study based on the inclusion criteria.

(Results) The results indicated ten variables that are associated with the psychological well-being of breast cancer survivors: symptoms burden, social support, history of psychiatric disorder(s), exposure to stress prior to diagnosis, fear of recurrence, demographic characteristics, level of physical activity, spirituality, information received from clinicians, and problems encountered by minority groups. **(Discussion)** Healthcare professionals need to consider the role of these variables related to the psychological well-being of breast cancer survivors. Further research needs to be conducted regarding the development and use of evidence-based interventions aimed at improving the psychological well-being of breast cancer survivors. This systematic review provides information on variables that may be investigated in future research.

Chapter I: Introduction

In 2016, there were approximately 28 million women living with breast cancer in the United States and this includes women diagnosed and those in post treatment status (U.S. Breast Cancer Statistics, 2017). While approximately 12 percent of women are diagnosed with breast cancer during their lifetimes in the United States, the expected number of deaths due to breast cancer in 2017 is projected to be 40,610 (U.S. Breast Cancer Statistics, 2017). In addition, the survival rate of breast cancer has been increasing since 1989 due to advances in cancer research, efficient screenings, and public awareness of breast cancer (U.S. Breast Cancer Statistics, 2017). As a result of increased survival rate, healthcare has shown an increased effort in the health management of breast cancer survivors. The American Cancer Society (ACS) and the American Society of Clinical Oncology (ASCO) have established various health management guidelines for breast cancer survivors. The main goal of the guidelines is to reduce recurrences of cancer by implementing routine screenings and managing survivors' overall health (New Guidelines Address Breast Cancer Survivors' Long-Term Needs, 2017). However, the current guidelines do not adequately address issues associated with breast cancer survivors' psychological well-being. In addition to the physical debilitations resulted from cancer treatments, a breast cancer diagnosis and some of the medical cancer interventions can have detrimental effects on patients' psychological well-being. Psychiatric comorbidities among breast cancer survivors are prevalent, and they are often overlooked in the management of breast cancer survivorship. A meta-analysis consisting of 43 studies indicates that the prevalence of depression and anxiety contributes to patients' well-being (Mitchell, Ferguson, Gill, Paul, & Symonds, 2013). This meta-analysis also indicates there is an association between the occurrence of post-traumatic disorder (PTSD) and breast cancer well-being (Mitchell, Ferguson, Gill, Paul, & Symonds, 2013). It is important to

address variables associated with the psychological component of breast cancer survivors' health. The purpose of this systematic review is to analyze literature that address variables contributing to the psychological well-being in breast cancer survivors. It is postulated that information from the review will increase awareness among healthcare professionals and encourage further study regarding the variables of interest. This might contribute to the development of evidence-based interventions for breast cancer survivors' well-being.

Chapter II: Methodology

The methodology for this systematic review is grounded in Khan, Kunz, Kleijnen, and Antes' (2003) framework (See Appendixes A, B). The steps in the review include: frame questions, identify relevant work, assess the quality of the studies, summarize the evidence, and interpret the findings. Appendix C has a listing of the relevant literature in this review. Databases PubMed and PsycINFO were used for article extractions. Search keywords used for literature search were “breast cancer survivors” and “psychological well-being”. Searches were limited to English articles that published after January 2014. A total of 254 articles resulted from the original searches, including 228 articles from PubMed and 26 articles from PsycINFO. Five inclusion criteria were established to identify relevant articles pertinent to the present study. The five inclusion criteria include: 1) breast cancer survivors are the main studied population; 2) psychological well-being should be the mainly focused outcome in the survivors; 3) study must include variable(s) contributing to the psychological well-being in the survivors; 4) female breast cancer survivors exclusively; 5) clinical studies must be conducted in the United States.

Based on the inclusion criteria, 63 articles were removed due to clinical studies being conducted outside of U.S.; 60 articles were removed because psychological well-being was not the main focus of the studies; 63 articles were removed for not including variable(s) contributing to survivors' psychological well-being; 22 articles were removed for including populations other than breast cancer survivors; nine studies were removed because psychological well-being was analyzed as a causative factor; and eight duplicated articles were removed. Finally, a total of 29 articles qualified for the study based on the five inclusion criteria. Ten variables emerged from the systematic review of the literature. These include: system burden, physical activity, social support and coping strategies, exposure to stress prior to diagnosis, history of psychiatric

disorder(s), fear of recurrence, demographic characteristics, spirituality, African-American women, and information received from clinicians. The next chapter will delineate these variables and their associations to well-being.

Chapter III: Results

Symptom Burden

Among the 29 articles, the most discussed variable contributing to the psychological well-being in breast cancer survivors is symptom burden. It is common for breast cancer survivors to suffer from symptoms associated with the long-lasting effects of their cancer treatments. The most common symptoms reported by breast cancer survivors include fatigue, pain, depression, insomnia, decreased cognitive functions, etc. (Avis, Levine, Marshall, & Ip, 2016). In a study conducted along a sample of 653 breast cancer survivors, six common symptoms (fatigue, restless sleep, general pain, joint pain, depressed feelings, and inability to concentrate) were studied in relations to patients' overall qualities of life. Upon analyzing subjects' qualities of life using The Functional Assessment of Cancer Therapy – Breast (FACT-B), it was discovered that the participants with fewer and less severe symptoms scored higher on their quality of life assessments. On the other hand, participants that reported more symptoms scored lower on their functional assessments (Avis, Levine, Marshall, & Ip, 2016). Moreover, Wei, Liu, Chen, Zhou, and Hu (2016) have addressed the negative psychological effects caused by symptoms associated with women's health, including early menopause, reproductive health, fertility issues, body image, and sexual health. Symptoms associated with breast cancer treatments are impactful on a patient's quality of life. A decrease in a patient's abilities to resume a normal life acts as a constant reminder of the disease. In order to maintain quality of life, healthcare professionals need to discuss with patients their risks of developing debilitating symptoms, signs and symptom to be cognizant of, and provide resources for the management of symptom burden for breast cancer survivors.

Physical Activity

Engagement in physical activity is a variable found to have a positive impact on reducing symptom burden, which ultimately improves the psychological well-being in breast cancer survivors. In Dieli-Conwright and Orozco's (2015) review on the effects of exercise in breast cancer survivors, the results depict a positive impact physical activity has on breast cancer survivors' physical and emotional well-beings. Routine exercise is found to be effective in the management of lymphedema, maintenance of bone mineral density, and reduction of cancer recurrence (Dieli-Conwright & Orozco, 2015). In a study involving 1,348 participants, the results indicate a statistically significant impact routine exercise has on reducing various debilitating symptoms and improving health-related quality of life in breast cancer survivors (Phillips & McAuley, 2015). Participants that maintained or increased their levels of physical activity post-diagnosis reported lower levels of fatigue than those that decreased their levels of physical activity post-diagnosis (3.3 vs. 2.8 vs. 3.9); levels of reported anxiety, depression, and stress were also lower in the participants that maintained or increased their levels of physical activity post-diagnosis; moreover, physical self-worth and self-esteem were lower in the participants that decreased their levels of physical activity post-diagnosis than those that maintained or increased their levels of physical activity (16.2 vs. 17.3 vs. 18.1 and 39.7 vs. 41.5 vs. 40.8, respectively); lastly, the total scores of HRQOL in participants with decreased levels of physical activity were eight and 9.7 lower than those that maintained or increased their levels of physical activity post-diagnosis (Phillips & McAuley, 2015). Through its positive impact on reducing the severity of symptom burden, routine physical activity is beneficial in improving and maintaining the psychological well-being in breast cancer survivors.

Social Support and Coping Strategies

Breast cancer survivors often experience feelings of loneliness during and after their cancer treatments. The presence of a support system has reassuring effects on the survivors, while appropriate coping strategies are needed for breast cancer survivors to better comprehend the illness and comply with the treatments. In 1,280 of breast cancer survivors aged 65 and above, an accelerated decline in emotional, physical, and cognitive functions was seen in 6.9%, 31.8%, and 7.6% of the participants, respectively (Dura-Ferrandis et al., 2017). Through analyzing variables contributing to the declines in those three quality of life domains, inefficient coping and inadequate social support were found to be the main contributors (Dura-Ferrandis et al., 2017). Post-traumatic growth (PTG) is a somewhat positive outcome breast cancer survivors can gain from this detrimental illness. The significant relationship between social support and PTG is evident in literature. Many aspects of social support help to promote PTG in breast cancer survivors, for example, the opportunity to converse with breast cancer survivors with longer survivorship lengths is beneficial in regards to the establishment of coping strategies in new breast cancer survivors. Family and friends are determined to be favorable resources to express feelings and frustrations to (Kolokotroni, Anagnostopoulos, & Tsikkinis, 2014). A healthy amount of expression is beneficial for survivors' psychological well-being.

Exposure to Stress Prior to Diagnosis

Exposure to stress prior to diagnosis is an important factor contributing to the development of psychological resilience in breast cancer survivors (Dooley, Slavich, Moreno, & Bower, 2017). Early exposure to stress promotes an early discovery of individualized efficient coping strategies. Stress is usually studied as a harmful element that negatively impacts a person's psychological well-being. However, recent studies have indicated otherwise. The

relationships between acute stress prior to diagnosis and psychological functioning post-diagnosis, and chronic stress prior to diagnosis and psychological functioning post-diagnosis are evaluated among 122 breast cancer survivors (Dooley, Slavich, Moreno, & Bower, 2017). The results depict a causal relationship between acute stress prior to diagnosis and psychological functioning post-diagnosis in breast cancer survivors, such that participants that experienced moderate amount of acute stress prior to diagnosis exhibited higher psychological functioning in survivorship; contrarily, a negative correlational relationship resulted between chronic stress prior to diagnosis and psychological functioning post-diagnosis, indicating that a high level of chronic stress experienced prior to diagnosis ultimately resulted in a low level of psychological functioning (Dooley, Slavich, Moreno, & Bower, 2017). An appropriate amount of acute stress is beneficial in maintaining psychological functioning by promoting an early establishment of coping strategies and psychological resilience. However, acute stress stemmed from a cancer diagnosis and treatments in addition to chronic stress developed prior to diagnosis can worsen a person's psychological functioning.

History of Psychiatric Disorder(s)

Current or past psychiatric disorder(s) have a negative impact on the psychological well-being in breast cancer survivors. Among 772 breast cancer survivors that completed surveys assessing emotional well-being decline utilizing The Functional Assessment of Cancer Therapy – Breast (FACT-B), 24.9% of the participants showed an emotional well-being decline overtime (Janz, Friese, Li, Graff, Hamilton, & Hawley, 2014). One of the factors that contributed to emotional well-being decline identified by this study was past or current depression. An emotional well-being decline was more prevalent in patients with current depression than patients with history of depression; moreover, an accelerating emotional well-being decline was

the least prevalent in breast cancer survivors without history of depression (Janz, Friese, Li, Graff, Hamilton, & Hawley, 2014). In order to maintain psychological well-being in breast cancer survivors, it is important for healthcare professionals to assess a client's history of psychiatric disorder(s). Appropriate precautions should be taken in preventing the recurrence or worsening of past or current psychiatric disorder(s).

Fear of Recurrence

Recurrence of breast cancer is a possibility many breast cancer survivors are warned about. The diagnosis of recurrent breast cancer is detrimental to a patient's emotional and physical well-beings. Because many breast cancer survivors are aware of this potential complication, fear of recurrence is a relevant psychological variable contributing to their qualities of life. Greater fear of recurrence is associated with a more accelerating emotional well-being decline and a higher level of distress (Janz, Friese, Li, Graff, Hamilton, & Hawley, 2014; Castillo, 2016). There are a few influential factors affecting the levels of recurrence fear experienced by breast cancer survivors. A total of 742 young breast cancer survivors completed web-based surveys for a study established to evaluate and analyze variables contributing to their levels of perceived stress, illness intrusiveness, fear of cancer recurrence, and parenting stress (Ares, Lebel, & Bielajew, 2014). The results displayed an association between the levels of recurrence fear and the ages of the participants and whether or not if they had children. It was concluded that young mothers are at risk for high levels of cancer recurrence fear, because they are often subjected to more parenting stress, which causes feelings of incompetency as mothers (Ares, Lebel, & Bielajew, 2014). Fear of recurrence is a common emotion many breast cancer survivors experience. This fearful feeling may have different levels of impact on survivors' abilities to resume a normal life depending on their psychological resilience and other factors. It

is essential for healthcare clinicians to address this issue with breast cancer survivors at an early time.

Demographic Characteristics

Demographic characteristics affect many of the previously discussed variables, which ultimately impact the psychological well-being in breast cancer survivors. Based on data collected from 222 breast cancer survivors, specific categories of demographic characteristics including age, education level, and income level greatly affected their reported depressive symptoms (Cohee et al., 2016). Overall, the participants that reported more severe depressive symptoms were younger, less educated, and had lower income levels (Cohee et al., 2016). Younger breast cancer survivors are more prone to distress, and they also have more social constraints (Cohee et al., 2016). A person's educational level determines his/her abilities to comprehend the meaning of the disease, the importance of treatments, and risks/complications associated with the disease and its treatments. An understanding of those components is essential in reducing distress caused by insufficient knowledge pertaining to one's health. Lower income levels are associated with higher financial burdens, which imposes more stress. In addition, financial inadequacy may also create barriers to access treatments and follow-up care. It is essential to assess a client's demographic profile in order to ensure his/her abilities to adhere to the treatments.

Spirituality

Spirituality is a common coping mechanism used by many breast cancer survivors (Mollica & Newman, 2014; Torres, Dixon, & Richman, 2016; Wei, Liu, Chen, Zhou, & Hu, 2016). In a study consisting of seven focus groups with 32 African American breast cancer survivors, faith in god was viewed as an essential coping mechanism by a majority number of the

participants (Torres, Dixon, & Richman, 2016). Through a shared vision on spirituality, breast cancer survivors can also expand their social support systems. Research studies that assess the importance of spirituality are more prevalent in African American breast cancer survivors. As a subgroup of all breast cancer survivors, African American breast cancer survivors are especially at risk for higher symptom burden, higher emotional distress, and lower social support (Mollica & Newman, 2014). Mollica and Newman (2014) have described spirituality as a “protective factor” in African American breast cancer survivors. Despite a substantial amount of research indicating the significance of spirituality in coping with cancer, cancer survivors should be aware of positive versus negative religious practices. While positive religious coping strategies can potentially increase a person’s physical and emotional well-beings, negative religious coping strategies have the opposite effects (Gochett, 2016).

African-American Women

In literature, there is a substantial amount of research conducted exclusively on African American breast cancer survivors. Overall, African American breast cancer survivors are at higher risks for many of the psychological variables compared to White breast cancer survivors, including more severe physical debilitations, higher risks for cancer recurrence, higher financial burdens, more social constraints, lower social support, etc. (Haynes-Maslow, Allicock, & Johnson, 2016; Mollica & Nemeth, 2015; Mollica & Newman, 2014; Nolan, Frank, Hisiger-Camata, & Meneses, 2017; Samuel et al., 2016; Torres, Dixon, & Richman, 2016). Moreover, racial disparities is an influential factor that suggests higher unmet needs in African American breast cancer survivor (Haynes-Maslow, Allicock, & Johnson, 2016). In Mollica and Newman’s (2014) focus group study, many of the participants expressed a great need to have another African American breast cancer survivor as a support person. Besides African American breast

cancer survivors, studies conducted among a few other minority groups are also present in literature. In a research study conducted in Southern California regarding the association between comorbidities and the psychological well-being in breast cancer survivors, a total of 86 Chinese Americans and 71 Korean Americans were recruited (Lim, 2016). Approximately 60% of the participants had one or more comorbidities, in which osteoporosis was the most prevalent comorbidity (Lim, 2016). The presence of one or more comorbidities significantly impacted one's perceived life stress and physical and mental health-related quality of life (Lim, 2016). Homosexual breast cancer survivors are a socially discriminated group, and social discrimination is a considerable factor influencing their psychological well-being negatively. While there are no significant differences in stress factors between homosexual breast cancer survivors and bisexual breast cancer survivors, a common variable of social discrimination was found to have an association with both groups' perceived levels of psychological distress (Kamen, Jabson, Mustian, & Boehmer, 2017). Healthcare professionals should consider the needs of minorities and deliver culturally appropriate care.

Information Received From Clinicians

As healthcare professionals, the amount of information provided to the clients ultimately affects their understandings of the disease and treatments. Information grounded in health literacy is an important factor healthcare professionals have to take into consideration while delivering information to clients. In Gotchett's (2016) systematic review on the factors influencing the psychological well-being in breast cancer survivors, the adequacy of health information provided by clinicians in regards to the illness, treatments, and survivorship care played an important role in the amounts of emotional distress experienced by breast cancer survivors. Fear for recurrence is a prevalent variable contributing to the psychological well-being

in breast cancer survivors (Janz, Friese, Li, Graff, Hamilton, & Hawley, 2014). The discussion of cancer recurrence should not be avoided in the care of breast cancer patients, because a lack of discussion on this topic can potentially cause an emotional well-being decline during survivorship (Janz, Friese, Li, Graff, Hamilton, & Hawley, 2014). Healthcare professionals should assess health literacy levels in each individual client, and any evidence suggesting insufficient knowledge from the client should be addressed and resolved in a timely manner.

In summary, ten variables were associated with the psychological well-being of breast cancer survivors. These variables and the presence of well-being need to be investigated in additional samples and populations of women who are breast cancer survivors.

Chapter IV: Conclusion

Through literature, ten variables contributing to the psychological well-being in breast cancer survivors are identified. As one of the most discussed variables, symptom burden has a negative impact on survivors' abilities to resume a normal life. The development of symptom burden affects a woman's well-being. The inability to resume a normal life may negatively influence the psychological well-being in breast cancer survivors. Meanwhile, research studies have indicated that engagement in routine physical activity is beneficial in decreasing symptom burden. In order to cope with breast cancer and the long-lasting effects of the treatments, it is essential for breast cancer survivors to establish adequate social support systems and efficient coping strategies. Exposure to acute stress prior to diagnosis is beneficial in building psychological resilience and an early discovery of efficient coping mechanisms. However, chronic stress experienced prior to diagnosis and history of psychiatric disorder(s) can be worsened when combined with stress caused by breast cancer.

Fear of recurrence is a common emotion experienced by many breast cancer survivors. It is important for health clinicians to address this issue with their clients, and provide an adequate amount of information regarding the illness, treatments, and survivorship care. In addition, clinicians should also consider clients' demographic profiles while delivering care. Depending on a person's educational level and literacy level, he/she may or may not be able to comprehend the information provided by the professionals. While the true impact of spirituality should be assessed in future research, evidence has shown it as an efficient coping mechanism used by many individuals. Discrimination against minority groups is still an existing issue, which causes unwanted distress on the targeted minority groups. Healthcare professionals should consider specific needs of those minority groups and deliver culturally appropriate care. In addition,

different racial groups may be at risk for different comorbidities. Healthcare professionals should assess the presence of comorbidities, as they can have negative effects on a person's overall quality of life. Overall, healthcare professionals need to consider the role of the discussed variables related to the psychological well-being of breast cancer survivors. Hence, further research needs to be conducted regarding the development and use of evidence-based interventions aimed at improving the psychological well-being of breast cancer survivors. This systematic review provides information on variables that may be investigated in future research and implementation studies with this population.

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Appendix A

Framework and steps in a systematic review (Khan, Kunz, Kleijnen, & Antes, 2003)

Step 1: Framing questions for a review

The problems to be addressed by the review should be specified in the form of clear, unambiguous and structured questions before beginning the review work. Once the review questions have been set, modifications to the protocol should be allowed only if alternative ways of defining the populations, interventions, outcomes or study designs become apparent

Step 2: Identifying relevant work

The search for studies should be extensive. Multiple resources (both computerized and printed) should be searched without language restrictions. The study selection criteria should flow directly from the review questions and be specified *a priori*. Reasons for inclusion and exclusion should be recorded

Step 3: Assessing the quality of studies

Study quality assessment is relevant to every step of a review. Question formulation (Step 1) and study selection criteria (Step 2) should describe the minimum acceptable level of design. Selected studies should be subjected to a more refined quality assessment by use of general critical appraisal guides and design-based quality checklists (Step 3). These detailed quality assessments will be used for exploring heterogeneity and informing decisions regarding suitability of meta-analysis (Step 4). In addition they help in assessing the strength of inferences and making recommendations for future research (Step 5)

Step 4: Summarizing the evidence

Data synthesis consists of tabulation of study characteristics, quality and effects as well as use of statistical methods for exploring differences between studies and combining their effects (meta-analysis). Exploration of heterogeneity and its sources should be planned in advance (Step 3). If an overall meta-analysis cannot be done, subgroup meta-analysis may be feasible

Step 5: Interpreting the findings

The issues highlighted in each of the four steps above should be met. The risk of publication bias and related biases should be explored. Exploration for heterogeneity should help determine whether the overall summary can be trusted, and, if not, the effects observed in high-quality studies should be used for generating inferences. Any recommendations should be graded by reference to the strengths and weaknesses of the evidence

Appendix B
Extinction of the Variables

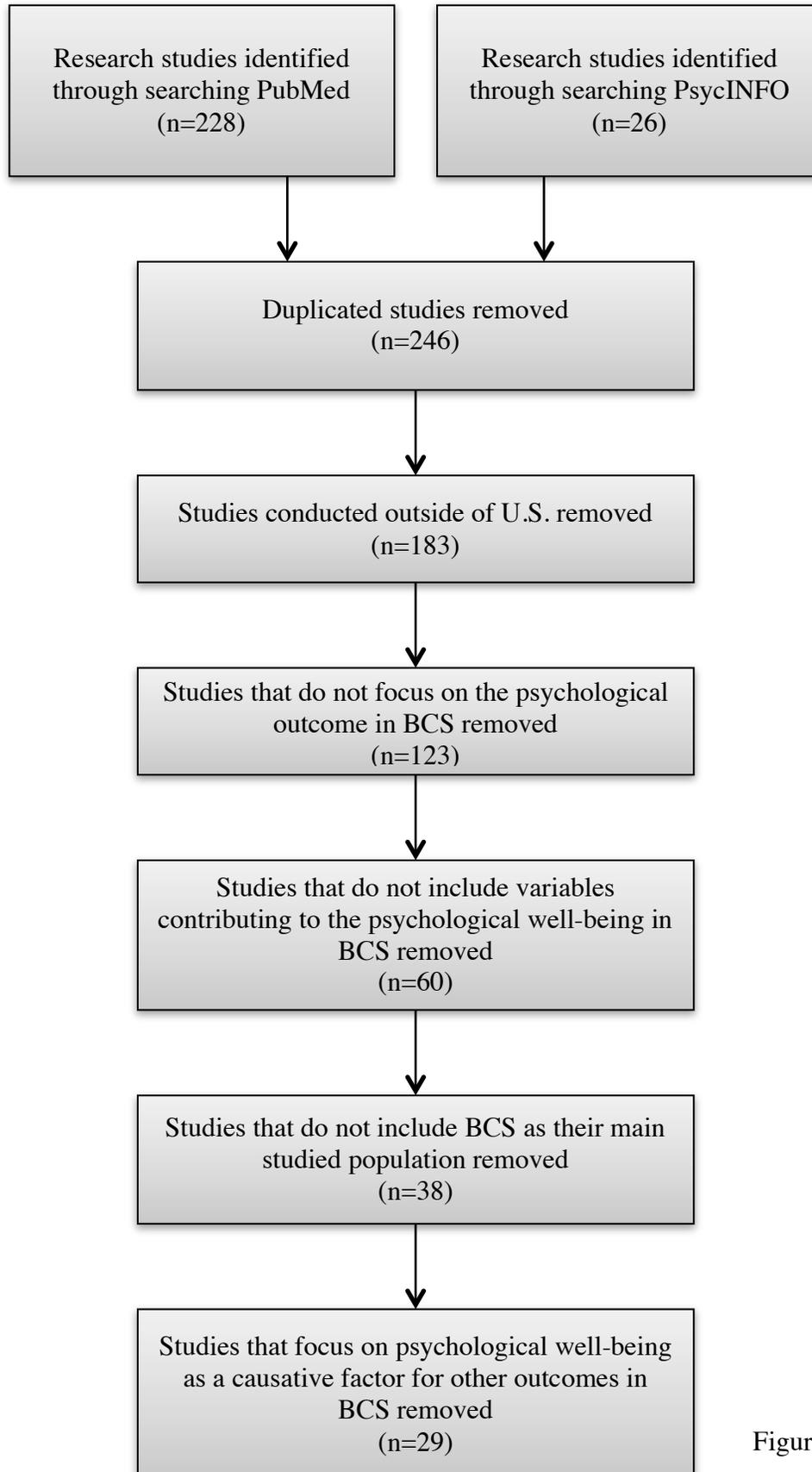


Figure 1

Appendix C
Relevant Articles

Author & Year	Participants	Results	Implications
Nolan, T. S., Frank, J., Gisiger-Camata, S., & Meneses, K. (2017)	A total of 237 articles were selected for review, and 16 articles were included based on the inclusion criteria.	Among young African American breast cancer survivors, variables including anxiety/depression, cognitive dysfunctions, and personal relationships were identified as concerns associated with their psychological well-being.	Future research needs to be conducted on young African American breast cancer survivors in order to reduce disparities related to quality of life in this specific population.
Dura-Ferrandis, E., Mandelblatt, J. S., Clapp, J., Luta, G., Faul, L., Kimmick, G., . . . Hurria, A. (2017).	A sample of 1280 breast cancer survivors aged 65 and above was selected for the study. Qualities of life were measured at baseline, 6 and 12 months, and 7 years after diagnosis of breast cancer.	A decline in emotional, physical, and cognitive functions was seen in 6.9%, 31.8%, and 7.6% of the participants, respectively. Lower social support was found to be a contributor for the decline in all functions. Cancer treatments caused a decline in physical and cognitive functions.	Personality and social support are variables associated with breast cancer survivors' emotional functions. Those variables should be utilized in identifying vulnerable breast cancer survivors in need of psychological support.
Kamen, C., Jabson, J. M., Mustian, K. M., & Boehmer, U. (2017)	A sample size of 201 sexual minority breast cancer survivors was selected to participate in the study. The participants answered self-report questionnaires in regards to stress factors.	No significant differences were noted between homosexual and bisexual participants. Stress factors such as social discrimination were found to be associated with psychological distress.	Minority stress factors are found to be associated with high psychological distress in sexual minority breast cancer survivors. However, when provided with adequate psychosocial resources and support, those stress factors may be converted into means to increase resilience in this specific population.
Dooley, L. N., Slavich, G. M., Moreno, P. I., & Bower, J. E. (2017)	The pre-diagnosis life stress and post-diagnosis psychological functioning of 122 breast cancer survivors were examined.	The participants that reported higher incidence of acute stress had higher psychological functioning post-diagnosis. There was a negative correlational relationship between chronic stress prior to diagnosis and psychological functioning post-diagnosis.	Acute stress exposure may be associated with psychological resilience in breast cancer survivors.

<p>Avis, N. E., Levine, B., Marshall, S. A., & Ip, E. H. (2016)</p>	<p>A sample size of 653 breast cancer survivors completed baseline surveys, and 565 of those women stayed in the study until the last phase of the survey.</p>	<p>Secondary analyzes were conducted on the questionnaires the participants filled out in regards to their symptom profiles and quality of life. Symptoms analyzed in the study included fatigue, general pain, joint pain, sleep quality, depressed feelings, and cognitive abilities. A relationship was found between low symptom burden and the highest quality of life score (114.9 using the Regression of Quality of Life Outcome scale). On the other hand, high symptoms burden was associated with the lowest quality of life score (93.5). Factors related to greater symptom burden included greater financial strain, having a partner, chemotherapy, greater illness intrusiveness, and lower social support.</p>	<p>Breast cancer survivors can be differentiated by the symptoms they are experiencing. Health care professionals should utilize these correlations in providing treatment recommendations pertaining to patients' psychological well-being.</p>
<p>Wei, D., Liu, X. Y., Chen, Y. Y., Zhou, X., & Hu, H. P. (2016)</p>	<p>A total of 37 articles from various databases were found to fit the inclusion criteria.</p>	<p>Treatment-related long-term side effects such as weight gain, endocrine symptoms, fatigue, pain, etc. were associated with psychological dysfunctions in breast cancer survivors. Spiritual well-being was also associated with a person's psychological and physical well-being.</p>	<p>Interventional programs aiding in providing support for breast cancer survivors based on their psychological, physical, psychosocial, and spiritual needs are valued.</p>
<p>Lim, J. W. (2016)</p>	<p>A population of 86 Chinese Americans and 71 Korean Americans were from Southern California participated in the study.</p>	<p>Osteoporosis was found to be the most common comorbidity in the 60% of the studied population. This identified comorbidity was also associated with high life stress, as well as lower scores for mental health-related quality of life.</p>	<p>Health care professionals need to assess both physical and psychological comorbidities in breast cancer survivors in order to establish treatment recommendations.</p>
<p>Samuel, C. A., Pinheiro, L. C., Reeder-Hayes, K. E., Walker, J. S., Corbie-Smith, G., Fashaw, S. A., . . . Wheeler, S. B. (2016)</p>	<p>A total of six articles that met the inclusion criteria from various databases were utilized in the study.</p>	<p>Compared to White breast cancer survivors, African American breast cancer survivors reported greater fear of recurrence/dying, inadequate support, higher financial burden, and higher symptom burden related to cancer treatments.</p>	<p>Due to the variables identified in the study, African American breast cancer survivors are at higher risks for developing psychological dysfunctions. Future research needs to be conducted on the population of African American breast cancer survivors.</p>
<p>Cohee, A. A., Stump, T., Adams, R. N., Johns, S. A., Von Ah, D., Zoppi, K., . . . Champion, V. L. (2016).</p>	<p>A total number of 222 breast cancer survivors and their partners completed questionnaires for this study.</p>	<p>The breast cancer survivors that reported more depressive symptoms were also young, less educated, had lower income, and had shorter intervals between their diagnoses to the time of the study. There was not a significant relationship between the breast cancer survivors' depressive symptoms and the partners' reported depressive symptoms.</p>	<p>Interventions aiding in reducing social constraints may be helpful in reducing depressive symptoms in breast cancer survivors.</p>

<p>Dieli-Conwright, C. M., & Orozco, B. Z. (2015)</p>	<p>Participants/articles for literature review had not been specified in this review</p>	<p>Exercise was found to be effective in maintaining bone health, managing lymphedema, reducing breast cancer recurrence, managing body weight, and reducing endocrine symptoms, and therefore improving breast cancer survivors' overall physical and emotional well-being.</p>	<p>Encouragement to participate in regular exercise for breast cancer survivors can be beneficial in improving their overall physical and psychological well-being.</p>
<p>Cheng, K. K., Wong, W. H., & Koh, C. (2016)</p>	<p>A total of 486 participants' results were included in the study.</p>	<p>There was a positive correlation between symptom burden and reported unmet needs. A negative correlation was found between symptom burden and reported unmet needs and mental quality of life.</p>	<p>Evaluation of symptom burden and unmet needs in breast cancer survivors is the key to improve their physical and mental quality of life.</p>
<p>Bredart, A., Merdy, O., Sigal-Zafrani, B., Fiszer, C., Dolbeault, S., & Hardouin, J. B. (2016)</p>	<p>The study approached 426 breast cancer survivors, in which 283 completed questionnaires for the first three time intervals, and 277 of the participants completed all time intervals.</p>	<p>The participants were categorized into four different groups based on their reported levels of social support and clinical anxiety levels: supported, resilient, borderline distress, chronic distress. The "supported" group women were overall younger of age, possessed higher education levels, and had lower scores on the avoidant attachment scale. The "resilient" group had a lower rate of chemotherapy, reported a higher satisfaction with their health care, and had lower scores on the avoidant attachment scale. The women in the "borderline distress" group had lower education levels, lower satisfaction rates with their health care, and had higher scores on the avoidant attachment scale. Lastly, the "chronic distress" group scored the highest on the avoidant attachment scale, and had the highest rate of chemotherapy.</p>	<p>Future research needs to address breast cancer survivors' psychological and physical needs based on demographic characteristics such as age, education level, etc.</p>
<p>Torres, E., Dixon, C., & Richman, A. R. (2016)</p>	<p>The study was conducted among seven focus groups consisting of 32 African American breast cancer survivors.</p>	<p>Spirituality was found to be an important coping mechanism among the participants. Social support had a positive impact on the adjustment of life for the participants.</p>	<p>It is vital to assess coping mechanisms used by African American breast cancer survivors in order to facilitate the variables' positive impacts.</p>
<p>Haynes-Maslow, L., Allicock, M., & Johnson, L. S. (2016)</p>	<p>The study was conducted among five focus groups that consisted of 41 African American breast cancer survivors and their caregivers.</p>	<p>Participants reported racial disparities related to unmet needs in the African American communities. The discussed disparities included 1) lack of discussion about breast cancer in the community; 2) lack of support from the community for African American breast cancer survivors; 3) lack of culturally appropriate services for African American breast cancer survivors; 4) lack of connections with other breast cancer survivors.</p>	<p>The results have indicated a greater need for African American breast cancer survivors in regards to social support and culturally appropriate services.</p>

<p>Metcalf, Zhong, Narod, Quan, Holloway, Hofer, Bagher, & Semple (2015)</p>	<p>A total number of 67 women completed questionnaires for all three time intervals pre-mastectomy, one year post-mastectomy, and long-term post-mastectomy.</p>	<p>A significant decline was noted in body concerns, total cancer-related distress, and total distress between one year post mastectomy and long-term post mastectomy.</p>	<p>The overall psychological functioning and quality of life improved for those breast cancer survivors that underwent mastectomy. Breast reconstruction has not been found to have significant impact on breast cancer survivors' body image issues in the long run.</p>
<p>Garland, S. N., Palmer, C., Donelson, M., Gehrman, P., Johnson, F. B., & Mao, J. J. (2014)</p>	<p>A sample size of 70 breast cancer survivors with clinically significant insomnia symptoms was compared with a sample size of 70 breast cancer survivors without insomnia.</p>	<p>The group of participants with insomnia reported higher depressive symptoms, anxiety, and fatigue.</p>	<p>Early identification and treatment of insomnia in breast cancer survivors can be impactful on the psychological and physical well-being in breast cancer survivors.</p>
<p>Taghian, N. R., Miller, C. L., Jammallo, L. S., O'Toole, J., & Skolny, M. N. (2014)</p>	<p>Researchers performed a literature search using PubMed including articles pertaining to lymphedema secondary to breast cancer since 1997.</p>	<p>The development of lymphedema was found to have negative impacts on breast cancer survivors' physical and psychological well-being. Women diagnosed with lymphedema reported having low self-confidence in their body images. In addition, they also reported experiencing anxiety, frustration, anger, fear, and self-consciousness as a result of living with lymphedema.</p>	<p>Lymphedema secondary to breast cancer continues to have a negative impact on breast cancer survivors' quality of life.</p>
<p>Phillips, S. M., & McAuley, E. (2015)</p>	<p>A total number of 1,631 women participated in the study. Only 1,348 of the breast cancer survivors were included for the section on physical activity and weight.</p>	<p>Maintaining or increasing physical activity were found to be have positive effects on reducing various negative symptoms experienced by breast cancer survivors, including fatigue, anxiety, depression, stress, etc. Participants that maintained or increased their levels of physical activities scored higher on Health-related Quality of Life scale than those that decreased their levels of physical activity post-diagnosis.</p>	<p>This research provides data for the relationship between physical activity and weight and breast cancer survivors' overall health-related quality of life. Future research is recommended to further enhance the evidence.</p>
<p>Clark, L., Holcombe, C., Fisher, J., & Salmon, P. (2014).</p>	<p>A total number of 14 breast cancer survivors agreed to participate in this study involving three focus groups.</p>	<p>Participants expressed the idea of previous life experiences making them more resilient after the diagnosis of breast cancer. However, childhood abuse made it difficult to cope with cancer. With an exception of one participant, all of the others expressed that they thought breast cancer survivors should be given to the opportunity by health care professional to disclose childhood abuse.</p>	<p>More research needs to be conducted towards this specific population of breast cancer survivors with history of childhood abuse. Health care professionals should respect their patients' wishes in whether or not if they want to disclose the presence of childhood abuse in their lives.</p>

<p>Davis, C. M., Myers, H. F., Nyamathi, A. M., Brecht, M. L., Lewis, M. A., & Hamilton, N. (2014)</p>	<p>A total number of 155 participated in this study.</p>	<p>Triple Negative Breast Cancer and BMI were two biological predictors found to be associated with anxiety and depression in African American breast cancer survivors. In addition, chronic stress was also a significant predictor discovered by the study.</p>	<p>A more in-depth review needs to be conducted on the relationship between TNBC and psychological functioning.</p>
<p>Kolokotroni, P., Anagnostopoulos, F., & Tsikkinis, A. (2014)</p>	<p>A total number of 22 studies were extracted from various databases.</p>	<p>Personality, coping strategies, and social support were identified as factors contributing to posttraumatic growth in breast cancer survivors. In addition, demographic characteristics such as younger age at time of diagnosis, were also found to play an important role in PTG.</p>	<p>Clinician should keep those above variables in mind in order to promote psychological well-being in breast cancer survivors.</p>
<p>Mollica, M., & Newman, S. D. (2014)</p>	<p>Eleven articles from various databases were found to be relevant in this study.</p>	<p>Spirituality and social support were found to be important factors in the transition from being a cancer patient to a survivor in African American breast cancer survivors.</p>	<p>There still exists racism in the care of minorities in health care. Clinicians should deliver culturally appropriate care to their patients.</p>
<p>Zeng, Y., Huang, M., Cheng, A. S., Zhou, Y., & So, W. K. (2014)</p>	<p>A total number of 25 trials were extracted from various research studies from multiple databases for this particular study.</p>	<p>All statistics have shown that exercise has a significant positive impact on the overall quality of life for breast cancer survivors, including psychologically and physically.</p>	<p>Engagement in regular exercise programs has been proven effective in improving the overall quality of life in breast cancer survivors.</p>
<p>Ares, I., Lebel, S., & Bielajew, C. (2014).</p>	<p>A total number of 742 young breast cancer survivors completed the web-based surveys. A sample size of 531 was used for the second part of the study.</p>	<p>Four determinants were found to be associated with breast cancer survivors' perceived stress, illness intrusiveness and fear of recurrence, including the age of the mother, age of the children, time since diagnosis, and parenteral stress. Overall, survivors with children reported higher levels of illness intrusiveness in the intimate life domain and fear of cancer recurrence. Younger survivors that were diagnosed 0-5 years prior to the study reported poorer overall psychological well-beings related to higher levels of perceived stress, illness intrusiveness, and fear of recurrence.</p>	<p>Young breast cancer survivors with children are identified as a vulnerable group subjected to higher levels of perceived stress, illness intrusiveness and great fears caused by their illnesses.</p>
<p>Mollica, M., & Nemeth, L. (2015)</p>	<p>A total number of 15 African American breast cancer survivors participated in the study.</p>	<p>Reliance on faith was a common supportive measure the participants took. Physical debilities cause by the illness and treatments, as well as inadequate guidance post-treatment caused great amounts of distress on the survivors. Lastly, participants expressed a great need to have another African American breast cancer survivor as a support person.</p>	<p>The results of study provide clinicians variables to assess in African American breast cancer survivors in regards to their emotional well-being. The utilization of peer support may be helpful to the survivors tremendously.</p>

<p>Raggio, G. A., Butryn, M. L., Arigo, D., Mikorski, R., & Palmer, S. C. (2014)</p>	<p>A total number of 83 breast cancer survivors participated in the study.</p>	<p>Based on the Female Sexual Distress Scale, 77% of all participants and 60% of sexually active participants were diagnosed with sexual dysfunction. Mastectomy was found to be a factor contributing to the high sexual morbidity in this population. In addition, weight gain was a predictor for body change stress.</p>	<p>Clinician and breast cancer survivors should be warned on the high sexual morbidity in breast cancer survivors, as well as stress caused by body changes.</p>
<p>Janz, N. K., Friese, C. R., Li, Y., Graff, J. J., Hamilton, A. S., & Hawley, S. T. (2014)</p>	<p>A total number of 772 breast cancer survivors completed both surveys involved in the study.</p>	<p>Of the 772 breast cancer survivors, 24.9% reported an experience of emotional well-being decline overtime. Women with a history of depressive disorder reported were more likely to report emotional well-being decline. The participants reported that they did not receive an adequate amount of information on the risk of recurrence also experienced an emotional well-being decline overtime. Greater fear of recurrent was also associated with emotional well-being decline.</p>	<p>An adequate amount of education on the recurrence of breast cancer is essential in improving emotional well-being in breast cancer survivors.</p>
<p>Gochett, C. G. (2016)</p>	<p>A total number of 12 articles from various databases were included in this study.</p>	<p>Factors discovered through literature review that had correlations with the psychological well-being of breast cancer survivors included: coping strategies, social support, physical symptoms etc. In addition, the adequacy of information provided by the clinicians in regards to the illness, treatments, and aftercare also impacted the level of distress experienced by the survivors. A negative correlation was found on the relationship between coping with cancer and relying on religious practices.</p>	<p>Clinicians should have a clear understanding of factors contributing to the psychological well-being in breast cancer survivors in order to provide the best patient care possible.</p>
<p>Castillo, M. A. (2016).</p>	<p>A sample size of 166 breast cancer survivors participated in the study.</p>	<p>Participants that underwent chemotherapy for their cancer treatments and those reported greater fears for recurrence were subjected to higher levels of distress.</p>	<p>Clinicians should consider all survivors unique characteristics and establish customized treatments.</p>