REVIEW ARTICLE
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Integrative medicine and lifestyle in women survivors of breast cancer: an integrative review

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ABSTRACT

Breast cancer is the most frequent among women in the world and in Brazil. New treatment strategies are considerably increasing survival rates in the context of Breast cancer, making it important to study the physical, social, and emotional effects of the disease and its treatments. In this context, integrative medicine emerges as a strategy based on scientific evidence, along with conventional therapy, with a mind-body approach with the use of natural products and lifestyle changes. The aim of this study was to carry out a brief literature review on integrative medicine and lifestyle in women who survived Breast cancer. This is an integrative review carried out with studies indexed in PubMed. Eight search strategies were carried out using the keywords: "survivorship," "breast cancer," "lifestyle," "nutrition," "physical activity," "alcohol," "tobacco," "sleep," "distress," and "relationship," respecting the period between 2015 and 2021. In all, 166 articles were found. Studies that considered other types of cancer and did not focus on the lifestyle of cancer survivors were excluded from the analysis. The remaining 28 articles referring to the proposed theme were read and analyzed in full. The results were described according to the six pillars of a healthy lifestyle proposed by the American College of Lifestyle Medicine, being addressed as follows: (1) nutrition, (2) physical activity, (3) stress, (4) substance abuse (alcohol and tobacco), (5) sleep, and (6) healthy relationships (marital relationships and social support), showing the importance of training health services and professionals in cancer survival programs to provide better guidance to patients with Breast cancer on how to use integrative therapies properly and what lifestyle changes can help optimize various aspects of your health, reducing the risk of recurrence or a new cancer.

KEYWORDS: integrative medicine; lifestyle; cancer survivors; breast cancer.

INTRODUCTION

Breast cancer (BC) is the most common cancer in women worldwide, and its frequency is increasing in low- and middle-income countries[1]. In Brazil, it is not different. According to data from the National Cancer Institute, 66,280 new cases were estimated for each year of the 2020–2022 triennium[2].

With the evolution of treatments, BC survival is increasing, with almost 90% of patients surviving for more than 5 years after diagnosis[3]. Therefore, establishing a smooth post-treatment transition from a cancer patient to a BC survivor is an extremely important goal in the oncology care line[4].

Many BC survivors experience the physical, social, and emotional effects of the disease and its treatments for years after the initial diagnosis[5,6]. Long-term symptoms can include fatigue, pain, neuropathy, lymphedema, insomnia, weight gain, cognitive dysfunction, sexual dysfunction, and a constant fear of recurrence. These women often use integrative medicine (IM) to treat symptoms and long-term adverse effects, often without their doctors' knowledge[5].

The definition of IM and its use for the different treatment modalities vary from country to country and between the different cultures in which they are practiced. IM promotes a person's physical, emotional, and spiritual health by incorporating various modalities, based on scientific evidence, alongside conventional therapy[5].

Studies published around the world report increasing use of IM by people with cancer; it is estimated that 50%–60% use some form of complementary therapy[6]. In the main oncology centers in the United States, patients usually meet with the IM physician for an initial consultation, in which the physician and patient develop an individualized prescription that requests a mind-body approach, use of natural products, and lifestyle change. All

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of this is based on robust literature and guidelines published by the most recognized associations in the area[6,7].

In 2015, the American Cancer Society (ACS), together with the American Society of Clinical Oncology (ASCO), published a care guideline for BC survivors, covering five main areas: (1) surveillance for recurrence of BC; (2) screening for second primary cancers; (3) assessment and management of long-term physical and psychosocial effects and late effects of cancer and its treatments; (4) health promotion; and (5) care coordination and practical implications[8].

This review focuses on the topic related to health promotion and how a healthy lifestyle is essential to improve quality of life, reduce the risk of recurrence and emergence of a second cancer, prevent comorbidities, minimize symptoms secondary to cancer, and thus reduce the risk of overall mortality and specific cancer[4]. In this sense, the objective of this study was to carry out a brief literature review on the topic of IM and lifestyle in women who survived BC.

METHODS

This bibliographic review, of the integrative type, was carried out using the scientific production index PubMed. In the first search, the following search strategy was used: "survivorship" AND "breast cancer" AND "lifestyle," with the delimitation of studies for the period between 2015 and 2021. In all, 166 articles were found. Studies that considered other types of cancer and that did not focus on the lifestyle of cancer survivors were excluded from the analysis. Seven more searches were carried out; in them, the keyword "lifestyle" was replaced, individually, by keywords of the six pillars of a healthy lifestyle, such as "nutrition," "physical activity," "alcohol," "tobacco," "sleep," "distress," and "relationship," also respecting the period between 2015 and 2021. The same exclusion criteria were applied. In the end, there were 28 articles referring to the proposed theme. With the materials already selected for analysis, the exploratory and analytical reading of the articles that, in fact, were of interest to the research began.

RESULTS AND DISCUSSION

The management of BC survivors is now recognized as a new subspecialty[3]. Most individuals far exceed a 5-year disease-free survival rate. However, survivors are at increased risk of recurrence, even 20 years after the initial diagnosis. In addition, they are at increased risk of gaining weight and developing other comorbidities[9].

Studies have shown that an unfavorable lifestyle pre-diagnosis of BC was associated with an almost twofold increased risk of mortality[10] and that the adoption of a healthy lifestyle, after diagnosis, can improve the prognosis and decrease mortality rates in up to 50%[3]. These data were largely consistent across individuals from different socioeconomic backgrounds[10].

The results described below were divided according to the six pillars of a healthy lifestyle proposed by the ACLM[11].

Nutrition

Several risk factors are identified in the pathogenesis of breast tumors; among them, a large number are linked to nutrition and lifestyle[1]. The standard Western diet, high in sugar and fat and low in fiber, results in obesity, insulin resistance, dysbiosis, and inflammation[3].

Body weight is associated with a higher risk of postmenopausal BC. Each 5-unit increase in body mass index was associated with a 5%–50% increase in risk[10] and a 14%–29% increase in cancer-specific mortality[9,10]. Furthermore, patients with obesity have a 6%–10% higher risk of recurrence and a 41% relative increase in mortality compared to their normal weight counterparts[12,13].

The analysis of the correlation between diet and BC is a controversial issue. One of the main limitations in the field of nutrition science is that food and nutrients are not consumed in isolation and, from an epidemiological point of view, form a complex network of correlated influences[1].

Studies suggest that dietary fat increases the risk of hormone receptor-positive BC and the risk of recurrence or death in premenopausal women who survive BC[1,9].

Greater adherence to the Mediterranean diet in BC survivors, particularly rich in fruits, vegetables, whole grains, and foods rich in omega-3, significantly decreases fatigue and improves sleep quality, physical functioning, and general well-being, in addition to promote lower recurrence rate and reduce mortality from all causes[9,12,14].

As with the Mediterranean diet, other diets based on fruits and plants and limiting saturated fats, sugar, red meat, and processed products have shown a reduction in overall mortality and specific cancer[15].

Despite these findings, a large meta-analysis of 15 prospective studies found only a weak association between combined fruit and vegetable intake and BC. The evidence to date is still limited and no conclusions can be reached[8].

A recent meta-analysis of 17 prospective studies associated red meat consumption with a 6% higher risk of BC and a 9% higher risk with processed meat consumption. The 2018 World Cancer Research Found International (WCRF) and American Institute Cancer Research (AICR) recommendation is not to completely avoid eating meat, but to limit consumption so as not to extrapolate 350–500 g/week[9].

The available data on the association of consumption of dairy products with total carbohydrates or specific sugars and risk of BC are contradictory and inconclusive; however, control should be advised[9,14].

The use of green tea, omega-3 and omega-6 polyunsaturated fatty acids, consumption of soy-based foods in Western women,

intermittent fasting, antioxidant vitamin, and mineral supplements have recently been investigated in survivors; however, to date, the data are still immature, and the evidence is limited for a recommendation[9].

The ACS, World Health Organization (WHO), WCRF, AICR, European Society for Clinical Nutrition and Metabolism, and National Comprehensive Cancer Network (NCCN) guidelines guide a dietary pattern rich in vegetables, fruits, whole grains and legumes, low intake of dairy products, red meat, and little or no processed meat, as well as sugar, sweets, and alcohol[4,9,16].

Physical activity

The practice of physical activity (PA) was related to better quality of life after the end of adjuvant treatments in patients with BC, with a reduction in post-treatment side effects, including fatigue, lymphedema, peripheral neuropathy, symptoms of depression, and arthralgia related to aromatase inhibitors[12-14].

Survivors who undergo PA programs also show improvement in quality of life, cognitive function, cardiopulmonary performance, bone health, and the ability to maintain an adequate body weight, with a substantial reduction in the risk of death compared to sedentary survivors[4,13,15].

Studies also show that the intensity of PA has an influence on the degree of clinical benefit. A recent systematic review of 26 observational studies found that cancer survivors who exercise the most had a 37% lower risk of dying from cancer[13].

In line with these studies, patients who practiced high-intensity physical exercise during chemotherapy demonstrated a reduction in the burden of symptoms, less fatigue, better emotional well-being, shorter time to return to work, and lower rates of sick leave compared to the usual care group[17].

Additional studies demonstrate that regular PA after BC decreases recurrence by 24% of the risk of death from specific cancer and overall mortality by 41%[3]. Women who increased their PA after BC reduced the overall risk of death by 45%, while those who decreased it had a fourfold increased risk of death[5].

The ACS/ASCO and NCCN guidelines recommend returning to PA and exercise tailored to individual abilities and preferences as soon as possible. Women should strive to perform PA for at least 150 min/week, with an end goal of 300 min or more of moderate-intensity activity, or 75 min of vigorous activity, two to three sessions per week of strength training, and avoiding prolonged sedentary behavior[4,16].

Stress

Increasingly, clinicians are recognizing that for many survivors, the cancer experience does not end with the completion of therapy. Many problems persist and can affect all aspects of their lives, whether physical, psychological, social, existential, or financial concerns, among others[18].

Unfortunately, long-term survivors are not immune to stress and psychological distress. Not only the risk of a new or recurrent cancer, but also the appearance of comorbidities, such as heart disease, osteoporosis, diabetes, or health problems in general, affect physical and emotional well-being[18].

More than 50% of cancer survivors report ongoing difficulties with recovery and returning to "normal" after treatment. Some experience constant fear of recurrence, suffering, depression, and anxiety, representing enormous emotional, interpersonal, and financial costs for patients and their families, as well as economic consequences for the health system, when depressive and anxiety disorders are not treated[5,18].

Depression is a major public health problem and often goes undiagnosed and untreated in women with BC. If left untreated, depression can cause amplification of physical symptoms, poor adherence to cancer treatment, and increased functional impairment[5].

According to the NCCN, cancer-related fatigue (CRF) is defined as "a distressing, persistent and subjective feeling of physical, emotional, and/or cognitive tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with normal functioning." CRF is a common complaint among cancer survivors and is graded on a scale of 1–10 as mild (0–3), moderate (4–6), and severe (7–10). It should always be addressed individually and based on patient reports and other clinical history data[16].

Treatment of these circumstances is based on well-founded guidelines, such as the ASCO published in 2014, which recommends, in addition to or in place of pharmacotherapy, psychotherapy, mindfulness approaches, expression of positive emotions, spiritual interventions, hope therapy, and interventions of creation of meaning, with a significant improvement in the quality of life and well-being[5].

Cognitive behavioral therapy (CBT) is a structured psychological approach to solving current problems, modifying behavior and useless thinking, promoting a reduction in symptoms of anxiety and depression, improving social life, and finding benefits in the cancer experience, with unquestionable improvement in quality of life[19,20].

Studies with interventions such as mindfulness, breathing exercises, and stretching have shown benefits in mental and physical health with reduced fatigue, anxiety, and symptoms of depression and greater resilience, as well as increased flexibility and psychological adaptation[19].

A Cochrane review concluded that yoga has a similar role in CBT and relaxation exercises for stress reduction, lower levels of fatigue, depression, and anxiety, as well as improved sleep quality, physical health, sex life, and consequent improvement in quality of life[20,21].

In addition to the above-mentioned therapies, the NCCN guidelines for stress management in cancer patients recommend PA, music therapy, dance, spiritual support, activities in support groups, and relaxation therapy as strategies with a level of evidence sufficiently adequate for their use and recommendation[16].

Substance abuse

Alcohol

The habit of drinking between 50 and 100 g of ethanol per day was associated with a 22%–91% increase in cancer incidence and a 31% increase in cancer mortality[14].

Bone loss and increased risk of fractures are clinical problems related to hormonal treatment of BC and excessive alcohol consumption (defined as greater than 2 units (U)/day – 3U/day [1 U equals 300 ml of beer, 1 glass of wine, and 25 mL of distilled beverage]), increasing the risk of osteoporotic fracture by up to 40% when compared to women who consume moderate or no alcohol[5].

The current recommendation for the use of alcohol in female survivors is no more than 1 drink per day[5,16].

Tobacco

Smoking is the most aggravating risk factor for cancer morbidity and mortality[14]. Numerous observational studies show that female smokers have significantly worse overall BC survival than former smokers and never-smokers at the time of diagnosis, with an increase of over 30% in mortality risk[4].

In addition to the negative effects of smoking on the outcome of BC, women who smoke have a very high risk of developing a new cancer in the lung, mouth, larynx, and upper digestive tract[13].

Passarelli et al. observed that patients who stopped smoking had a 33% reduction in the mortality rate from BC[22]. Like alcohol, tobacco use affects bone density and further increases the risk of fracture[5].

Consistent research shows that smoking cessation in BC patients is associated with a better survival status, making it essential for oncology services to prescribe and promote immediate smoking cessation for all survivors[23,24].

Sleep

Insomnia is defined as difficulty falling asleep, staying asleep, or waking up too early, at least three times a week, for at least 3 months. This is one of the problems most commonly described by patients with BC[15,25].

In oncology centers that screen for sleep disorders, up to 75% of patients report insomnia or sleep disturbance at some point after diagnosis; among them, patients with BC are the ones who experience this symptom chronically[25].

As sleep disorders are often multifactorial, it is difficult to define a single etiological factor for insomnia. However, emotional stress is cited by 87% of BC patients; 64% report hot flashes as a cause, and half of them associate difficulty sleeping with pain, discomfort at the surgery site, and treatment side effects[25,26].

Without adequate treatment, insomnia becomes chronic and has been associated with a series of physical and psychosocial consequences, including poor quality of life, fatigue, reduced daily functional activities, loss of productivity, lower rate of return to work, emotional stress, reduced cognitive capacity, lower rate of adherence to hormone therapy, and greater use of the health system[25,26].

Treatment options for sleep disorders include pharmacological and nonpharmacological therapies, used either separately or together, behavioral and psychosocial interventions, sleep hygiene protocols, and PA[15,25].

A range of drugs are described for the treatment of insomnia. Among the over-the-counter medications are diphenhydramine and melatonin, which have been studied in BC survivors with advantages compared to placebo[25].

Commonly prescribed for insomnia, benzodiazepines are associated with increased sleep duration and reduced sleep latency, and their use for short periods is safe, but chronic use can cause dependence and rebound insomnia[25,27].

Nonbenzodiazepine hypnotics such as zolpidem, eszopiclone, and zaleplon showed little benefit in polysomnography; trazodone has a solid benefit in interval insomnia. Quetiapine, gabapentin, mirtazapine, and ramelteon can be considered in selected patients[25,27].

Recently, cannabidiol has been studied for its potential impact on sleep disorders, but high-quality clinical trials are still needed for safe use in cancer patients[25].

Among nonpharmacological therapies, CBT is the most recognized intervention as a first-line therapy for chronic insomnia[27].

The use of mindfulness programs for stress reduction with a focus on meditation, acupuncture, PA, and yoga shows consistent results[25,26].

Healthy relationships

Two aspects of human life are relevant when talking about healthy relationships: marital relationships and social support.

Marital relationships

Epidemiological research highlights the importance of intimate relationships as a determinant of health, especially in times of stress. People with less secure and conflicting relationships have higher cortisol levels, higher levels of inflammation, and poorer immune functioning, increasing the chance of cancer recurrence and development of comorbidities, thus contributing to premature mortality[28].

The benefits of stress reduction associated with satisfying romantic relationships are also evident in BC survivors, helping them to cope with the emotional and physical consequences of receiving a potentially fatal diagnosis and undergoing treatment[28].

BC diagnosis and cancer treatment can negatively impact many facets of your relationships, including time with your partners, open and honest communication, and planning for the future. After survivors complete cancer treatment, it can be difficult to resume their pretreatment or "normal" lives with their partners. These changes in relationship satisfaction over the course of treatment may offer a new avenue for survivors' levels of stress and inflammation, ultimately affecting their long-term health[28].

Promoting survivor relationships and encouraging them to connect with their partners can help reduce inflammation and promote long-term health. The American College of Surgeons Cancer Commission and ASCO recommend that care services for BC survivors conduct

distress screening programs, screening for relationship satisfaction, and ultimately referral for couples counseling when appropriate[28,29].

Social support

Social support is understood as an individual's feeling of being loved and cared for by a social network, and this is a key factor in determining how women face the diagnosis of BC and subsequent treatment[30].

Studies in various parts of the world demonstrate a direct relationship between the quality of the social support network and outcomes during and after BC treatment. Women with adequate support have better health, fewer side effects from hormone therapy, fewer depressive symptoms, and an earlier return to what could be considered "normal life." Research has shown that the ability of survivors to reintegrate into a social structure, even on a new trajectory, is crucial for an extended quality of life[31].

Social support is also a key component of several theories of improving healthier behaviors. For example, higher levels of social support are associated with greater participation in PA among BC survivors and a reduced risk of all-cause mortality and BC-specific mortality[30].

Importantly, the completion of primary treatment coincides with a sudden decrease in health care visits from several times a month during treatment to once between 3 and 6 months during the follow-up phase. This reduction means that patients have fewer opportunities to get support from their health care teams. In addition, patients tend to underutilize their support networks and report receiving less social support from their friends and family within a year of primary treatment. Thus, for many women, the end of conventional treatment marks the beginning of a decline in social support, which can create unmet needs[32].

Paladin et al. evidenced that the presence of relatives and other allies to accompany the patients during medical consultations was a key factor in meeting the emotional and informational needs of the participants, as well as the fact that the support of formal groups with other survivors and the informal support of family and friends are essential for well-being during and after primary treatment[32].

Ultimately, oncology services must address these needs by facilitating connections between survivors, offering more avenues for receiving support from the health care team, and encouraging women to utilize their existing networks, inviting family and friends to be active contributors in their care[32].

CONCLUSION

IM and lifestyle medicine are modern medical disciplines that speak to and complement each other. BC survivors continue to experience adverse effects and sequelae of the disease for many years after diagnosis and use various techniques related to IM to help manage their symptoms, as well as having a keen interest in learning more about lifestyle improvements. After analyzing the available content on lifestyle in the context of BC and the solid scientific data presented, we concluded that it is essential that health services and professionals in cancer treatments be trained in cancer survival programs and educate patients about how to use appropriate integrative therapies and what changes in their lifestyle can help optimize various aspects of their health and reduce the risk of a recurrence or a new cancer.

AUTHORS' CONTRIBUTIONS

REARC: Data curation, Formal analysis, Investigation, Writing – original draft. RSN: Data curation, Formal analysis, Investigation, Writing – original draft. SFVV: Conceptualization, Data curation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing. RJVV: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing.

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