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BENEFITS OF ACUPUNCTURE AS A COMPLEMENTARY TREATMENT IN WOMEN WITH BREAST CANCER: SCOPING REVIEW

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Abstract: Objectives: To map the existing scientific evidence on acupuncture protocols used to improve sexuality in women with breast cancer. **Methods:** A scoping review was conducted according to the JBI methodology and reported in accordance with PRISMA-ScR, using the MEDLINE (PubMed), CINAHL Complete, Cochrane Central Register of Controlled Trials, and Cochrane Database of Systematic Reviews databases. Twelve articles met the inclusion criteria, involving women between 30 and 70 years of age with sexual changes who underwent specific manual acupuncture protocols in the context of breast cancer. **Results:** The included studies report associations between acupuncture and improvements in sexual dysfunction, observed in 60% of breast cancer survivors, with improved sexuality in quality of life. **Conclusions:** The evidence suggests that acupuncture is an integrative intervention with potential benefits for the sexuality and quality of life of women with breast neoplasms.

Keywords: Integrative Medicine; Complementary Therapies; Women; Sexuality; Breast Neoplasms.

INTRODUCTION

Breast neoplasms remain one of the leading causes of morbidity and mortality among women worldwide, with repercussions not only on a physical level, but also on an emotional, social, and psychological level⁽¹⁻²⁾. This condition causes physical and emotional suffering and, in many cases, is associated with mutilating procedures and invasive treatments that significantly alter women's perception of their identity and self-image⁽³⁾.

In fact, the breast plays a central role in women's identity and self-image. Being fundamental to sexuality and motherhood, the impact of breast neoplasms becomes particularly difficult and emotionally complex⁽³⁾.

Sexuality and sexual function are issues that directly influence women's quality of life. According to the WHO⁽⁴⁾, sexuality is "an energy that motivates us to seek love, contact, tenderness, and intimacy, integrated into the way we feel, move, touch, and are touched; it is being sensual and, at the same time, sexual; it influences thoughts, feelings, actions, and interactions and, consequently, also our physical and mental health." Encompassing sexual identity, affection, self-esteem, and physical and psychological transformations, it is an individual experience shaped by different desires and behaviors, assuming itself as a totally personal and natural process.

In addition to the diagnosis of breast cancer, women face a process of reformulating their sexuality, which can lead to a loss of self-confidence and a state of tension with such significant psychological repercussions that it can lead to a breakdown of internal balance, accompanied by various physical changes, symptoms resulting from hormonal deficiency and consequent changes in body image.

The diagnosis and treatment of breast neoplasms can thus affect sexuality, interfering not only with physical well-being but also with women's emotional well-being. In the field of integrative therapies, acupuncture has emerged as a promising intervention to improve the quality of life and sexual function of these women. As one of the most widely used practices in Traditional Chinese Medicine, acupuncture has been

studied for its effectiveness in alleviating physical and emotional symptoms associated with the treatment of breast neoplasms, namely pain, anxiety, insomnia, hot flashes, and sexual dysfunction ⁽⁶⁻⁷⁾ .

In this context, acupuncture acts through hormonal modulation, improved blood flow, reduced anxiety, and pain relief, contributing to better sexual function. In addition, some randomized studies have shown that acupuncture can be an effective therapy in reducing vasomotor symptoms, thereby improving quality of life and sexuality in breast cancer survivors ⁽⁸⁻⁹⁾ . It is important to note that Lu et al. demonstrated that acupuncture significantly improves several symptoms related to breast cancer treatment, while Frisk et al. demonstrated the effectiveness of acupuncture in reducing fatigue, one of the most prevalent symptoms after treatment ⁽¹⁰⁻¹¹⁾ . These studies support the idea that acupuncture can be a valid integrative therapy for the management of sexual dysfunction and reinforce the importance of an integrative and personalized approach to the care of these women ⁽¹¹⁾ .

Recommended by the Society for Integrative Oncology (SIO) and the American Society of Clinical Oncology (ASCO) as an integrative intervention for the control of pain, fatigue, insomnia, and hot flashes in women with cancer ⁽¹²⁾, acupuncture stands out as an effective non-pharmacological intervention in symptom management in women undergoing allopathic therapy ⁽¹³⁾ . Integrative therapies can thus be incorporated into nursing interventions, giving them a distinctive dimension and enriching the range of skills of nurses, in line with a more integrative approach to human care. Therefore, there is a recognized need to develop nursing interventions that integrate

these therapies, allowing for improved practice through differentiation and reinforcing their social value and visibility.

This scoping review aims to map the available scientific literature on acupuncture protocols applied to improving sexuality in women with breast cancer. The intention is to provide a basis for the development of a future nursing intervention, supported by the evidence identified, which can be subsequently tested and evaluated. The importance of this review lies in its contribution to the construction of a nursing intervention that is more tailored to the complex needs of these women, promoting a more humanized and integrative response.

OBJECTIVE

To map the existing scientific evidence on acupuncture protocols used to improve sexuality in women with breast cancer, identifying the most frequently applied points and the reported therapeutic benefits.

METHOD

This scoping review was conducted according to the JBI methodology for scoping reviews and described in accordance with the PRISMA-ScR checklist ⁽¹⁴⁾.

The investigation was guided by the PCC mnemonic, defining: Population (P): women diagnosed with breast cancer, with changes in sexuality associated with the disease and/or treatment; Concept (C): acupuncture intervention/treatment protocols; Context (C): all health care settings, including hospital, community, and home care, without geographical or cultural restrictions.

Review questions

What acupuncture protocols are described in the scientific literature to improve sexuality in women with breast cancer?

What are the most commonly used or recommended acupuncture points, according to the literature, to improve sexuality in women with breast cancer?

What benefits or improvements have been reported in the scientific literature regarding the application of these protocols in this population?

Inclusion criteria

The following inclusion criteria were defined for this scoping review.

Participants

Studies that included women aged between 30 and 70 years with changes in sexuality were considered.

Concept

Studies describing acupuncture protocols for women with breast cancer were included, including the identification of the acupuncture points used.

Only studies with a complete description of the implementation of acupuncture protocols were included, specifically those that used manual acupuncture exclusively.

Context

This review included studies conducted in any healthcare setting, without clinical, institutional, geographical, or cultural restrictions.

Types of sources

Experimental and quasi-experimental designs were considered, including randomized and non-randomized clinical trials. Analytical observational studies, such as prospective and retrospective cohort studies, case-control studies, and analytical cross-sectional studies, were also included.

Descriptive observational studies (case studies and descriptive cross-sectional studies) and qualitative studies, such as phenomenology, qualitative description, and action research, were also considered. Systematic reviews and clinical practice guidelines that met the inclusion criteria were also included.

Only sources published in peer-reviewed scientific journals were considered. Dissertations, theses, gray literature, and publications without scientific review were excluded.

Search strategy

The research strategy aimed to identify both primary studies and secondary sources (reviews) published on the topic.

A preliminary search was initially conducted in the Medline (via PubMed) and CINAHL (via EBSCO) databases to identify relevant articles. The keywords present in the titles and abstracts of these articles, as well as the indexing terms used to describe them, were used to develop a complete search strategy for Medline (via PubMed), presented in Table 1.

	Description	PubMed (MESH)	PubMed (Keywords)	Junction
P	Women with breast cancer with altered sexuality	“Women”[Mesh] AND “Breast Neoplasms”[-Mesh] AND “Sexuality”[Mesh]	(woman[tiab] OR women[tiab]) AND ((Breast*[tiab]) AND (Neoplasm*[tiab] OR Cancer*[tiab]) AND (sexual*[tiab]))	(((((woman[Title/Abstract]) OR (women[[Title/Abstract]]) OR (Women[-Mesh])) AND (((Breast*[Title/Abstract]) AND (Neoplasm*[Title/Abstract]) OR ((Breast*[Title/Abstract]) AND (Neoplasm*[Title/Abstract]) OR (Breast Neoplasms[Mesh])))) AND ((sexual*[Title/Abstract]) OR (Sexuality[Mesh]))
C	Acupuncture treatment protocol	“Acupuncture”[Mesh] OR “Acupuncture Therapy”[Mesh] OR “Medicine, Chinese Traditional”[Mesh] OR “Acupuncture Points”[Mesh]	(Acupuncture[tiab]) OR (Acupuncture[tiab] AND Therap*[tiab]) OR (Medicine[tiab] AND Chinese[tiab]) OR (Point*[tiab] AND Acupuncture[tiab])	(((((Acupuncture[Title/Abstract])) OR (Acupuncture[Mesh])) OR ((Acupuncture[Title/Abstract]) AND (Therap*[-Title/Abstract]))) OR (Acupuncture Therapy[Mesh])) OR ((Medicine[Title/Abstract]) AND (Chinese[Title/Abstract])) OR (Medicine, Chinese Traditional[Mesh])) OR ((Acupuncture[Title/Abstract]) AND (Point*[Title/Abstract])) OR (Acupuncture Points[Mesh]))
C	All contexts			

Table 1: Search strategy for Medline (via PubMed)

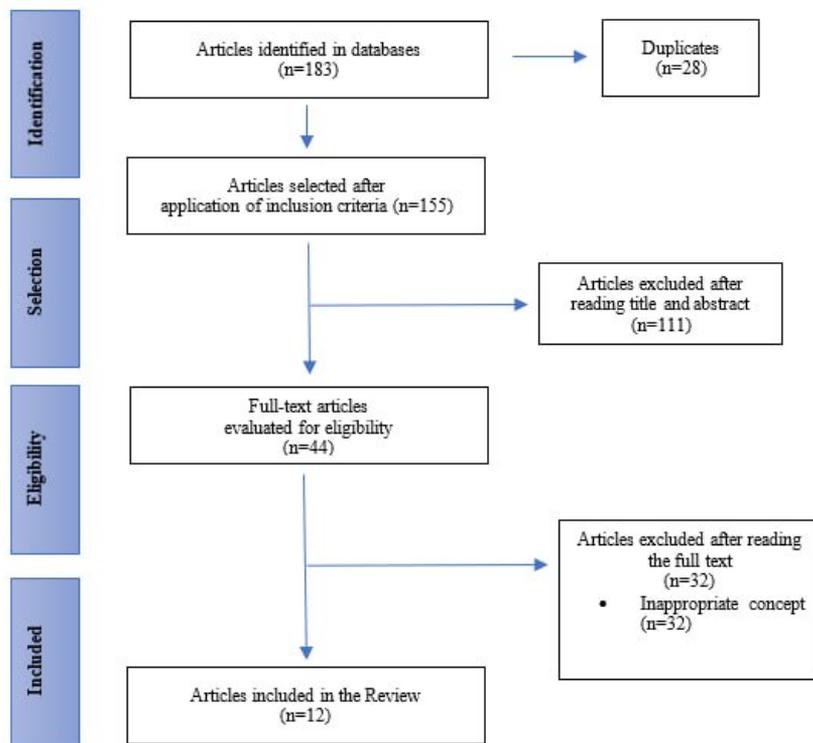


Figure 1: Article selection procedure, based on the PRISMA diagram

This was adapted to the specificities of each information source. Finally, the references of the included articles were analyzed to search for additional studies.

The following databases were searched: MEDLINE (PubMed); CINAHL complete (EBSCO); Cochrane Central Register of Controlled Trials (EBSCO); and Cochrane Database of Systematic Reviews (EBSCO).

Selection of scientific evidence

After the search, all identified articles were compiled and uploaded to Mendeley® V1.19.8 software (Mendeley Ltd., Elsevier, Netherlands), and duplicates were removed.

A pilot test was conducted by the review team before screening titles and abstracts, followed by analysis of the full texts.

Titles and abstracts were independently assessed by two reviewers to determine eligibility based on inclusion criteria. Articles considered potentially relevant were obtained in full text.

The full texts of the selected articles were evaluated in detail by two independent reviewers. The reasons for excluding studies that did not meet the inclusion criteria were recorded.

Any disagreements between reviewers at any stage of the selection process were resolved through discussion.

The search results are presented in the final scope review and summarized in a PRISMA-ScR flow diagram for scope reviews and meta-analyses.

Data extraction

Data extraction from the included articles was performed by two independent

reviewers using a data extraction tool developed by the authors. The data extracted included specific details about acupuncture protocols aimed at improving sexuality in women with breast cancer, relevant to the question of this review.

RESULTS

Initially, 183 articles were identified. After removing 28 duplicates, titles and abstracts were screened, and 111 articles were excluded because they did not provide clear descriptions of acupuncture protocols aimed at improving sexuality in women with breast cancer or because they did not answer the review questions.

Forty-seven articles were then selected for full-text reading, of which 32 were excluded because they did not provide a complete description of acupuncture protocols or because they included other Traditional Chinese Medicine practices in addition to manual acupuncture. Thus, 12 articles were included in the review, as illustrated in Figure 1 (PRISMA-ScR diagram), of which 11 are primary studies and 1 is a secondary study (review).

After reading the texts in full and extracting data using the tool developed by the authors (Table 2), the results were analyzed and discussed.

DISCUSSION

This review mapped studies that reported improvements in sexual dysfunction scores, with increased sexual desire⁽¹⁵⁻¹⁶⁾ and improved sexual behavior⁽¹⁷⁻¹⁸⁾ in about

Author, Year, Country	Population	Most commonly used acupuncture points	Acupuncture protocols, materials, or instruments used	Context
Kim, T. & Kang, J. W. 2019 Seoul, South Korea	6 women	Bilateral PC6, ST30, ST36, SP6, LI4, LR3, CV2, CV4	8 to 12 sessions of symptom-specific puncture for 4 weeks. Single-use sterile acupuncture needles (0.25 mm × 40 mm, 20 min retention)	Kyung Hee University Korean Medicine Hospital Korean Medicine Hospital, Kyung Hee University
Jeong, J., Park, S., Kwak, M., Seo, J., Bong, J., Shin, I., & Park, S. 2018 South Korea	10 women	LI 4, LI 11, ST 36, LV 3, M-UE-9 (Ba Xie), and M-LE 8 (Ba Feng).	The study protocol consisted of 8 weeks, including 4 weeks of acupuncture treatment and 4 weeks of follow-up after the last treatment. Acupuncture was performed 3 times per week for the first 4 consecutive weeks. The acupuncture needles were sterile, disposable stainless steel needles (40 × 0.2 mm). Acupuncture treatments took 25 ± 5 minutes per session.	East-West Medical Center at Daegu Catholic University Hospital, Daegu, South Korea.
Jeong, Y. J., Park, Y. S., Kwon, H. J., Shin, I. H., Bong, J. G., & Park, S. H. 2013 South Korea	10 women	It was applied to five acupuncture points: GV 20; M-HN-3; and bilaterally to three points: HT 8, KI 10, and LV 2	Acupuncture was performed three times a week for four consecutive weeks, for 20 to 5 minutes in each session The acupuncture needles used were sterile disposable stainless steel needles (30 × 0.25 mm)	East–West Medical Center at Daegu Catholic University Medical Center, Daegu, Korea.
Alem, M., & Gurgel, M. S. C. 2015 Brazil	29 women	CV12, CV3, CV2; LI15, TE14, LU5, TE5, LI4; ST36, SP9, SP6.	A total of 24 treatments were performed once a week with a needle retention time of 30 minutes using stainless steel needles (0.25 mm × 30 mm).	Study conducted at several clinics and hospitals in the vicinity of Rio Claro and São Carlos, cities in the state of São Paulo, Brazil.
Bardy, J., Finnegan-John, J., Molassiotis, A., & Mackereth, P. 2015 England	40 women	ST36, SP6, and LI4, with some flexibility in the case of points that could not be punctured (e.g., lymphedema of a limb); these points may include GB34 and SP9	6 weekly sessions, with needles retained for 20 minutes per session	Study conducted in several hospitals and medical centers in the North and South of England.

De Valois, B. A., Young, T. E., Robinson, N., McCourt, C., & Maher, E. J. 2010 England	50 women	B13 B14 B15 B18 B20 B23 Lu 7; Kid 6; Ren 4; Sp 6; He 6; Kid 7; LI 11; Sp 6; LI 11	8 sessions, with needles retained for 20 minutes	Mount Vernon Cancer Center Vernon Cancer Center (MVCC) in Northwood, Middlesex, England
Walker, E. M., Rodriguez, A. I., Kohn, B., Ball, R. M., Pegg, J., Pocock, J. R., Nunez, R., Peterson, E., Jakary, S., & Levine, R. A. 2010 USA	25 women	23V, 3 R, 14VG, 20Vb, 9P, 3F, 20VG, 36E, 6VC, 7PC, and 7C.	Acupuncture was performed with 34-gauge stainless steel filiform needles (Japanese size: 0.20 30 mm) 12 weeks of acupuncture treatment	oncology clinics of the Henry Ford Health System
Lesi, G., Razzini, G., Muriel, Musti, A., Stivanello, E., Petrucci, C., Benedetti, B., Rondini, E., Ligabue, M. B., Scaltriti, L., Botti, A., Artioli, F., Mancuso, P., Cardini, F., & Pandolfi, P. 2016 Italy	85 women	SP6, LI 11, CV 4.	Sterile disposable needles 0.30 3 0.40 mm 20-minute acupuncture. 10 sessions of traditional Chinese medicine (TCM) acupuncture once a week for 12 weeks	Hospitals specializing in cancer and primary health care center in northern Italy.

Quinlan-Woodward, J., Gode, A., Dusek, J. A., Reinstein, A. S., Johnson, J. R., & Sen-delbach, S. 2016 USA	30 women	Stimulation of the PC 6 acupuncture point on the wrist.	Disposable stainless steel needles, 30 mm long and 0.16 mm, 0.18 mm, or 0.2 mm in diameter, average needle time of 36 minutes.	Abbott Northwestern Hospital
Smith, C. A., Pirotta, M., & Kilbreath, S. 2014 Australia	10 women	CV12, CV3 i, CV2; LI15, TE4, LU5, LI4; ST36, SP9, and SP6 S	The women received 12 treatments over 8 weeks, twice a week for 4 weeks and then once a week for 4 weeks, lasting at least 20 minutes	Performed in the office by an acupuncturist
Tukmachi, E. 2000 England	22 women	B-62; F-14; R-3; C-7; TA-6; BP-6; LI-11; E-36; VG-20; LI-4	6 to 14 sessions, 20 to 30 minutes per week, for 7 weeks Solid stainless steel acupuncture needles, 3 cm, 30 gauge	Performed in the office by an acupuncturist
Garcia, M. K., Graham-Getty, L., Haddad, R., Li, Y., McQuade, J., Lee, R. T., Spano, M., & Cohen, L. 2015 Texas	8 studies with a total of 474 women	6RT, 3 F, 3R, and 36 E.	Across all trials, the average number of treatments administered was 12.	Review article, different contexts

Table 2: Data extraction using the tool developed by the authors

60% of women with breast cancer included in the studies analyzed.

A reduction in neuropathy symptoms was also identified ⁽¹⁹⁾, contributing to an overall improvement in quality of life ⁽¹⁹⁻²⁰⁻¹⁷⁻²¹⁻²²⁾, including physical and emotional well-being ⁽¹⁹⁾.

Acupuncture intervention was associated with a reduction in vasomotor symptoms ⁽¹⁸⁻¹⁹⁻²¹⁻²³⁾, as well as pain relief ⁽²⁴⁾, allowing a return to daily activities and a reduction in feelings and thoughts of incapacity.

Some studies report that acupuncture is generally safe, with few adverse effects, constituting an added value in the overall management of quality of life ⁽¹⁷⁾. Significant improvements in sleep, memory, concentration, anxiety, and somatic and menstrual symptoms have also been observed ⁽¹⁷⁾, as well as a reduction in depressive symptoms and improvements in mental health ⁽²¹⁾.

In the context of clinical practice, Quinlan-Woodward et al. ⁽²⁵⁾ highlight the role of nurses. Acupuncture is identified as a valid non-pharmacological intervention for symptom control in women undergoing mastectomy and can be used as a complement to conventional therapy. This study demonstrated significant improvements in pain, nausea, anxiety, and coping. The authors also emphasize the need for nurses to understand the benefits of acupuncture and to integrate this practice into their clinical interventions and future research. Smith, Pirotta, and Kilbreath ⁽²⁶⁾ showed that acupuncture is an acceptable intervention with the potential to stabilize symptoms in women with post-surgical lymphedema.

In the 12 studies included, the protocols used acupuncture points described in detail, with the number of sessions varying

between 6 and 24 weeks. In most studies, approximately 12 sessions were performed over 4 weeks, with needles retained for 20 to 30 minutes per session. The most frequently used points included ST36, SP6, LI11, GV20, and LI4 ⁽²³⁾, with the first three considered homeostatic and the last sedative. The PC6 point was identified by Quinlan-Woodward et al. ⁽²⁵⁾ as beneficial for nausea and vomiting. Lu et al. ⁽¹⁰⁾ point out that there is no consensus on the number of points to be used, with selection generally based on Traditional Chinese Medicine theory and the therapist's experience.

Lopes-Júnior et al. ⁽⁷⁾ indicate that ST36 stimulation can enhance the immune response through the activation of NK cells and the release of nitric oxide and endorphins. Al, little is still known about the exact mechanisms of acupuncture, authors such as Stone and Johnstone ⁽²⁷⁾ and Wang, Kain, and White ⁽²⁸⁾ report that the technique acts by releasing neurotransmitters and endogenous opioids, involving peripheral, spinal, and supraspinal mechanisms ⁽¹⁰⁾.

Overall, the mapped results suggest the therapeutic potential of acupuncture; however, the heterogeneity of the studies limits conclusions regarding its effectiveness in improving sexuality and quality of life in women with breast cancer, reinforcing the need for new studies to support its possible integration into evidence-based clinical practices.

Limitations of the scope review

Although articles published in other languages may also be relevant to this review, only articles published in English, Portuguese, and Spanish were included. It is important to note that no articles in other

languages were found; however, it is possible that relevant publications may have been inadvertently omitted, representing a potential limitation.

It should be noted that, in accordance with the methodological nature of scoping reviews, no critical assessment of the quality of the included studies was performed. For this reason, no recommendations for clinical practice were made. Nevertheless, the results highlight the importance of future investigations with prolonged follow-up, which will allow for a more consistent assessment of the benefits of acupuncture in improving symptoms associated with sexuality and changes in self-image in women with breast cancer.

Contributions to nursing, health, or public policy

The integration of integrative therapies, such as acupuncture, represents a significant advance in the quality and scope of care provided to women. This evidence-based approach values the personalization and humanization of care, highlighting the uniqueness of each woman.

By incorporating strategies that promote physical and emotional well-being, nurses expand their skills and offer a more holistic and sensitive response to the biopsychosocial needs of women with breast cancer.

This reinforces not only the need for therapeutic efficacy, but also the creation of a more welcoming and person-centered care environment, enhancing the quality of healthcare delivery.

CONCLUSIONS

This scoping review mapped evidence describing acupuncture as a potential non-pharmacological and complementary therapeutic intervention in the care of women with breast cancer. Reported benefits include improvements in sexual dysfunction, which is common in these situations and has a marked impact on self-esteem and body image.

Acupuncture was also associated with significant gains in quality of life, namely through the reduction of pain, anxiety, neuropathic symptoms, and vasomotor disturbances, which often accompany the course of the disease and its treatment.

The studies analyzed emphasize the positive impact of acupuncture on hormone modulation, increased blood flow, and stimulation of the immune system, as well as on the reduction of psychological and physical symptoms. These effects contribute to a better experience of sexuality, emotional well-being, and functional recovery, reinforcing the role of acupuncture as a relevant practice in the field of integrative therapies.

In the studies included, acupuncture was most frequently administered in about twelve sessions, ranging from one to three per week, lasting 20 to 30 minutes and stimulating the acupoints ST36, SP6, LI11, GV20, and LI4, although no formal consensus on protocols was identified.

In the context of nursing interventions, the inclusion of integrative therapies such as acupuncture introduces an innovative and differentiating dimension to women's care, promoting more personalized and humanized approaches. This model not only expands the scope of practice of nurses

but also responds more comprehensively to the biopsychosocial needs of women with breast cancer.

Although the results are promising, further studies are needed to strengthen the scientific evidence and establish standardized protocols. The implementation of acupuncture in the field of nursing could become an essential tool in improving the quality of life and overall well-being of these women, highlighting the importance of a multidisciplinary and integrative approach in oncology.

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