

Systematic Review

Understanding the Feelings of Breast Cancer Survivors with Lymphedema in Various Social Relationships: A Qualitative Meta-Synthesis

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Abstract

Background: Breast Cancer-Related Lymphedema (BCRL) is a chronic condition requiring lifelong care, impacting survivors' quality of life. Social relationships play a crucial role in survivorship, yet research on their broader impact remains limited. Many Breast Cancer Survivors with Lymphedema (BCSWL) struggle with work, relationships, and self-esteem. This review explores their social experiences to inform healthcare strategies and improve self-management. **Method:** Based on the Joanna Briggs Institute meta-aggregation approach, article screening and data analysis were conducted following the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. The quality of the screened articles was evaluated using the Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research (JBI-QARI), and the Confidence in the Qualitative Synthesis of Findings (ConQual) approach was conducted to grade aggregated findings. **Results:** This review included 14 studies and focused primarily on 4 types of relationships: family, work colleagues, romantic relationships, and all relational partners (with some papers discussing overlapping relationship themes). We identified 4 synthesized findings that explore the experiences of BCSWL under different social relationships: (a) negotiating health and role expectations, (b) experiencing psychosocial pressure and stigmatization, (c) experiencing support from social networks, and (d) developing adaptive resilience and identity reconstruction. **Conclusions:** BCSWL experience complex and multifaceted outcomes within various social relationships, with both positive and negative experiences shaping their health and well-being. Findings indicate that BCSWL often face heightened role conflicts in workplace and family settings, compounded by a lack of adequate support. They are also particularly vulnerable to psychosocial pressures and stigmatization in romantic relationships. Despite these challenges, BCSWL demonstrate remarkable resilience, effectively navigating these difficulties across different relational contexts. Receiving support from relational networks throughout their lifelong treatment is crucial for their overall health and well-being. **The PROSPERO Registration:** The study has been registered on <https://www.crd.york.ac.uk/prospero/> (registration number: CRD42024541249).

Keywords: lymphedema; breast cancer survivors; social relationships; meta-aggregation

1. Introduction

Lymphedema is a clinical expression caused by the block of lymphatic circulation, often due to the consequence of trauma, radiation damage, or surgical intervention. Breast cancer is the most common etiology of lymphedema [1,2], contributing to breast cancer-related lymphedema (BCRL). Although it is difficult to estimate the precise incidence of BCRL, axillary surgery undoubtedly plays a significant role [2,3], with the incidence increasing from 6–8% to 13–15% [3,4]. According to the consensus of the International Society of Lymphology [5], the classification of BCRL is described as four stages (from Stage 0 to Stage III). In Stage II, changes occur in solid structures, which remain spontaneously irreversible, with pitting becoming evident. Treatment for BCRL is recommended to be initiated as early as possible, as the condition becomes irreversible in its advanced stages. It should be noted that the treatment of BCRL often requires strict adherence to lifelong care and ongoing therapy, as BCRL of-

ten develops into a chronic condition. Therefore, as breast cancer survivors live longer, the issue of BCRL should not be overlooked. Additionally, breast cancer survivors with lymphedema (BCSWL) require more psychosocial support to alleviate suffering associated with BCRL and improved their quality of life. However, there is a lack of adequate study on this topic.

Social factors are increasingly recognized as being associated with various diseases, particularly chronic conditions, and the nature of social relationships has been linked to cancer outcomes, including quality of life and survival. In general, social relationships contribute to health by providing support, fostering a sense of belonging, and enhancing personal identity. Specifically, the Women's Health Initiative has highlighted an association between social relationships and breast cancer outcomes [6]. A longitudinal study by Shrout *et al.* [6] demonstrated that satisfaction with social support can significantly affect breast cancer survivorship, a finding consistent with the cohort study by Vaz *et al.* [7]. In this way, understanding the psychoso-



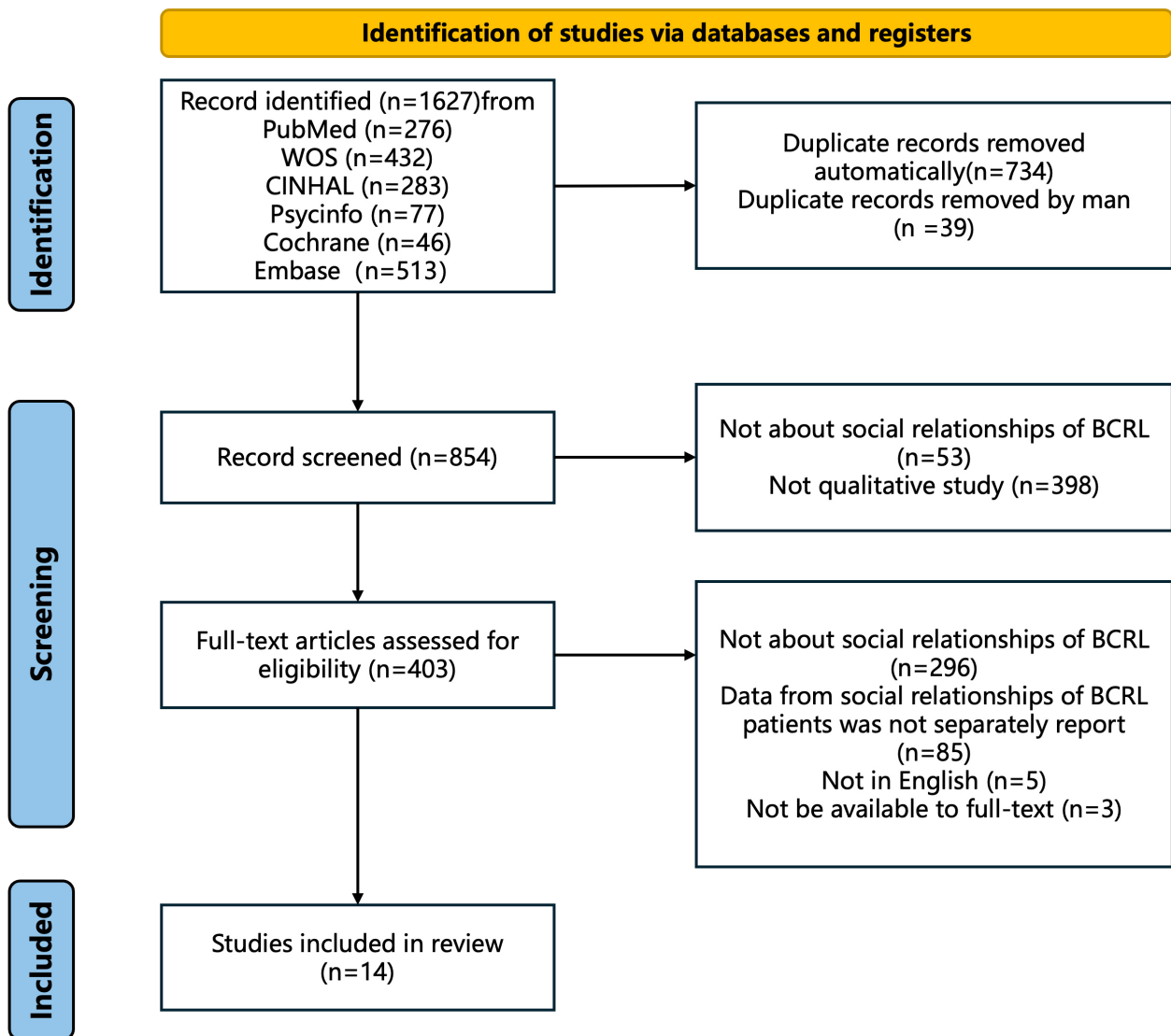


Fig. 1. Literature identification process. The literature identification process followed the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). BCRL, breast cancer-related lymphedema.

cial challenges faced by breast cancer survivors is essential for providing comprehensive healthcare. Furthermore, psychosocial factors are particularly relevant for BCSWL. A review of 23 articles by Fu *et al.* [8] reported a strong association between psychosocial factors and BCRL, particularly in terms of survivorship and self-management. This finding aligns with the results of a qualitative review [9].

Currently, existing literature addressing the concept of social elements in BCSWL primarily focuses on aspects such as body image, social support, and stigma, while rarely exploring the relevant experiences associated with social relationships. Besides, according to social exchange theory, the concept of social relationships extends beyond social support, which is defined as a reciprocal relationship in which individuals collaborate to achieve mutual or personal goals. The notion of reciprocity is particularly emphasized within social relationships and is crucial for the

BCSWL population as they reintegrate into everyday life. This is especially important considering that BCRL is a life-long condition, and BCSWL are relatively younger than other cancer survivors. Many BCSWL express a strong desire to return to a normal life, particularly concerning work and sexual behavior. Research indicates that BCSWL who wish to return to work face both direct and indirect barriers [10,11]. Indeed, approximately 58% report difficulties in their sexual relationships, which negatively affects women's perceptions of their body image and contributes to low self-esteem. Therefore, it is essential to understand the experiences of BCSWL, explore the nuanced differences among them, and provide necessary support to facilitate their transition to regular life within diverse social relationships. The aim of this qualitative review is to systematically integrate the experiences of BCSWL across various social contexts, analyze their feelings to inform future healthcare

services, and provide a reference for developing effective self-management strategies for BCSWL.

2. Method

The qualitative systematic study followed the meta-aggregation approach of the Joanna Briggs Institute [12]. The study protocol was registered in PROSPERO (registration number: CRD42024541249) and meta-synthesized the available evidence on the experiences of patients with BCRL.

2.1 Eligibility Criteria

2.1.1 Participants

The criteria for participant eligibility include the following: (1) A diagnosis of breast cancer with successful completion of treatments; (2) A diagnosis of lymphedema without restriction to any stage of breast cancer-related lymphedema, or self-reported relative symptoms (e.g., swelling of affected areas, limb numbness, muscle strength); and (3) Age ≥ 18 years. Participants initially diagnosed with lymphedema or any other form of lymphedema, except BCRL, were excluded. In addition, studies that mentioned different types of lymphedema but did not specifically describe the experiences of breast cancer survivors were also excluded. Active breast cancer disease was excluded.

2.1.2 Condition of Interest

Lymphedema is a clinical condition resulting from the obstruction of lymphatic circulation, commonly caused by trauma, radiation damage, or surgical interventions. Among these, breast cancer is the most frequent underlying cause, leading to BCRL. This study aims to investigate the experiences of BCSWL within various social relationships. The study focuses specifically on relationships with romantic partners, family members, friends, and work colleagues, excluding other types of relationships. This is because these selected relationships tend to remain relatively stable over time and are built on interactions that recognize individuals as distinct and independent. Additionally, diverse social relationships collectively form a network of social interactions, which represent the broader concept of social networks. Therefore, studies examining the social interactions and social networks of patients with BCRL are also included in this exploration.

2.1.3 Context and Types of Studies

This review includes all forms of study settings. This study included qualitative studies and relevant study designs, including phenomenology and grounded theory. Mixed-method studies were also included, provided they reported qualitative data. Only publications in English were considered. Grey literature was considered as a potential source if data saturation was not achieved in the final analysis.

2.2 Search Strategy

Firstly, we conducted a preliminary search of relevant publications to identify key terms, which included “breast cancer”, “lymphedema”, and “qualitative study”. As the definition of “social relationship” remains ambiguous, it was excluded as a search term. These keywords were then searched in the MeSH (Medical Subject Headings) Database to identify specific MeSH and related synonyms. Subsequently, a comprehensive search strategy was developed by combining keywords and subject headings using Boolean operators. This strategy was applied across multiple databases, including PubMed, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, Cochrane, and PsycINFO, covering publications from their inception to April 2024, with the language restricted to English. Finally, articles meeting the eligibility criteria of this review were screened, and relevant studies were identified from the final reference lists to produce the results.

2.3 Quality Appraisal

We used the Joanna Briggs Institute Critical Appraisal Checklist for Qualitative Research (JBI-QARI) to evaluate the included articles, employing a rating system of “yes”, “no”, or “unclear” [12]. This 10-item checklist assesses various aspects, including the appropriateness and clarity of the study’s aims and objectives, methodology, design, sampling strategy, data collection, researcher reflexivity, ethical considerations, rigor of data analysis, findings, and overall research value. Two reviewers independently assessed the quality of the articles, resolving disagreements through discussion or by consulting a third reviewer.

2.4 Data Extraction and Synthesis

All search results were imported and managed using Zotero 6.6.37 (Corporation for Digital Scholarship, Vienna, VA, USA). Duplicates were removed using the software. First, the remaining titles and abstracts were screened according to the inclusion and exclusion criteria mentioned above by two reviewers independently. In cases of discrepancies, the reviewers reached a consensus through discussion or seek the advice of a third reviewer to make a final decision. Data (i.e., title, author, year of publication, design, study objective, relational partner, participants, and locations) from each study was extracted based on specific criteria [12]. All data was tabulated using Microsoft Excel 2024 (Microsoft Corporation, Redmond, WA, USA).

Meta-synthesis was employed to aggregate the data, synthesizing the results based on similarities to create sets of statements that present the aggregation. The synthesized findings can serve as the foundation for evidence-based practice. Only credible and distinct findings were synthesized into categories, while ambiguous findings were presented separately in narrative form. These aggregated cate-

Table 1. All studies selected for literature review.

ID	Title	Author and year	Design	Aim	Relational partners	Participants	Age (years)	Locations
1	“This is a kind of betrayal”: a qualitative study of disability after breast cancer	Thomas-MacLean <i>et al.</i> [13] (2009)	Semi-structured interviews	Document the effect of arm morbidity and disability in 40 Canadian women who were 12–24 months post breast cancer surgery.	Work league; Family	40 Canadian women (9/40)	M = 52	Canada
2	A multiple case study of latina breast cancer survivors returning to work with breast cancer-related lymphedema: adaptation, resilience, and quality of life	Anderson <i>et al.</i> [14] (2022)	Mixed cross-section questionnaire and semi-structured interview	Explore the changes in work experienced by Hispanic/Latina survivors and the impact on their overall quality of life.	Work league; Family	all = 10; White = 7; Hispanic = 2; Mexican = 1	M = 56; Range = 42–71	USA
3	Breast cancer patients’ experiences of lymphoedema	Johansson <i>et al.</i> [15] (2003)	Semi-structured interviews	Explore employed women’s experiences of light or moderate arm lymphoedema following breast cancer treatment in order to gain a deeper understanding of this phenomenon.	Work league; Family	12	Range = 44–59	Sweden
4	Breast cancer survivors coping with lymphedema: what all counselors need to know	Heppner <i>et al.</i> [16] (2009)	Semi-structured interviews	Promote greater understanding among counselors and other helping professionals regarding the stressors associated with lymphedema, how women cope with the stressors, and the role of social support.	All relational partners	10	M = 58.6; Range = 47–88	USA
5	Breast cancer-related lymphedema and sexual experiences: a mixed-method comparison study	Radina <i>et al.</i> [17] (2015)	Mixed cross-section questionnaire and semi-structured interview	Compare the sexual experiences of women with and without breast cancer-related lymphedema.	Romantic partners	47 (47/60)	Range = 45–59	USA
6	How people construct their experience of living with secondary lymphoedema in the context of their everyday lives in Australia	Meiklejohn <i>et al.</i> [18] (2013)	Semi-structured interviews	Explore how men and women construct their experiences living with lymphoedema following treatment for any cancer in the context of everyday life.	All relational partners	20 (20/29)	M = 63; Range = 39–80	Australia
7	Lived experiences for supportive care needs of women with breast cancer-related lymphedema: a phenomenological study	Arikan Dönmez <i>et al.</i> [19] (2020)	Semi-structured interviews	Explore the lived experiences for supportive care needs of women with breast cancer-related lymphedema.	All relational partners	19	M = 52.15; SD = 7.69	Turkey
8	Living with lymphoedema—the perspective of cancer patients: a qualitative study	Río-González <i>et al.</i> [20] (2018)	Semi-structured interviews	Describe the lived experience of lymphoid-ema and the barriers faced by cancer sufferers receiving physiotherapy outpatient treatment.	All relational partners	8 (8/11)	M = 62.18	Spain
9	Lymphoedema and sexual relationships in mid/late life	Radina <i>et al.</i> [21] (2008)	Semi-structured interviews	Investigate the effect on quality of life of the sexual relationships with intimate partners for women with lymphedema.	Romantic partners	11	M = 60.6	USA

Table 1. Continued.

ID	Title	Author and year	Design	Aim	Relational partners	Participants	Age (years)	Locations
10	Sexual concerns of women diagnosed with breast cancer-related lymphedema	Winch <i>et al.</i> [22] (2015)	Semi-structured interviews	Understand the impact of breast cancer-related lymphedema on women's sexual functioning, and to identify key concerns of these women regarding sexual issues.	Romantic partners	17	M= 58.9; SD = 7.9; Range = 38–67	Australia
11	Surviving breast cancer and living with lymphedema: resiliency among women in the context of their families	Radina <i>et al.</i> [23] (2004)	Semi-structured interviews	Assist women with lymphedema and their families and underscore practitioners' need to serve the patient and the family.	Family	18	Range = 35–65	USA
12	The influence of breast cancer related lymphedema on women's return-to-work	Sun <i>et al.</i> [11] (2020)	Semi-structured interviews	Address this gap by investigating survivors' perspectives regarding the ways in which BCRL influences their work and by examining the contextual facilitators and barriers as survivors return-to-work.	Work col-league	13	M = 62; Range = 40–77	USA
13	Voices From the Shadows Living With Lymphedema	Ridner <i>et al.</i> [24] (2012)	Semi-structured interviews	Explore perceptions and feelings related to lymphedema in breast cancer survivors.	Family	All = 39; White = 31; African American = 7; other = 1	M = 55.31; SD = 10.14	USA
14	Women at work with breast cancer-related lymphoedema	Fu [25] (2008)	Semi-structured interviews	Describe the experience of work of breast cancer survivors with lymphoedema.	Work col-league	All = 22; White = 8; African American = 7; Chinese American = 7	M = 53; Range = 42–56	USA

M, mean; SD, standard deviation.

gories were graded according to the Confidence in the Qualitative Synthesis of Findings (ConQual) approach [12].

3. Result

3.1 Search Outcomes

The initial database search yielded 1627 records. After duplicates were removed, 854 records were entered for title and abstract screening. Following the screening of titles and abstracts according to the eligibility criteria, 403 records were included for full-text screening from which a further 389 were excluded due to reasons outlined in Fig. 1.

3.2 Characteristics of Studies

The paper selected for this review included 14 studies conducted in diverse geographic locations: 8 in the USA, 2 in Australia, 1 in Canada, 1 in Sweden, 1 in Turkey, and 1 in Spain (more details of the included studies are presented in Table 1, Ref. [11,13–25]). A total of 255 participants were involved throughout the combined studies, with a mean age ranging from 52 to 63 years. The participants represented various ethnic groups, including White, Hispanic, African American, Chinese American, Mexican American, and others. Additionally, 4 primary types of relationships were examined in the selected papers: family, work colleagues, romantic relationships, and all relational partners (with some papers discussed themes of overlapping relationships). We identified 4 synthesized findings that examine experiences of BCSWL in the context of different social relationships.

3.3 Methodological Quality

The quality assessment of the 14 studies was conducted using JBI-QARI, with scores ranging from 7 to 10. One study demonstrated a clear expression in all methodological aspects, but most studies scored 8 and did not perform well on three questions (Q6, Q7, and Q8). Six questions (Q1 to Q5, and Q10) were well addressed in all studies.

4. Findings of the Review

In the 14 included studies [11,13–25], 54 findings were identified and classified. These findings were aggregated into 12 categories based on similar meanings and further synthesized into 4 overarching findings, as presented in Table 2. The final synthesized findings were graded according to the ConQual summary of the findings shown in Table 3.

4.1 Synthesized Finding 1: Negotiating Health and Role Expectations

BCRL rarely poses a direct threat to life; however, it significantly impacts various aspects of a survivor's daily life. Furthermore, as individuals are inherently situated within specific social relationships, the diagnosis and treatment of BCRL inevitably result in role conflicts across diverse social contexts. This issue is particularly noteworthy

given that all individuals affected by BCRL are women. Synthesized findings indicate that workplace and family relationships are the most frequently discussed social connections in this context, cited by 7 out of 19 and 6 out of 19 participants, respectively.

4.1.1 Category 1: Difficulty Meeting Work Expectations

Since many BCSWL are typically still of working age, changes often occur after they receive a diagnosis. Many patients mentioned changes in their work roles caused by the diagnosis of BCRL, although the experience would be varied depending on the nature of their work [11,25]. Due to the symptoms of BCRL and related treatments, like wearing bandage or lymphedema garments, survivors had to decrease their work activities and avoid certain movements, such as lifting [11,13,24,25], which might also affect their work efficiency. At times, to avoid compromising their work performance, survivors chose to continue working, which often led to worsening BCRL symptoms [11,25]. In such situations, survivors had to seek extra help from their co-workers [11,13,24,25]. However, due to a lack of understanding about BCRL, not all colleagues were willing to offer assistance without complaint, which could create an uncomfortable work environment [11]. Additionally, even though some survivors felt that BCRL had minimal impact on their work, the side effects of treatments did influence their regular work routine, requiring them to invest more time and energy than their colleagues [11,25]. The following are direct quotes from patients describing their experiences:

“As I type all day long, by the end of each day I see my hand swell like freshly baked bread. My fingers cannot move anymore. Although my boss does not say a word, I know that I have to finish my work, typing and filing. Otherwise, I might have been fired a long time ago. Sometimes I think that if I had another kind of job, I would not need to type this much, my swelling might go away and I would not feel so debilitated by the cancer.” [25].

“It means that I have to get up earlier because it takes me about half an hour to wrap, to get it all wrapped, and get cleaned up. So you'd get up and you shower, and then I'd have to sit down figure out how to get my wrap on which is complicated.” [11].

4.1.2 Category 2: All Aspects of Life can be Affected

The role of BCSWL could be significantly altered. Survivors discussed that BCRL did not simply affect their physical condition, but impacted the wholeness of a person, especially under the influence of various social interactions [18,20]. They felt there were psychosocial pressure restricted them from engaging in normal daily activities [15,18,20]. The following are direct quotes from patients describing their experiences:

“It's not just one limb; it's a holistic thing about how it affects your body.” [18].

Table 2. Findings extracted from the included studies, categories and synthesized findings.

Findings	Categories	Synthesized findings
A1. Paid Work (C) A2. Unpaid Work (C) B1. Workplace Resilience (U) L2. Bandages compromise work activity (U) L3. Bandages draw unwanted attention and distract from job role (U) L4. BCRL management affect work lifestyle (U) L5. Limited BCRL awareness and resources for patients pose barriers to work-return (U) N2. Having physical limitations: being handicapped versus the inconvenience (U)	Categories 1: Being hard to reach the expectations of work	Synthesized finding 1: Negotiating health and role expectations
C3. “Feminine” behaviour (U) F1. “It’s not just a limb, it’s a holistic thing” (U) F2. “It affected every aspect of your life” H1. Social barriers (C)	Categories 2: All parts of life can be affected	
G1. Being addicted to someone else in daily life (U) K1. Increased Vulnerability (C) N1. Having a visible sign: disability versus a need for help (U)	Categories 3: Attenuating independence	
A3. Family Relationships (C) E1. Hindering intimacy (U) I2. Changes in intimate relationships (U) J1. Lymphedema’s role compared to breast cancer (U) J2. Impaired sexual function (U) J4. Sexual interference (U) J11. Sexually inconsiderate (U) M1. Lack of sensitivity from friends and family (U) M2. Adverse effects on relationships (U)	Categories 4: Incremental relationship issues	
G2. Uncertainty about the future (U) J3. “If it were worse...” (U)	Categories 5: Enhancing sense of insecurity about future	Synthesized finding 2: Instilling psychosocial pressure and stigmatization
C1. Being supervised (U) J5. Cause of self-consciousness (U) J12. Negative (U) L1. BCRL causes longterm emotional distress (U) N3. Worrying constantly versus feeling fortunate (C)	Categories 6: Inducing psychological pressure	
E2. Effects on “feeling sexy” (U) E3. Negative feelings about sex/intimacy (U) I1. Not feeling sexy anymore (U) J6. Feel ugly (U) J7. Treated as fat, injured, or disabled (U)	Categories 7: Producing stigma of sex	

Table 2. Continued.

Findings	Categories	Synthesized findings
B2. Familia Roles and Support (U) D3. Spiritual support from others (U) G3. Social and religious support (U) J13. Positive (U) L6. Social supports vary positively with work-return experience with BCRL (U) M3. Psychological support (U)	Categories 8: General bolstering	Synthesized finding 3: Experiencing support from social networks
D2. Reliable alliance of others besides partners (U) L8. Comfort in seeking help eases the difficulties (U)	Categories 9: Being able to relay on others	
D1. Opportunity to nurture others (C) J9. Established relationship (U) J10. Sexual patience (U)	Categories 10: Reinforce connection between relationships	
H2. Adapting your life (C) J8. Acceptance and validation (U)	Categories 11: Patients try their best to rebuild their life	Synthesized finding 4: Adaptive resilience and identity reconstruction
K2. Factors Influencing Resiliency (C) L7. Motivation to work drives the work-return (U) L9. Positive attitudes toward challenges are essential in coping (U) L10. Coping strategies were developed along the way to work- return (U)	Categories 12: Better balance coping strategies between roles	

The codes preceding each extracted finding correspond to Online **Supplementary Table 1**. Each finding has been assigned a level of credibility based on the ConQual approach: Unequivocal (U): Refers to evidence beyond reasonable doubt, including findings that are matters of fact, directly reported or observed, and not open to challenge. Credible (C): Refers to findings that, although interpretative, are plausible in light of the data and theoretical framework. These findings can be logically inferred from the data, but since they are interpretive, they may be open to challenge. Not Supported (NS): Applies when neither of the above criteria is met, particularly when the findings are not sufficiently supported by the data.

Table 3. ConQual summary of findings.

Synthesized finding	Type of research	Dependability	Credibility	ConQual score Comments
Negotiating health and role expectations	Qualitative	Downgraded one level (scored 5/5 for the 5 criteria in 1 study, 4/5 in 4 studies, 3/5 in 8 studies)	Downgraded one level (Credibility downgraded as the synthesized finding includes mix of 15 unequivocal and 5 credible findings)	Low
Instilling psychosocial pressure and stigmatization	Qualitative	Downgraded one level (scored 5/5 for the 5 criteria in 2 studies, 3/5 in 5 studies)	Downgraded one level (Credibility downgraded as the synthesized finding includes mix of 15 unequivocal and 2 credible findings)	Low
Experiencing support from social networks	Qualitative	Downgraded one level (scored 5/5 for the 5 criteria in 1 study, 3/5 in 5 studies)	Downgraded one level (Credibility downgraded as the synthesized finding includes mix of 10 unequivocal and 1 credible findings)	Low
Adaptive resilience and identity reconstruction	Qualitative	Downgraded one level (scored 5/5 for the 5 criteria in 2 studies, 3/5 in 2 studies)	Downgraded one level (Credibility downgraded as the synthesized finding includes mix of 11 unequivocal and 2 credible findings)	Low

Systematic review title: Understand the feelings of breast cancer survivors with lymphedema under various social relationships: A qualitative meta-synthesis.

Population: breast cancer survivors with lymphedema.

Phenomena of interest: the experiences of lymphedema self-management among breast cancer survivors under various social relationships.

Context: all kinds of settings (e.g., home, primary care settings, hospitals, and rehabilitation centers).

"I have to thank God because my husband doesn't reject me as in so many marriages. I have a friend, a young girl with two children, her husband hasn't coped with the pressure. She has breast cancer, and her husband can't bear it psychologically..." [20].

4.1.3 Category 3: Reduced Independence

Due to disfunction and the coexistence of affected parts of the BCSWL, it is difficult for patients to fully return to their original independent lives, leading them to become more reliant on others, such as family members or colleagues [19,23,25]. In addition, some survivors mentioned that the existence of BCRL would be regarded as a reminder of breast cancer or signal of disability, contributing to stronger sense of vulnerability [23,25]. Some direct quotes are as follows:

"You don't maintain a normal and comfortable life. Someone is constantly shopping, preparing food, cleaning the house for you...Someone else does what you would normally do...So, now, control of your life is in the hands of others...and I've never had a normal life since lymphedema developed." [19].

"You can almost forget about the breast cancer. You can forget all about it and go on with your life. With the lymphedema there are so many things that you can't do and that is a reminder for me." [23].

4.1.4 Category 4: Altered Relationships

Many survivors experienced alteration of relationships in their inner circle, and the changes in intimate relationship were mentioned more frequently. Survivors described receiving support from their family and partners, which made them feel appreciated [13,21]. However, the physical limitations caused by their condition hindered their ability to interact as they used to, sometimes resulting in misunderstanding and increasing feelings of guilt about becoming a burden [13,24]. Additionally, the symptoms and treatments of BCRL would impact the sexual and emotional aspects of their intimacy, like inconsiderate sexual behaviors or living in separated room, leading to unideal intimate relationships [17,21,22,24].

"The night sleeve slows down our love making a bit, as does taking off day garments if things get amorous." [17].

"I cannot lift my nieces and nephews or carry them around like I used to. I can't hold them in my arms, and it makes me feel as though I can't be close to them." [24].

4.2 Synthesized Finding 2: Imposing Psychosocial Pressure and Stigmatization

BCRL remains irreversible once it progresses to Stage II, meaning that survivors must coexist with BCRL for the rest of their life. The inconvenience, along with indefinite symptoms or treatments, impacts every aspect of their lives and affects survivors' mindsets, leading to adverse psychological effects in diverse relationships. Our synthesized

findings reveal that survivors most frequently experience psychosocial pressure within their romantic relationships (reported by five out of nine).

4.2.1 Category 5: Increased Sense of Insecurity about Future

Because there was not a definitive therapy for BCRL, which requires lifelong management, survivors experience an intense sense of insecurity [19,22]. As a result, many survivors expressed the need for more supportive care [19].

"I don't know how long I will live with lymphedema. How long can I survive... get used to it... can I really succeed? I don't know. I don't believe I'm ready to live with it. I accepted my breast cancer more easily. I had surgery, I received treatments—it's over... but lymphedema doesn't stop... It is always right in front of me, right under my nose. It is a continuous reminder." [19].

4.2.2 Category 6: Inducing Psychological Pressure

Survivors with BCRL indicated that they felt self-conscious due to being supervised by those around them, even though it was not intentional [17,22]. Additionally, they tried their best to avoid the risk of infection or other recurrent symptoms, which prevented them from acting spontaneously and led to a sense of incapability when comparing their current state to their previous level of functioning, bringing about onset of long-term emotional stress and a sense of losing control [11,20,23,25]. However, the experience varied depending on individual circumstances [25].

The women felt that they were being supervised by their family, friends, or colleagues, for example being reminded not to lift heavy things, to keep the arm elevated, or to wear the compression sleeve: "They are always after me. Don't carry this..." or "They are always on me about wearing my sleeve. They keep after me. They realize that it is good for me." [17].

"That cellulitis experience really laid me up, and financially it's very expensive... It's hard not to just be able to be spontaneous and do things; that's the hardest part, not being spontaneous. I don't know how to not make it a drag... A lot of my work involved being outside, in the elements; I'm digging in the dirt and getting scratched up. So to me, I feel like I need to be in a plastic bubble." [11].

4.2.3 Category 7: Negative Body Image and Stigmatization of Sex

The alerted appearance, such as the swelling arm, compression garments, and wrapped bandages, adversely affect the self-perception of BCSWL, leading them not to perceive themselves as being attractive or sexy [17,21,22]. Some may even develop fear of showing up in public [22]. Consequently, stigma surrounding sexuality was experienced due to a sense of insecurity about their bodies [17,21].

"... when you have lymphoedema you don't feel attractive. If you look at yourself in the mirror, you're not

attractive by any ordinary standards that are commonly accepted. When you don't feel good about yourself, you're less likely to be [sexually] responsive." [21].

4.3 Synthesized Finding 3: Receiving Support from Social Networks

BCRL is a chronic, lifelong condition. Beyond medical treatment, the support provided by survivors' relational partners plays a critical role in managing the condition. Conversely, a lack of care or understanding from these partners can lead to a worsened prognosis. Our synthesized findings reveal that survivors receive support from their romantic and family relationships; however, both are perceived as the least significant, as reported by only two out of eleven participants.

4.3.1 Category 8: General Support and Encouragement

Many survivors described perceiving strong support from their family, friends, or even colleagues, which helped them better engaged in daily life [11,14,19,24]. If survivors lacked support from those around them, they might feel more isolated than ever [14]. Though, some mentioned that it was initially challenging for them to receive help from others, as they did not take it for granted. Eventually, they did feel motivated, encouraged and grateful for the support [14]. On the other hand, some survivors referred to the empowerment of religion, which, when integrated into their interactions and relationships, could facilitate their management of the condition [16,19].

"... she gives me that, she lets me do little things like that; she doesn't take it away from me." [14].

"My husband has been very supportive with this. He wants to know about it as well, and so do my friends and family. I share with others who are going through breast cancer and dealing with lymphedema, and I hope that I can help them." [24].

4.3.2 Category 9: Being able to Rely on Others

Owing to the limitations of affected areas in their relationships, it was quite normal for them to ask for help from their loved ones, but there was still a process for them to spontaneously do so [11,16]. If the person offering help was a closed one, such as a spouse, family member, or friend, the situation was much easier. However, when it came to the coworkers, they preferred to selectively seek help to avoid placing a burden on others [11].

"I think one of the biggest things I've learned is that I have to ask for help, and I can't do everything on my own. That was a very big challenge for me because, as I said, I was very independent." [11].

4.3.3 Category 10: Strengthening Connections in Relationships

The BCRL itself was a setback for most patients and their relational partners. However, when they successfully

navigated it together, their relationships could be reinforced even more [16,22]. The survivor could find a way to give back to those who had helped them [16]. In the terms of intimate relationship, this opportunity led to better understanding and a stronger connection between them [22].

"I've got a very patient husband, and, um, I think the fact that we've had a really strong marriage and a good sex life all though our marriage...I think that's sort of been good. I think if we'd had problems along the way, this would've made it a lot harder. But, um, you know, he's just... [unclear] you know, things will get better, just got to give it time." [22].

4.4 Synthesized Finding 4: Adaptive Resilience and Identity Reconstruction

Though the therapy for BCRL is a lifelong commitment, patients did not become dejected. Instead, survivors felt empowered through various relationships, developing better coping strategies to coexist with BCRL. Based on the results of the synthesized findings, BCSWL survivors demonstrated remarkable resilience, enabling them to move forward and rebuild their lives.

4.4.1 Category 11: Survivors' Efforts to Rebuild their Life

Since coexistence with BCRL was inevitable, although the attitude of relational people could influence the survivor, whether positive or negative, they had to accept the status quo and struggled to make some changes to rebuild their lives, with or without the assistance of their relational partners [20,22].

"People are very indiscreet; they spend the day wondering what happened to you. This is unpleasant because you have to explain..." [20].

4.4.2 Category 12: Achieving Better Balance in Coping Strategies Across Roles

It was a challenge for BCSWL to achieve an equilibrium between daily life and BCRL management [11,23]. Patients build a sense of resilience through support from their family and community, which contributes to an improved ability of adjust and adapt [23]. Moreover, when the family could make adjustments alongside BCRL management, such as modifying employment, it resulted in better coping strategies [23]. Additionally, remembering what was most valuable for individuals, holding a positive attitude, and incorporating spiritual language into daily life were also essential [11]. Furthermore, they developed more creative strategies to better manage the challenges of BCRL [11,23].

"What happens to me, happens to him." [23].

"(When I) have these appointments I have to go to, I just pencil them in...and (it has to) just be like, this is part of my job right now, taking care of my health. Because I treated it that way, it was so much easier to deal with. It was just something that needed to be done." [11].

According to the synthesized findings, BCSWL survivors often face heightened role conflicts within the workplace and family environments, compounded by a lack of adequate support. Additionally, they are particularly susceptible to psychosocial pressures and stigmatization, especially within romantic relationships. Nevertheless, BCSWL survivors can still exhibit resilience, navigating and adapting to challenges across diverse relational contexts.

5. Discussion

This review revealed four conceptual themes that provide a comprehensive overview of the experiences of BCSWL within various social relationships, providing valuable qualitative evidence. The following four synthesized findings were identified: the influence of role conflict on social interactions, the triggering of negative emotions, the feeling of being cared for, and the resolution to move forward. Our findings partly align with earlier qualitative reviews [26].

The first synthesized finding in our review was ‘negotiating health and role expectations’. A role set is integral to the socialization process, and role conflict arises when incompatible expectations exist regarding role-relevant behaviors [27]. The BCSWL must manage a series of chronic symptoms, such as hand swelling, tenderness, numbness, pain, and other severe complications associated with lymphedema [4,5]. Once diagnosed with BCRL, survivors must commit to lifelong treatment. Examples of these treatments include complete decongestive therapy, which involves specialized massages administered by trained therapists, and regular compression bandaging to reduce and control swelling in the affected arm [3–5]. These treatments can significantly hinder the range of motion, leading to restricted daily functionality. Consequently, it becomes challenging for survivors to fulfill their socialized duties and responsibilities as previously [15,18,19,28]. Similar renegotiations of social roles and functions are observed in other chronic conditions such as asthma or diabetes [29,30]. According to Karkkola *et al.* [31], role conflict strongly correlates with autonomy, which involves a sense of volition and self-endorsement.

A lack of autonomy undermines survivors’ self-management ability. In other words, survivors may prioritize fulfilling their family or social roles rather than adopting the overarching role of a survivor, which reflects their current health condition [32]. Moreover, as noted by the National Lymphedema Network [33] and the American Physical Therapy Association [34], self-management plays a crucial role in preventing and controlling lymphedema [35].

Poor adherence to self-management in BCRL can negatively impact prognosis and quality of life [36,37]. Workplace and family relationships are the most frequently discussed social connections in this context. BCRL also affects work activities, requiring adjustments influenced by

financial constraints, functional limitations, and the challenges of managing a chronic illness. These factors play a critical role in survivors’ ability to return to work. Research by Lee *et al.* [38] found that attitudes toward cancer patients and survivors returning to work vary across professional groups. Negative perceptions were primarily related to concerns about work efficiency, rather than the survivors themselves. This suggests that cancer survivors can receive workplace support if assigned roles that match their capabilities. For women, traditional gender roles often prioritize family responsibilities [39], and most BCSWL are female. Thus, addressing social factors is essential to improving outcomes, as women frequently encounter role conflicts due to these stereotypes. Given the long survivorship period associated with BCRL, these issues are particularly significant. Jiang and Chen [40] demonstrated that lower levels of social support correlated with poorer self-management ability. Ridner *et al.* [41] further emphasized the need for education at both the survivor and family levels, as well as gender role-based self-management strategies within complex social contexts.

The second synthesized finding was ‘instilling psychosocial pressure and stigmatization’. BCSWL experience increased insecurity about the future as well as psychological pressure as the disease progresses, particularly regarding the stigma associated with gender. After breast cancer, survivors undergo numerous physical and psychological changes. Research by Dominick *et al.* [42] revealed that 48.9% of women with BCRL reported moderate to extreme distress, classified as lymphedema-related distress, with 73% experiencing poor mental health. Additionally, BCSWL reported higher rates of clinical-level distress compared to those without lymphedema (37.0% vs. 14.1% [43]), with noticeable effects persisting for up to seven years [44,45]. Poor psychological health also negatively impacts physical outcomes and overall quality of life [42,43]. Fu *et al.* [8] highlighted that BCRL leads to negative self-identity, emotional disturbances, and psychological distress among survivors. These psychological factors contribute to low adherence to lymphedema self-management, emphasizing the importance of addressing survivors’ emotional well-being [46]. Our findings reveal that survivors most often encounter psychosocial pressure in their romantic relationships. Alcorso and Sherman [47] found that body image disturbances and related beliefs contribute to psychological distress in BCSWL. Body image is defined as an individual’s perception, thoughts, and feelings about their own body [48]. Physical changes, such as the asymmetrical body shape caused by lymphedema, often lead to a negative body image. This perception can heighten concerns about sexuality, an essential aspect of self-perception closely linked to mental health [49]. The specific quality of life domains most affected in BCSWL—body image and psychological functioning—were not correlated with a reduction in lymphedema size [38,50]. Al-

corso and Sherman's study [47] revealed that older BCSWL are more likely to experience anxiety and depression due to body image disturbances. However, there were also reported that younger survivors reported greater challenges related to mental functioning [51] and experiencing more sexual difficulties compared to their partners [52]. This discrepancy may be attributed to differences in social networks [53,54], underscoring the importance of educating BCSWL on mapping their social connections and fostering a self-care mindset. Such initiatives can empower survivors to build sufficient social support tailored to their unique needs and circumstances. A randomized controlled trial by Hummel *et al.* [55] highlighted that improving sexual health among patients with breast cancer requires the involvement of both the patients and their romantic partners. Cognitive-behavioral therapy (CBT) has been shown to enhance sexual health and strengthen relationships, suggesting that sexual counseling could be an effective intervention for addressing sexual challenges faced by BCSWL. Moreover, psychosocial pressure among BCSWL stems not only from the disease itself but also from the prolonged treatment journey, which often requires significant financial resources [56]. Research by Hens *et al.* [57] indicated that intangible costs are strongly associated with psychosocial suffering. However, in many countries, treatment costs for BCRL are not covered by national insurance, increasing the financial burden on survivors. Therefore, it is crucial to identify cost-effective strategies, particularly through social organizations, to alleviate this economic strain and improve the overall well-being of BCSWL.

'Experiencing support from social networks' is the third synthesized finding. Social support is a multidimensional and reciprocal concept that refers to the relationships individuals maintain with others. It is often classified into four subtypes: emotional, instrumental, informational, and appraisal support. The role of social support has been widely studied, especially in its connection to health outcomes. Research on chronic conditions such as dementia, diabetes, and heart disease highlights its significant impact on patient well-being. Similarly, the progression and outcomes of BCRL are shaped by social factors. Studies show that individuals with BCRL face more severe social challenges than those without the condition, resulting in reduced social well-being [14,58,59]. While self-management is vital for BCRL management, social support is equally important, particularly in complex and demanding situations [32,60,61]. This suggests that exploring social support is beneficial for disclosing BCRL. Our synthesized findings reveal that while survivors receive support from their romantic and family relationships, these are perceived as the least significant sources of support. Interestingly, although women generally access more social support than men in the general population [62,63], female cancer survivors report receiving less spousal support—a key element of social support—compared to male cancer patients [64]. Al-

though this disparity remains unexplained, women's self-sacrificing behaviors, especially in familial settings, may offer a potential explanation [65]. Based on the synthesized findings, support from family and romantic relationships is the least perceived by BCSWL. This may be explained by the fact that women often serve as the primary provider of informal care within families or partnerships [66]. Moreover, BCSWL may feel more uncomfortable disclosing sensitive issues when they pertain to intimacy. As such, it is important to note that the impact of BCSWL, particularly on domestic or intimate relationships, may be underestimated or obscured [17]. Survivorship care plans for BCRL should focus on building survivors' self-awareness and providing educational resources for those in close social or professional relationships.

The final synthesized finding, 'adaptive resilience and identity reconstruction', highlights how both BCSWL and their close relations collaboratively develop strategies to rebuild their lives. After diagnosis, BCSWL undergo a series of physical and mental transformations, with their perception of the disease significantly influencing the progression of BCRL. This phenomenon relates to illness perception, which is defined as a survivor's cognitive and emotional representation of the disease. It encompasses aspects such as perceived life impact, emotional burden, experienced symptoms, personal control over the illness, and trust in the treatment. Notably, the process of illness perception varies greatly among individuals [27]. A study by González-Fernández *et al.* [28] reported that BCSWL often experience a sense of transition and transformation, adapting to a new life both physically and psychologically. Illness perceptions play a pivotal role in shaping health behaviors. In the context of BCRL, Chen *et al.* [32] identified illness perception as a critical factor influencing self-management capabilities, serving not only as an interrelated variable, but also as an independent determinant. The family environment is another significant factor affecting illness perceptions. Sociocultural influences, such as traditional notions of femininity, also shape the outcomes of illness perceptions among BCSWL. Consequently, survivorship care plans should integrate considerations of illness perceptions, particularly for managing chronic conditions like BCRL. Furthermore, social engagement programs can strengthen coping strategies and resilience, alleviate social isolation, and contribute to improvements in both physical and psychological health [33]. Focused clinical education is essential, targeting both survivors and their close support networks to foster adaptive resilience and effective identity reconstruction [28,34].

The symptoms of BCRL often result not only in physical pain but also in social discomfort, leading to dysfunction in the lives of BCSWL, affecting them both physically and mentally. Although these dysfunctions typically manifest as chronic and non-fatal, they significantly impact the daily lives of BCSWL, often resulting in role conflict or role

shifts. Influenced by stereotypical gender roles, women are expected to contribute more to family responsibilities. Consequently, BCSWL may experience increased pressure and a tendency to make compromises, which can hinder effective self-management of BCRL. However, when BCSWL perceive support from their various social relationships in daily life, they can develop resilience and the ability to rebuild their lives, regardless of the objective severity of their BCRL condition. Numerous experimental studies have explored the association between psychosocial factors and the quality of life in BCSWL. However, most interventional programs focus on physiotherapy or self-management and are short-term, with limited emphasis on long-term, specific psychosocial treatments, particularly regarding social relationships. A group-based randomized controlled clinical trial by Omid *et al.* [35] highlighted the importance of incorporating social elements into BCRL self-management education, demonstrating that group-based education was more effective. Despite this, further research on diverse educational methods and cost-effectiveness remains insufficient, which is essential for implementing practical clinical strategies. With advances in modern medical technology, disease mortality rates are declining, and the survivorship of patients with chronic symptoms has gained increased attention. However, the interpretation and application of strategies for managing BCSWL within various social relationships remain unclear, especially among clinical professionals. Therefore, further research is recommended to investigate the biopsychosocial elements of BCSWL, aiming to develop advanced interventions that improve their quality of survivorship.

6. Implication for Research

Firstly, future research is recommended to explore a broader range of social relationships to enrich the integrated structure of experiences for BCSWL. Future research can also discover extended strategies based on the findings of our study. With regard to biopsychosocial aspects, when BCSWL are discharged from hospital, it is important to examine how healthcare facilities offer relevant medical and psychological assistance to help them back to get their lived back on track, especially during the transition from hospital discharge. Secondly, the education of caregivers about BCRL should also be considered, as it plays an important role in influencing the outcomes of BCRL. Thirdly, for healthcare professionals, it is crucial to develop patient-centered care strategies that address the specific needs of BCRL population with diverse backgrounds. Therefore, future research should focus on advancing interventions that optimize the survivorship and quality of life for BCSWL as they transition to normal life.

7. Strengths and Limitation

This meta-synthesis review represents the first comprehensive examination of the experiences of BCSWL

within various social relationships. While Burckhardt *et al.* [26] explored the living experiences of BCSWL, their focus was broader and did not specifically target the role of social relationships. The findings aggregated from qualitative research can complement results from quantitative reviews based on cross-sectional studies, addressing gaps in the literature. In addition, our study adheres to robust JBI-QARI guidelines, ensuring that the sample is sufficiently representative of similar experiences, even if the sample size is not particularly large, thereby providing valuable insights. However, several limitations warrant emphasis. Firstly, our findings reveal that relationships with family members are more frequently highlighted, indicating that the exploration of other relational partners may be somewhat limited. Additionally, the inclusion of only English-language studies restricts the cultural diversity of the data, as all the studies originate from developed Western countries. Furthermore, the stages of BCRL among participants in the included studies remain unclear, potentially affecting the precision of the findings. Future research should focus on exploring the psychosocial dynamics of younger survivors, as the current age range (average 52–63 years) is predominantly older adults. Studies could investigate how younger individuals navigate unique challenges, particularly in terms of role conflicts and sexual relationships, to provide a more comprehensive understanding of their experiences. The relatively small sample size may limit the generalizability of the current findings. Future studies should address this limitation by discussing how sample size might influence the results and considering strategies to enhance the robustness and representativeness of the data. These limitations underscore the need for more diverse, inclusive, and culturally representative research in this area.

8. Conclusions

Our meta-synthesis revealed four conceptual themes that illustrate a series of experiences, providing an overview of qualitative evidence on the experiences of BCSWL within various social relationships. Synthesized findings reveal that BCSWL often face significant role conflicts both in workplace and within family settings. These challenges are exacerbated by insufficient support and increased psychosocial pressures, as well as stigmatization, particularly in romantic relationships. Despite these challenges, BCSWL demonstrate remarkable resilience, effectively navigating and adapting to diverse relational contexts. The meta-synthesis highlights four key themes illustrating their experiences: the impact of role conflict on social interactions, the triggering of negative emotions, feelings of being cared for, and the determination to move forward. These positive and negative experiences coexist, shaping their health outcomes and overall well-being. Support from relational networks is critical throughout their lifelong treatment journey. For healthcare professionals, integrating social dimensions into patient-centered care is essential

for developing targeted interventions and inclusive clinical practices. On a societal level, implementing supportive social policies and fostering an inclusive environment are equally important. Ultimately, cultivating strong and stable social relationships is fundamental to improving the health and quality of life for BCSWL.

Availability of Data and Materials

All data points generated or analyzed during this study are included in this article and there are no further underlying data necessary to reproduce the results.

Author Contributions

SG: conceptualization, methodology, formal analysis, data extraction, writing—original draft, writing—review and editing. YL: conceptualization, methodology, screening, data extraction, review and edits. PX: conceptualization, methodology, screening, data extraction, review and edits. XL: conceptualization, methodology, screening, data extraction, review and edits. YP: data extraction, review and edits. LL: overall supervision, project administration, formal analysis, revise important intellectual content. All authors read and approved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

Not applicable.

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Conflict of Interest

The authors declare no conflict of interest.

Supplementary Material

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References

- [1] Tedesco A, O'Donnell T, Weycker D, Salehi P. The critical role of phlebotomy in cellulitis associated with lymphedema: Its incidence and economic impact in a large real-world population. *Journal of Vascular Surgery. Venous and Lymphatic Dis-*
- orders. 2024; 12: 101704. <https://doi.org/10.1016/j.jvsv.2023.101704>.
- [2] Rockson SG. Lymphedema after Breast Cancer Treatment. *The New England Journal of Medicine*. 2018; 379: 1937–1944. <http://doi.org/10.1056/NEJMc1803290>.
- [3] McLaughlin SA, Brunelle CL, Taghian A. Breast Cancer-Related Lymphedema: Risk Factors, Screening, Management, and the Impact of Locoregional Treatment. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*. 2020; 38: 2341–2350. <https://doi.org/10.1200/JCO.19.02896>.
- [4] Anuszkiewicz K, Jankau J, Kur M. What do we know about treating breast-cancer-related lymphedema? Review of the current knowledge about therapeutic options. *Breast Cancer (Tokyo, Japan)*. 2023; 30: 187–199. <https://doi.org/10.1007/s12282-022-01428-z>.
- [5] DOCUMENT C. The diagnosis and treatment of peripheral lymphedema: 2020 consensus document of the international society of lymphology. *Lymphology*. 2020; 53: 3–19. <https://doi.org/10.2458/lymph.4649>.
- [6] Shrout MR, Renna ME, Madison AA, Alfano CM, Povoski SP, Lipari AM, *et al*. Relationship satisfaction predicts lower stress and inflammation in breast cancer survivors: A longitudinal study of within-person and between-person effects. *Psychoneuroendocrinology*. 2020; 118: 104708. <https://doi.org/10.1016/j.psycheneu.2020.104708>.
- [7] Vaz AF, Pinto-Neto AM, Conde DM, Costa-Paiva L, Morais SS, Pedro AO, *et al*. Quality of life and menopausal and sexual symptoms in gynecologic cancer survivors: a cohort study. *Menopause (New York, N.Y.)*. 2011; 18: 662–669. <https://doi.org/10.1097/gme.0b013e3181ffde7f>.
- [8] Fu MR, Ridner SH, Hu SH, Stewart BR, Cormier JN, Armer JM. Psychosocial impact of lymphedema: a systematic review of literature from 2004 to 2011. *Psycho-oncology*. 2013; 22: 1466–1484. <https://doi.org/10.1002/pon.3201>.
- [9] Fu X, Lu Q, Pang D, Shen A, Shih YA, Wei X. Experiences of breast cancer survivors with lymphedema self-management: a systematic review of qualitative studies. *Journal of Cancer Survivorship: Research and Practice*. 2023; 17: 619–633. <https://doi.org/10.1007/s11764-022-01225-9>.
- [10] Anbari AB, Sun Y, McCaffrey S, Morton J, Armer JM. The impact of breast cancer-related lymphedema on rural and small-town Survivors' return-to-work and quality of life: A multiple-case study. *Cancer Treatment and Research Communications*. 2021; 29: 100459. <https://doi.org/10.1016/j.ctarc.2021.100459>.
- [11] Sun Y, Shigaki CL, Armer JM. The influence of breast cancer related lymphedema on women's return-to-work. *Women's Health (London, England)*. 2020; 16: 1745506520905720. <https://doi.org/10.1177/1745506520905720>.
- [12] JBI Manual for Evidence Synthesis. 2024. Available at: <http://jbi-global-wiki.refined.site/space/MANUAL> (Accessed: 22 September 2024).
- [13] Thomas-MacLean R, Towers A, Quinlan E, Hack TF, Kwan W, Miedema B, *et al*. "This is a kind of betrayal": a qualitative study of disability after breast cancer. *Current Oncology (Toronto, Ont.)*. 2009; 16: 26–32. <https://doi.org/10.3747/co.v16i3.389>.
- [14] Anderson EA, Anbari AB, Sun Y, Armer JM. A Multiple Case Study of Latina Breast Cancer Survivors Returning to Work With Breast Cancer-Related Lymphedema: Adaptation, Resilience, and Quality of Life. *Hispanic Health Care International: the Official Journal of the National Association of Hispanic Nurses*. 2022; 20: 222–230. <https://doi.org/10.1177/15404153221116755>.
- [15] Johansson K, Holmström H, Nilsson I, Ingvar C, Albertsson M, Ekdahl C. Breast cancer patients' experiences of lymphoedema. *Scandinavian Journal of Caring Sciences*. 2003; 17: 35–42. <http://doi.org/10.1046/j.1471-6712.2003.00119.x>.

- [16] Heppner PP, Tierney CG, Wang Y, Armer JM, Whitlow NM, Reynolds A. Breast Cancer Survivors Coping with Lymphedema: What all Counselors Need to Know. *Journal of Counseling and Development*. 2009; 87: 327–338. <https://doi.org/10.1002/j.1556-6678.2009.tb00114.x>.
- [17] Radina ME, Fu MR, Horstman L, Kang Y. Breast cancer-related lymphedema and sexual experiences: a mixed-method comparison study. *Psycho-oncology*. 2015; 24: 1655–1662. <https://doi.org/10.1002/pon.3778>.
- [18] Meiklejohn JA, Heesch KC, Janda M, Hayes SC. How people construct their experience of living with secondary lymphoedema in the context of their everyday lives in Australia. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*. 2013; 21: 459–466. <https://doi.org/10.1007/s00520-012-1534-4>.
- [19] Arikan Dönmez A, Kuru Alici N, Borman P. Lived Experiences for Supportive Care Needs of Women with Breast Cancer-Related Lymphedema: A Phenomenological Study. *Clinical Nursing Research*. 2020; 30: 799–808. <https://doi.org/10.1177/1054773820958115>.
- [20] Río-González Á, Molina-Rueda F, Palacios-Ceña D, Alguacil-Diego IM. Living with lymphoedema-the perspective of cancer patients: a qualitative study. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*. 2018; 26: 2005–2013. <https://doi.org/10.1007/s00520-018-4048-x>.
- [21] Radina E, Watson W, Faubert K. lymphoedema and sexual relationships in mid/late life. *Journal of Lymphoedema*. 2008; 3: 21–30.
- [22] Winch CJ, Sherman KA, Koelmeyer LA, Smith KM, Mackie H, Boyages J. Sexual concerns of women diagnosed with breast cancer-related lymphedema. *Supportive Care in Cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*. 2015; 23: 3481–3491. <https://doi.org/10.1007/s00520-015-2709-6>.
- [23] Radina ME, Armer JM. Surviving Breast Cancer and Living with Lymphedema: Resiliency among Women in the Context of Their Families. *Journal of Family Nursing*. 2004; 10: 485–505. <https://doi.org/10.1177/1074840704269847>.
- [24] Ridner SH, Bonner CM, Deng J, Sinclair VG. Voices from the shadows: living with lymphedema. *Cancer Nursing*. 2012; 35: E18–E26. <https://doi.org/10.1097/NCC.0b013e31821404c0>.
- [25] Fu MR. Women at work with breast cancer-related lymphoedema. *Journal of Lymphoedema*. 2008; 3: 20–25.
- [26] Burkhardt M, Belzner M, Berg A, Fleischer S. Living with breast cancer-related lymphedema: a synthesis of qualitative research. *Oncology Nursing Forum*. 2014; 41: E220–E237. <https://doi.org/10.1188/14.ONF.E220-E237>.
- [27] Leventhal H, Leventhal EA, Contrada RJ. Self-regulation, health, and behavior: A perceptual-cognitive approach. *Psychology & Health*. 1998; 13: 717–733. <https://doi.org/10.1080/08870449808407425>.
- [28] González-Fernández L, Romero-Morales C, Martínez-Pascual B, Río-González A, Cerezo-Téllez E, López-Martín I. Breast cancer survivors suffering from lymphedema: What really do affect to corporeality/body image? A qualitative study. *Breast Cancer Research: BCR*. 2024; 26: 47. <https://doi.org/10.1186/s13058-024-01806-9>.
- [29] Saritas SC, Özdemir A. Identification of the correlation between illness perception and anxiety level in cancer patients. *Perspectives in Psychiatric Care*. 2018; 54: 380–385. <https://doi.org/10.1111/ppc.12265>.
- [30] de Rooij BH, Ezendam NPM, Nicolaije KAH, Lodder P, Vos MC, Pijnenborg JMA, *et al.* Survivorship care plans have a negative impact on long-term quality of life and anxiety through more threatening illness perceptions in gynecological cancer patients: the ROGY care trial. *Quality of Life Research: an International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*. 2018; 27: 1533–1544. <https://doi.org/10.1007/s11136-018-1825-4>.
- [31] Karkkola P, Kuittinen M, Hintsala T. Role clarity, role conflict, and vitality at work: The role of the basic needs. *Scandinavian Journal of Psychology*. 2019; 60: 456–463. <https://doi.org/10.1111/sjop.12550>.
- [32] Chen J, Wang Y, Luo X, Zhang Y, Zhang X, Li M, *et al.* Effect of illness perception on predicting breast cancer-related lymphedema risk management behaviours among breast cancer patients: A comparison between dimensions and profiles. *International Journal of Nursing Practice*. 2023; 29: e13182. <https://doi.org/10.1111/ijn.13182>.
- [33] Steptoe A, Fancourt D. Leading a meaningful life at older ages and its relationship with social engagement, prosperity, health, biology, and time use. *Proceedings of the National Academy of Sciences of the United States of America*. 2019; 116: 1207–1212. <https://doi.org/10.1073/pnas.1814723116>.
- [34] Luo X, Zhang L, Chen J, Zhang Y, Yan J. The Predictive Role of Illness Perception on Lymphedema Risk-Management Behaviors in Women After Breast Cancer Surgery: A Longitudinal Study. *Cancer Nursing*. 2024; 47: 358–367. <https://doi.org/10.1097/NCC.0000000000001225>.
- [35] Omid Z, Kheirkhah M, Abolghasemi J, Haghighat S. Effect of lymphedema self-management group-based education compared with social network-based education on quality of life and fear of cancer recurrence in women with breast cancer: a randomized controlled clinical trial. *Quality of Life Research: an International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*. 2020; 29: 1789–1800. <https://doi.org/10.1007/s11136-020-02455-z>.
- [36] Temur K, Kapucu S. The effectiveness of lymphedema self-management in the prevention of breast cancer-related lymphedema and quality of life: A randomized controlled trial. *European Journal of Oncology Nursing: the Official Journal of European Oncology Nursing Society*. 2019; 40: 22–35. <https://doi.org/10.1016/j.ejon.2019.02.006>.
- [37] Jørgensen MG, Toyserkani NM, Hansen FG, Bygum A, Sørensen JA. The impact of lymphedema on health-related quality of life up to 10 years after breast cancer treatment. *NPJ Breast Cancer*. 2021; 7: 70. <https://doi.org/10.1038/s41523-021-00276-y>.
- [38] Lee HS, Lee HJ, Seo KS. What Should We Focus on When Managing Breast Cancer-Related Lymphedema to Improve Quality of Life? *Lymphatic Research and Biology*. 2023; 21: 28–33. <https://doi.org/10.1089/lrb.2021.0009>.
- [39] Eagly AH, Wood W. Social Role Theory of Sex Differences. In Wong A, Wickramasinghe M, Hoogland R, Naples NA (eds.) *The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies* (pp. 1–3). 1st edn. Wiley: USA. 2016. <https://doi.org/10.1002/9781118663219.wbegss183>.
- [40] Jiang W, Chen L. Analysis of the factors and moderating role of self-care ability among patients with breast cancer-related lymphedema. *Journal of Clinical Nursing*. 2023; 32: 926–940. <https://doi.org/10.1111/jocn.16495>.
- [41] Ridner SH, Dietrich MS, Davis AJ, Sinclair V. A Randomized Clinical Trial Comparing the Impact of a Web-Based Multimedia Intervention Versus an Educational Pamphlet on Patient Outcomes in Breast Cancer Survivors with Chronic Secondary Lymphedema. *Journal of Women's Health* (2002). 2020; 29: 734–744. <https://doi.org/10.1089/jwh.2019.7676>.
- [42] Dominick SA, Natarajan L, Pierce JP, Madanat H, Madlensky L. The psychosocial impact of lymphedema-related distress among breast cancer survivors in the WHEL Study. *Psycho-oncology*. 2014; 23: 1049–1056. <https://doi.org/10.1002/pon.3510>.

- [43] Koehler L, Penz LE, John F, Stenzel A, Jewett P, Teoh D, *et al.* Functional and psychosocial quality of life in gynecologic Cancer survivors with and without lymphedema symptoms. *Gynecologic Oncology*. 2023; 170: 254–258. <https://doi.org/10.1016/j.ygyno.2023.01.019>.
- [44] Vassard D, Olsen MH, Zinckernagel L, Vibe-Petersen J, Dalton SO, Johansen C. Psychological consequences of lymphoedema associated with breast cancer: a prospective cohort study. *European Journal of Cancer (Oxford, England: 1990)*. 2010; 46: 3211–3218. <https://doi.org/10.1016/j.ejca.2010.07.041>.
- [45] Clough-Gorr KM, Ganz PA, Silliman RA. Older breast cancer survivors: factors associated with self-reported symptoms of persistent lymphedema over 7 years of follow-up. *The Breast Journal*. 2010; 16: 147–155. <https://doi.org/10.1111/j.1524-4741.2009.00878.x>.
- [46] Mak SS, Mo KF, Suen JJS, Chan SL, Ma WL, Yeo W. Lymphedema and quality of life in Chinese women after treatment for breast cancer. *European Journal of Oncology Nursing*. 2009; 13: 110–115. <https://doi.org/10.1016/j.ejon.2009.01.005>.
- [47] Alcorso J, Sherman KA. Factors associated with psychological distress in women with breast cancer-related lymphoedema. *Psycho-oncology*. 2016; 25: 865–872. <https://doi.org/10.1002/pon.4021>.
- [48] Grogan S. *Body Image Understanding Body Dissatisfaction in Men, Women and Children*. 3rd edn. Routledge: London. 2016. <https://doi.org/10.4324/9781315681528>.
- [49] Simbar M, Nazarpour S, Alavi Majd H, Dodel Andarvar K, Jafari Torkamani Z, Alsadat Rahnamaei F. Is body image a predictor of women's depression and anxiety in postmenopausal women? *BMC Psychiatry*. 2020; 20: 202. <https://doi.org/10.1186/s12888-020-02617-w>.
- [50] Pusic AL, Cemal Y, Albornoz C, Klassen A, Cano S, Sulimanoff I, *et al.* Quality of life among breast cancer patients with lymphedema: a systematic review of patient-reported outcome instruments and outcomes. *Journal of Cancer Survivorship: Research and Practice*. 2013; 7: 83–92. <https://doi.org/10.1007/s11764-012-0247-5>.
- [51] Wan X, Huang H, Peng Q, Zhang Y, Hao J, Lu G, *et al.* The relation between coping style and posttraumatic growth among patients with breast cancer: a meta-analysis. *Frontiers in Psychology*. 2022; 13: 926383. <https://doi.org/10.1016/j.jsxm.2017.08.004>.
- [52] Vanlemmens L, Duprez C, Lesur A, Kaci FA, Congard A, Antoine P, *et al.* 1371P - Concerns About Sexuality of Young Women with Breast Cancer and Their Partners. *Annals of Oncology*. 2014; 25: iv481. <https://doi.org/10.1093/annonc/mdu352.3>.
- [53] Hauken MA, Larsen TMB. Young adult cancer patients' experiences of private social network support during cancer treatment. *Journal of Clinical Nursing*. 2019; 28: 2953–2965. <https://doi.org/10.1111/jocn.14899>.
- [54] Naik H, Leung B, Laskin J, McDonald M, Srikanthan A, Wu J, *et al.* Emotional distress and psychosocial needs in patients with breast cancer in British Columbia: younger versus older adults. *Breast Cancer Research and Treatment*. 2020; 179: 471–477. <https://doi.org/10.1007/s10549-019-05468-6>.
- [55] Hummel SB, Hahn DEE, van Lankveld JJDM, Oldenburg HSA, Broomans E, Aaronson NK. Factors Associated With Specific Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Sexual Dysfunctions in Breast Cancer Survivors: A Study of Patients and Their Partners. *The Journal of Sexual Medicine*. 2017; 14: 1248–1259. <https://doi.org/10.1016/j.jsxm.2017.08.004>.
- [56] Dean LT, Moss SL, Ransome Y, Frasso-Jaramillo L, Zhang Y, Visvanathan K, *et al.* "It still affects our economic situation": long-term economic burden of breast cancer and lymphedema. *Support Care in Cancer*. 2019; 27: 1697–1708. <https://doi.org/10.1007/s00520-018-4418-4>.
- [57] Hens W, Vissers D, Annemans L, Gielen J, Van Gaal L, Taeymans J, *et al.* Health-related costs in a sample of premenopausal non-diabetic overweight or obese females in Antwerp region: a cost-of-illness analysis. *Archives of Public Health = Archives Belges De Sante Publique*. 2018; 76: 42. <https://doi.org/10.1186/s13690-018-0285-1>.
- [58] Lopez Penha TR, van Bodegraven J, Winkens B, Heuts EM, Voogd AC, von Meyenfeldt MF. The quality of life in long-term breast cancer survivors with breast cancer related lymphedema. *Acta Chirurgica Belgica*. 2014; 114: 239–244.
- [59] Anbari AB, Wanchai A, Armer JM. Breast cancer-related lymphedema and quality of life: A qualitative analysis over years of survivorship. *Chronic Illness*. 2021; 17: 257–268. <https://doi.org/10.1177/1742395319872796>.
- [60] Ostby PL, Armer JM, Smith K, Stewart BR. Patient Perceptions of Barriers to Self-Management of Breast Cancer-Related Lymphedema. *Western Journal of Nursing Research*. 2018; 40: 1800–1817. <https://doi.org/10.1177/0193945917744351>.
- [61] Shen A, Wu P, Qiang W, Fu X, Zhu F, Pang L, *et al.* Factors associated with lymphedema self-management behaviours among breast cancer survivors: A cross-sectional study. *Journal of Clinical Nursing*. 2023; 32: 7330–7345. <https://doi.org/10.1111/jocn.16833>.
- [62] Zhou B, Heather D, Cesare AD, Ryder AG. Ask and you might receive: The actor–partner interdependence model approach to estimating cultural and gender variations in social support. *European Journal of Social Psychology*. 2017; 47: 412–428. <https://doi.org/10.1002/ejsp.2251>.
- [63] Pelchat D, Lefebvre H, Levert MJ. Gender differences and similarities in the experience of parenting a child with a health problem: current state of knowledge. *Journal of Child Health Care: for Professionals Working with Children in the Hospital and Community*. 2007; 11: 112–131. <https://doi.org/10.1177/1367493507076064>.
- [64] Pedersen AF, Olesen F, Hansen RP, Zachariae R, Vedsted P. Social support, gender and patient delay. *British Journal of Cancer*. 2011; 104: 1249–1255. <https://doi.org/10.1038/bjc.2011.87>.
- [65] Jack DCA. *Silencing the Self Across Cultures*. OUP: USA. 2010.
- [66] Borgi M, Collacchi B, Ortona E, Cirulli F. Stress and coping in women with breast cancer: unravelling the mechanisms to improve resilience. *Neuroscience and Biobehavioral Reviews*. 2020; 119: 406–421. <https://doi.org/10.1016/j.neubiorev.2020.10.011>.