

Original Paper

Unmet Care Needs in Breast Cancer Survivors: An Integrative Review



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ABSTRACT

Introduction: Understanding the unmet care needs of breast cancer survivors is one of the important aspects of healthcare service.

Objective: This study aimed to identify the unmet needs of breast cancer survivors.

Materials and Methods: This research is an integrative review of evidence-based studies from five electronic databases (Web of Science, PubMed, Science Direct, Scopus, and Google Scholar), which was conducted with no time limit until December 2020. Eligible articles were critically reviewed and scored using the mixed methods appraisal tool (MMAT).

Results: A total of 28 articles were reviewed, including 7 qualitative, 19 quantitative, and 2 mixed methods studies. "Survival care needs" are referred to information needs, unmet communication needs, and management of disease symptoms and complications. The "unperceived support needs" are referred to six themes of self-change, hurting hope, uncertain faith, unmet occupational needs, impaired sexual function, and forgotten social support.

Conclusion: As the survival rate of breast cancer increases, developing flexible strategies for long-term and changing unmet needs of these patients should be a priority for health policymakers to promote care for breast cancer patients.

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Highlights

- Cancer survivors encounter many problems during and after their initial treatments, and these problems often continue.
- Survivors' needs are dynamic and may vary over time.
- Assessing patients' needs is substantial to provide timely and effectual interventions that reflect personal needs.

Plain Language Summary

Assessing the unmet needs of breast cancer survivors is an important step in promoting cancer management and can be an important factor in providing patient-centered services. Most available studies are limited to only one aspect of the unmet needs of breast cancer survivors. Therefore, the present study was performed to determine the unmet needs of breast cancer survivors. The results of this study identified the unmet needs of breast cancer survivors in two main categories: "survival care needs" and "unperceived support needs." Healthcare providers' awareness of the unmet needs of breast cancer survivors enables them to make better care and effective treatment decisions. Identifying unmet needs also improves the survival of breast cancer patients.

Introduction

Breast cancer is the most prevalent malignancy in women worldwide, and its incidence is increasing [1]. In 2018, over two million cases of breast cancer and six hundred thousand deaths due to breast cancer were reported [2]. However, in recent years, we have witnessed an increase in the survival rate of breast cancer patients, as the 5-year and the 10-year survival rates of breast cancer in the United States have reached 90% and 83%, respectively [3]. Improving survivors' long-term care has become an important priority [4].

Cancer survival is a dynamic process encompassing many issues, including diagnosis, treatments, recovery, and palliative care. A specific stage in this spectrum is when the initial treatment is completed [5, 6]. Unmet needs are a set of required health services and activities designed to assist cancer patients in diagnosis, treatment, follow-up, and recovery [7-9]. It presented five significant changes in the approach to care and support for cancer patients and accentuated the provision of follow-up care based on patient's needs and preferences [10]. Care needs include health information, patient care, psychosocial needs, daily living, and sexual needs [11-14]. Providing care tailored to the needs of breast cancer patients leads to patients' better self-care and self-management during the survival period, faster recovery, and less need for routine follow-ups [15-17]. The changes resulting from cancer and long-term treatments necessitate constant attention to the needs of cancer survivors [18]. Because many breast cancer pa-

tients have joined the survivors in recent years, it seems that the healthcare team is facing a multitude of unmet needs of this group, which requires a systematic approach to provide a more comprehensive picture of this problem's dimensions [19].

Furthermore, in a systematic review, out of 26 studies, seven were dedicated to breast cancer patients who did not receive active treatment [20]. Therefore, the present study focuses exclusively on the unmet needs of breast cancer patients undergoing initial treatment (surgery, chemotherapy, radiotherapy) and during the post-treatment period (initial and long-term).

Besides, previous studies have mainly addressed one aspect of the unmet needs of the survivors [21, 22]; this integrative review was conducted in accordance with the framework of Whitemore and Knaf, five stages-problem identification, literature search, data evaluation, data analysis, and presentation. The integrative approach allowed the authors to synthesize all available evidence and generate insights about "what is happening," "who is involved," and "what matters" and uncover directions for future investigations [23]. This literature review aims to answer the following research question: What are the unmet care needs of breast cancer survivors?

Materials and Methods

This study is an integrated literature review. The search process and selection were adopted from the preferred reporting items for systematic reviews and meta-analyses (PRISMA) [24]. The initial search generated 3012 articles, with 28 eligible articles selected for

inclusion in this literature review. The audit trail is presented in [Figure 1](#). Secondary sourced references were also retrieved. The search was undertaken in 2020. To avoid errors in the study, quality evaluation and data extraction were done by two researchers independently. A third researcher examined the agreement between the results and cases of disagreement. The inclusion criteria were original research papers only, articles in which the studied units were adult participants over 18, the full text of the articles was accessible in reputable published journals, and quantitative, qualitative, and mixed method studies that reported the data based on the unmet needs, or the concerns directly related to the unmet caring needs of the patients with breast cancer. The following articles were excluded: those that exclusively focused on the quality of life, satisfaction with healthcare services, use of care services, presence of centralized symptoms/problems, and studies that focused on tool development, translation, or evaluation. According to the exclusion criteria, the following articles were excluded from the study: abstract-only conference papers, dissertations, editorial opinions, recommendations, policies, or treatment recommendations.

Duplications were identified and eliminated through reference management software (EndNote). Eligible articles were appraised, the risk of bias for each study was assessed, and its data were extracted. The methodological quality was assessed by all three authors using the mixed methods appraisal tool (MMAT) [25, 26]. This tool has specifically been designed for qualitative and quantitative studies. Four different quality criteria were used for the studies. Each met criterion and each unmet criterion was graded 1 and 0 points, respectively [27]. The score of each study was calculated on a 0-4 scale (0=no satisfied criteria, 1=one satisfied criterion, 2=two satisfied criteria, 3=three satisfied criteria, 4=four satisfied criteria). In case of disagreement, the authors held a group discussion to reach a final agreement [26]. The articles comprised qualitative, quantitative, and mixed-method studies. They most had MMAT scores of greater than 3, so due to a large number of studies, studies with a score of 3 or less were excluded from the study. Content analysis [28] was used to identify unmet needs in women with breast cancer; the categorization of these aspects was performed through previous studies [19, 22]. The primary author read and reread the literature and moved back and forth between the literature and the coded extracts of data and themes to ensure that the themes and subthemes emerging from the analysis generated clear definitions and labels for each theme; thus, the overall story of the experience illuminates

the unmet needs of breast cancer survivors. Given that quantitative and mixed methods studies employed an exploratory and descriptive approach, the issues identified from these studies were integrated into the emergent themes, and statistical results from those studies were used to support the themes identified. The themes were scrutinized and revised by the other authors to ensure accurate interpretation and credibility.

Results

The initial search yielded 3012 articles, of which 28 articles were selected for final inclusion. The articles included 19 quantitative ([Table 1](#)), 2 mixed-methods, and 7 qualitative ([Table 2](#)). From different studies, 152 themes were retrieved, of which 34 were similar. Themes were reviewed, categorized, and emerged into two final categories: survival care needs and unperceived support needs ([Table 3](#)).

Survival care needs

This main category includes three themes: information needs, unmet communication needs, and management of disease symptoms and complications. All patients had many unmet information needs about the disease, treatment, and relapse symptoms [15, 40-44, 51, 53]. They also lacked adequate information about reducing physical and psychological complications. Many complained about the lack of a consultant and insufficient information needed to resume life [29, 30, 34, 37-45, 49, 50-52]. Regarding the unmet communication needs, most patients cited the need to communicate as one of the most basic unmet needs, represented as the need for communication with other patients, physicians, and nurses and the need for opportunities for empathy and sharing experiences [29, 31, 34, 36, 39, 41, 42, 49, 50, 53, 54].

Management of disease symptoms and complications are among the unmet needs of almost all cancer patients [29, 34, 39, 49, 52, 54]. They typically experience problems with alternative therapies, existing therapeutic gaps, medical literacy of specialists in controlling treatment side effects, lack of continuous access to health care services, and paradoxes of care, and often encounter disagreements to resolve their therapeutic conflicts [38, 40-44, 47, 51, 52, 54].

Unperceived support needs

Breast cancer patients often suffer from a variety of psychological problems [11, 29, 33, 31, 39, 53]. These

Table 1. Literature summary and mixed methods appraisal tool (MMAT) score

References	Design	Sample Size (Response Rate, %), Sampling Method	Mean±SD Age and the Phase of the Participants (y)	Main Dimensions of Unmet Needs
Shih [29] MMAT score: 4	Cross-sectional	349 (99.71%), convenience sampling	56.38±10.12 post-treatment (2 and 5 years after treatment) ¹	Physical/psychological/Support communications/patients' care and support/health services and information/
Chou [30] MMAT score: 4	Retrospective study	1129 (100%), all the eligible cases	38.7% of the participants, between 46-55 years old treatment/disease recurrence/follow-up after diagnosis/final care	Psychological/Health services and information nutrition/treatment
Martínez Arroyo [31] MMAT score: 4	Cross-sectional	450 (81%), convenience sampling	54.90±10.25 after primary treatment	Psychological/support/communications/spiritual/consultation
Capelan [32] MMAT score: 4	Retrospective	625 (100%), all the eligible records and sending the holistic needs assessment (HNA) checklist	Post-primary treatment	Communications/spiritual/independence/patients' care and support/health services and information/financial/sexual
Palmer [33] MMAT score: 4	Cross-sectional	164 (76.6%), consecutive sampling	55.45±11.97 under 1-year treatment	Physical/psychological/communications/sexual
Brennan [34] MMAT score: 4	Cross-sectional	68 (86%), convenience sampling	Mean age was 56 years (median 60, age range 25-84) post-primary treatment	Psychological/support/communications/patients' care and support/health services and information/consultation/sexual
Abdollahzadeh [15] MMAT score: 4	Cross-sectional	136 (100%), random sampling	46.8±10.1 4-6 years after treatment	Physical/psychological/spiritual/health services and information/consultation/treatment/sexual
Cheng [35] MMAT score: 4	Cross-sectional	150 (46%), consecutive sampling	55.1±8.1 up to 5 years after treatment	Physical/psychological
Pauwels [36] MMAT score: 4	Cross-sectional	465 (65%), convenience sampling	Age group of 50-54 years (26.9%) 3 weeks to 6 months after treatment	Physical/psychological/communications/independence/sexual
Li [37] MMAT score: 4	Cross-sectional	201(89%), convenience sampling	52.01±10.15 up to 2 years after diagnosis	Consultation/communications/health services and information/
Uchida [38] MMAT score: 4	Cross-sectional	85 (97.7%), random sampling	58.5±11.9 after diagnosis	Physical/daily life activities/psychological/spiritual/independence/health services and information/consultation/treatment/sexual
Amatya [39] MMAT score: 4	A prospective cross-sectional survey	191(42.5%), consecutive sampling	57.6±10.6 after the treatment	Psychological/communications/patients' care and support/health services and information
Au [40] MMAT score: 4	Cross-sectional	198 (90%), consecutive sampling	53.4±9.74 after the diagnosis	Physical/daily life activities/psychological/communications/spiritual and independence/patients' care and support/patient's health services and information/consultation/treatment/sexual
Burris [41] MMAT score: 4	Randomized controlled trial	90(93.88%), random sampling	55.26±9.23 after diagnosis	Physical/psychological/communications/health services and information/financial
Edib [11] MMAT score: 4	Cross-sectional	117 (88%), convenience sampling	50±10.1 primary and the recurring breast cancer	Physical/daily life activities/psychological/communications/spiritual/independence/patients' care and support/health services and information/consultation/treatment/sexual
Hodgkinson [42] MMAT score: 4	Cross-sectional	117 (67%), consecutive sampling	32-88 years, 3.9 years after diagnosis (2-10 years)	Psychological/communications/patients' care and support/health services and information/consultation
Liao [43] MMAT score: 4	Prospective longitudinal survey	124 (91%), consecutive sampling	49.37±0.8 diagnosis time/1,2,4 months after diagnosis	Physical/daily life activities/psychological/independence/health services and information/consultation/treatment

References	Design	Sample Size (Response Rate, %), Sampling Method	Mean±SD Age and the Phase of the Participants (y)	Main Dimensions of Unmet Needs
Okuyama [44] MMAT score: 4	Secondary analysis	408 (97%), random sampling	56.1±12 after diagnosis	Physical/daily life activities/psychological/patients' care and support/health services and information/sexual
Lam [45] MMAT score: 4	Longitudinal study	228 (87%), consecutive sampling	53.4±9.79 after diagnosis	Health services and information

1. "2 years" means that participants entered the study 2 years after the treatment.

"5 years" means that participants entered the study 5 years after the treatment.

problems occur in response to the patient's individual needs, the subsequent treatment needs, and the psychosocial burden of the disease that may influence the effects of treatment and disease prognosis, and in some cases, lead to frustration and depression in patients [38, 43, 47, 48, 51]. This category includes the following themes: self-change, hurting hope, uncertain faith, unmet occupational needs, impaired sexual function, and forgotten social support.

In the self-change theme, patients complained about changes in their attitudes, self-perceptions, being embarrassed about the self, and changes in their mental image and felt the need to be supported [29, 31, 33, 34, 39, 48, 53].

Hope is a multidimensional and potentially influential factor in cancer patients' effective recovery and adaptation [11, 54]. Due to the critical stages, they go through, patients experience diverse emotions at each stage, such as uncertain beliefs, hope, and trust, sometimes a change in faith, a loss of spirituality, and distressing beliefs, and in fact, perceiving the future as ambiguous [11, 31, 32, 38, 40, 53, 54]. These factors cause them not to pay adequate attention to their treatment and disregard their doctor's instructions. Consequently, the need for psychological and spiritual support is quite felt in these individuals.

Unmet occupational needs are a major concern for patients with job-related needs, economic burdens, and financial worries that, in some cases, they are forced to abandon treatment [32, 41, 46, 51, 53, 54].

Patients with breast cancer who experience trouble in the sexual relationship with their partners and have unmet needs related to their fertility suffer from impaired sexual function and need guidance to direct their relationships [15, 33, 34, 36, 38, 40].

Social support is a reliable source to help cancer patients cope with anxiety, depression, and a sense of insecurity. Lack of social support reduces patients' quality

of life. Breast cancer survivors need the support provided by society and their partners, emotional support, and insurance coverage [11, 29, 46, 47, 49, 54]. The unmet needs of patients in this regard will cast a shadow over these individuals' lives during and after treatment.

Discussion

The results of this review emerged in two main categories: unperceived support needs and survival care needs. Unperceived support needs are experienced in patients for numerous reasons, including the disease's psychological and emotional burden and treatment burden. This main category includes five themes: self-change, hurting hope, unmet occupational needs, impaired sexual function, and forgotten support.

Changes in self-image and a sense of embarrassment occur in almost all women with breast cancer and are among their unperceived support needs [29, 31, 33]. In most cases, the treatment system focuses merely on treating patients and, for various reasons, avoids addressing such patients' needs, which is an immediate complication of the disease [33, 34, 36, 39]. However, monitoring the physical and mental health of women with breast cancer should be given special attention in a comprehensive, regular, and individualized care program. A study in this field showed that poor mental image could lead to physical and psychological distress in breast cancer patients and reduce intimacy and proper relationships with a sexual partner in young women [55]. Another researcher declares that such ignorance of poor mental image in these patients by the medical staff can ultimately reduce the quality of life in patients with breast cancer, which confirms the present study's findings [56]. Healthcare providers can use the available evidence to develop practical strategies and integrate them into psychotherapy programs for cancer patients. One of the main themes of the unperceived support needs was the hurting hope. Maintaining hope for coping with the disease effectively is the most critical need to be considered. However, studies have shown that patients with breast cancer experience wide ranges of

Table 2. Literature summary and mixed methods appraisal tool (MMAT) score

References	Setting	Design	Participants/Age (y)	Data Collection Method/Instrument	Results
Keesing [46] MMAT score: 4	Outpatients	A mixed-methods study	Sampling: Purposive sampling methods Sample size: (n=18) and partners (n=8) n=56 health provider 35-70	In-Depth interviews with women and partners (45-90 min) a questionnaire with a health provider	Patient: pain; fatigue; fear of recurrence; employment, leisure, social and intimacy difficulties.
Haynes-Maslow [47] MMAT score: 4	Outpatients	Thematic content analysis Focus groups	Sampling: Purposive sampling methods Sample size: 22 cancers mean age 62, survivors and 19 caregivers mean age 54	Semi-structured face-to-face in-depth interviews (90 min)	A culture that discourages the discussion of cancer A lack of support services for African American cancer survivors A lack of support services for cancer caregivers Need for culturally appropriate cancer resources, including resources targeted at African American women Aspects that were helpful to cancer survivors and caregivers, including connecting with other survivors and caregivers and having a strong social support network
Landmark [48] QS:4	Hospital-based	A qualitative design using a focus group	Sampling: Sample size: seven women mean age of 49	Focus group interviews	Knowledge and psychosocial support related to physical, Emotional, and social perspectives of daily living
Wei [49] MMAT score: 4	Hospital-based	A qualitative content analysis	Sampling: A purposive sampling Sample size: nine breast cancer patients, four oncologists, and four oncology nurses	Semi-structured and in-depth interviews were conducted to collect data	Four themes of needs emerged from the interviews with patients and providers: Information/knowledge, communication, social support, and symptom management
Lally [50] QS: 4	Outpatients	Content analysis	Sampling: Sample size:5 young adults (mean age: 15.6), 4 cancer survivors (mean age: 21)	Focus groups and interviews	Themes focused on young supporters' Lack of cancer-related information reduced the ability to Communicate needs and challenged views of themselves, Relationships, faith, and the future when they provided support.
Pembroke [51] MMAT score: 4	Hospital-based	Grounded theory	Sampling: A purposive sampling Sample size: 17 patients	Semi-structured interviews	Emotional health, information needs, relationships, access and continuity of care, financial concerns
Ruddy [52] MMAT score: 4	Women treated in research at Dana-Farber Cancer Institute (DFCI)	Thematic content analysis	Sampling: A purposive sampling Sample size: 36 patients,18-42	The focus groups using a semi-structured interview (90 min)	Participants felt different from older breast cancer patients with regard to relationships, fertility, menopausal symptoms, treatment side effects, and work/finances; Participants faced unique challenges transitioning into the survivorship phase of care; Participants desired assistance, including connections with other young patients, help to navigate the healthcare system, educational materials, and lists of appropriate counselors.

References	Setting	Design	Participants/Age (y)	Data Collection Method/Instrument	Results
Dsouza [53] MMAT score: 4	Hospital-based & Outpatients	Thematic content analysis	Sampling: A purposive sampling Sample size: 17 patients (38-70)	Semi-structured interviews (20-45 min)	Awareness, psychological expressions, spirituality and misconceptions, economic burden, confinement, body image, bashfulness, maintaining secrecy, family support, and physical burden. The needs of breast cancer survivors were identified as financial, informational, breast reconstruction surgery, help in household activities, family support, counseling, and emotional support.
Fong [54] MMAT score: 4	Hospital-based	Mixed-methods cross-sectional study	Sampling: A purposive sampling Sample size: qualitative phase: 9 (survivors, healthcare providers, and informal caregivers) Quantitative phase: 259	An in-depth face-to-face interview using a semi-structured protocol, the supportive care needs survey--short form (SCNS-SF-34)	Finance (burden), transportation, beliefs, family and employment issues, health system, communication, comorbidities, family support, social support, financial independence, employer support, spiritual support?

loss of hope and spirituality as well as distressing beliefs [31, 32, 40, 54]. Similarly, Li reported that nursing intervention positively increases hope in cancer patients [57]. Likewise, Zumstein-Shaha's study indicated that regarding patients' spiritual needs by nurses led to finding meaning in the disease status and ultimately accepting the disease [58]. Identifying patients' spiritual needs and increasing the level of hope should be included in the care program for women with breast cancer by a multidisciplinary team.

Unmet occupational needs are another theme of the "unperceived support needs" category. Cancer diagnosis and treatment process indirectly affect the patients' financial well-being, families, and employment. A study showed that more than 47% of breast cancer patients had experienced financial problems [59]. Another study indicated that financial needs related to cancer treatment and health care vary according to the patients' socio-economic background and type of health insurance [60]. Healthcare professionals can satisfy these unmet needs through multi-sectoral collaboration accelerated by state organizations.

Another important theme was impaired sexual function in patients with breast cancer. This problem, which often occurs for the patient following the disease and treatment process, is often disregarded by the medical staff. Albers reported that 80.4% of patients and 37.7% of companions had not received any information in that regard [61]. The results of Lehmann's study likewise showed that the level of sexual health needs had varied between young survivors and other individuals

[62]. Therefore, the sexual health care program must become a part of the standard breast cancer care program. Forgotten support is the last theme of the "unperceived support needs of breast cancer patients" category. This theme originates from subthemes, such as the need for social support and unmet emotional support needs. The results of several studies have shown that women with breast cancer suffer from forgotten social support [29, 34, 50]. About 20.6% of patients do not receive family support [50]. Social support can reduce readmission in the hospital and patient mortality [63]. Therefore, social support provided by the family and the effective presence of the spouse during the treatment is the most critical factor to support and help the patient leave isolation.

The second main category extracted in this study was "survival care needs," which includes three main themes: information needs, unmet communication needs, and management of the disease symptoms and complications.

The provision of information should be considered an indispensable component in the field of healthcare. Reviewing studies showed that patients complained about unmet information needs regarding the disease, treatment, relapse symptoms, and the lack of a consultant [49]. Consultants can provide valuable solutions and approaches to patients enabling them to deal with the problems caused by the disease.

Table 3. Key categories, themes and subthemes

Themes	Subthemes
	<p>Survival Care Needs</p> <ul style="list-style-type: none"> Cancer-related information needs Information needs to reduce physical/mental complications Information needs <ul style="list-style-type: none"> Information needs to resume life <ul style="list-style-type: none"> A need for training A need for a consultant
<p>Unmet communication needs</p>	<ul style="list-style-type: none"> A need to communicate Attitude changes in the relationship Specialist-patient relationship A need for opportunities to empathize A need to share experiences A need for communication and intimacy A need to have a companion for leisure time A need to have effective communication with the nurse
<p>Management of disease symptoms and complications</p>	<ul style="list-style-type: none"> Symptom management The paradox of care Side effects of treatment A need for information about alternative therapies Satisfaction with medical literacy A need to know the health care system <ul style="list-style-type: none"> Medical competence A need for continuous access to health care services Long-term effects of treatment A need to trust the health care system A need for professional qualifications Care gap

Themes	Subthemes
Unperceived Support Needs	
Self-change	A change in the perspective on the self
	Losing the self
	A change in self-perception
	A change in body image
	Being embarrassed about the self
Hurting hope, uncertain faith	A change in faith
	Uncertain belief
	Hope and trust
	Lost spirituality
	Annoying beliefs
	The future in ambiguity
Unmet occupational needs	Job problems
	Financial concerns
	Inefficient employment
	Economic burden
Impaired sexual function	A need for support in the workplace
	Sexual relationship
	Fertility
	Menopause
	Sexual function
	A need guidance to direct relationships
	Relationships with a partner
Forgotten support	A need for social support
	Supporting the partner
	Unmet emotional support needs
	Physicians' inadequate emotional support
	A need for support services
	A need for insurance support

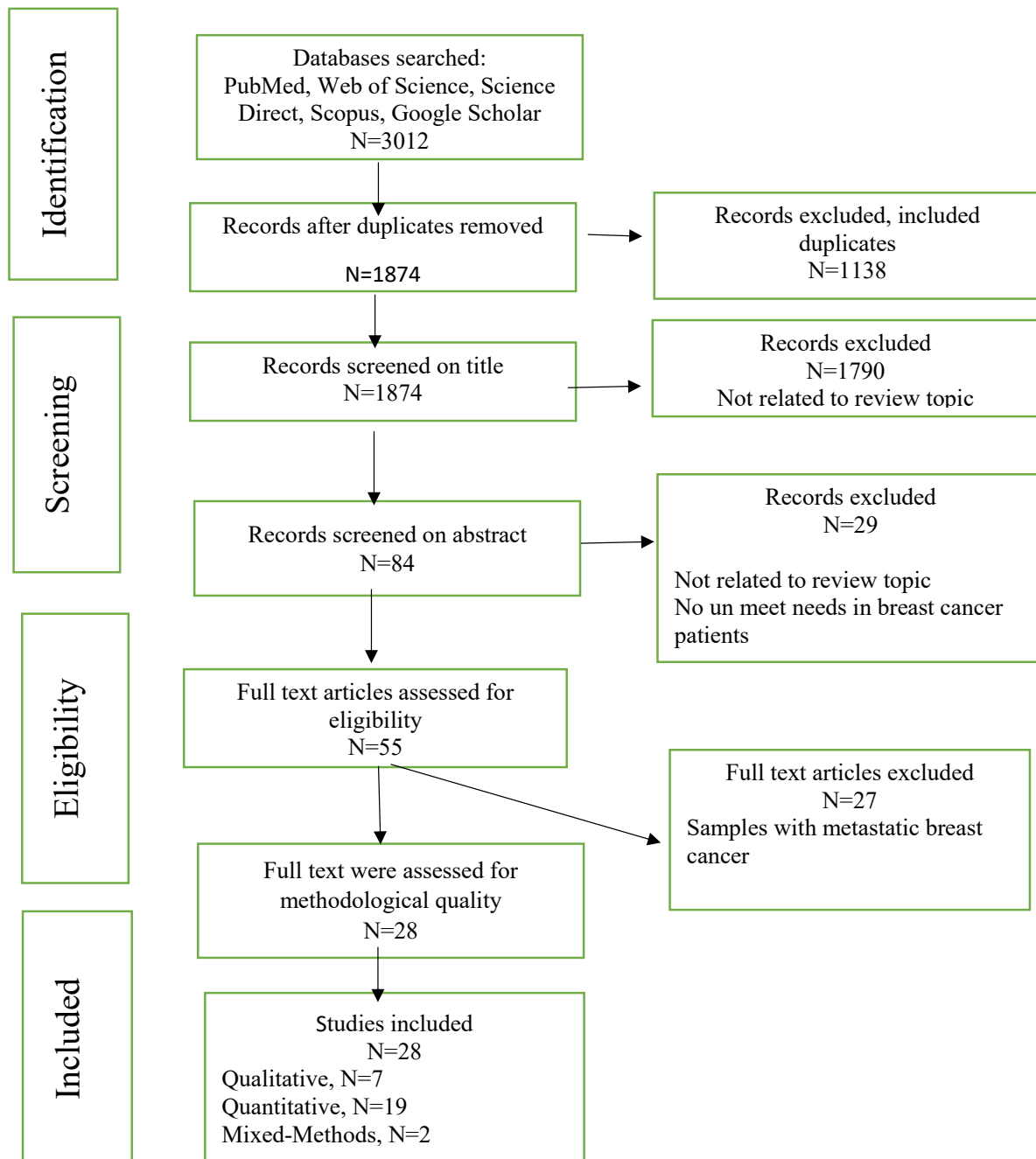


Figure 1. Overview of the literature search process

Communication needs are another main theme of survival care needs in these patients [11, 21, 19, 40]. Shih et al. showed that after a while following treatment, the need for communication was felt more in the patients, and the highest unmet need of patients with a longer survival period was related to the field of communication [29]. Women in the long-term survival phase tend to share their feelings with the medical staff [64]. A systematic review showed that unmet needs were unrelated to patients’ survival [20]. However, several studies [65, 66] have shown that identifying and promoting pa-

tients’ communication needs and paying special attention to nonverbal aspects of communication can lead to improved patient care. Another major theme of “survival care needs” is the management of disease symptoms and complications. Breast cancer patients have strong unmet needs for training and intervention for complications [67]. Evidence shows that few patients receive initial assessments of dysfunction and performance [49, 68]. Emphasis on training patients and raising their awareness before initiating the treatment will significantly benefit patients.

Strengthening and developing comprehensive support in women with breast cancer can be an appropriate technique to promote life expectancy and better adaptation to the complications caused by the disease and treatment.

Identifying survival care needs can guide the development and implementation of survival care programs that improve communication and care coordination between hospital oncology services, primary care services, and cancer survivors. Based on the results of the current study, it is recommended that the following dimensions are taken into more consideration: the needs for information and communication, management of disease complications, and support needs.

Ethical Considerations

Compliance with ethical guidelines

Ethical permission was obtained from the Research Ethics Committee of [Guilan University of Medical Sciences](#) (Code: IR.GUMS.REC.1397.529) on 16/3/2019.

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Authors' contributions

Methodology: Nastaran Mirfarhadi and Fatemeh Jafaraghaei; Data analysis: Nastaran Mirfarhadi, Rasoul Tabari-Khomeiran, Fazlollah Ahmadi, and Marzieh Jahani Sayad Noveiri; Writing—original draft: Nastaran Mirfarhadi, Fatemeh Jafaraghaei, Rasoul Tabari-Khomeiran, Marzieh Jahani Sayad Noveiri; Writing—review & editing: Fazlollah Ahmadi, Rasoul Tabari-Khomeiran, and Fatemeh Jafaraghaei; Conceptualization, Data collection and, and final approval: All authors.

Conflict of interest

The authors declared no conflict of interest.

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