



A scoping review of return to work decision-making and experiences of breast cancer survivors in Korea

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Abstract

Purpose Return to work (RTW) is an important component of cancer survivorship for individual rehabilitation and economic development. The focus of prior research on cancer survivor RTW has generally been on Western and general cancer populations. There is a need to examine the existing research on RTW decisions and experiences in Korean breast cancer survivors (BCS).

Methods This scoping review followed the framework of Arksey and O'Malley, which consisted of identifying the research question, discovering and selecting studies, charting data, analyzing results, and incorporating expert consultations. Quality assessments and a thematic map were included.

Results Out of 863 original articles found in the literature search, 8 articles met the inclusion criteria. Majority were published in the past 5 years. The scope of the field, socio-demographic and clinical associations, and factors associated with RTW decision-making and experiences were reported. In the thematic analysis, 4 main categories were derived.

Conclusions Future research needs to be conducted on effective RTW interventions targeting various educational backgrounds, socioeconomic levels, and job types. More institutional and social support would encourage more successful RTW through educational awareness, financial assistance, and workplace accommodations. Future studies should focus on interdisciplinary RTW efforts with multiple stakeholders.

Implication for cancer survivors BCS need programs that include social support, individual coping strategies, reliable RTW information, physical rehabilitation, vocational counseling, workplace allowances, and psychological support. More support should be provided through extending the work law and engaging employers. If they desire to resume working, BCS should be fully supported with RTW specific resources.

Keywords Breast neoplasms · Literature review · Return to work · Scoping review · Cancer survivorship

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Introduction

Breast cancer is the second most common cancer in South Korean women and its incidence rate has been increasing annually by 4.5% between 2007 and 2015 [1]. Whereas the incidence rate of breast cancer in the USA is highest for 55–64 year olds, the highest proportion in Korea is among those aged 40–49 years old [1]. With positive survival outcomes accompanying more diagnoses at younger ages, there have been increasingly more breast cancer survivors (BCS) in Korea. Korean women have been seen retiring in their 60s and later [2]. Not only are there high levels of working among older Koreans [1, 3] but there also are higher rates of self-employed workers who often retire later than their wage-and-salary counterparts [2]. Yet, Korean BCS have been found to lag behind Western patients in rejoining or

continuing to participate in the workforce after diagnosis and treatment, with significant costs from lost productivity and difficulty with return to work (RTW) [3, 4].

Prior research emphasizes the importance of conducting RTW-focused studies as there is substantial evidence that cancer survivors are more likely to be unemployed than the general population [5]. As found in studies primarily focused on Western populations, RTW can be an important part of survivorship, in terms of economic contributions, sense of purpose and normality, increase in quality of life (QoL), and benefits to physical and mental health [3, 6, 7]. According to a Western review study, as BCS readjust to work, social, and family roles after their diagnosis, they might struggle with a wide variety of difficulties that significantly impact their QoL and ability or desire to RTW [6].

There are a number of existing reviews that examine factors associated with RTW of cancer survivors [5–11]. However, the majority is focused on white populations in Western countries, and usually has limited focus on breast cancer specific studies [5–9, 12]. A handful of studies have noted key cultural differences and challenges (such as high levels of self-stigma, importance of social relationships, and concern over cancer diagnosis disclosure) that define RTW experiences for Asian cancer survivors [13–15]. In certain Asian populations, Confucianism influences gender and familial roles which might affect priorities, support, and expectations of BCS [15]. RTW is a recent research field of interest in South Korea and is quickly growing [3]. As BCS' experiences in Korea are closely intertwined with cultural traditions and the healthcare system, it is important to understand the differing aspects of Korean cultural and socioeconomic context in order to design and implement effective interventions targeting RTW [16]. This scoping review sought to contribute to the existing gap by extensively identifying and charting RTW information specific to a breast cancer and a non-Western population.

This scoping review aims to provide a comprehensive overview on and to increase our collective understanding of the RTW experiences of BCS in South Korea. Scoping reviews are increasingly used to map and analyze the existing research evidence in a particular complex or relatively unexamined field of interest [17]. A scoping review has a broad conceptual range and allows for a wide variety of relevant literature and studies to be included [17].

Methods

This scoping review followed the 6 stages outlined in the Joanna Briggs Institute manual [18], based on Arksey and O'Malley's classical framework [17].

Stage 1: Identification of research question

We aimed to identify: (1) What is the current research progress regarding RTW of BCS in Korea, with a focus on scope and quality of research? (2) What are the RTW experiences of BCS in Korea, especially related to RTW decision-making?

Stage 2: Identification of relevant studies

A preliminary search for existing reviews was conducted in January 2019. CINAHL Plus, Cochrane Library, Medline, and KoreaMed were searched to identify relevant keywords. After finalizing keywords (e.g., breast cancer, and RTW), a formal search was conducted in February and March 2019, for articles published in Korean or English from January 2000 to March 2019. We searched the following electronic databases: Medline, Embase, Cochrane Library, CINAHL Plus, JSTOR, and PsycINFO; including five Korean databases, ProQuest Dissertations & Theses Global, and Open Grey Database. Finally, a search was run on the reference lists of identified full-text articles. Full-text publications and unpublished research were considered for this review. The full search strategy can be found in Table 1 of the Appendix.

Stage 3: Selection of studies

Studies that met the following inclusion criteria were selected: (1) Korean BCS; (2) women aged 20–70 years old; and (3) reported work experience, RTW decision-making, or a RTW-focused intervention. Exclusion criteria were selected: (1) did not report work experience or RTW decision-making and (2) included other cancer types.

Titles and abstracts were independently assessed by two reviewers (A, B) for fit and relevance, followed by evaluation of full-text versions to determine inclusion and exclusion. A third reviewer (C) was present to settle any disagreements.

Stage 4: Charting the data

Data from each study was extracted, including author information, publication year, study type and design, study population, RTW definition, study aims, methodology, outcome variables, key findings, limitations, and future directions.

Stage 5: Collating, summarizing, and reporting the results

We conducted thematic mapping (Table 2, Table 2 in the Appendix) utilizing the Braun and Clarke framework [17, 19–21]. Using Microsoft Excel as an organizational and conceptual tool, we extracted variables found in the main findings of the included studies and re-arranged these results into larger thematic clusters in order to identify key trends across the

studies [18, 19]. To guide the write up and serve as a visual aid, a thematic map was constructed [19].

Methodological quality appraisal was an important component for this scoping review [20]. The Critical Appraisal Skills Programme (CASP) checklist for qualitative studies [22, 23] and the Risk of Bias for Non-Randomized Study (RoBANS) tool [24, 25] were utilized to assess the quality of the studies. Two researchers (A, B) conducted the quality appraisal in order to reduce bias and maintain consistency. We adhered to the PRISMA checklist in writing this manuscript [21].

Stage 6: Consultation

Consultations were held with several experts in cancer survivorship, e.g., academics and clinicians. They reviewed and offered revisions for the thematic map and pointed out gaps in the literature.

Results

Eight articles were included for analysis [26–33]. The PRISMA flow diagram [21] presenting the selection process is found in Fig. 1.

Characteristics of selected studies

Scope of articles The characteristics of these studies are shown in Tables 1 and 2, and Table 2 in the Appendix. Seventy-five percent were published 2015–2017, indicating research in this field being relatively new. The majority of studies produced descriptive results [27, 28, 30, 31]. Most were based on surveys and interviews, with only 1 preliminary clinical intervention study identified [32]. As only 1 study was prospective in nature [33], this limited causality of variables and examining change over time. Another common limitation was a lack of generalizability of results related to skewed population characteristics (higher income, more education, lack of personal information) and use of particular recruitment methods (convenience sampling, single institution, selection bias, low response rate) [26, 28–31, 33]. Examined RTW topics included employment status [26, 28, 30, 33], balancing work and treatment [27, 29, 31, 32], workload [31], sick leave [27, 31], disclosure of cancer diagnosis [31], and labor welfare programs in the workplace [27, 31].

Quality assessment Quality assessments are presented in Tables 3 and 4 in the Appendix. The majority of included studies appeared to be well designed and ethically conducted, with visible efforts to reduce bias. The greatest concerns were

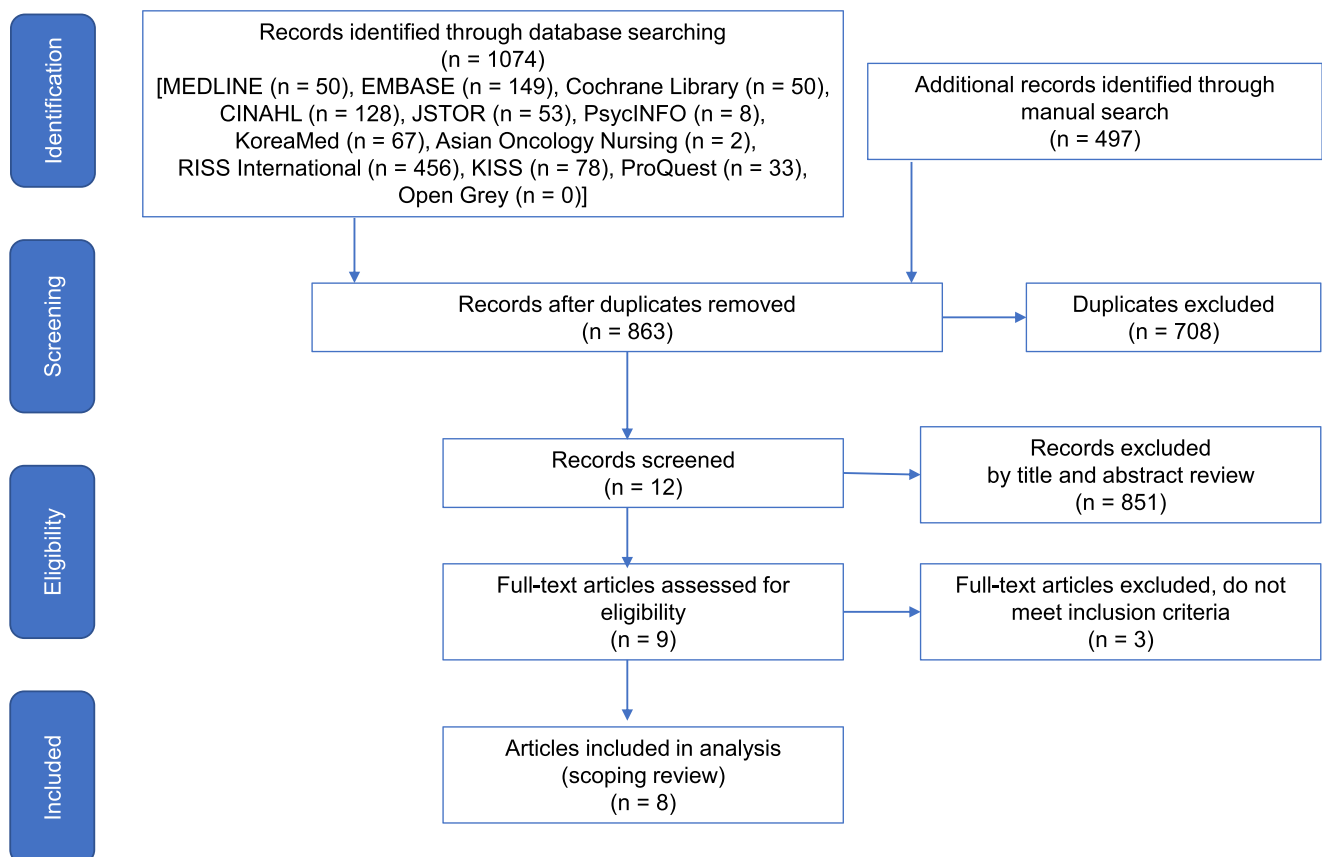


Fig. 1 PRISMA flow diagram for selection of studies regarding return to work decision-making and experiences of breast cancer survivors in Korea

Table 1 Important study characteristics and summarized results of selected studies ($N = 8$)

Author, year	Study design	Aims	Sample	Definition of working and RTW	Main findings
Ahn et al., 2008 [26]	Case control	To examine effect of BC diagnosis and treatment on employment and ability to perform daily tasks	1594 BCS working at time of diagnosis, 415 control women aged 20–60	Working = employed or self-employed; non-working = retired or homemakers	<ul style="list-style-type: none"> • Low income, several comorbidities, advanced disease stage associated with unemployment • Less education, marriage, more extensive surgery (–) association with RTW • Most frequent difficulties for occupational work and housework: fatigue, exhaustion • Reported difficulties: decreased work-related ability, wages, working hours, less promotional opportunity, physical limitations, more difficulties with emotional distress
Heo et al., 2010 [27]	Qualitative (in-depth interview)	To describe RTW experiences of BCS	10 BCS working at time of diagnosis, aged 30–55	Quit job OR worked in same job during treatment OR quit job after surgery, began working new job after treatment	<ul style="list-style-type: none"> • 4 themes of RTW experiences: desire to hide physical changes (hair loss), social support (family, spouse, colleagues, religion) encourages normal routine, mixed reactions from others towards individual's RTW, and difficulty balancing work and treatment (physical discomfort, lack of time control, financial burdens, emotionally sensitive) • Social and colleague support critical for RTW → stressful for survivors if colleagues made fun of RTW or were overly interested, desire to return to normalcy • Need for education or counseling for BCS to cope with/ take care of changing appearance • Usually short period of sick leave (<6 months) → need for more legal support for sufficient sick leave, ability to have more flexible working hours, more insurance benefits, more emotional support, less discrimination, more occupational health workers
Hwang, 2015 [28]	Cross-sectional	To investigate levels and examine risk factors for depression and anxiety among BCS aged 40s	609 BCS aged 40–49	Not specified, but can be found in Hwang (2016)	<ul style="list-style-type: none"> • Significant risk factors for depression and anxiety: unemployment, job anxiety due to increased opportunities for social interaction → suggesting that for housewives or those without full-time employment, more opportunities for social activities are critical • RTW themes: “conflict between BC diagnosis and job,” “difficulties of simultaneous working and treatment,” “managing BC treatment while working,” “expressing gratitude despite a busy and hard life,” “what one’s body needs,” and “what one’s heart needs.” • Participation in online communities results in similar support and social relationships developed normally through off-line self-help groups. BCS want self-help groups → online communities can be an alternative for those with full-time employment • Need for more reputable and updated sources of information online for RTW resources and for more experts to provide vocational counseling • (+) association with higher QoL: self-employment, professional/office employment • Higher socioeconomic status (measured by income, education level, and job type) → higher QoL → need to provide more support to BCS with low socioeconomic status • [Core] “to overcome withering and anxiety to keep working in healthy condition” • [Contextual conditions] “physical burden,” “workload,” “financial burden,” “social bias against cancer survivors,” “individual temperament and character” • [Coping] “make others understand my condition,” “work smart,” “take care of myself with more attention,” “reduce other burdens,” “control mind,” “reestablish identity as worker” • [Interventions] “understanding and support of family,” “understanding and support of managers and coworkers,” “labor welfare programs in the workplace,” “specific information and support resources for RTW”
Bae and Kwon, 2016 [29]	Semantic network analysis	To examine the impact of BC diagnosis on working experience or job retention after time off or resignation	1186 articles and 212 keywords written and discussed in community website by BCS	Not specified	
Hwang, 2016 [30]	Cross-sectional	To examine effect of socioeconomic status on QoL for BCS in their 40s	607 BCS aged 40–49	Working = employed or self-employed; non-working = unemployed or housewives	
Kim, 2016 [31]	Qualitative (grounded theory)	To identify RTW experiences and psychosocial difficulties for BCS in specific sociocultural context of South Korea	26 BCS working at time of diagnosis	RTW = resume and sustain any kind of work. Participants who RTW (or intended to), employed or self-employed, and left work during treatment	

Table 1 (continued)

Author, year	Study design	Aims	Sample	Definition of working and RTW	Main findings
Bae, 2017 [32]	One group, pretest-posttest	To develop and test the efficacy of a post-traumatic growth program for working BCS	15 BCS working at time of diagnosis aged 19–50, 4 sessions	RTW = took sick leave, general leave or quit job after being diagnosed with BC, but are planning to return to workplace or get a new job	<ul style="list-style-type: none"> Single women householders with children found it more urgent to RTW after cancer diagnosis and treatment due to the burden of child support combined with no spousal support (challenges of little emotional support and prejudices against single women) Surrounding support levels and social prejudice affect disclosure of cancer diagnosis Goal of program: decrease intrusive rumination by increasing self-disclosure (writing, speaking activities) and increase deliberate rumination with more social support (medical staff, self-help group of fellow working BCS) to promote post-traumatic growth Program contents: professional education on healthy diet and exercise, post-cancer treatment management, psychology, aesthetic management Immediately after and a month after intervention, post-traumatic growth improved (relationships with others and personal strengths in particular increased); intrusive rumination and pain decreased and deliberate rumination increased immediately afterwards Patients appreciated learning coping methods to help with RTW and opportunity to connect with fellow BCS with similar RTW concerns Personality type inspection should be used more often in post-traumatic growth interventional programs (e.g., Enneagram), high level of participant satisfaction Future work needs to validate finalized program in same group and to determine how many sessions are necessary for lasting effects. Need to verify program efficacy using a randomized controlled trial with a larger and more representative sample of BCS.
Lee et al., 2017 [33]	Prospective cohort	To identify factors before diagnosis, during treatment, and after treatment associated with successful RTW	288 BCS aged 18–65	Working = employed or self-employed (full time, part time), non-working = unemployed, students or housewives	<ul style="list-style-type: none"> Childbirth at 12–24 months after cancer diagnosis (–) association with RTW Women who participate in exercise at all stages are more likely to RTW → future studies should examine how to incorporate exercise programs more effectively into their overall cancer rehabilitation interventions Need to care for children (role adjustment) might (–) affect BCS RTW, whereas positive perceived body image and good existential well-being increases likelihood of RTW (+) (–) RTW: fatigue, appetite loss Korea specific context: paid workforce has little access to illness or sick leave compensation, no employer-based supportive practice nor any law regulates absence and RTW for disabled individuals

BC, breast cancer; BCS, breast cancer survivors; RTW, return to work; *QoL*, quality of life

Table 2 Comparison of the main findings of the selected studies ($N = 8$)

Main findings	Ahn et al 2008 [26]	Heo et al 2010 [27]	Hwang 2015 [28]	Bae and Kwon 2016 [29]	Hwang 2016 [30]	Kim 2016 [31]	Bae 2017 [32]	Lee et al 2017 [33]
Psychological	Appearance and/or body image		✓	✓		✓	✓	✓
	Identity as worker				✓	✓		✓
	Attitude, coping, adjustment		✓		✓	✓	✓	✓
	Cognitive function							✓
	Depression and/or anxiety		✓	✓	✓		✓	✓
	Emotional distress and/or sensitivity	✓	✓	✓	✓		✓	✓
	Post-traumatic growth				✓			✓
	Intrusive and/or deliberate rumination							✓
	Well-being (QoL, HRQoL, existential)					✓		✓
	Physical	Physical difficulties and/or limitations	✓	✓	✓	✓	✓	✓
Sexual function								✓
Cancer related fatigue		✓	✓				✓	✓
Pain (intensity, interference)				✓		✓	✓	✓
Lifestyle and support	Financial pressures	✓	✓			✓		✓
	Social function			✓	✓	✓	✓	✓
	Social and/or colleague support		✓		✓		✓	✓
	Family and/or spousal support	✓	✓		✓		✓	
	Social bias and/or discrimination		✓				✓	
	Symptom management				✓		✓	✓
	Nutrition management				✓		✓	✓
	Exercise management				✓		✓	✓
	Pain management			✓				✓
	Schedule and/or time management		✓		✓		✓	✓

QoL, quality of life; HRQoL, health-related quality of life

that selection of participants wasn't sufficiently reported in 4 studies [27, 29, 32, 33] and blinding of outcome assessments [26, 28–30, 32, 33] had unclear or high risk of bias for 6 studies.

Relationships among socio-demographic and clinical characteristics While women in their 40s might be more likely to keep their jobs than younger women, there was a high prevalence of depression and anxiety in these Korean BCS [26, 28, 31]. More education was positively associated with RTW [32]. Correlates of higher QoL for Korean BCS in their 40s included being self-employed or in a professional/ managerial position and having a monthly income greater than 4 million (in comparison to the average 2.9 million) Korean Won [30,

34]. Unemployment was associated with more than 2 comorbidities and advanced or extensive surgery in the case-control study [26], whereas a prospective cohort study found clinical characteristics to have no association with RTW [33] (Table 2).

Factors associated with decision to RTW Found in both qualitative and observational research, support is an important factor in determining BCS RTW in Korea [27, 33]. Negative associations with RTW included appetite loss, fatigue, and childbirth at 12–24 months post-diagnosis [33]. Positive associations with successful RTW included more educational materials, regular exercise, better personal body image and physical function post-treatment, and healthy existential well-

being [33]. According to a qualitative grounded theory study, single mothers were more likely to resume employment in order to support their children [31].

Factors associated with RTW experiences Fatigue and exhaustion were perceived to be the most frequent physical difficulties [26]. Yet, overall low levels of pain were reported in mostly qualitative research [27, 28, 31]. According to interviews and surveys, cancer survivorship is also a time of increased emotional sensitivity and distress, particularly depression and anxiety [26–28, 31, 32]. Cancer diagnoses appear to change people’s perception of the meaning of their work and roles in life, with patients experiencing varied struggles with helplessness, body image negativity, and other emotions [27–29, 31–33]. In addition, survivors struggled with balancing simultaneous treatment and work as reported by interviews and semantic network analysis [27, 29], while also voicing concerns about potential disadvantages as a cancer patient in their workplace [26, 31]. One case-control study highlighted how BCS might face reduced wages, working hours, and promotional opportunities after their diagnosis [26]. From two qualitative studies, other concerns are negatively received diagnosis disclosures and discrimination [27, 31].

According to both qualitative and observational research, positive high-quality support is imperative [27–29, 31, 32]. Throughout several different study designs, participants made various personal efforts towards adopting effective coping mechanisms including self-care, positive thinking, consistent exercise, healthy eating habits, working strategically, and reducing extra responsibilities [27, 31–33]. The intervention study [32] stressed the importance of counseling and peer support groups to facilitate post-traumatic growth and of considering personality traits. Furthermore, lack of labor welfare programs offered by the workplace and specific RTW informational resources for Korean BCS was highlighted in the qualitative grounded theory study [31] (Table 2).

Thematic mapping

A total of 407 concepts were created by extensively examining the key findings of each included study. These concepts were classified into 24 subcategories based upon shared themes, and 4 final categories were derived. For example, one study found that women living with a spouse were more likely to stop working. This data was categorized as “family relationships and effect on RTW” as opposed to peer support. However, since family relationships and peer support are all related to support for BCS, these subcategories were combined into a larger theme of “Impact of Support and Relationships” which is directly related to the main theme of “Employment Status/RTW Experience of BCS” (Fig. 2).

“Identifying the struggles of individuals” pointed to the physical, psychological, and financial burdens of cancer and how these challenges related to the general work ability and daily work activity of survivors. Primary concerns were psychological difficulties adjusting to physical and body image changes, general psychological difficulties, and difficulty balancing daily work responsibilities and schedule changes. Financial burden was not noted as a high priority by the experts consulted in Stage 6.

“Coming to terms with breast cancer and working again” focused on coping strategies and mindsets, lifestyle changes and priority shifts, and decision-making in disclosing breast cancer diagnoses. Mindset and personality were important, with individual BCS pursuing thankfulness, positivity, and open mindsets. Personal measures for healthier living included improving fitness, diet, hygiene, and sleep.

“Impact of support and relationships” included the influence of workplace, family, and social relationships on well-being and RTW. Supervisors and colleagues played an important role. Family support was also significant, with contributions such as emotional support and housework help being desired by Korean BCS from their spouse and children. High-quality social support was necessary to avoid additional psychological burden. Stigma is acknowledged to be a concern when attempting to RTW, resulting in reduced wages, less promotional opportunities, tensions in the workplace, and loss of employment. Expert consultations pointed to the importance of implementing effective RTW interventions, providing more support within the workplace, and the need for more institutional support. There was a strong desire from BCS for more reliable and specific resources, such as professional education and counseling.

Finally, “associated factors” consisted of clinical factors and socio-demographics. Lower educational level, lower household income, two or more comorbid diseases, more advanced stage cancer, and extensive surgery were found to be associated with unemployment.

Discussion

Overview of studies

Research on RTW in BCS in Korea primarily utilized an observational or qualitative study design. International interventions may be applicable, as long as considerations for Korean cultural, legal, and healthcare system differences are taken into account. Comparing Korean and Western reviews covering RTW, limitations were similar, including bias in population characteristics, unreliable recruitment methods, difficulty comparing studies due to variable study measures, and lack of long-term follow-up [6, 9, 26, 28–31, 33].

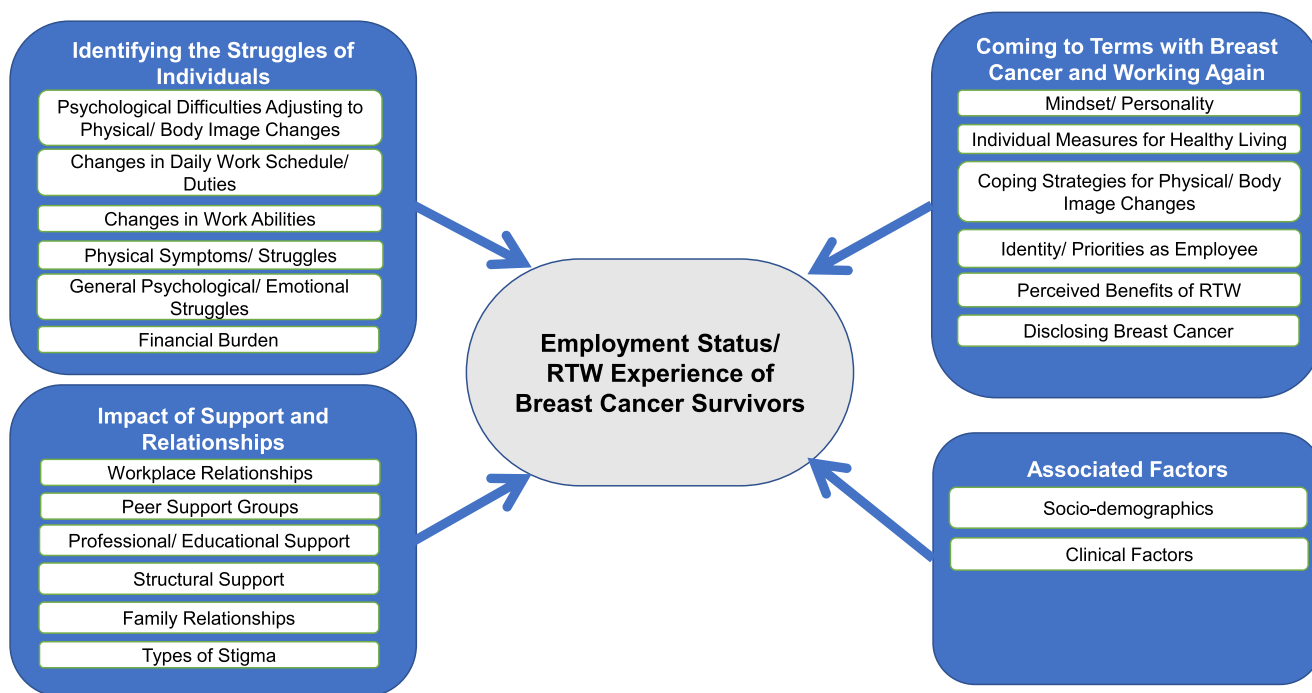


Fig. 2 Thematic map of employment status/RTW experience of breast cancer survivors in Korea. RTW, return to work

International research covered physical/sexual/cognitive function, psychological distress, support, and financial burden as related to RTW [6, 8, 11]. However, for Korean BCS, we only found 1 study on cognitive and sexual function [33], and only 2 studies examining social bias and discrimination [27, 31]. Western reviews have covered individual meaning of work, employment types, RTW interventions, vocational guidance, rehabilitation programs [11] employment status, sick leave duration, and working hours [8]. In contrast, our review had limited coverage of RTW interventions [32], post-traumatic growth promotion [32], disclosure of diagnosis [31], labor welfare programs [27, 31], and reduced working hours [26, 27]. In fact, the studies in this review explicitly highlighted lack of data on changing priorities [33], work problems occurring pre-cancer diagnosis [33], job type or physical workload [26, 33], flexibility of jobs [33], and assistance from colleagues/employers [33]. More research is needed to expand the current understanding of RTW of Korean BCS.

Factors influencing RTW

This review identified conflicting data about clinical characteristics and RTW. In agreement with international research [7, 8, 10], 1 study noted disease stage and type of treatment to have a significant impact on RTW outcomes [26]. Yet, another study found no such association [33]. As a prospective cohort study, the latter study suggested that clinical characteristics might have less of an impact on RTW farther out from the initial breast cancer diagnosis [33]. It would be beneficial to provide RTW interventions during or immediately after

treatment for BCS with more advanced stages and extensive surgery to counteract the challenges of RTW that present early on for these BCS.

For Korean BCS, marriage [3, 30] and low-paying jobs [3] meant a lower likelihood of RTW, whereas education was positively associated with RTW [30, 33]. This appears parallel to a Western study that found less education and low income to be negatively associated with RTW [9]. These combined results suggest that it would be beneficial to develop more RTW interventions for Korean BCS with lower education and income.

Fatigue was generally perceived to be the most common physical barrier to RTW of BCS [26, 33], whereas better physical function is positively associated with better RTW outcomes, in agreement with international reports [7, 10]. Overall low levels of pain were reported in Korean BCS [27, 28, 31], contrasting with chronic pain found in Western populations [6]. Individual fatigue management strategies, as well as consistent nutrition and physical activity, should be incorporated into RTW programs as means of improving physical function and surgery outcomes post-treatment [28, 29, 31–33].

Findings from this scoping review noted that Korean BCS significantly struggle in terms of psychological difficulties. Whereas these articles largely focused on personal body image and existential well-being [27, 29, 31–33], Korean research is expanding quickly to include cognitive impairments and frustrations with role fulfillment [29, 31, 33]. There is some evidence in BCS that cognitive dysfunction negatively impacts QoL and work-related outcomes, but the impact

appears to diminish in severity over time [5, 7]. With limited results reporting on cognitive and emotional function, we should further explore their impact on RTW of Korean BCS.

Although financial burden was examined in many of our articles [26, 27, 30, 31, 33], it was not noted as a major factor in RTW. The lesser priority may be because Korea has universal healthcare coverage that supports breast cancer treatments. However, it appears that with a rapidly increasing incidence rate of breast cancer, overall socioeconomic cost and individual financial burden for Korean BCS are becoming more burdensome [1]. More research is needed to better understand financial situations of Korean BCS.

Work-related concerns and interventions

Korean BCS struggle with balancing simultaneous treatment and work [27, 29], and also might experience disadvantages in their workplace [26, 31]. In agreement with Western research, Korean BCS may also face reduced wages, working hours, promotional opportunities, and work ability [10, 26].

In order to combat RTW difficulties, positive high-quality social support is imperative. In agreement with international research [7, 8, 12], the importance of social support appears to be emphasized heavily in the RTW of Korean BCS [27, 29, 31] and comes from peers, religious groups, family, and the workplace [27–29, 31, 32]. Support has been found to be positively associated with QoL, survivor well-being [6], and successful RTW [27, 31]. Difficulties in relationships with coworkers and superiors, internal struggles regarding identity and ability, and balancing responsibilities are all important target areas requiring intervention for Korean BCS. More RTW support resources need to be easily accessible to BCS and could be provided in the workplace such as through a company-based cancer survivor support group.

International research has found that RTW is positively associated with the availability of counseling, rehabilitation services, career training, and job search systems [10]. However, those programs catering to BCS are limited in Korea [3] and BCS may be reluctant to reveal their diagnosis to potential employers [31]. Furthermore, the existing employment law offers little legal protection for BCS, with limited right to little paid sick leave, and even less protection for self-employed workers on short-term contracts (or employed by firms with less than 5 employees) [4]. More institutional and workplace resources should be provided for Korean BCS [31]. Government support could include incentives like tax benefits for companies to employ cancer survivors, expanded insurance coverage for lower socioeconomic BCS, and laws to ensure adequate paid sick leave and flexible work hours for cancer survivors [27]. Employers should provide more resources about BCS rights at work, vocational counseling and rehabilitative services, and address discrimination in the

workplace [31]. Workplaces could help adjust workload and working hours to make RTW more manageable.

Survivors worldwide continue to face stigma in the workplace [27, 31, 35, 36]. Particularly in Asia and in Asian American populations, stigma, self-stigma, and misinformation regarding the RTW of cancer survivors is prevalent [3, 13, 14, 35, 37]. Over 30% of Korean cancer survivors had negative stereotypical views of cancer patients, about with about 10% experiencing discrimination [38]. Stigma related to cancer diagnosis is critical to address due to potential negative outcomes of hiring discrimination, harassment and hostile work environments, denial of necessary workplace accommodations, reduced wages, and demotion or loss of employment [35]. Others' negative reactions and discriminatory workplace behaviors can also be driving forces in BCS being unwilling to reveal their diagnosis or access support [35–37]. Furthermore, it has been found that individual perception of limited ability at work can play a significant role in the RTW decision-making process [12]. More work needs to be done to increase awareness in the general Korean public, and provide support for BCS experiencing self-stigma outcomes.

RTW interventional programs can include easily accessible RTW information, instructions for structured RTW plans, and support groups [9]. The preliminary intervention study addressed the need for professional educational materials and stressed the importance of counseling and peer support [32]. Adjusting mindsets and lifestyle habits can be useful tools of RTW intervention, perhaps addressed during support group meetings and with online educational materials verified by healthcare providers. More educational resources and peer support (cooking, typing, rehabilitation), along with a focus on strengthening coping skills, is needed to better cope with physical and body image changes for Korean BCS [12].

Moderate evidence over the years has found multidisciplinary interventions that combine physical, psycho-behavioral, educational, and vocational components help increase RTW rates for BCS [6, 7]. There must be interdisciplinary teamwork (including healthcare providers and employers) to bind together these multidisciplinary interventions to begin at the start of sick leave [9]. In Western literature, a review on RTW interventions for BCS found that only 38% were work directed and offered services beyond basic RTW information, 80% were provided by healthcare professionals, and 75% took place after completion of treatment [9]. Although strides are being made to acknowledge RTW as an essential component of cancer survivorship, more stakeholders need to get involved, providing more consistent and reliable resources. We should focus on helping survivors plan structured RTW for individual-specific challenges, evaluating the impact and severity of illness on RTW abilities, and encouraging employers to make flexible and informed workplace accommodations [9]. Not only do more RTW interventions need to be designed and implemented but the efficacy of such programs

also should be rigorously evaluated [5]. In Korea, more clinicians and researchers are getting involved in developing RTW interventions to meet this need [3], such as a multi-center randomized control trial [32].

Strengths and limitations

This study's strength is that it offers understanding of Korean BCS and BCS in other Asian regions as well, as public perceptions of cancer stigma and Confucian influences may be shared [37]. It also employed rigorous and transparent methods including systematic efforts to review the literature and thorough quality assessments. A limitation of this study is that with focus on BCS, perspectives of other stakeholders in the RTW of Korean BCS were not included. Finally, some relevant studies might have been missed and unintentionally excluded from review due to database selection, search strategy errors, and time constraints.

Directions for future research

Future Korean BCS research examining RTW should expand its scope to include more studies examining fatigue assessment, cognitive/emotional function, stigma and discrimination, and financial burden. It would be beneficial for further studies to examine perceptions of workplace stigma from a variety of perspectives, across a variety of occupations, and to compare across different Asian cancer populations. Additionally, more RTW support studies are needed that target survivors with lower educational and socioeconomic levels, especially single mothers. Finally, it is important that more longitudinal and RCT intervention studies are conducted.

This scoping review identified many recommendations for future clinical interventions and policy change to encourage effective RTW in Korean BCS. Strategies to combat fatigue, address appetite loss, manage emotional distress, and tackle body image issues should be incorporated into a unified care plan to increase RTW success rates [33]. Development of effective multidisciplinary RTW intervention models, addressing psychological difficulties (particularly physical and body image changes), work ability, and handling work schedules, would benefit BCS. A successful RTW intervention might include social support, self-care management and coping tools, reliable information about healthy diet and exercise, physical rehabilitation, vocational counseling, workplace coordination to increase schedule flexibility/ accommodations, and financial support. Beyond clinicians and researchers, more stakeholders need to become involved in improving the survivorship care of Korean BCS. The employment law needs to be expanded to offer more legal protection, insurance coverage, and adequate sick leave payment. Employers can

provide more support with flexible working hours, systems to pinpoint and address stigma and discrimination in the workplace, and vocational counseling and rehabilitative services.

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Data availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflicts of interest.

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