A Narrative Review of the Confluence of Breast Cancer and Low-wage Employment and Its Impact on Receipt of Guideline-recommended Treatment

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ABSTRACT
Breast cancer is the leading cause of cancer among women in the United States, costing the healthcare system, employers, and society billions of dollars each year. Despite improvements in screening and treatment, significant breast cancer treatment and survivorship disparities exist among various groups of women. One variable that has not been explored extensively as a possible contributor to breast cancer treatment disparities is employment. This is concerning, given the changing economic and employment trends in the United States favoring low-wage employment. Currently, one-quarter to one-third of all US workers are considered to be working poor, and women are disproportionately represented in this group. Characteristics of low-wage work—limited paid time off, minimal health benefits, schedule inflexibility, and economic insecurity—may become even more significant in the event of breast cancer diagnosis. To date, there has been limited research into how job conditions inherent to low-wage work may influence working poor survivors’ receipt of guideline-recommended breast cancer treatment. Therefore, the purpose of this narrative review was to critically examine the current literature to further our understanding of how employment context may impact treatment decisions and adherence—and therefore receipt of guideline-recommended care—among newly diagnosed, working poor breast cancer survivors. After undertaking a comprehensive review, we failed to identify any published literature that explicitly addressed low-wage employment and receipt of guideline-recommended breast cancer treatment. Four articles reported circumstances where women delayed, missed, or quit treatments due to work interference, or alternatively, developed strategies that allowed them to continue to work and obtain their breast cancer treatment concurrent with medical and economic challenges. An additional five articles, while focused on other cancer and employment outcomes, described the need for increased patient-provider communication about the influence of work on treatment decisions and the development of alternative treatment plans. Due to the paucity of research in this area, future policy, practice, and research efforts should focus on the employment context of working poor breast cancer survivors as a potential contributor to cancer disparities. Engagement of women, employers, oncology providers, healthcare systems, and interdisciplinary researchers is warranted to improve cancer outcomes among this disparate population of working women.

Key Words: Breast cancer, low-wage employment, guideline-recommended treatment, disparities, working poor, decision making, adherence

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INTRODUCTION

Low-wage employment, ever more prevalent in today’s economy, offers women minimal autonomy, schedule inflexibility, limited paid time off, minimal health benefits, and economic insecurity. Indeed, these workplace characteristics become even more significant in the event of a breast cancer diagnosis. While much of the literature to date has focused on the impact of cancer on employment outcomes, there has been limited research into how employment context may influence working poor breast cancer survivors’ receipt of guideline-recommended treatment. Our narrative review paper articulates these gaps in knowledge and proposes a related practice, policy, and research agenda focused on improving cancer outcomes among this disparate population of women experiencing both employment and health insecurity.

BACKGROUND

Breast cancer is the most commonly diagnosed cancer among women in the United States, with more than 232,000 new cases expected in 2013 and the second leading cause of cancer-related mortality, with almost 40,000 deaths expected during the same time period. In 2010, female breast cancer accounted for $16.5 billion USD in national expenditures for cancer care, and in 2005, breast cancer was responsible for $12.1 billion USD in lost productivity due to cancer death. During the past 3 decades, advancements in breast cancer screening and treatment have led to an improved overall 5-year survival rate of 90% (localized, 98.6%; regional, 83.8%; distant, 23.3%) compared to 75% in the mid-1970s. According to national estimates, as of July 1, 2012, there were more than 2.3 million women living with a history of invasive breast cancer; this number is expected to increase to 3.8 million by 2022. Notably, almost three out of every five breast cancer cases are diagnosed in women between the ages of 20 and 69 years, with a median age at diagnosis of 61 years, indicating that the majority of breast cancer cases occur among working-age women.

Despite improvements in mammography screening and breast cancer treatment options, there are still significant screening, diagnostic, treatment, and survivorship-related disparities that exist among specific population groups, including minority and medically underserved women and women of lower educational and socioeconomic status. In further understanding treatment and survivorship disparities, the recognition that breast cancer treatment is complex, replete with
mental and physical side effects, expensive, time-sensitive, and time-intensive and that it competes with patients’ work-family-life responsibilities is critical. Depending on stage of diagnosis, estrogen/progesterone receptor status, human epidermal growth factor receptor 2 (HER2) expression, menopausal status, and lymph node involvement, guideline-recommended treatment regimens may include surgery (e.g., mastectomy, lumpectomy, sentinel lymph node biopsy), specific doses and cycles of external beam or internal radiation, specific doses and cycles of chemotherapy, clinical trial participation, and/or long-term adherence to oral medications such as tamoxifen or anastrozole. The overall, active treatment process, excluding time allocated for breast reconstruction surgery, may take up to a full year or more depending on comorbidities, treatment-related toxicities and infections, and unanticipated side effects.

The complexity of breast cancer treatment, coupled with a patient’s socioecological environment, may manifest in differences in delay and receipt of and adherence to guideline-recommended breast cancer treatment and attendance at clinical follow-up appointments. Specifically, breast cancer treatment disparities have been linked to a combination of patient factors (e.g., clinical characteristics, sociodemographics, and psychosocial issues); provider and health system factors (e.g., provider demographics and communication styles, accredited cancer programs, hospital volume); and contextual factors (e.g., geography, travel time, community-level poverty). For example, compared to white women, minority women (e.g., African Americans and Hispanics) are less likely to receive guideline-concordant breast cancer treatment, including surgery, radiation, chemotherapy, and hormonal therapy. Similarly, women living in communities with high rates of poverty and low education are less likely to receive guideline-recommended chemotherapy and hormonal therapies. A systematic review of adherence to adjuvant hormonal therapy suggests that patients with greater or younger age, increased out-of-pocket costs, follow-up with a general practitioner (vs oncologist), and treatment side effects are less likely to adhere to treatment. Bickell et al reported that patient knowledge and beliefs about treatment benefits, medical mistrust, older age, and comorbidities also are related to underuse of adjuvant radiation, chemotherapy, and hormonal therapy among a sample of breast cancer survivors in New York. Compared to treatment compliance rates in clinical trials that reach almost 90%, Li et al found breast-conserving treatment (lumpectomy, axillary node dissection, radiation therapy, and clinical follow-up appointments) compliance rates in a rural Louisiana hospital reached only 36%, resulting in higher local recurrence rates. Lastly, Magai et al suggest that psychosocial characteristics such as cognition, emotion regulation, and the quality of social relationships are important to breast cancer treatment adherence.

Considering that the efficacy and benefit of varying breast cancer treatments are well established in reducing overall breast cancer morbidity, mortality, and risk of recurrent disease, identifying and intervening on modifiable factors that lead to disparate rates in treatment delay, receipt, and adherence is of utmost importance. One factor that has been studied inadequately as it relates to receipt of guideline-recommended breast cancer treatment and adherence is employment (Figure). As advocated by the Institute of Medicine in its seminal text From Cancer Patient to Cancer Survivor: Lost in Translation, more research is needed on the impact of employment on cancer patients’ treatment decision making, including initiation of and adherence to recommended treatment protocols, breast reconstruction surgery (if applicable), and missed medical appointments. While employment status (i.e., employed, full/part time, unemployed, retired) is often documented in the literature, there is a lack of detailed assessment on the quality of employment, including occupation, job responsibilities, wage, job conditions, formal and informal workplace policies and practices, and employee benefits, that may influence cancer treatment disparities. Though employment has been studied extensively as a risk factor for poor health, including injury and disability, and the impact of a history of cancer on employment outcomes is well documented, exploring employment context as a potential contributor to cancer treatment disparities is a novel and understudied phenomenon. Moreover, a focus on diagnosis and treatment corresponds with what Mullan termed as the first season of cancer survival, the acute phase, which comprises the initial cancer diagnosis and subsequent treatment regimen, compared to longer-term assessments of cancer survivorship.

In reality, not all jobs are created equal and not all cancer patients can be treated alike due to differing employment contexts. This acknowledgement is a noted omission in the literature given broad variation in employment quality across the wage spectrum. Economic and employment trends over the past 3 decades indicate a decline in secure, well-paying industrial jobs and a steady rise in service-related jobs. Unfortunately, service-related positions usually pay low wages and offer little job security, few benefits, and little to no control over work hours. One-quarter to one-third of US workers earn low wages and could easily be classified as “working poor.” This trend is not
going away. Projections from the US Department of Labor indicate that seven out of the ten occupations in which job growth is predicted are in low-wage occupations.24 Low-wage jobs often require nonstandard work hours, offer only part-time employment, and/or provide workers with minimal, if any, form of paid time off, schedule control, flexible work arrangements, and/or health insurance.22,25,26 These business practices make it difficult for working poor individuals to thrive economically and emotionally. This is especially true when a low-wage worker is diagnosed with breast cancer. Without access to paid time off or flexible work arrangements, survivors may continue to work throughout treatment, taking unpaid leave to receive or recover from treatment, thereby comprising their economic security. Likewise, limited access to flexible work arrangements may restrict their availability for medical appointments increasing the risk that women may delay treatment or miss appointments.27

There is no universally accepted definition of low-wage work; however, there are two general approaches based on wages: basic income and social inclusion.28 The basic income approach typically uses the US poverty threshold for a family of four to determine whether a job is considered low-wage. According to this approach, a low-wage job is defined as one in which a full-time, year-round worker earns less than the poverty threshold for a family of two adults and two children. For 2013, a low-wage job paid $11.32 USD per hour or less. In contrast, the social inclusion approach defines low-wage as two-thirds the median wage of men. Using this definition, in 2013, a low-wage job pays $14.45 USD per hour or less. The variation in how low-wage work is measured reflects a broader conversation about the sociopolitical consequences of classifying a higher proportion of US workers as “working poor.”

Regardless of the definition used to characterize a low-wage job, women, blacks, and Hispanics are disproportionately working poor and are overrepresented in occupations that pay low wages, as are workers with low levels of education.22,29 For example, working poor women comprise 8% of the total workforce, whereas working poor men comprise 6% of the total workforce. Blacks and Hispanics are more likely than whites to be among the working poor; specifically, in 2011, 13.3% of blacks and 12.9% of Hispanics were among the working poor, compared with 6.1% of whites. Additionally, employees in occupations that generally do not require high levels of education and are characterized by low earnings were more likely to be among the working poor.22,29 As an example, 13.1% of service workers were classified as working poor in 2011. Service occupations, with 3.3 million working poor, accounted for nearly one-third of all those classified as working poor, and 53% of service occupations are held by women.30

Many occupations that pay low wages typically do not offer medical care benefits or the types of employee benefits and informal supports that may enable breast cancer survivors to take time off for medical appoint-ments, treatment, and time to heal.31 For example, among low-wage earners, 30% have access to employer-sponsored medical care benefits, with 24% actually participating in the benefit. Among service-related jobs, 48% of employees have access to medical care benefits and 33% actually participate. Thirty-six percent of low-wage earners have access to paid sick leave, 53% have access to vacation leave, and only 21% have access to paid personal leave.32 Furthermore, low-wage jobs frequently require nonstandard work hours (ie, a schedule other than Monday through Friday, 8:00 AM to 5:00 PM) and have unpredictable work schedules over which employees have little control.32,33 Employment in shift work, particularly at night, has been identified as a potential carcinogen34; half of all workers in low-wage jobs work in shift work.22 Finally, low-wage jobs seldom provide line supervisors with adequate training on work adjustment and work-life management skills.

Considering these tenuous employment conditions, newly diagnosed, working poor breast cancer survivors may make treatment decisions in the context of work responsibilities, workplace policies, financial needs, and maintenance of health insurance coverage. Additionally, these women may be less likely to take meaningful and clinically needed time off from work following their cancer diagnosis and more likely to continue working during active treatment. This confluence of circumstances may jeopardize receipt of guideline-recommended treatment and overall cancer outcomes if these women delay, fail to initiate, miss, or discontinue their breast cancer treatment and related clinical follow-up appointments due to competing demands of employment.35 Furthermore, several working poor characteristics overlap with patient characteristics associated with previously identified breast cancer treatment disparities (eg, sociodemographic factors, poverty, access to health insurance), underscoring the importance of understanding how employment in low-wage jobs may influence the receipt of cancer treatment. Therefore, the purpose of this narrative review is to critically examine the current literature to further our understanding of how employment context influences treatment choices and adherence—and therefore receipt of guideline-recommended care—among newly diagnosed, working poor breast cancer survivors.

METHODS

In early March 2013, with the assistance of a medical librarian, literature searches were run in the following databases: PubMed’s MEDLINE, the Cumulative Index of Nursing and Allied Health Literature (CINAHL), PsycInfo, Business Source Complete, and Web of Science. The Table provides details of the searches in each database, as well as the number of results retrieved from each search (N=611). The main core of literature was retrieved from MEDLINE using the National Cancer Institute (NCI)/National Library of Medicine special topic query for breast cancer as a base with additional medical subject heading (MeSH) terms and/or key
| Database   | Key Word Search Strategy                                                                 | No. of Results |
|-----------|-----------------------------------------------------------------------------------------|----------------|
| PubMed    | (*Employment*[MeSH] OR "Employment"[Title]) AND ((breast neoplasms[majr] AND human[mh] AND english[la]) OR dcis[t] OR lcis[t] OR ((breast[t] OR breasts[t] OR mammary[t] OR nipple[t] OR nipples[t]) AND ((cancer*[ti] OR carcinoma*[ti] OR adenocarcinoma*[ti] OR malignan*[ti] OR tumor*[ti] OR tumour*[ti] OR neoplasm*[ti]) OR in situ[tj])) | 159            |
| MEDLINE   | (*Employment*[MeSH] AND (breast neoplasms[majr] AND human[mh] AND english[la]) OR dcis[t] OR lcis[t] OR ((breast[t] OR breasts[t] OR mammary[t] OR nipple[t] OR nipples[t]) AND ((cancer*[ti] OR carcinoma*[ti] OR adenocarcinoma*[ti] OR malignan*[ti] OR tumor*[ti] OR tumour*[ti] OR neoplasm*[ti]) OR in situ[tj])) | 15             |
|           | (*Sick Leave*[MeSH] AND (breast neoplasms[majr] AND human[mh] AND english[la]) OR dcis[t] OR lcis[t] OR ((breast[t] OR breasts[t] OR mammary[t] OR nipple[t] OR nipples[t]) AND ((cancer*[ti] OR carcinoma*[ti] OR adenocarcinoma*[ti] OR malignan*[ti] OR tumor*[ti] OR tumour*[ti] OR neoplasm*[ti]) OR in situ[tj])) | 17             |
|           | (*Salaries and Fringe Benefits*[MeSH] AND (breast neoplasms[majr] AND human[mh] AND english[la]) OR dcis[t] OR lcis[t] OR ((breast[t] OR breasts[t] OR mammary[t] OR nipple[t] OR nipples[t]) AND ((cancer*[ti] OR carcinoma*[ti] OR adenocarcinoma*[ti] OR malignan*[ti] OR tumor*[ti] OR tumour*[ti] OR neoplasm*[ti]) OR in situ[tj])) | 30             |
|           | (*patient-provider communication*[title/abstract] AND (breast neoplasms[majr] AND human[mh] AND english[la]) OR dcis[t] OR lcis[t] OR ((breast[t] OR breasts[t] OR mammary[t] OR nipple[t] OR nipples[t]) AND ((cancer*[ti] OR carcinoma*[ti] OR adenocarcinoma*[ti] OR malignan*[ti] OR tumor*[ti] OR tumour*[ti] OR neoplasm*[ti]) OR in situ[tj])) | 10             |
|           | (*Decision Making*[Mesh] AND (*Appointments and Schedules*[MeSH] OR Delay OR Timing)) AND ((breast neoplasms[majr] AND human[mh] AND english[la]) OR dcis[t] OR lcis[t] OR ((breast[t] OR breasts[t] OR mammary[t] OR nipple[t] OR nipples[t]) AND ((cancer*[ti] OR carcinoma*[ti] OR adenocarcinoma*[ti] OR malignan*[ti] OR tumor*[ti] OR tumour*[ti] OR neoplasm*[ti]) OR in situ[tj]))) | 25             |
| CINAHL    | (MM "Breast Neoplasms") AND (MH "Employment")                                          | 42             |
|           | (MM "Breast Neoplasms") AND (MH "Absenteeism")                                         | 5              |
|           | (MM "Breast Neoplasms") AND (MH "Sick Leave")                                         | 12             |
|           | (MM "Breast Neoplasms") AND (MH "Salaries and Fringe Benefits")                       | 2              |
|           | (MM "Breast Neoplasms") AND (MH "Decision Making") AND (Scheduling OR Delay OR Timing) | 7              |
|           | (MM "Breast Neoplasms") AND "patient-provider communication"                          | 9              |
| PsycInfo  | exp Breast Neoplasms AND exp Employment Status                                         | 13             |
|           | exp Breast Neoplasms AND exp Employee Absenteeism                                      | 1              |
|           | exp Breast Neoplasms AND exp Employee Leave Benefits                                   | 1              |
|           | exp Breast Neoplasms AND exp Decision Making AND (scheduling or delay or timing).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] | 5              |
|           | exp Breast Neoplasms AND exp Communication AND patient-provider.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] | 3              |
|           | exp Breast Neoplasms AND exp Salaries                                                  | 0              |
| Business  | "breast cancer" AND DE "DECISION making"                                               | 48             |
| Source    | "breast cancer" AND DE "SICK leave"                                                    | 2              |
| Complete  | "breast cancer" AND DE "ABSENTEEISM (Labor)"                                            | 0              |
| Web of    | "breast cancer" AND DE "COMMUNICATION"                                                 | 7              |
| Science   | "breast cancer" AND DE "WAGES"                                                         | 2              |
|           | "breast cancer" AND DE "WORK"                                                          | 3              |
|           | Breast Cancer[topic] AND employment[title]                                             | 48             |
|           | Breast Cancer[topic] AND absenteeism[topic]                                             | 14             |
|           | Breast Cancer[topic] AND sick leave[topic]                                             | 38             |
|           | Breast Cancer[topic] AND (wages OR salary)[topic]                                     | 40             |
|           | Breast Cancer[topic] AND patient-provider communication[topic]                        | 48             |
|           | Breast Cancer[topic] AND decision making[title] AND (scheduling OR delay OR timing)[title] | 5              |
| Total     |                                                                                       | 611            |
words for relevant topics. The remainder of searches used a combination of subject headings when possible and again key words germane to topics of the current review. Duplicate citations were removed in each database to produce a set of unique results (N=558; MEDLINE, n=216; CINAHL, n=72; PsycInfo, n=22; Business Source Complete, n=60; Web of Science, n=188). Each collection of citations was then exported to the reference managing software EndNote (Version X6; Thomson Reuters, New York) where duplicate citations across databases (n=125) were removed and the inclusion/exclusion coding process began. In addition to the formal database searches, reviewed articles’ reference lists were used to expand our search to include grey literature, books, and governmental and nongovernmental reports. Approximately 150 pieces of published literature were evaluated for this narrative review.

Criteria considered for this review included English-language articles that assessed, either retrospectively or prospectively, the role employment—particularly the context of low-wage jobs—may have had in women’s initial breast cancer treatment decisions, as well as subsequent treatment behaviors (ie, delay, adherence, missed appointments). The range of possible treatment options corresponding to an incident, primary invasive breast cancer diagnosis (Stages 1-4), were informed by NCI’s Breast Cancer Treatment Physician Data Query (PDQ, National Cancer Institute, Bethesda, Maryland).6 In reviewing articles, we searched for breast cancer treatment behaviors using commonly accepted terms and concepts such as (non)initiation, delay, (non)adherence, (non)compliance, (non)receipt, discontinuance, (non)completion, underuse, (non)attendance, cancelled/missed/skipped appointments/follow-up, and refusal/decline. We restricted our search to studies of cancer survivors employed in jobs in the United States because the employment conditions, workplace policies, and social welfare system vary substantially in comparison to Canada or European countries. The national changing economic and employment trends described earlier may not reflect employment circumstances in Canada or Europe, particularly as those countries have had national healthcare policies in place much longer than the United States has. Similarly, these countries’ workers may not be as dependent on employer-based health insurance benefits as are US workers. Lastly, within the concept of employment, we critically reviewed papers for mentions of employment status, working poor, salaries/wages, low income, job types, occupational classifications (eg, pink collar, blue collar, service), benefits, and job conditions.

RESULTS

Through the course of the narrative review process, the authors found no published studies that directly assessed the impact of low-wage employment on newly diagnosed, working poor breast cancer survivors’ receipt of guideline-recommended treatment. The majority of the work and breast cancer literature is focused on return-to-work, employment outcomes, subsequent earnings, absenteeism, and/or work disability among survivors.36-43 The breast cancer treatment literature primarily assesses sociodemographic, clinical, provider, contextual, and/or psychosocial variables as contributing factors to treatment decision making, receipt, and related adherence behaviors.7,10,44-48 In some instances, employment status (ie, employed, unemployed) is used as an explanatory variable in statistical analyses, but the results often are mixed with either no significant associations among employment groups or significance favoring unemployment as a risk factor for nonreceipt or noncompliance, which is to be expected. Job and workplace characteristics, individual occupation, and wages often are absent in these quantitative analyses. Typically, other socioeconomic proxy measures such as insurance status or household income measures are reported. This lack of comprehensive employment data may result from the fact that many cancer treatment receipt and adherence studies use medical record databases, insurance claims, and/or population-based cancer registry data that do not adequately capture occupation, income/wage, and industry-related variables.49,50 Moreover, qualitative studies that collect in-depth information directly from breast cancer patients (and providers) related to treatment decisions and behaviors also fail to capture detailed employment circumstances.45-51

Based on our review, there were only four studies that addressed the impact of work on breast cancer survivors’ treatment behaviors, and they provide little insight into the actual process and/or outcomes of these decisions and behaviors. First, Ashing-Giwa et al conducted focus groups with 102 multiethnic breast cancer survivors in the Los Angeles area to assess their overall breast cancer experiences, with a specific interest in the psychosocial impact of the disease.52 Latina breast cancer survivors (N=26) in particular perceived employment as a major concern during their breast cancer experience; several Latina focus group participants admitted that they did not attend all of their treatment appointments in order to avoid job termination and to continue financially supporting their families.52 Limitations to this study include the lack of reported employment details (ie, employment status, occupation, wage, workplace factors), direct income and education measurements, and further explanation of missed treatment appointments.

Second, as a part of a longitudinal study of newly diagnosed breast cancer patients identified by the Metropolitan Detroit Cancer Surveillance System, Bradley et al interviewed 201 women to examine the effects of employment-contingent health insurance on married women’s labor supply after a breast cancer diagnosis.13 Overall, results suggest that women with employer-provided health insurance were more likely to stay attached to the labor market compared to women with health insurance provided by their
spouse’s employer. Interestingly, several of the women participating in the study shared with the study interviewers that they quit their treatment due to job interference. While this finding was anecdotal to the overall study, it raises important questions about the influence of health insurance coverage and “job lock” and deserves further exploration by employment context, especially low-wage work. In this study, two-thirds of the women were classified as white collar workers and more than 60% of the survivors had a household income of less than $75,000 USD.

Third, the 2006 Breakaway from Cancer national online survey conducted by Fleishman-Hillard Research in collaboration with the National Coalition for Cancer Survivorship and The Wellness Community examined “the effects of cancer on the careers and workplace environment for both cancer patients/survivors and caregivers throughout the United States.” The survey was conducted in October 2006 with 504 cancer survivors and 500 caregivers. Survey results showed that 26% of cancer survivors who were employed during at least part of their treatment period indicated that they skipped or postponed a scheduled treatment due to conflict with a work obligation; half of this group further explained that this situation happened three or more times. Notably, those with jobs perceived as stressful (29%) were more likely to miss treatment due to work compared to those with less stressful jobs (13%); this same pattern was evident for treatment due to conflict with a work obligation; half of this group further explained that this situation happened three or more times. Notably, those with jobs perceived as stressful (29%) were more likely to miss treatment due to work compared to those with less stressful jobs (13%); this same pattern was evident for those reporting that their job was physically demanding.

The purpose of the qualitative study was to understand how female breast cancer survivors employed in low-wage jobs manage the treatment and recovery process within the context of their work, family, and other life responsibilities. At the time of diagnosis, the mean hourly wage for the study sample was $11.25 USD (SD=2.18); 18 of the 24 (75%) women had household incomes of less than $40,000. Retail, healthcare and social assistance, manufacturing, and food and accommodation services were the most commonly represented industries (n=19). More than half of the women (n=13, 54%) continued employment during their cancer treatment due to financial stress, fiscal necessity, lack of paid time off, and fear of losing their health insurance. None of the study participants indicated that they made explicit treatment decisions or missed treatment appointments due to work. However, women provided detailed explanations of how they managed the competing demands of work and cancer treatment, concurrent with medical and economic challenges. For example, a bookkeeper for a construction company was given only 9 days of paid time off for a double mastectomy and multiple rounds of chemotherapy. Two women (store clerk and youth counselor) described how they worked throughout their entire treatment in order to maintain their health insurance, switching from day shifts to later shifts in order to attend chemotherapy appointments scheduled during daytime hours. One woman working as a certified nursing assistant wanted to have breast reconstruction surgery, but financially, she could not afford to take additional time off of work and thereby forewent surgery. Several women described going to radiation appointments early in the morning before work or during their lunch hour. An administrative assistant explained that she scheduled her chemotherapy appointments at the end of the workday so that (1) she would miss only a few hours of work and (2) if she were to get sick from the chemotherapy, it would occur the following day, which was her vacation day. One woman who worked as an activities director at a nursing home delayed her treatment initiation as she weighed the economic costs of the prescribed treatment against the treatment itself due to a proposed reduction in work hours (and therefore wages and health insurance benefits). Finally, a retail clerk did not attend follow-up postmastectomy or mammography appointments due to cost concerns. Overall, results indicated access to paid time off, family medical leave, and short-term disability; understanding of health insurance benefits; and work environments with supportive supervisors and coworkers appeared to influence treatment-related behaviors. Limitations of the Vanderpool study include a convenience sample of women from Kentucky and lack of objective medical follow-up to assess cancer outcomes and lack of objective information about employment characteristics.

It is also worth noting that during the course of the review, we found several articles wherein authors included a discussion of the impact of work on breast cancer treatment decisions and adherence even though their studies focused on other cancer and employment outcomes. For example, Hassett et al’s article on the influence of chemotherapy and radiation on breast cancer survivors’ employment the year following diagnosis concludes with a discussion that considers treatment decision making in the context of significant work consequences (eg, loss of health insurance coverage) and the modest benefit of chemotherapy in some clinical situations. Blinder and et al’s 3-year longitudinal study of return-to-work in low-income non-Latina and Latina breast cancer survivors in California advocates for consideration of job responsibilities such as heavy lifting and manual labor in surgical decisions. Lastly, Bradley et al have published multiple studies addressing absenteeism, job lock due to employer-contingent health insurance coverage, and return-to-
more aggressive treatment, increased rates of morbidity, and lower quality of life. This confluence of circumstances may further exacerbate cancer treatment and survivorship disparities observed in the United States. Similarly, many of the complexities associated with low-wage employment and breast cancer also may be relevant to other chronic disease conditions such as diabetes, arthritis, and heart disease.

Researchers have previously acknowledged that breast cancer treatment and its related physical and mental side effects may threaten patients’ ability to earn an income and maintain health insurance benefits. It is reasonable to assume this situation may be magnified among working poor survivors who choose to forgo or delay care due to potential job, wage, and benefit losses (for themselves, directly; for their households, indirectly); inability to attend numerous and lengthy treatment and follow-up medical appointments; and fear of side effects and additional out-of-pocket expenses. This struggle between cancer survival and economic survival may result in poorer quality of life, including functional, emotional, and affective well-being.

It is well documented in the literature that both oncology care providers and patients experience difficulties in communicating with one another about survivors’ working circumstances. Bradley et al suggest that breast cancer treatment decisions are most likely provider-driven, failing to take into account the patient’s work circumstance and demands, which may jeopardize treatment compliance and recovery. However, if providers and patients are willing to discuss possible work-treatment conflicts throughout the diagnosis-treatment continuum, surgical, radiotherapy, and/or chemotherapy recommendations could potentially be adapted (but with respect to achieving full survival benefit), allowing patients to continue working and attend treatment appointments, thereby increasing overall adherence and avoiding income and benefit losses. In addition, it should be recognized that many of these patients also will need assistance managing acute and long-term treatment side effects if they continue to work throughout the course of care. Patient-centered communication and care, incorporating shared decision making, seems well-suited for newly diagnosed breast cancer patients employed in low-wage jobs.

Frazier et al outlined several ways in which the cancer care team can be involved in helping patients manage cancer and employment conflicts, including asking about employment concerns at every appointment, inquiring about patients’ benefits and employer policies, brainstorming ways to manage competing work-treatment demands, and providing informational and emotional support. Moreover, healthcare systems may consider extended and weekend clinic hours for both treatment and follow-up medical appointments, providing training to cancer center support staff (eg, patient navigators, social workers, billing staff,
nurses) to help patients with employment-related questions, providing patients with strategies for managing fatigue and other symptoms while working, and evaluating the inclusion of employment concerns in breast cancer treatment decision aids.

Employers also play an important role in helping women manage work-treatment conflicts. For example, employers may consider offering flexible work schedules and paid leave, as well as training supervisors on how to manage employees with cancer as strategies to reduce employment barriers to treatment adherence. Other employer-sponsored programs also may assist working poor women in making treatment decisions and adhering to treatment recommendations, including physical and psychological rehabilitation programs and cancer disease management plans. Finally, lack of paid leave as a reason for missing appointments among working poor cancer survivors highlights the need for federally sponsored paid-leave legislation.

In addition to the practical, policy-oriented strategies described above, we highlight several ideas for incorporating survivors’ employment context into future breast cancer treatment decision making and compliance research. For example, Neugut et al recently completed the multisite, 5-year Breast Cancer Quality of Care Study (BQUAL) to determine causes for noncompliance with breast cancer adjuvant chemotherapy and hormonal therapy. Though their proposed bio-psychosocial model illustrating the causes of treatment noncompliance includes important factors such as physician characteristics, patient-provider communication, provider referrals, biology, and patient characteristics that are known to influence treatment receipt, it does not include an explicit variable focused on employment. Longitudinal studies such as BQUAL, with diverse geographic coverage and a large sample of racially diverse working women (42%), serve as prime opportunities to assess patients’ employment circumstances and how they may influence treatment decisions. Similarly, intervention studies focused on improving breast cancer treatment compliance rates through strategies such as structured patient navigation and peer education are also appropriate for collecting employment-related data. Guided by research in the United Kingdom focused on colorectal cancer, we also recommend exploring the types of questions (if any) oncology providers and their staff members ask working poor women about their jobs, whether survivors’ work schedules are factored into treatment plans, what type of information and resources are used with working breast cancer patients, and barriers/facilitators to work-treatment communication between oncology care providers and patients.

In the work and cancer research field, a recent review by Feuerstein et al that focused on work in cancer survivors identified health and well-being, symptoms, function, work demands, work environment, policies, procedures, and economic factors as key areas in a model for cancer and work practice and research. We propose receipt of guideline-recommended cancer care be added to such a research agenda. To date, much of the focus has been on the unidirectional impact of breast cancer and its treatment on employment rather than a consideration of a bidirectional relationship, which also suggests employment may impact receipt of guideline-recommended breast cancer treatment. We recommend that future cancer-work studies explore this bidirectional relationship, particularly among women identified as working poor. A longitudinal study, ideally with a large population-based sample, would allow prospective data to be collected at regular points to describe not only treatment decisions and their context, but also important socioecologic, employment, work productivity, and quality-of-life measures.

A mixed-methods approach, including collection of objective and subjective data, would provide a comprehensive assessment of women’s breast cancer and work experience over time, including motivation for continued employment. This type of study could highlight points for intervention at the patient, provider, employer, and policy levels.

LIMITATIONS

To our knowledge, this is the first review of the literature on the implications of low-wage employment on treatment decisions and adherence among working poor breast cancer survivors. Like all narrative reviews, this one has several limitations. First, this is not a systematic or exhaustive review of the literature; therefore, we may have missed articles during our search despite our efforts to include the most relevant research. Secondly, authors may have measured detailed job characteristics and work context within studies that we reviewed but did not report these findings in the published literature. Third, though our focus on breast cancer was intentional, it may have been too narrow to fully understand the state of knowledge on the effect of employment on cancer survivors’ treatment decisions and adherence. Nonetheless, we felt that women, many of whom are a part of the changing employment trends toward low-wage work, and breast cancer, the most commonly cancer among women in the United States, were an important, targeted focus for this narrative review. Fourth, we also realize there is more to breast cancer treatment disparities than patients’ employment context. For example, in addition to important sociodemographic, clinical, provider, and community variables, poor mental health has been linked to poor treatment compliance. Anxiety and depression due to financial strain, job-related stress, and breast cancer treatment could be a contributing factor to decreases in treatment adherence behaviors among the working poor. Finally, our narrative review included only studies of employed cancer survivors in the United States. In the future, we will include studies conducted by researchers in Europe and other western countries. A crossnational comparison of work-treatment conflicts among working poor breast cancer survivors could illuminate similarities.
and differences by organizational and policy context and provide insights into how employers, healthcare delivery systems, and oncology care providers in the United States could improve the cancer treatment experiences of these at-risk patients.

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CONCLUSIONS

The goal of our narrative review was to address the confuence of breast cancer and low-wage employment among the working poor, a population of women at risk for poor cancer outcomes and economic insecurity, which may perpetuate the cancer disparities cycle. The development of new knowledge about how working poor breast cancer survivors make treatment decisions will inform future studies and interventions that could lead to improved treatment and employment outcomes, better patient-provider employer communication, higher quality of life, and reductions in cancer disparities. Indeed, helping working poor breast cancer survivors make informed decisions about treatment and employment; enhancing employers’ knowledge about breast cancer and ways to create supportive work environments; and engaging oncology providers to work with their employers to successfully balance competing treatment and employment demands should be a priority research area for women’s health.
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