Published in final edited form as:
Cancer Epidemiol Biomarkers Prev. 2020 March ; 29(3): 616–624. doi:10.1158/1055-9965.EPI-19-0352.

Insurance coverage, employment status and financial well-being of young women diagnosed with breast cancer

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Abstract

Background: The economic cost of breast cancer is a major personal and public health problem in the United States. This study aims to evaluate the insurance, employment, and financial experiences of young female breast cancer survivors and assess factors associated with financial decline.

Methods: We recruited 830 women under 40 years of age diagnosed with breast cancer between January 2013 and December 2014. The study population was identified through California, Florida, Georgia, and North Carolina population-based cancer registries. The cross-sectional survey was fielded in 2017 and included questions on demographics, insurance, employment, out-of-pocket costs, and financial well-being. We present descriptive statistics and multivariate analysis to assess factors associated with financial decline.

Results: Although 92.5% of the respondents were continuously insured over the past 12 months, 9.5% paid a “higher price than expected” for coverage. Common concerns among the 73.4% of respondents who were employed at diagnosis included increased paid (55.1%) or unpaid (47.3%) time off, suffering job performance (23.2%), and staying at (30.2%) or avoiding changing jobs (23.5%) for health insurance purposes. Overall, 47.0% experienced financial decline due to treatment-related costs. Patients with some college education, multiple comorbidities, late stage diagnoses, and self-funded insurance were most vulnerable.

Conclusions: The breast cancer diagnosis created financial hardship for half the respondents and led to myriad challenges in maintaining employment. Employment decisions were heavily influenced by the need to maintain health insurance coverage.

Impact: This study finds that a breast cancer diagnosis in young women can result in employment disruption and financial decline.

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The authors declare no potential conflicts of interest.

Keywords

Breast Cancer; Financial Toxicity; Insurance; Young Women; Employment

INTRODUCTION

The economic cost of cancer is a major personal and public health problem in the United States.[1–3] Expenditures on cancer-related health care in the United States were about $87.8 billion in 2014.[3] The economic burden resulting from lost productivity, medical costs, and lasting effects of treatment impact the quality of life of cancer patients and has a significant impact on the population.[2] Cancer patients are more likely than individuals without a history of cancer to report inability to work,[4–6] and experience employment disability, including reduced hours or taking time off work due to ill-health.[4–7]

The cost of cancer care is anticipated to continue to rise because of the increasing number of cancer survivors[8] and the high cost of new cancer treatments.[4,9] Cancer patients will likely bear part of these rising costs through wide-ranging insurance premium increases[10,11] and out-of-pocket (OOP) costs when seeking care.[12] This financial strain has been associated with bankruptcy filing,[4,13,14] suboptimal patient outcomes[15] and increased risk of mortality.[16] The high cost of cancer is gaining attention,[4] and the Institute of Medicine Report on Delivery of High-Quality Cancer Care specifically included cost as a quality measure.[17]

Young patients diagnosed with cancer, such as breast cancer, may be more vulnerable and likely to experience substantial financial distress[18,19] as young adults are less likely to have insurance than older patients.[20] Furthermore, younger women are more likely to be diagnosed with late stage disease that requires more intensive treatments, and they may have additional concerns, such as preserving fertility.[21,22] There is also some evidence to suggest that young women experience substantial psychological distress, which can impact their ability to remain productive and stay employed.[23]

The economic and financial impacts of breast cancer among women as a whole group have been studied.[4,10,12,13,19,24] However, these studies did not explore the economic and financial impacts of a breast cancer diagnosis specifically among young women, who may experience different financial and employment impacts than older women.[10] Results from existing studies on breast cancer patients of all ages show significant medical expenditures and productivity losses, financial hardship, and changes in employment and work productivity.[4,10] These studies have enhanced the understanding of the economic implication of cancer survivorship; however, the economic consequences of breast cancer diagnosis among young women have remained relatively unexplored. The objective of this study is to evaluate the insurance, employment and financial experiences of young (age ≤ 39 years) female breast cancer patients and assess factors associated with any potential financial decline.

MATERIALS AND METHODS

Study Sample

We selected women who received a breast cancer diagnosis between the ages of 18 and 39 years from the state cancer registries in California, Florida, Georgia, and North Carolina. These states were chosen as they have relatively large numbers of young breast cancer patients across all major racial/ethnic groups. We included women who were 1) diagnosed with ductal carcinoma in situ (DCIS) (D05.1; 8500/2) or invasive breast cancer (C50; 8500/3) between January 2013 and December 2014 and 2) alive at the time of data extraction, as determined by state cancer registries, state death records, and the National Death Index, a national database compiled by the National Center for Health Statistics (ICD-10; ICD-O-3).

Questionnaire Design and Content—To develop a comprehensive survey instrument that is relevant to breast cancer patients targeted for this study, we placed special emphasis on questions that had been previously tested and fielded among breast cancer patients.[10, 25–27] Questions were both dichotomous and multiple response, with several questions allowing the subject to provide additional details. To reduce language barriers, the instrument was available in both English and Spanish. We performed cognitive testing with nine women in English and eight women in Spanish to further improve the accessibility of the instrument.

The final instrument, which was developed in both paper and Web formats, consisted of 66 questions and could be completed in 22 minutes (see supplementary material for questionnaire). Six questions on insurance sought to characterize the extent of coverage during breast cancer diagnosis and treatment, as well as the respondent's current insurance status. The questions on insurance status aimed to identify not only the *type* of insurance coverage but also *changes* in coverage over time. Eleven questions covered topics such as OOP payments related to co-payments and deductibles, financial decline, and cancer-related expenses. The financial burden section evaluated broad privations related to the patient's medical expenses. To this end, we asked the respondent to estimate their breast cancer-related OOP medical expenses including copayments, hospital bills, and medication costs. Thirteen questions pertained to job-related topics like benefits and employment status and whether survivors had worked for pay at the time of their diagnosis. Those who were employed were asked to report on benefits that were available, such as paid sick leave, disability, and accommodations, like scheduling flexibility. Ten questions addressed access to treatment and seven focused on quality of care. The remaining questions addressed the subject's symptom information, demographic data, and cancer history.

Comorbid conditions were assessed based on a listing of 34 conditions that were reported, which included cardiovascular conditions, circulatory problems, vision issues, depression, migraines, back problems, arthritis, and thyroid problems (see supplementary material for questionnaire). We report the proportion with no conditions, one condition, or two or more conditions. Stage at diagnosis was collected through self-report in the survey based on the American Joint Commission on Cancer.[28] We used the treatment-oriented survey questions to create new, cancer-specific treatment variables including surgery, chemotherapy, radiation therapy, and hormone therapy.

Additionally, we created variables for insurance and employment status at the time of diagnosis and at the time of the survey. To catalog the financial impacts of breast cancer we collected details on two sets of expenditures. The first category was OOP treatment costs, which include copayments, hospital bills, deductibles, and medication costs. The second category, “other costs,” included indirect medical costs that were not covered by insurance. Examples of costs falling under this category include travel costs, parking, and child/elder care. For both categories, the respondent was asked to report all costs in the past 12 months to allow us to capture complete costs related to cancer treatment.[29] Finally, respondents were asked to indicate the level of financial decline due to their breast cancer diagnosis. Those who responded “somewhat,” “quite a bit,” and “very much” were identified as reporting financial decline.

Data Collection—We obtained contact information for breast cancer patients meeting the study selection criteria from the state registries in California, North Carolina, and Florida. Due to registry operating procedures, the Georgia Comprehensive Cancer Registry could not share address information. For all cases identified in Georgia, the cancer registry conducted the mailings following standardized procedures. The first mailings were initiated in March 2017. A total of 3,659 young women were selected for the study and contacted by mail; of those, 2,927 were alive and had deliverable addresses. The initial mailing included a cover letter, survey instruments in English and Spanish, and instructions for accessing the Web version of the survey. Respondents could choose to complete either the paper survey or the Web version. We offered a $10 gift card as an incentive to those who completed and returned the survey. Reminder letters were sent to individuals who had not responded within 2 weeks, and a complete mailing (with the survey instruments) was sent to those who had not returned the survey within 2 months.

At the end of the data collection period in July 2017, 830 women returned completed surveys, yielding a response rate of 28.4%. All surveys completed online were automatically uploaded into a dataset, while paper survey responses were scanned, interpreted, and verified using TELEform software, an automated data collection system (Cardiff Software, San Marcos, CA). Ultimately, the Web and mail responses were combined into a single dataset, which was used to assess the data quality and conduct statistical analyses.

Approval for data collection was received from the Office of Management and Budget (No. 0920–1123).

Statistical Analysis—We created demographic and clinical variables to facilitate the analysis of insurance and employment status. We report age in two groups (18–34 years and 35–39 years); we placed women 35–39 in a separate category, as we hypothesized that these women were likely to be more established in their careers and better able to cope with breast cancer-related financial impacts. We also report educational attainment based on years of schooling, marital status, and race/ethnicity categories. In the survey, participants were instructed to select as many race categories as applied. Those who selected “Hispanic” regardless of race were categorized as “Hispanic.” All other variations of more than one racial variable resulted in a coding classification of “other.” Our final race/ethnicity categories were “non-Hispanic white,” “non-Hispanic black,” “Hispanic,” “non-Hispanic Asian/Pacific Islander,” and “non-Hispanic other.”

To adjust for potential nonresponse bias, we created and applied survey weights to the survey responses. The survey weight for an individual respondent was equal to the mean response rate divided by the propensity-predicted response rate for that individual. The purpose of this weighting was to make our survey results representative of all women in the four state cancer registries. We conducted a response propensity analysis and determined that, although response rates were similar in each of the four states, women from racial/ethnic minority groups (Hispanic, non-Hispanic black, or non-Hispanic Asian/Pacific Islander) were less likely to complete the survey than non-Hispanic whites. The adjustment process gives a higher weight to the responses of minority women and lower weight to responses provided by non-minorities and makes minor changes for small differences between the states. For example, Hispanic women comprised 21% of the original registry population, but only 14% of the survey respondents. After applying the sample weights, Hispanic women represented 21% of the population.

We present both descriptive statistics and multivariable analysis to explore insurance status, employment, and the financial well-being of young women diagnosed with breast cancer. In our descriptive analysis, we present variables that impact the respondents’ decision-making process and the impact of cost on treatment. Additionally, we present the proportion of respondents who had to forgo specific types of treatment due to cost. We evaluated the association between the respondents’ characteristics at diagnosis and financial decline using logistic regression. Our dependent variable was financial decline; independent variables of interest included age, race/ethnicity, marital status, educational level, comorbid conditions, insurance status, and employment status, American Joint Commission on Cancer (AJCC) cancer stage, and U.S. state of diagnosis. All analysis was conducted using STATA.[30] This study was approved by institutional review boards at RTI International, Centers for Disease Control and Prevention, and each of the four states that provided cancer registry data.

RESULTS

Table 1 summarizes the clinical and racial/ethnic characteristics of the 830 respondents in the survey. The majority of women (60.5%) were 35–39 years of age, placing them in the older age group. The effect of this skewed age distribution can be seen in other demographic variables, such as marital status and educational attainment. Non-Hispanic whites comprised the largest racial/ethnic group at 48.1%, followed by Hispanics (23.9%) and non-Hispanic blacks (17.9%). The survey respondents were generally well-educated and married; over half (57.4%) held bachelor or graduate degrees, and 71.1% were married or in a domestic partnership. In terms of clinical characteristics, 77.7% of the respondents had at least one comorbid condition, with 57.5% reporting two or more. Overall, 31.5% were diagnosed at stages 0 and I, while 35.4% were diagnosed at stage II, and 28.3% were diagnosed at stages III and IV. Surgery (95.2%) was the most commonly cited treatment category, followed by chemotherapy (76.7%), radiation therapy (62.8%), hormone therapy (62.1%), and immunotherapy (25.1%). Breast cancer patients who were diagnosed in California (32.7%) and Florida (29.7%) made up the majority of the sample. Respondents who were diagnosed in Georgia (19.1%) and North Carolina (18.6%) comprised a smaller proportion of the study population.

In Figure 1, survey respondents are categorized according to their insurance coverage status in the 12 months prior to the survey. The majority (71.3%) of respondents were insured continuously by the same plan for the entire 12 months. An additional 21.2% were insured continuously but switched plans during the year. Only 5.8% of respondents were uninsured for any period during the year leading up to the survey; of these, 4.4% were uninsured for 1–11 months, and 1.4% were uninsured for all 12 months. Figure 2 summarizes insurance-related barriers faced by the young women during the 12-month period prior to the survey. Overall, 9.5% of respondents reported paying a “higher price than expected” for insurance coverage and another 7.3% lost their coverage. Additionally, 3.3% could not afford health insurance, 1.8% had a specific condition excluded from their coverage, and 1.1% were turned down when they tried to buy health insurance.

Table 2 summarizes the employment impacts that the young women experienced due to their breast cancer diagnosis and treatment. Overall, almost three quarters (73.4%) of respondents were employed at the time of diagnosis. Of these, 64.9% worked for a private or nonprofit organization; 21.0% worked for a branch of federal, state, or local government; and 7.5% were self-employed. Many respondents had access to employment accommodations during their treatment, such as paid sick leave (55.1%), flexible scheduling (49.4%), disability (40.5%), unpaid sick leave (36.8%), and flexible location (21.5%). However, 10.9% of women did not have any of these work benefits. Most (66.8%) women rated their employers “very supportive,” and only 5.5% categorized them as “unsupportive.” The most commonly cited breast cancer-related employment impacts were taking paid (55.1%) or unpaid (47.3%) time off and experiencing job performance issues (40.4%). Additionally, many young women chose to stay in a job (30.2%) or avoided changing jobs (23.5%) in order to maintain their health insurance coverage.

In Table 3, we present the financial impacts of breast cancer treatment-related OOP treatment costs and other nonclinical costs for the 12-month period immediately prior to the survey. In terms of OOP treatment costs, the sample was generally evenly segmented, with 27.7% spending less than $500 dollars, 27.9% spending $500–$2,000, 18.7% spending $2,001–$5,000, and 17.0% spending $5,001–$10,000. Most respondents (58.6%) spent less than $500 on other costs, with 24.7% spending $500–$2,000, 9.2% spending $2,001–$5,000, and 3.9% spending $5,001–10,000 on other costs. For both OOP treatment costs and other costs, the most common funding method was the use of personal funds (81.5% and 86.0%, respectively), followed by informal borrowing from family and friends (22.9% and 20.3%, respectively). Although respondents reported similar rates of credit card debt for both OOP treatment costs (21.7%) and other costs (19.1%), fewer respondents reported that other costs caused them to postpone paying bills (12.8%) or delinquent with medical bills (13.4%) compared to OOP treatment costs (18.2% and 22.7%, respectively).

As reported in Table 4, 47.0% of the women reported a financial decline due to their breast cancer diagnosis. In multivariable analysis, statistically significant differences were observed in the categories of race/ethnicity, educational level, comorbid condition, stage at diagnosis, and insurance status at diagnosis. Non-Hispanic other women were more likely (odds ratio [OR]=2.58) to experience financial decline due to breast cancer compared with non-Hispanic white women, but there were no significant differences across other race/ethnic groups. Women with college experience that did not culminate in a degree were also more likely (OR=1.58) to report a decline in their financial situation compared with those with a college or post-graduate degree. Women with one (OR=1.80) and two or more (OR=2.80) comorbid conditions were more likely to have breast cancer-induced financial hardship compared to those with no comorbid conditions. Similarly, women with stage III and IV cancers (OR=1.76) were more likely than those diagnosed at earlier stages to see a deterioration in their financial situation. Self-insured women were more likely (OR=2.29) to experience financial decline due to breast cancer compared with those with employer-based insurance coverage.

DISCUSSION

Our study provides evidence that among recently diagnosed, young breast-cancer patients, only a small proportion experienced significant challenges with health insurance coverage. The employment decisions of the women in our study were heavily influenced by the need to maintain health insurance coverage, and the cancer diagnosis led to a plethora of other employment effects, like paid leaves of absence (55.1%) and job performance issues (40.4%). In fact, a 2009 study[6] found that among employed respondents, those undergoing cancer treatment missed 22.3 more workdays each year than those without cancer.

Almost half (47.0%) of the women reported financial decline due to their breast cancer diagnosis. Women who reported having a non-Hispanic other race/ethnicity, an incomplete college degree (i.e., “some” college education), a history of comorbidities, stage II or higher at diagnosis, or a self-funded insurance policy disproportionately reported worse financial outcomes compared to those without these characteristics. The results from this paper fill an important gap in the literature on the financial burden experienced by young breast-cancer patients and add to the growing evidence[4,5,10,12,13,19,31] on the economic burden of cancer. Other researchers[6] have found that being treated for cancer does increase annual OOP medical expenditures—on average by $1170, compared with not having cancer.

Although most young breast-cancer patients were insured, 1 in 10 reported paying more than expected for health insurance during the 12-month period prior to the survey, and a smaller percentage lost coverage, could not afford insurance, or were denied coverage. This suggests variability in insurance coverage and benefits, reinforcing similar findings in the literature on cancer survivorship.[13] Lack of insurance coverage is a major barrier to receipt of appropriate health care along the cancer continuum, from cancer prevention, early detection, treatment, to survivorship, and palliative care.[32–35] A recent study showed an increase in the number of women screened for breast cancer and an earlier stage at diagnosis among insured non-elderly (18–64 years) women compared to those who were uninsured.[36] Other studies have reported an association between lack of insurance with receipt of suboptimal care, late stage diagnosis and poor survival after a cancer diagnosis.[35,37,38] Although our multivariable analysis did not find a relationship between lack of insurance and financial decline, this does not preclude the possibility that this group may be at risk for suboptimal clinical outcomes.

Like findings from earlier research,[39] results from this study demonstrate that many women undergoing cancer treatment continue to work full time to maintain employer-sponsored health insurance. Our findings further suggest that while the majority of the young breast cancer patients had employment support (sick leave, disability benefits, or flexible schedule) to accommodate cancer treatment and recovery, a breast cancer diagnosis created numerous work-related challenges. These include the quality of work performed (poor job performance), anxieties about health insurance (continued working and avoided changing jobs to keep health insurance coverage), employment disability (taking paid or unpaid time off, retiring early, lost job), and the need for more money (increasing work hours to cover medical expenses). Prior studies support these findings.[31,40] Jagsi,[31] Hasset,[41] Hoyer,[42] and Blinder[24] have documented decreased work time (taking paid or unpaid leave) and job discontinuation among breast cancer patients receiving treatment. Other studies [4–6] have reported that cancer patients are unable to work because of their illness or experience employment disruption. Cancer patients often have to make employment adjustments as a consequence of their cancer diagnosis, and many experience loss of productivity.[13,43] Furthermore, a meta-analysis by De Boer et al.[44] identified higher rates of unemployment among breast and colorectal cancer patients compared with those without cancer. Studies have also shown that women who experience adverse effects from breast cancer treatment, especially lymphedema, are more likely to face challenges with employment.[45,46]

Employment-based insurance is the main source of health insurance coverage for adults aged <65 years.[4] Losing a job or reducing the number of hours worked may limit access to health insurance; this along with reduced earnings could result in financial hardships.[4] This is particularly a concern among young patients who do not receive other benefits, such as Medicare or Social Security, to help with potential financial decline after a cancer diagnosis. In terms of employment accommodation, we found that many women had employment benefits such as paid sick leave, flexible scheduling, disability, unpaid sick leave, and flexible location. Women with breast cancer who work for accommodating employers have a higher job retention rate.[47]

In addition to affecting employment outcomes directly, a breast cancer diagnosis among young women could limit access to important resources, such as adequate survivorship care. In our study, we found that the breast cancer diagnosis resulted in substantial financial decline in about half the patients, and additional research is required to assess whether this might limit their ability to afford the OOP payments related to follow-up care. Additionally, research is also required on whether ensuring access to lifelong risk-based follow-up care and improving adherence to survivorship care plans can help improve the quality of life of young breast cancer patients. Prior studies support the findings of significant negative financial implications of a cancer diagnosis on all cancer patients[4,10,12,40,48,49] and worse deteriorating financial conditions for younger patients.[5,13,14,50]

Evidence exists that pre-diagnosis employment status and financial conditions are important in understanding financial strain,[51] and young women who are in the early stages of building their careers may be more acutely affected. High OOP cancer-related costs have been associated with limited access to necessary medical care and preventive services,[12] forgoing and delaying medical[4,12,52] and cancer care,[53] and lesser adherence to cancer treatment.[54,55]

Additional research is needed to identify appropriate employment modifications that employers can consider in seeking to aid in the transition and retention of young breast cancer patients in the workplace. Approaches such as flexible work hours, supportive medical leave policies, and part-time positions could help maximize the employment opportunities and provide continued access to health insurance coverage. Recent qualitative work[56] surrounding recommendations for ameliorating the economic burden caused by cancer suggests four major themes: 1) expanding affordable insurance and insurance coverage, 2) domestic support, 3) financial assistance, and 4) employment-preserving policies. Additionally, employment-preserving policies could be implemented to support women to retain their employment while undergoing and recovering from cancer treatment.[56]

In our study, more than 80% of women used personal funds and more than 20% borrowed from family and friends to cover OOP cancer-related costs. Credit card debt is also likely to increase among cancer patients.[57] The combination of the negative effect of high OOP payments on the health of cancer patients and the financial burden from cancer treatment has been defined[12,58] as “financial toxicity.” Nekhlyudov[13] reported that 30% of cancer patients or their families borrowed money or went into debt because of cancer.

Although physicians often discuss the toxicity of cancer treatment, these conversations are framed mainly in terms of the side effects of treatment.[12,58] Financial hardship or toxicity resulting from breast cancer diagnosis has been linked to poor quality of life of patients and their families.[4,10,12,59] Medical debt due to a cancer diagnosis has been attributed to bankruptcy filings,[36] with a higher risk of bankruptcy more common among non-elderly patients.[12,14] This could be explained in part because non-elderly patients have greater variations in employment, income, health insurance status, and personal assets.[12,14] Cancer patients sometimes have to decide between settling medical bills or paying for basic necessities.[12,58]

Given the negative implications of the financial burden on cancer treatment and survivorship care,[4] patient-physician discussions on affordability can inform treatment decisions[4,58,60] and help reduce patient anxiety.[4,61,62] Even though patients and physicians understand the importance of having discussions about the economic burden of cancer, such conversations seldom occur.[63] This communication-based strategy might be pursued as part of a multipronged approach that also includes policy and programmatic solutions to high cost.

The strengths of this study are the unique focus on young breast cancer patients, the diversity of the sample, and the identification of young breast-cancer patients from multiple, population-based cancer registries with large numbers of young breast cancer patients. This study adds to a growing body of literature that quantifies the unique barriers that arise from racial and ethnic minorities being disproportionately diagnosed with breast cancer at younger ages than non-Hispanic whites.[64] Additionally, we used multiple measures of economic impact (insurance, employment, and financial experiences) of breast cancer diagnosis in young women and identified the most financially vulnerable young breast-cancer patients.

The study has a few limitations. First, the study is based on data from four states; thus, the results may not be generalizable nationwide. We attempted to address our overarching concerns about sample generalizability, specifically pertaining to racial/ethnic group, by applying sample weights. However, we recognize that other concerns remain—namely, that economically disadvantaged, unemployed, or sicker women may have been less likely to respond.

Second, more than 90% of our respondents were insured, and thus their responses—particularly concerning insurance barriers—may not be representative of all young breast cancer patients. Third, only about a quarter of those targeted for the survey responded, which could have introduced nonresponse bias. Although we used weights to adjust for this potential bias, the results may not be representative of all young women with breast cancer in these four states or nationally.

Our results are also based on self-report; thus, social desirability bias could have prevented respondents from reporting on undesirable facets of their financial circumstances. Although we believe that the inclusion of direct and indirect costs was an important strength of our study design, we realize that a 12-month recall of OOP costs could suffer from recall bias and, in many cases, may underestimate the amount spent.

Despite these limitations, we provide evidence that a breast cancer diagnosis among young women can result in employment disruption and financial decline. Additionally, these findings indicate the need for obtaining and maintaining comprehensive health insurance coverage of young cancer patients to ensure that they can fully engage in their cancer treatment and make a full recovery to continue to function as productive members of society.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding support for RTI staff was provided by the Center for Disease Control and Prevention (CDC) (Contract N0. 200–2008-27958 Task 48, to RTI International).

The findings and conclusions in this manuscript are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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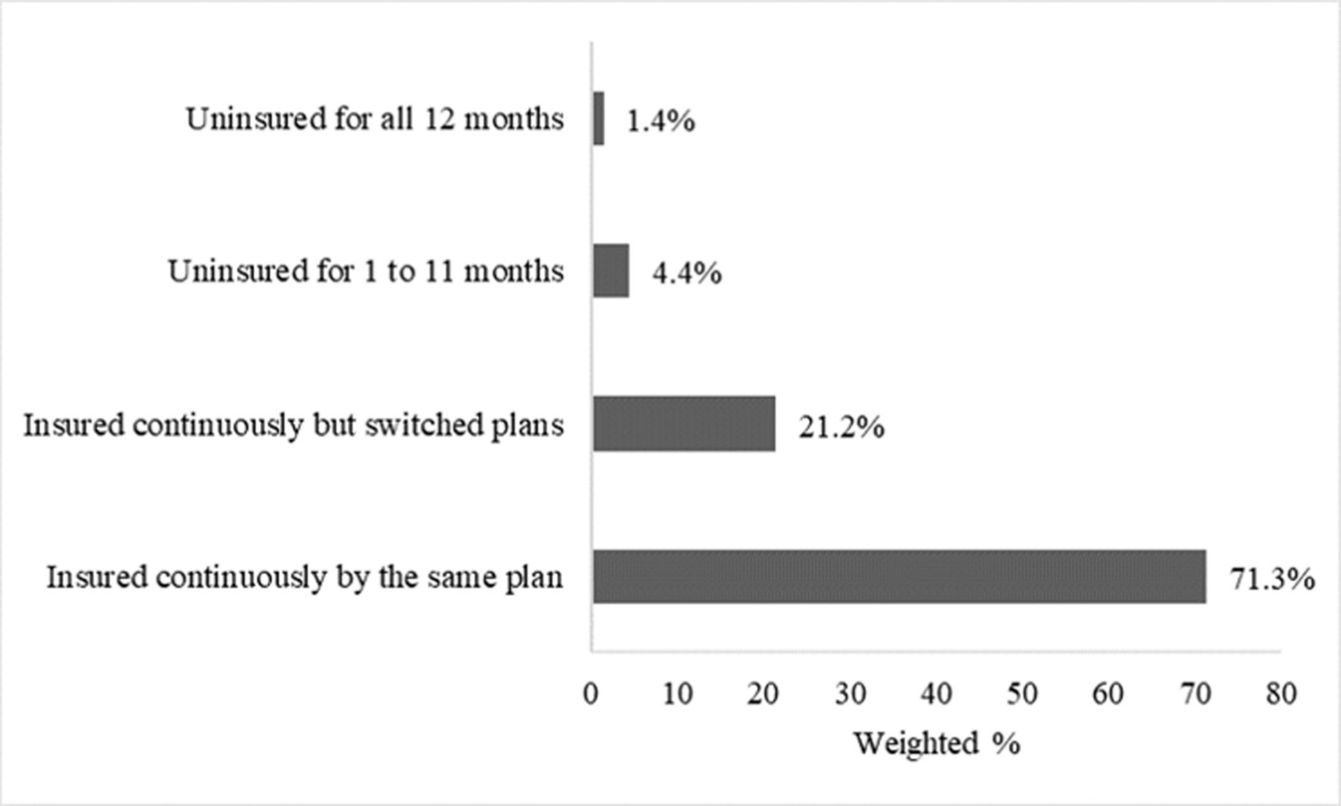

Figure 1.

Insurance Status of Survey Respondents, 2017

Figure 1 exhibits the weighted proportion of survey respondents who were continuously insured by the same (71.3%) or different (21.2%) plans over the past 12 months, as of the date of the survey. The proportion of respondents who were continuously uninsured (1.4%) for 12 months and uninsured for less than 12 months is also displayed.

Note: Weighted estimates

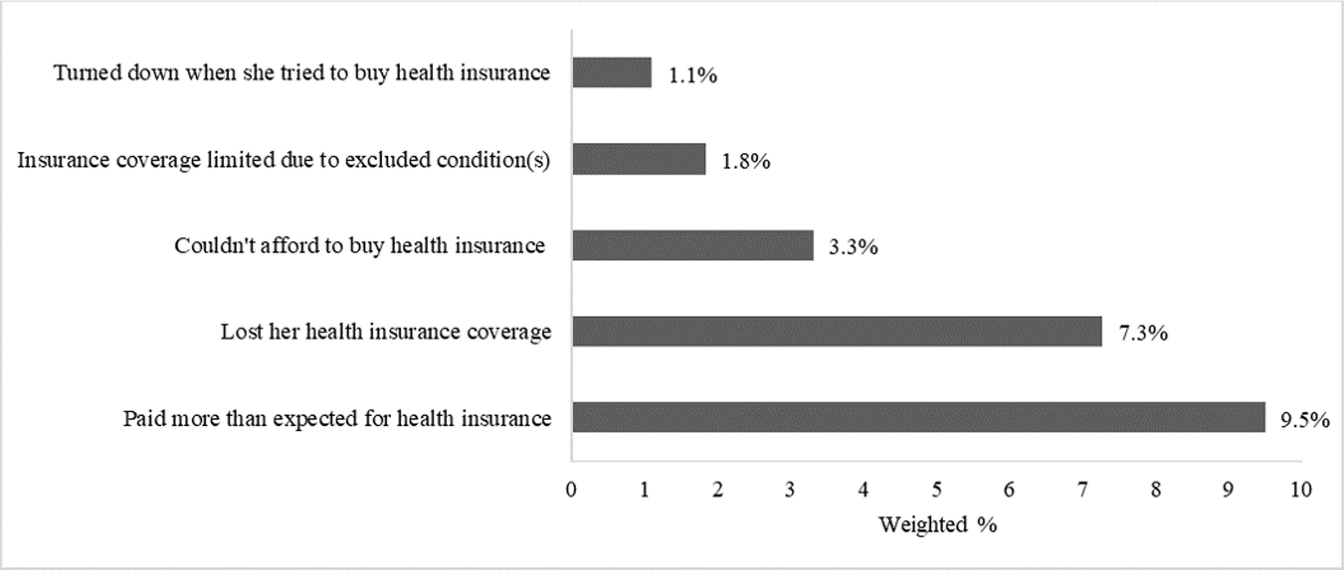

Figure 2.

Insurance Experiences of Survey Respondents, 2017

Figure 2 exhibits the weighted proportion of survey respondents who encountered health insurance barriers over the past 12 months, as of the date of the survey. 9.9% Paid more than they expected for health insurance, 7.3% lost their health insurance coverage, 3.3% couldn’t afford health insurance, 1.8% experienced excluded conditions, and 1.1% were turned down when they tried to buy health insurance.

Note: Weighted estimates

Table 1.

Demographic and Clinical Characteristics of the Study Population, Breast Cancer in Young Women Survey, 2017

Characteristic	Frequency, n=830	Weighted, %
Age at diagnosis		
18–34 years	322	39.5
35–39 years	508	60.5
Race/ethnicity		
Non-Hispanic White	487	48.1
Non-Hispanic Black	111	17.9
Hispanic	153	23.9
Non-Hispanic Asian/Pacific Islander	38	5.3
Non-Hispanic Other	33	3.9
Missing	8	1.0
Education (at survey)		
Graduate degree	201	23.1
Bachelor’s degree	291	34.3
Some college	222	27.2
High school or less	101	13.6
Missing	15	1.9
Marital status (at survey)		
Single	106	13.5
Married/ with partner	602	71.1
No longer married	95	12.0
Unknown	27	3.4
Comorbid conditions (at survey)		
None	184	22.3
One condition	169	20.2
Two or more conditions	477	57.5
Stage at diagnosis		
Stage 0	91	10.9
Stage I	180	20.6
Stage II	293	35.4
Stage III	173	21.4
Stage IV	53	6.9
Unknown or missing	40	4.9
Treatments received		
Surgery	793	95.2
Radiation therapy	507	62.8
Chemotherapy	630	76.7
Hormone therapy	517	62.1
Immunotherapy	207	25.1

Characteristic	Frequency, n=830	Weighted, %
Missing	2	0.2
State of diagnosis		
California	268	32.7
Florida	246	29.7
Georgia	152	19.1
North Carolina	164	18.6

Table 2.

Employment Impacts of Breast Cancer Diagnosis and Treatment, Breast Cancer in Young Women Survey, 2017

	Frequency, *n*=830	Weighted, %
Employed at diagnosis	620	73.4
Employer type		
Private or nonprofit	405	64.9
Government	130	21.0
Self-employed	50	7.5
Unknown	18	3.1
Missing	17	3.6
Available work benefits at diagnosis		
Paid sick leave	346	55.1
Unpaid sick leave	230	36.8
Disability benefits	244	40.5
Flexible schedule	312	49.4
Flexible location	141	21.5
None of the above	70	10.9
Missing	1	0.3
Employer supportiveness during treatment		
Employer unaware	20	3.7
Very supportive	419	66.8
Neutral or somewhat supportive	110	17.9
Unsupportive	36	5.5
Missing	35	6.1
Employment impacts		
Changed jobs within company	34	5.4
Avoided changing jobs to keep health insurance	143	23.5
Changed jobs to get health insurance	9	1.5
Took paid time off	347	55.1
Took unpaid time off	300	47.3
Quit job	79	12.2
Retired early	9	1.2
Lost job	47	7.5
Job performance suffered	260	40.4
Kept job for health insurance	183	30.2
Increased work hours to cover medical costs	31	5.1

Table 3.

Financial Impacts of Breast Cancer Treatment and Survivorship, Breast Cancer in Young Women Survey, 2017

	Out-of-Pocket Costs		Other Costs[a]	
	Frequency	Weighted %	Frequency	Weighted %
Estimated Costs Over 12 Months				
< $500	227	27.68	494	58.58
$500-$2000	226	27.88	205	24.7
$2001-$5000	163	18.71	72	9.16
$5001-$10000	144	17.01	31	3.9
>$10000	48	5.63	11	1.25
Missing	22	3.09	17	2.41
Funding method				
Used personal funds	688	81.5	724	86.0
Used Health Savings Account funds	163	18.9	N/A	N/A
Borrowed from family or friends	189	22.9	161	20.3
Cancer support organization funding	79	10.0	51	6.6
Borrowed against house or assets	24	3.1	15	2.0
Left some medical bills unpaid	183	22.7	105	13.4
Increased credit card debt	179	21.7	154	19.1
Postponed paying bills	146	18.2	101	12.8
Sold belongings	81	9.6	60	7.7
Other	65	8.1	36	4.3

[a] ‘Other costs’ include indirect medical costs that were not covered by insurance. Examples of costs falling under this category include travel costs, parking, and child/elder care.

Table 4.

Multivariable Model of Financial Decline Due to Breast Cancer, Breast Cancer in Young Women Survey, 2017

	Financial Decline Due to Breast Cancer (47.0% Reported a Decline)		
Covariate	**OR**	**95% CI**	**P value**
Age			
18–34 years	1.28	0.92 to 1.77	0.137
35–39 years (reference)	1.00		
Race/ethnicity			
Non-Hispanic White (reference)	1.00		
Non-Hispanic Black	1.03	0.65 to 1.65	0.891
Hispanic	1.34	0.85 to 2.12	0.209
Non-Hispanic Asian/Pacific Islander	1.30	0.59 to 2.85	0.517
Non-Hispanic Other	2.58	1.13 to 5.91	0.025
Marital status			
Unmarried (reference)	1.00		
Married/ with partner	1.09	0.76 to 1.56	0.643
Educational Level			
Bachelor’s or graduate degree (reference)	1.00		
Some college	1.58	1.09 to 2.31	0.017
High school degree or less	1.56	0.89 to 2.73	0.121
Comorbid conditions			
None (reference)	1.00		
One condition	1.80	1.09 to 2.94	0.020
Two or more conditions	2.80	1.86 to 4.22	<.0001
Stage at diagnosis			
Stage 0, I (reference)	1.00		
Stage II	1.38	0.96 to 1.99	0.082
Stage III, IV	1.76	1.16 to 2.67	0.008
Insurance status at diagnosis			
Private (employer based)	1.00		
Self-insured	2.29	1.3 to 4.04	0.004
Medicaid or Medicare	0.98	0.53 to 1.81	0.946
Uninsured	0.88	0.48 to 1.61	0.669
Other	0.53	0.17 to 1.63	0.268
Employment status at time of diagnosis			
Employed (reference)	1.00		
Unemployed	0.69	0.45 to 1.06	0.091
State of diagnosis			
North Carolina (reference)	1.00		
California	0.64	0.41 to 1.02	0.060
Florida	1.07	0.69 to 1.68	0.761
Georgia	1.52	0.92 to 2.5	0.099

Note: The dependent variable in this analysis was constructed from a Likert-type survey question asking the subject to rate the financial decline she experienced due to her breast cancer diagnosis (questions B2). Response options ranged from 1, “not much at all” to 5, “very much.” Those who responded 3, “somewhat,” 4, “quite a bit,” and 5, “very much” were coded as 1 for the financial decline dependent variable, while those who answered 1, “not much at all” and 2, “a little” were coded as 0. Subjects who reported no financial impacts due to their diagnoses were instructed to skip question B2—these subjects were coded as 0. CI = confidence interval.