

## Not Working 3 Years After Breast Cancer: Predictors in a Population-Based Study

Mélanie Drolet, Elizabeth Maunsell, Jacques Brisson, Chantal Brisson, Benoît Mâsse, and Luc Deschênes

From the Unité de Recherche en Santé des Populations, Centre de Recherche du Centre Hospitalier Affilié Universitaire de Québec; Université Laval; Centre des Maladies du Sein Deschênes-Fabia, Hôpital du Saint-Sacrement Québec City, Québec, Canada; and Fred Hutchinson Cancer Research Center, Seattle, WA.

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Address reprint requests to Elizabeth Maunsell, PhD, Unité de Recherche en Santé des Populations, Hôpital du Saint-Sacrement, 1050 Chemin Sainte-Foy, Québec, Québec City, Canada G1S 4L8; e-mail: elizabeth.maunsell@uresp.ulaval.ca.

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### A B S T R A C T

#### Purpose

Little is known about factors increasing likelihood of not working among breast cancer survivors compared with women in the general population.

#### Patients and Methods

A population-based retrospective cohort study was conducted in Quebec, Canada, based on the consecutive series of working women aged younger than 60 years when first treated for breast cancer (identified through the Quebec Tumor Registry), and on a group of randomly selected similar women, living in Quebec, who were working at the time of survivors' diagnoses, but who were without cancer (identified through provincial health care files). Data came from a telephone interview, 3 years after diagnosis for 646 survivors (73% of those eligible) or during a similar period for 890 comparison women (51%).

#### Results

Slightly more survivors were not working 3 years after diagnosis compared with women never diagnosed with cancer (21% and 15%, respectively). Older age (for survivors and comparison women, relative risk [RR] = 4.62,  $P < .0001$  and RR = 4.98,  $P < .0001$ , respectively) and union membership (RR = 1.88,  $P = .0003$  and RR = 1.40,  $P = .06$ , respectively) increased the likelihood of not working at the end of follow-up. In addition, income less than \$20,000 compared with  $\geq$  \$50,000 was associated with not working only among survivors (RR = 3.18;  $P = .0008$ ). Adjuvant treatments did not predict work cessation, but any new cancer event during follow-up did (RR = 2.14;  $P < .0001$ ).

#### Conclusion

Although reassuring that adjuvant treatments did not appear to play a role in survivors' not working, other aspects of the cancer experience might nonetheless have influenced the decision to reduce work effort after breast cancer.

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### INTRODUCTION

Return to work after cancer is important, not only from a societal viewpoint, but also for the rehabilitation of the cancer survivor.<sup>1,2</sup> At least 80% of cancer survivors<sup>3</sup> and more specifically, breast cancer survivors,<sup>4-7</sup> return to work. However, compared with women of a similar age who have never confronted cancer, a slightly higher proportion of survivors reduce work effort.<sup>4,8,9</sup> Assessment of factors influencing work cessation could help us better understand this important outcome.

We undertook a population-based, comparative, retrospective study with the overall aim of describing work experience, over the 3-year period after diagnosis compared with that of women of a similar age who had never had cancer. We have reported previously from this study that slightly more survivors were not working 3 years after diagnosis compared with the women never diagnosed with cancer (21% and 15%, respectively).<sup>4</sup> In this article, we identified and compared characteristics that increased the likelihood of not working

among survivors and comparison women 3 years after the survivors' diagnosis. We defined not working to include women who were no longer in the labor force (that is, retired) or those not currently working, whether or not they were looking for work. Women who were on sick leave or temporarily absent from work to which they could return were not considered as not working.

## PATIENTS AND METHODS

Study participants and procedures have been described fully elsewhere.<sup>4</sup> Briefly, follow-up began in the month and year of diagnosis for breast cancer survivors and at a similar calendar period for comparison women, and ended at interview, 3 years after the survivors' diagnosis. We used the Quebec Tumor Registry to identify 1,504 consecutive women aged younger than 60 when first treated for breast cancer in Quebec, Canada, between November 1996 and August 1997. The Registry has been shown to include 98.8% of new cases of invasive breast cancer.<sup>10</sup> Apart from age younger than 60 years, the other eligibility requirements for breast cancer survivors included being employed in the month of diagnosis and being able to respond to a telephone interview in either English or French.

To assemble a population-based comparison group, a random sample of women aged 18 to 59 years and living in the province of Quebec at the same period as the survivors' diagnoses was selected from the Régie de l'assurance-maladie du Québec (RAMQ) which oversees Quebec's universal health insurance plan and is the most complete and up-to-date file of Quebec residents. Women previously diagnosed with cancer, identified through record linkage with the Quebec Tumor Registry, were excluded. In addition, women who were diagnosed with cancer during study follow-up were identified during telephone interview, and excluded from the comparison group. Other eligibility criteria for women in the comparison group included being employed during the period of survivors' diagnosis (same month as the diagnosis  $\pm$  1 month), and being able to respond to a telephone interview in either English or French. Neither the RAMQ nor the Quebec Tumor Registry contains information on individuals' employment status.

Women in the comparison group were frequency matched to survivors on age and sampling time. We sought to recruit equal numbers of survivors and comparison women aged 40 to 59 years, and twice the number of comparison women compared with survivors for those younger than 40 years of age. Potentially eligible survivors and comparison women were contacted by letter and asked to return a reply form indicating whether they agreed or refused to be contacted about the study. After a potential participant agreed to be contacted about the study, the interviewer first verified by telephone whether the women had paid employment when diagnosed, or during a similar 3-month period for women in the comparison group. Once employment status was determined, the interviewer then described the study, answered any questions, solicited verbal consent; when consent was obtained, the telephone interview was scheduled. All study procedures were approved by the Commission d'Accès à l'information du Québec<sup>11</sup> and the Ethics Committee of the Hôpital du Saint-Sacrement Quebec City, Quebec, Canada.

During the interview, women were questioned about work history during the 3-year period,<sup>12</sup> working conditions for the job held at the start and end of follow-up, and sociodemographic and personal characteristics. Because both anecdotal reports and research findings indicated that cancer diagnosis can result in a reordering of life priorities,<sup>13,14</sup> we sought to capture one aspect of this phenomenon by assessing whether participants judged the importance of work to have changed over the 3-year period. Thus, the following question was used as a simple indicator of this change: "Since (month and year of the start of follow-up), has the value you attach to work: (1) increased a lot, (2) increased a bit, (3) stayed the same, (4) decreased a bit, (5) decreased a lot?" For survivors, disease and treatment characteristics and timing of any recurrence during follow-up were assessed at the end of the interview. We have shown previously that survivors' recall of these key features of their disease and treatment was almost perfect.<sup>15,16</sup>

Because employment status was not available from either the Quebec Tumor Registry or the RAMQ, we had to estimate what participation would have been had we been able to send letters to employment-eligible women only. Otherwise, we would have underestimated participation because some nonrespondents to our letter would not have been working and were thus ineligible. To estimate numbers of eligible women more accurately, we used information from the 1996 Canadian population census on the proportions of women employed in the age groups (in 5-year strata) we studied. The census was appropriate for this because it was taken at about the same time as the year of diagnosis of our survivor population. By multiplying the number of letters sent times the census proportions of working women for each of the 5-year age strata, we adjusted survivor and comparison denominators (letters sent to both employed and unemployed women) to what they would have been if we had been able to contact only employed women. We then calculated study participation among eligible survivors and eligible women in the comparison group using these adjusted denominators.

Characteristics examined as potential predictors were chosen a priori based on previous publications, clinical experience, and anecdotal reports of cancer survivors. With one exception, the possible change of value attached to working, all of the characteristics were ones relating to the period just before diagnosis, or a similar calendar period for women in the comparison group. For the multivariate models, we examined whether there was colinearity between potential predictors using condition indices, proportions of variance of the estimate accounted for by each principal component, and variance inflation factors.<sup>17</sup> On the basis of these factors, we concluded that colinearity was not an issue for this set of potential predictors.

Binomial regression was used to quantify the extent to which characteristics increased the risk of not working 3 years later. Specifically, we used a generalized linear regression with a log link and binomial distribution for the error.<sup>18</sup> This analysis is similar to logistic regression but provides a true relative risk (RR) rather than an odds ratio. All participants were included in the same model. The interaction term between the group (survivors or comparison women) and each potential predictor made it possible to determine whether a potential predictor showed the same association with not working among survivors and women in the comparison group, and to calculate RRs for survivors and women in the comparison group separately. A significant interaction term meant that the association between a given predictor and the likelihood of not working at interview was different for survivors

and the comparison group. Given that medical characteristics are not relevant for comparison women, indicator variables for medical characteristics were all set to zero for these women. Although the estimates for medical variables among comparison women were uninterpretable, this procedure made it possible to keep all participants in the multivariate model and to avoid the exclusion of comparison women from the model because of missing data for medical variables.

We used two analytic strategies to identify the predictors. In the first, a backward procedure, all variables that were statistically significant in univariate analyses were entered simultaneously into a single model and removed one by one, starting with the one with the highest *P* value, until only statistically significant ones remained ( $P < .05$ ). In the second strategy, we used a forward procedure to validate the first model. Characteristics were entered into the model one by one and the significance level of all characteristics was assessed after the addition of each characteristic, until the inclusion of an additional characteristic was not statistically significant. These two strategies resulted in the same final multivariate model. Conceptually, the strategy used to identify predictors was an exploratory one that gave equal chances for all types of characteristics, whether they were sociodemographic, disease or treatment, or psychosocial (as with value given to work), to emerge as predictors.<sup>19</sup> Furthermore, when looking at predictors of not working among survivors only, with 646 breast cancer survivors and an event rate of 21%, we had sufficient power ( $\geq 80\%$ ) to detect  $RR \geq 1.75$  and moderate power ( $\geq 60\%$ ) to detect  $RR \geq 1.50$ . Because some interaction terms were significant (meaning that a given factor influenced the likelihood of not working differently for the two groups of women), data are presented separately for survivors and comparison women.

## RESULTS

We initially sent letters about the study to 1,504 age-eligible breast cancer survivors and 2,921 age-eligible women in the comparison group. Using the 1996 Canadian census information, we calculated that 885 of these survivors and 1,745 of the women in the comparison group would have been working at the time of the survivors' diagnoses. Thus, overall participation among eligible women calculated using these latter denominators was estimated as 73% (646 of 885) among survivors and 51% (890 of 1,745) among women in the comparison group.

Among the 646 breast cancer survivors, 79 women had a new breast cancer event during follow-up. Mean age at start of follow-up was  $47 \pm 7$  years for disease-free survivors,  $46 \pm 7$  years for survivors who had new breast cancer event, and  $45 \pm 8$  years at the beginning of follow-up for women in the comparison group (Table 1). Working conditions at the start of follow-up were similar for the three groups of women. However, by the end of follow-up, survivors were more likely than comparison women to report that they now valued work less than they did 3 years earlier (42% of survivors and 26% of comparison women;  $P = .001$ ).

Age and union membership increased the likelihood of not working 3 years after the start of follow-up similarly

for survivors and comparison women (interaction term  $P = .73$  and  $P = .51$ , respectively). Specifically, RRs comparing women aged 50 to 60 years with those younger than 40 years were  $RR = 4.62$  ( $P < .0001$ ) and  $RR = 4.98$  ( $P < .0001$ ) among survivors and comparison women, respectively; when comparing union members with those who were not,  $RR = 1.88$  ( $P = .0003$ ) among survivors and  $RR = 1.40$  ( $P = .06$ ) among comparison women (Table 2).

Income level influenced the likelihood of not working only among survivors (interaction term  $P = 0.02$ ), with survivors earning less than \$20,000 less likely to work compared with those earning  $\geq$  \$50,000 ( $RR = 3.18$ ;  $P = .0008$ ). Although the interaction term *P* value was not significant ( $P = .11$ ), survivors who attached less value to work at interview than 3 years earlier were nonetheless significantly more likely to have stopped working at interview compared with those who reported increased value ( $RR = 1.83$ ;  $P = .02$ ). None of adjuvant radiotherapy, adjuvant chemotherapy, or invaded axillary nodes significantly increased likelihood of not working 3 years after the diagnosis, but confronting any new cancer event during the 3-year period did ( $RR = 2.14$ ;  $P < .0001$ ) increase likelihood of not working 3 years after the diagnosis.

## DISCUSSION

This study advances our understanding of the previous observation that a slightly higher proportion of women reduce work effort after having confronted breast cancer, compared with women of similar age.<sup>4,8</sup> First, by examining predictors of not working at the end of the 3-year follow-up among women who had never confronted cancer and women who had, we were able to determine whether the characteristics that play a role in the process of reducing work effort generally in the absence of breast cancer also applied to breast cancer survivors. Although older age and union membership were characteristics that identified women more likely to not work in both groups, additional characteristics also appear to play a role in breast cancer survivors' not working. These characteristics were having a low income and being faced with any new cancer event during follow-up. Although we cannot rule out the possibility that attaching less value to work influenced survivors and comparison women similarly, we nonetheless observed that the decrease in value attached to work was associated with not working among survivors. Second, compared with previous studies reporting only percentages of women who returned to work at a specific moment or focusing only on a few possible predictors, we considered a wide range of predictors including sociodemographic characteristics and characteristics of the women's work situation in the period just before the survivors' diagnosis, as well as the survivors' initial treatments and prognosis. As highlighted in a recent

**Table 1.** Sociodemographic and Work Characteristics of Breast Cancer Survivors and Comparison Women, and Survivor Treatment, and Prognostic Characteristics

Characteristics	Comparison Women (n = 890)		Disease-Free Survivors (n = 567)		Survivors With NBCE <sup>1</sup> (n = 79)	
	%	No.	%	No.	%	No.
<b>Sociodemographic characteristics</b>						
Age, years						
18-39	24	217	14	81	15	12
40-49	41	362	44	248	49	39
50-59	35	311	42	238	35	28
Mean	45		47		46	
SD	8		7		7	
Civil status						
Married	57	510	55	310	47	37
Separated, divorced, widowed	23	204	27	151	33	26
Single	20	176	19	106	20	16
Lives with a partner	77	685	71	404	67	53
Lives with children age ≤ 18 years	33	296	28	157	35	28
Education						
High school or less	44	391	43	248	39	31
Collegial level	28	246	27	151	30	24
Some university or more	28	253	30	168	30	24
Personal income						
< \$20,000	39	352	35	198	35	28
\$20,000-\$29,999	25	224	25	139	28	22
\$30,000-\$39,999	16	139	18	103	18	14
\$40,000-\$49,999	10	85	11	61	8	6
≥ \$50,000	8	68	9	52	10	8
No answer	2	22	2	14	1	1
<b>Work characteristics</b>						
Not working at the end of follow-up	15	131	20	113	33	26
Hours worked per week						
Mean	34		35		35	
SD	11		11		14	
Part-time job (< 30 h/w)	27	237	24	132	20	16
Self-employed	16	141	15	86	21	17
White-collar job	78	691	79	450	75	59
Union member	46	346	51	247	63	39
Experience in the job held at start of follow-up, years						
< 5	35	312	31	176	30	24
5-14	40	359	38	215	29	23
15-39	25	218	31	176	41	32
Value attached to work since start of follow-up*						
Decreased	26	227	42	227	42	32
Stayed the same	46	406	39	215	42	32
Increased	28	251	19	103	17	13
<b>Treatment and prognosis</b>						
First treatment undergone:						
Breast surgery and/or axillary dissection	—	—	95	537	94	74
Neoadjuvant chemotherapy	—	—	5	30	6	5
Partial mastectomy	—	—	84	476	72	57
Axillary dissection	—	—	86	487	90	71
Invaded axillary nodes at diagnosis, No.						
0	—	—	63	308	50	35
≥ 1	—	—	35	169	49	34
Unknown	—	—	2	10	1	1
Radiotherapy	—	—	82	467	72	57
Chemotherapy	—	—	56	320	59	47
Hormone therapy	—	—	50	281	37	29

(continued on following page)

**Table 1.** Sociodemographic and Work Characteristics of Breast Cancer Survivors and Comparison Women, and Survivor Treatment, and Prognostic Characteristics (continued)

Characteristics	Comparison Women (n = 890)		Disease-Free Survivors (n = 567)		Survivors With NBCE <sup>1</sup> (n = 79)	
	%	No.	%	No.	%	No.
Types of different adjuvant treatments undergone among radiotherapy, chemotherapy, and hormone therapy, No.						
0	—	—	4	25	9	7
1	—	—	25	144	34	27
2	—	—	47	270	37	29
3	—	—	23	128	20	16

NOTE. Percentages may not equal 100% because of rounding.

Abbreviations: NBCE, new breast cancer event; SD, standard deviation.

<sup>1</sup>Calculated among 884 comparison women, 545 disease-free survivors, and 77 survivors with NBCE: missing answers for women who did not returned to work after the start of follow-up.

literature review of factors influencing return to work,<sup>7</sup> to date no previous study has assessed the effects of specific treatments on breast cancer survivors' return to work. Third, because this study is population based rather than based on small or selected sample or survivors, we contribute information on the process of reduction of work effort among survivors from all socioeconomic strata; from urban, suburban, and rural areas; and from a large variety of working situations.

The characteristics that increased the likelihood of not working among these survivors were not surprising. That older age was the strongest predictor among survivors and comparison women suggests that life stage may be at least as important as cancer in the decision to reduce work effort. Illness, such as cancer, often comes at a time in life when the individual has already started thinking about retirement or working less.<sup>20</sup> With respect to the absence of long-term effects of adjuvant treatments, our results are reassuring and confirm previous observations<sup>7</sup> that surgical or adjuvant treatments generally are not driving cancer survivors' not working 3 years after diagnosis. This was the case when we considered each adjuvant treatment individually and when we used the total number of types of adjuvant treatments undergone as an indicator of the overall burden of these treatments. Thus, these results provide some additional evidence that breast cancer treatments do not seem to affect permanently women's chances of being in the workforce. In fact, having some kind of new cancer event during follow-up was the only cancer-related factor that predicted not working. This further supports our previously published interpretation that women confronted with new health problems and a possibly reduced life span might decide to reduce work effort.<sup>4</sup>

Our observations that more survivors than women without cancer attached less value to work and that, if survivors did attach less value to work, they were also less likely to work, may be evidence of a phenomenon discussed

in a growing body of literature concerning changes in values and conceptualization of quality of life as part of the cancer experience.<sup>13,14</sup> In fact, based on previous phenomenologic and qualitative studies, "confronting a cancer might prompt survivors to revise their priorities" and "life-long goals may take precedence over career advancement."<sup>14</sup> This type of repriorization is probably reflected in some cancer survivors' reports that "life is too short" to work as much after cancer.<sup>7,21</sup>

In our study, we must be cautious in interpreting the meaning of the change in value accorded to work because it was assessed at the end of follow-up, once the women had already stopped working. Nonetheless, several other observations from our study are consistent with the idea that changed priorities led to not working, rather than the reverse. Women more likely to stop working were those with lower income, for whom not working might not affect family income as much. In a complementary analysis, we found that 82% of those survivors earning less than \$20,000 a year at diagnosis and not working 3 years later said that not working was their own decision, not the employer's. Women who were union members (although this group probably is better protected against involuntary job loss) were also more likely to stop working. We speculate that these women may have decided to stop working because of more satisfactory retirement provisions or conditions for leaving the workforce as part of their collective agreement. Taken together, these findings may be consistent with the emerging belief that some survivors find benefit as a result of confronting cancer. Specifically, for some survivors who can afford it, reducing work effort might even be seen as a positive effect of the experience of breast cancer.<sup>14</sup>

Our study potentially could be subject to selection bias, given the multiple steps involved in the recruitment of participants for this population-based study. However, to the extent that we can verify, there seem to be no systematic differences between participants and those we intended to

**Table 2.** Predictors of Not Working 3 Years After Start of Follow-Up for Breast Cancer Survivors and Comparison Women

Characteristic	Survivors				Comparison Women			
	Univariate (n = 646)		Multivariate (n = 628)		Univariate (n = 890)		Multivariate (n = 867)	
	RR	95% CI	RR	95% CI	RR	95% CI	RR	95% CI
<b>Age, years</b>								
18-39	1.00		1.00		1.00		1.00	
40-49	1.46	0.70 to 3.02	1.31	0.60 to 2.86	1.91	0.99 to 3.68	1.74	0.90 to 3.38
50-59	4.15	2.10 to 8.21	4.62	2.24 to 9.53	5.39	2.95 to 9.86	4.98	2.71 to 9.15
<b>Lives with a partner</b>								
No	1.00				1.00			
Yes	1.06	0.76 to 1.47	—	—	1.01	0.69 to 1.47	—	—
<b>Lives with children younger than 18</b>								
No	1.00				1.00			
Yes	1.83	1.23 to 2.72	—	—	2.61	1.67 to 4.07	—	—
<b>Education</b>								
High school or less	1.00				1.00			
College level	0.84	0.59 to 1.20	—	—	0.98	0.67 to 1.43	—	—
Some university or more	0.66	0.46 to 0.97	—	—	0.88	0.59 to 1.29	—	—
<b>Personal income</b>								
< \$20,000	2.24	1.14 to 4.41	3.18	1.62 to 6.25	0.82	0.48 to 1.38	0.86	0.53 to 1.41
\$20,000-29,999	1.16	0.56 to 2.44	2.01	0.97 to 4.16	0.59	0.33 to 1.05	0.62	0.36 to 1.08
\$30,000-39,999	1.28	0.60 to 2.74	1.27	0.62 to 2.62	0.66	0.35 to 1.24	0.65	0.36 to 1.19
\$40,000-49,999	1.57	0.71 to 3.47	2.21	1.00 to 4.89	0.51	0.24 to 1.12	0.52	0.25 to 1.09
≥ \$50,000	1.00		1.00		1.00		1.00	
<b>Union member</b>								
No	1.00		1.00		1.00		1.00	
Yes	1.46	1.05 to 2.02	1.88	1.33 to 2.65	1.23	0.88 to 1.71	1.40	0.99 to 1.99
No, self-employed worker	0.97	0.59 to 1.59	0.60	0.34 to 1.05	0.70	0.40 to 1.22	0.51	0.28 to 0.93
<b>Experience in the job held at start of follow-up, years</b>								
< 5	1.00				1.00			
5-14	0.78	0.54 to 1.14	—	—	0.96	0.63 to 1.46	—	—
15-24	0.91	0.60 to 1.39	—	—	1.28	0.78 to 2.09	—	—
25-39	1.46	0.97 to 2.21	—	—	3.58	2.39 to 5.36	—	—
<b>Type of job</b>								
Blue collar	1.00		—	—	1.00		—	—
Services	0.82	0.47 to 1.40	—	—	1.89	0.88 to 4.07	—	—
White collar	0.63	0.41 to 0.98	—	—	1.22	0.59 to 2.51	—	—
<b>Hours of work per week</b>								
Full time	1.00				1.00			
Part time	1.41	1.03 to 1.94	—	—	1.00	0.70 to 1.43	—	—
<b>Value attached to work since start of follow-up</b>								
Decreased	1.73	1.00 to 2.98	1.83	1.11 to 3.04	1.15	0.70 to 1.86	1.00	0.62 to 1.62
Stayed the same	1.58	0.91 to 2.74	1.36	0.81 to 2.29	1.52	1.01 to 2.30	1.20	0.81 to 1.79
Increased	1.00		1.00		1.00		1.00	
<b>Adjuvant radiotherapy</b>								
No	1.00							
Yes	1.17	0.79 to 1.75	—	—				
<b>Adjuvant chemotherapy</b>								
No	1.00							
Yes	1.03	0.77 to 1.39	—	—				
<b>Adjuvant hormone therapy</b>								
No	1.00							
Yes	1.55	1.14 to 2.10	—	—				
<b>Invaded axillary nodes at diagnosis, No.</b>								
0	1.00							
≥ 1	1.12	0.82 to 1.53	—	—				

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**Table 2.** Predictors of Not Working 3 Years After Start of Follow-Up for Breast Cancer Survivors and Comparison Women (continued)

Characteristic	Survivors				Comparison Women			
	Univariate (n = 646)		Multivariate (n = 628)		Univariate (n = 890)		Multivariate (n = 867)	
	RR	95% CI	RR	95% CI	RR	95% CI	RR	95% CI
No. of types of adjuvant treatment undergone (radiotherapy, chemotherapy, hormone therapy)								
0	1.00		—	—				
1	0.88	0.40 to 1.95	—	—				
2	1.14	0.53 to 2.41	—	—				
3	1.48	0.69 to 3.19	—	—				
Had new breast cancer events								
No	1.00		1.00					
Yes	1.65	1.16 to 2.36	2.14	1.49 to 3.08				

Abbreviation: RR, relative risk.

recruit. We have demonstrated previously that the distributions of survivors and comparison women from different regions across the province of Quebec closely resembled those of the general female population of Quebec.<sup>4</sup> Although participation among comparison women was modest, at 51%, we have shown that key working conditions of these women were similar to those of working women in the province of Quebec (Statistics Canada data).<sup>4</sup> The fact that treatment and prognostic characteristics of the breast cancer survivors in this study were similar to those of other series of newly diagnosed women in Quebec suggests that this was not an unusual group of survivors.<sup>22</sup> In addition, a fairly high proportion (73%) of eligible survivors consented to participate. We also took several steps to limit the potential for information bias. Assessment of women’s work experience was based on a method validated among Quebec women.<sup>12</sup> Questions were ordered so that women could establish a chronology of events, a technique known to aid recall.<sup>23,24</sup> Finally, interviews were worded identically for both survivors and comparison women, and no mention of cancer was made until the final interview section, applicable only to survivors.

On the basis of all of these considerations, we believe that these results are likely to be representative of those among an unselected series of women with newly diagnosed breast cancer who are working when diagnosed, who receive current multimodal treatment, who obtain health care and insurance independently of employment status, and among whom a small proportion would experience new events related to breast cancer in the first 3 years after diagnosis. These results are likely to be applicable to countries with health and social systems like those in Canada. In other countries, however, the constraint to keep a job to maintain health insurance coverage is obviously an additional potential predictor that must be considered in addition

to the factors highlighted in this study. It is conceivable that in such contexts, this characteristic may trump the predictors we identified here.

In summary, despite having had breast cancer, survivors were similar in several regard to women who had not had cancer with respect to predictors of work cessation. Although it is reassuring that adjuvant treatments did not appear to play a role in cancer survivors’ not working, other aspects of the cancer experience might nonetheless have influenced the decision to reduce work effort. Breast cancer survivors likely to stop working within 3 years are women who may believe that the advantages of working no longer outweigh the disadvantages. Most often, women stopping work are older women living in social and economic conditions that may facilitate leaving the workforce or women who had had a new occurrence of cancer. Although survivors’ reducing work effort may be a negative outcome from a societal viewpoint, it may be less so for survivors if congruent with their values and the possible reordering of their priorities.<sup>14,25</sup>

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### Authors’ Disclosures of Potential Conflicts of Interest

The authors indicated no potential conflicts of interest.

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