What Really Matters for Returning to Work After Breast Cancer? A 6-month Longitudinal Study and a Multidimensional Approach

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Abstract

Purpose.

Return to work (RTW) after breast cancer (BC) may easily impact on women recovery and quality of life. Literature on RTW highlighted several factors associated to RTW after BC, and there is still some concern for exploring the main sociodemographic, clinical, psychological and work-related predictors of RTW after BC treatments especially when considering the first 6 months. The present study aims to explore which baseline factors are associated with RTW at 6-month after BC surgery.

Methods.

A 6-month follow-up study was performed among patients recruited from a Hospital in Northern Italy after their cancer-related surgery. Participants filled in a battery of questionnaires at baseline and at 6-month follow-up. Measurements were on job stress, work engagement, quality of life, anxiety, depression and resilience. Moreover, sociodemographic, clinical and work-related data were collected. Univariate and multivariate analyses were performed.

Results.

We recruited a sample of 149 patients, whose 73.9% returned to work after surgery. The women who returned to work were more likely to be not in a relationship, nor to have children. Also, they were not treated by chemotherapy, and had higher scores in expectations of job changes after illness, RTW expectations, perception of physical quality of life and psychological resilience. In the multivariate model, chemotherapy and women's RTW expectations resulted as significant predictors of RTW at 6-month after BC surgery.

Conclusion

Most patients returned to work within first 6 months from breast surgery. Return to work was influenced by chemotherapy and RTW expectations at baseline. A carefully individual screening of risk factors at baseline can prevent from occupational disability and long sickness absence.

Introduction

Early diagnosis and improvements in treatment in most developed countries have increased in the number of breast cancer (BC) survivors [1] which means that more cancer survivors might be capable of returning to work (RTW). BC is the most widespread cancer in women, which frequently requires a combination of treatment modalities that can be associated with longer treatment and recovery time [2,3].

Among female cancer in Italy, BC is the most frequent with 54.976 new diagnoses in 2020, representing 30.3% among all female cancers (www.aiom.it). BC occurs most frequently in middle-aged women that are in a life stage vital for business development and work in addition to family management. For most women, diagnosis of BC implies a change in working conditions such as a temporary interruption or work limitations due to the disease or treatments and their side effects, while some other patients never return to work (RTW) [4,5]. The RTW represents a relevant event for cancer patients since it is a symbol of complete recovery and regain of the normal life [6,7]; in addition, several studies showed that it also facilitates an increasing in quality of life and mental health [6,8-10].

Literature on RTW after BC may be seen as a process made up of stages involving several aspects, such as clinical, socio-demographic, psychological and work-related factors [11].

Overall, chemotherapy is widely associated with prolonged period of sick leave [12-14]. Regarding the treatments, mastectomy and axillary node dissection, irradiation to breast or chest wall, hormone and radiotherapy were also found to be important barriers to RTW [13,15]. Early stage BC, fatigue and physical exhaustion were found to hinder women's RTW [16,17].

Among socio-demographic factors, BC survivors with higher education, younger age and not in a relationship were more likely to RTW compared to others [13,15,17]. Furthermore, there are several psychological factors, which may influence patients' decision to RTW, such as life satisfaction, self-motivation, emotional distress, fatigue, social support, depression and anxiety [13,15]. Previous studies found that work-related factors, such as having a manual job, heavy job demands, high levels of occupational stress, lack of supervisor or coworkers support resulted as barriers of RTW [8,13,18]. Also, BC women who RTW mostly look forward to a flexible working schedule, non-manual job and job security [13].

BC women pass through the status of patient to the status of survivor wishing to resume a "normal life". The first period is crucial for women to recover and regain psychological resources. Indeed, the first 6-month period after treatment is a time window called "in-between" because of its important impact on RTW [11]. An in-depth analysis of this delicate time window could provide a better comprehension of this stage and support clinicians interventions for RTW.

In addition, previous studies showed that early interventions are the key for preventing disability since the longer a worker is absent from work due to illness, the less likely that person is to return to work [19].

Reintegration into the workplace after illness is strongly recommended since it is associated with improved quality of life and mental health status [8]. Given the multidimensional nature of RTW, it is important to explore prospectively which factors may promote or impede work reintegration in the specific context of BC.

Therefore, the aim of this study was to explore which baseline sociodemographic, clinical, psychological and work-related factors predict RTW at 6-month after breast cancer surgery.

Materials And Methods

The participants in this 6-month prospective study were 181 patients who underwent breast cancer-related surgery and accessed our Oncology Clinic for cancer therapy from March 2017 to December 2019 in North Italy. Participants fulfilled the following inclusion criteria: a) diagnosis of first primary invasive breast cancer (all stages); b) recently having completed surgical intervention; c) being employed at the time of diagnosis; d) ageing between 18 and 60 years at the diagnosis time. We excluded individuals with: a) prior history of cancer other than non-melanoma skin cancer; b) presence of cerebral metastasis; c) unemployment in the six months before the diagnosis.

The data were collected at baseline during the hospitalization (mean = 1.43 ($\pm$ 2.43) days after surgery) and at 6-months follow-up when patients were evaluated by means of phone interview. At baseline, participants completed questionnaires regarding socio-demographic, psychological and work-related factors. We collected information about patients' definitive return to work or not at 6-month follow-up assessment.

Thirty-two patients out of 181 (17.7%) refused to participate, resulting in a final sample of 149 patients eligible for this study (82.3%).

The study was approved by the local Independent Ethics Committee at "IRCCS Istituti Clinici Scientifici Fondazione Maugeri" (Number Protocol: 2136). Written informed consent was obtained from all participants.

Materials

Job Content Questionnaire (JCQ). Job stress was investigated using scales from the Job Content Questionnaire (JCQ) [20]. The original version consists of 49 items scored from 1 (completely disagree) to 4 (completely agree). The components measured for this study were: skill discretion (6 items), decision authority (4 items), psychological job demands (9 items), physical job demands (2 items), supervisor support (4 items), coworker support (4 items).

Utrecht Work Engagement Scale (UWES-9) [21]. Work engagement was measured with the Utrecht Work Engagement Scale (10 item) which included the following three subscales: vigor (3 items), dedication (3 items), and absorption (3 items). Responses to items were given on a frequency scale varying from 0 (never) to 6 (always). The higher the score, the greater the work engagement.

The World Health Organization Quality of Life- BREF (WHOQOL-BREF). In order to investigate the perception of Quality of Life (QoL), the World Health Organization Quality of Life was used (26 item) [22]. It is the short form of the WHOQOL-100 [23] and assesses 24 domains of general QoL grouped in four domains: physical health (7 items), psychological health (6 items), social relationships (3 items), and environment (8 items). Additionally, 2 items about overall QoL and general health were considered. Scores range from 1 to 5 and are recoded into 1-100 scores. The higher the scores, the greater the quality of life.

Hospital Anxiety and Depression Scale (HADS). Anxiety and depression symptoms were investigated by the Hospital Anxiety and Depression Scale [24]. It is a 14-item scale composed by two subscales: anxiety (7 items) and depression (7 items). The lowest possible scores for depression and anxiety are 0, and the highest possible scores are 21. Higher scores indicate great severity of anxiety or depression.

Connor–Davidson Resilience Scale (CD-RISC). The short form of the CD-RISC scale [25] was used to investigate resilience. Items were rated on a 5-item scale ranging from 1 (strongly disagree) to 5 (strongly agree). The resilience score was calculated as the average of the items; higher scores indicate greater resilience.

RTW expectancy. A single item was used to evaluate baseline patient's expectations for RTW after BC surgery ("Do you expect to return to work?"), using a 1–10 slider scale, higher scores meaning higher RTW expectancy.

Expectancy of job changes after illness. A single item was used to evaluate baseline patient's expectations of job changes when they will return to work ("Do you expect to change your job/position after illness?") using a dichotomous scale (Yes/No).

Statistical Analyses

All analyses were performed using SPSS for Windows version 19.0. Preliminary analyses were conducted in order to test the causality of the hypothesized model. Women who did and did not return to work within T1 were compared on socio-demographic, medical and psychological variables using independent t-test for continuous variables and Chi-square test for categorical variables. Only variables with significant results ($p < .05$) with return to work were used in the model. Logistic regression model was then used to test our research hypothesis. The model was adjusted for socio-demographic (age) and job variables (professional category, type of job). We included these covariates because many previous studies found them to be related significantly to RTW and sickness absence [8,26].

Results

Total Sample

Baseline characteristics of the sample are presented in Table 1. The mean age was 50.30 (SD=6.16), the majority of women was in a relationship (75%) and referred having children (79.1%). Participants had a mean education of 13.74 years, and 54.9% reported their husband as the caregiver. As regards with medical characteristics, 69.2% of women did not receive chemotherapy (only or combined), 86.5% did not receive radiotherapy (only) and 80.5% did not receive hormonotherapy (only). 76.9% of participants did not have axillary dissection while 63.4% had a sector resection. 70.7% of the sample had no previous diseases. Concerning their job, the majority of participants worked full-time (75.0%) and was employed (87.3%) as white-collar (69.4%). Furthermore, the mean of seniority with the current job was 18.92 (yrs) (SD= 10.19), while the mean of the total seniority was 26.85 (yrs) (SD= 8.66). As showed in Table 2, at

baseline 88.6% of women believed that no job changes will be necessary when returning to work. Additionally, a high score of RTW expectation was found ($M=9.26$; $DS= 1.58$; range 1-10)

Differences between RTW and NOT RTW groups

73.9% of the total sample returned to work at 6-month follow-up. Women who did and did not return to work within 6-month were compared on socio-demographic, clinical and psychological variables (Table 1 and 2). Results evidenced that RTW patients were less likely to be in a relationship ($X^2= 4.45$; $p= 0.035$), they tended to have less children ($X^2= 4.35$; $p= 0.37$) and they were less likely to receive chemotherapy (only or combined) ($X^2= 7.014$; $p= 0.011$) compared to the NOT RTW group. Moreover, the RTW group frequently had less expectancies of job changes after illness ($X^2= 6.25$; $p= 0.012$), and scored higher in RTW expectancy ($Z= -2.070$; $p= 0.038$), physical quality of life ($Z= -2.093$; $p= 0.036$) and resilience ($Z= -2.120$; $p= 0.034$) compared to the other group.

Baseline predictor of RTW at T1

Logistic regression analyses were used in order to study the predictor of RTW after 6 months. As showed in Table 3, receiving chemotherapy ($B= -1.428$; $SE= 0.520$) and women' RTW expectancy ($B= -0.340$; $DS= 0.156$) predicted patients' RTW at T1.

Discussion

RTW after BC is a relevant topic considering the increase of breast cancer incidence, the age of the diagnosis and the decrease of mortality due to news diagnostic and therapeutic tools. RTW literature underlined the multifactorial nature of RTW process and need of timely interventions since the duration of sickness absence is negatively associated with the probability of RTW. Therefore, this study aimed to focus on the first 6-month after breast surgery to explore relevant predictors of RTW, from a multidimensional perspective.

In this study we found a rate of RTW 6-month after surgery (73.9%) in line with the [13] showing that even few months after surgery most women decided to RTW. Among the socio-demographic factors, we found that RTW was associated with being not married and not having children. Previous findings suggested that women without a partner and children are more likely to RTW [13,16]. It is plausible that financial insecurity or investment in career may be the reasons [27,28]. In addition, single women may be more likely to perceive a sense of loneliness when coming back home after surgery, hence conceiving RTW as regaining the own normal life [6,7].

Surprisingly, in our study, age and type of job were not significant factors influencing RTW. Based on the literature, we expected that younger women with a white collar position were more likely to RTW after surgery [13] but it is plausible that the high percentage of white collar women in our sample has impacted on this result.

As regards with clinical factors, our findings confirmed that chemotherapy is a relevant risk factor for not returning to work [18,29,30] while other treatments or clinical factors did not have a significant effect. In line with this, our findings suggested that the baseline perception of physical QoL predicted RTW at follow-up. This means that women who perceived physically healthy are more oriented to RTW after surgery, so that personal evaluations and beliefs on self-efficacy may influence women's behaviors and decisions.

One of the main results of our study is the strong impact of personal expectations on RTW. The great RTW expectancy at baseline resulted to be a relevant predictor of RTW at 6-month after surgery. Patient expectations have been demonstrated previously to relate to a variety of recovery indicators including surgical outcomes, treatment adherence and disability duration [31].

Overall, our study suggested that marital-status single women without children, with possible high investment in their job and with positive perception of physical quality of life are more likely to RTW 6-months after surgery. Moreover, when motivated and positively hopeful, women RTW 6-months after surgery. We may assume that job may help these women to perceive a good self-image and psychological identity. RTW can be considered a protecting factor for psychological health after cancer treatment. Taken all together these results suggest that when women have positive expectancy and feel motivation to RTW as well as self-efficacy on the job, they may feel stronger and much more available to deal with work demands even after cancer. This concept may be related to the psychological resilience, which resulted as a distinctive characteristic of RTW women in our study. In conclusion, the present research highlighted the key role of women expectation about RTW and individual evaluation of physical health, that means self-confidence and perception of self-efficacy on the job. When you believe you can do it, you are halfway there.

Study limitations

Some limitations should be acknowledged. First, all measurements used were self-reported, a common-method bias may exist [32]. Second, our sample consisted of patients enrolled in a single hospital, therefore generalizability of our findings might be limited.

Third, we are aware that our sample is characterized by a higher percentage of white collar women employed in an organization. In future studies, both type of job and work status should be taken into account in multi-group analyses.

Clinical implications

Our findings have important practical implications for healthcare organizations and for clinicians working with BC women. Our results recommend a baseline psychological screening for these women: even if common evaluation (such as anxiety and depression) might result appropriate, it could be useful to explore RTW expectations since they can be barriers to the complex process of work reintegration after illness. Indeed, when there are positive expectancy on RTW at baseline, it may be possible that women are

more likely to RTW 6-month after surgery. As a matter of fact, the psychologist can help clinicians evaluating and monitoring the course of these expectations during the path. BC women who are hesitant in RTW may benefit from psychological support, specifically on reinforcing self-image as a workable woman when dealing with rehabilitation. Lastly, patients treated with chemotherapy should be monitored carefully since they are at high risk for not returning to work. Therefore, timely interventions such as work accommodations based on patients' needs could be a useful strategy to prevent work disability.

Declarations

Compliance with Ethical Standards:

Conflicts of interest: the authors declare that they have no conflict of interest.

Informed consenses: informed consent to participate in the study has been obtained from all participants

Consent to publication: all participants consent to publish their data to a journal

Funding: no found.

Conflicts of interest/Competing interests: the authors declare that they have no conflict of interest.

Availability of data and material: requests to access the datasets should be directed to the corresponding author.

Code availability: not applicable

Authors' contributions:

Conceptualization: EMF, PG; Methodology: EMF, PD, PG; Formal analysis and investigation: EMP, PD; Writing - original draft preparation: EMF, PD; Writing - review and editing: EMF, PD, AB, FC, PG; Supervision: PG.

Ethics approval: the study has been approved by the Ethics Commitee at Fondazione Maugeri (Number Protocol: 2136)

Consent to participate: Informed consent was obtained from all individual participants included in the study.

Consent for publication: all participants consented to publish their data to a journal

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Tables

Table 1. Baseline sociodemographic, work-related and clinical characteristics of the total sample and differences between RTW groups (N=149)

	<i>TOTAL</i> %(N)	<i>RTW</i> %(N)	<i>NOT RTW</i> %(N)	χ^2	<i>p</i>
In a relationship				4.45	0.035
Yes	75.0(101)	69.3(70)	30.7(31)		
No	24.0 (33)	87.9(29)	12.1(4)		
Children				4.35	0.037
Yes	79.1(106)	69.8(74)	30.2(32)		
No	20.9(28)	89.3(25)	10.7(3)		
Caregiver				3.15	0.368
Husband	54.9(73)	68.5(50)	31.5(23)		
Husband and son	12.0(16)	75(12)	25.0(4)		
Mother, brother/sister	8.3(11)	72.7(8)	27.3(3)		
Other	24.8(33)	84.8(28)	15.2(5)		
Chemiotherapy ¹				7.01	0.011
Yes	30.8(41)	58.5(24)	41.5(17)		
No	69.2(92)	80.4(74)	19.6(18)		
Radiotherapy ²				0.32	0.399
Yes	13.5(18)	83.3(15)	16.7(3)		
No	86.5(115)	72.2(83)	27.8(32)		
Hormonetherapy ³				0.94	1.000
Yes	19.5(26)	73.1(19)	26.9(7)		
No	80.5(107)	73.8(79)	26.2(28)		
Axillary dissection				0.18	0.649
Yes	23.1(31)	71.0(22)	29.0(9)		
No	76.9(103)	74.8(77)	25.2(26)		
Previous diseases				0.30	0.669
Yes	29.3(39)	76.9(30)	23.1(9)		
No	70.7(94)	72.3(68)	27.7(26)		
Cancer-related surgery				0.93	0.545

Sector resection	63.43(85)	74.11(63)	25.88(22)		
Mastectomy	36.56(49)	73.46(36)	26.53(13)		
Work status				0.39	0.823
Full time	75(99)	74.7(74)	25.3(25)		
Part time	22(29)	69.0(20)	31.0(9)		
Other	3(4)	75.0(3)	25.0(1)		
Professional category				-1.82	0.068
Blue collar	30.59(41)	63.41(26)	36.58(15)		
White collar	69.40(93)	78.49(73)	21.50(20)		
Type of Job				2.08	0.237
Employed	87.3(117)	71.8(84)	28.2(33)		
Self-employed	12.7(17)	88.2(15)	11.8(2)		
	<i>TOTAL</i>	<i>RTW</i>	<i>NOT RTW</i>	<i>Z</i>	<i>p</i>
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>		
Age	50.30(6.16)	50.24(5.84)	50.45(6.98)	-0.33	0.738
Education (yrs)	13.74(3.23)	13.95(3.09)	12.85(3.91)	-1.73	0.082
Seniority with actual job (yrs)	18.92(10.19)	19.83(9.60)	16.26(12.07)	-1.75	0.080
Seniority total (yrs)	26.85(8.66)	27.57(7.89)	25.61(10.70)	-0.76	0.449

¹ Yes = only chemotherapy or combined; No = no chemotherapy;

² Yes = only radiotherapy; No = no radiotherapy;

³ Yes = only hormonetherapy; No = no hormonetherapy;

Table 2. Differences at baseline in psychological factors between RTW and not-RTW groups (N=149)

	<i>TOTAL</i> %(N)	<i>RTW</i> %(N)	<i>NOT RTW</i> %(N)	χ^2	<i>p</i>
Expectancy of job changes after RTW				6.25	0.012
Yes	11.4(15)	46.7(7)	53.3(8)		
No	88.6(117)	76.9(90)	23.1(27)		
	<i>TOTAL</i> <i>M(SD)</i>	<i>RTW</i> <i>M(SD)</i>	<i>NOT RTW</i> <i>M(SD)</i>	<i>Z</i>	<i>p</i>
RTW expectancy	9.26(1.58)	9.47(1.34)	8.68(2.16)	-2.07	0.038
Job stress					
Skill discretion	33.36(5.00)	33.47(4.67)	33.45(5.10)	-0.18	0.854
Decision authority	33.40(6.67)	33.14(7.03)	33.87(6.92)	-0.81	0.417
Psychological Job demand	23.03(3.96)	23.39(4.29)	22.42(3.14)	-1.01	0.312
Physical Job demand					
Supervisor support	6.29(1.97)	6.47(1.94)	5.96(1.97)	-1.38	0.168
Coworker support	11.01(3.59)	11.36(4.12)	10.68(1.83)	-0.79	0.426
	11.70(1.85)	11.87(1.89)	11.57(1.25)	-1.01	0.313
Work engagement					
Vigor	4.23(1.40)	4.28(1.32)	4.30(1.48)	-0.33	0.744
Dedication	4.41(1.30)	4.51(1.15)	4.32(1.50)	-0.23	0.816
Absorption	4.58(1.25)	4.67(1.14)	4.60(1.30)	-0.05	0.962
Quality of life	64.54(14.72)	66.57(15.03)	60.84(13.08)	-2.09	0.036
Physical	61.52(12.53)	62.56(12.46)	59.27(12.83)	-0.97	0.330
Psychological	72.38(12.34)	73.39(12.57)	71.92(11.17)	-0.67	0.502
Social	59.95(11.29)	61.67(10.61)	57.85(12.52)	-1.30	0.193
Environment					
Anxiety	9.69(4.58)	9.70(4.47)	9.30(4.79)	-0.55	0.579
Depression	5.69(3.70)	6.00(3.63)	5.08(3.58)	-1.34	0.180
Resilience	29.41(6.86)	30.30(6.90)	27.91(6.87)	-2.12	0.034

Table 3. Baseline predictors of return to work at 6 months follow up (N = 149)

	OR	95 % CI	<i>p</i>
In a relationship	2.35	0.85-1.35	0.125
Children	1.02	0.11-2.04	0.312
Chemiotherapy	7.54	0.09-0.67	0.006
Belief about job changes after RTW	2.34	0.10-1.35	0.126
RTW Expectacion ^a	4.77	0.52-0.97	0.029
Physical QoL ^a	1.99	0.94-1.00	0.158
Resilience ^a	0.32	0.91-1.05	0.571
Nagelkerke R ²	0.34		

This model is adjusted for socio-demographic(age) and job variables (professional category, type of job)

^aOR for one point increase