
PUBLIC HEALTH RESEARCH

Work Engagement among Breast Cancer Survivors: Are They Less Engaged in Their Work?

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ABSTRACT

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Introduction	This study investigates work engagement of employed breast cancer survivors in comparison to unmatched control samples of healthy working women without cancer and any other chronic diseases from the general population.
Methods	A case-control study design using unmatched controls was adopted in this study. The case comprised of 80 female breast cancer survivors who have returned to full-time employment selected using purposive sampling technique. Meanwhile, controls were 88 healthy female working women in full time paid employment, selected using quota sampling. Questionnaire covering socio-demographic characteristics and self-rated work engagement measured using Utrecht Work Engagement Scale (UWES) was distributed to the cancer survivors through face-to-face meeting during their hospital visits. For the healthy controls the questionnaires were distributed using drop-and-collect method through the human resource personnel of the participating organization.
Results	The results revealed, after controlling for age, marital status, ethnic group and tenure with organization, no significant differences in the overall work engagement was found between the breast cancer survivors [mean (SD) = 4.66 (0.92)] and the healthy controls [mean (SD) = 4.75 (0.85)]; $F(1, 163) = 1.70$. In comparison to the work engagement domains, only the Vigor domain was found to be significantly lower for the survivors, survivors [$F(1, 163) = 14.94$; $p < .001$] compared to healthy controls. However, the effect size was small ($\omega^2 = 0.004$). No significant difference was found in the mean absorption and dedication domain scores.
Conclusions	The findings suggest, except for vigor domain, work engagement of breast cancer survivors who have returned to work do not differ from individuals without cancer.
Keywords	Work engagement - Breast cancer survivors - Absorption - Dedication - Vigor.

INTRODUCTION

Cancer is a condition that malignant tumors grow in body and has negative effects on the abilities of its survivors. It also influences survivors' values, expectations, ambitions and their returning to work¹. Despite this, many of them are interested to work after their treatment for some reasons such as having a purpose in life, social connections, self-esteem, income, sense of contributing, personal identity and importantly maintaining health and well-being^{1,2,3}. In fact, remaining employed or anticipating return to employment has been regarded as a key aspect to cancer survivors' quality of life⁴. Studies have also shown that the number of cancer survivors who returned to work after treatment have increased due to improvements in early detection and effective treatments^{2,3,4}.

Despite the increase in the number of cancer survivors returning to work, it has been reported that cancer survivors are at the risk of experiencing discrimination at work due to their condition that may affect their ability to work^{5,6} or as a result of negative or misinformed attitudes of co-workers or employers⁷. Employers' negative perception about people with disabilities such as cancer survivors have adversely impact the employment and retention of individual with chronic illness⁸. One possible misconception may be due to the perception that cancer survivors are less engaged in their work. Grundfield, Low and Cooper⁷ conducted a study examining employers' beliefs about the impact of cancer on returning to work. They found organizations generally have negative beliefs about the impact of cancer on work and have concerns about the ability of cancer survivors to meet the demands of the workplace. This could potentially be detrimental to the smooth transition of cancer survivors to work because a non-supportive work environment has been shown to negatively affect return to work among cancer survivors⁶.

Many studies have focused on work limitations experienced by cancer survivors⁹. This may also have led to the misconception that cancer survivors are not productive at work, and have negative feelings towards their job due to their limitations at work. Moreover, majority of cancer studies has focused on health-related quality of life and psychological adjustment among cancer survivors. Little is known about cancer survivors 'well-being, engagement, their daily activities, and their work abilities at work place^{10,11}. Therefore, there is a need to study positive aspects of work to cancer survivors such as examining work engagement among cancer survivors in order to fill this gap in the literature. This aim of this study was to examine work engagement of employed breast cancer survivors in comparison to healthy working women in paid employment.

Work engagement (WE) is a broad concept that comprises of core features like high involvement, affective energy, and self-presence at work^{11,12}. Work engagement can be defined as a positive, affective-motivational work-related state that is characterized by vigor, dedication, and absorption^{13,14}. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior¹⁵. Work engagement may affect employee's positive job-related attitudes, employee health, extra-role behaviors and performance at workplace¹⁶. Those who feel engaged seem to be more pleased with their jobs, feel more committed to their organization and do not intend to leave the organization. Engaged workers also seem to enjoy good mental and psychosomatic health and perform better at work¹⁷. Engagement at work can function as an intervention to support, heal and maintain self-identity among cancer patients¹⁸. Since adjustment at work has been regarded as a way to cope and reduce physical and mental strains¹⁹, being engaged at work may signify successful adjustment and transition to work for cancer survivors.

Until to date, despite the importance placed on return to work of cancer survivors, very little studies was conducted to examine work engagement among cancer survivors. Insofar, only two studies^{11,13} on cancer survivors' work engagement were found in the literatures. Berg, Fossa, Dahl¹³ reported no difference in the work engagement between breast, prostate, and testicular cancer patients and non-cancer group even though the cancer patients reported significantly poorer work ability, poorer health status and greater number of disease symptoms. In a study conducted by Hakanen and Lindbohm¹¹, they found that the level of work engagement was similar in both breast cancer survivors and non-cancer controls. They found social support at work, organization climate and cancer survivors' optimism have significant influence on the work engagement among cancer survivors.

Despite these promising findings, several studies have reported deterioration in job satisfaction and job performance among cancer survivors²⁰. This may be because although role functions in the workplace and at home are similar but not identical constructs, it may be more difficult in the face of illness to maintain employment roles than domestic roles because job tasks cannot be interrupted and resumed as often as needed¹. Furthermore, some of cancer survivors who return to work are likely to experience physical and psychological symptoms like lack of enough energy, feeling of anxiety, depression and vomiting that are related to their cancer¹⁰. These

symptoms may have negative effects on their work engagement.

METHODS

This study adopts an unmatched case-control study design²¹ to examine work engagement among breast cancer survivors in comparison to healthy female employees. Unmatched control sample was used because there were too many matches need to be made in order to make appropriate matches. Therefore, we chose to control the confounding effects of socio-demographic variables when comparing the work engagement of breast cancer survivors with healthy controls.

The case sample consisted of 80 female breast cancer survivors who have returned to work. They were selected using purposive sampling technique. The cases were selected for inclusion based on the following criteria: 18 years or older, a confirmed diagnosis of breast cancer at Stage III or lower, in full time paid employment, holding management or non-management job position, working in public or private organization and have at least one year working experience prior to cancer diagnosis. We excluded survivors who are unemployed, self employed or on part-time employment, at advanced stage of disease (Stage IV) or having recurrence of disease, or suffering from other serious disease. Written consent was obtained from the cases who participated in this study. Ethical approval from the Medical Ethics and Research Committee, Ministry of Health was also obtained prior to data collection. Cases were recruited from five government hospitals and two private hospitals in the Klang Valley area during their outpatient visits to the respective hospitals. A total of 127 cases were first approached. Twenty two cases were disqualified because they did not meet the inclusion criteria and twenty five cases declined to participate in this study. The final sample consisted of 80 cases. Questionnaire was administered by face to face interview to the 80 cases during their visits to hospital. Interview was used to increase the survivors' participation and motivating them to respond adequately to the questionnaire²². The unmatched control-group comprised of 88 healthy female individuals without breast cancer in full-time paid employment for at least one year from three public and three private organizations. Controls with other chronic diseases were excluded. Controls were selected using quota sampling based on similar criteria with the BCS sample such as age group, employment category and employment sector. Quota sampling technique was used to recruit the controls due to non-availability of sampling frame and to obtain representative sample with the cases²¹. A total of 16 female employees who have worked with the organization for at least one year (8 from management category and 8 from non-management

category) were recruited from each participating organizations. Written consent was obtained from the respective organizations to allow their employees to participate in this study. Nevertheless, we were not given access to meet the healthy controls. Therefore, data from the control group was gathered using drop and collect method with the assistance from the Human Resource Department in the participating organization. The purpose and instructions to complete the questionnaire were stated in the questionnaire so as to guide the healthy controls to complete the questionnaire.

Work engagement was assessed using the shortened version of the Utrecht Work Engagement Scale (UWES)¹⁵ which consists of 9 item that measure Vigor (3 items), dedication (3 items), and absorption (3 items). Vigor refers to high levels of energy and mental resilience while the employees are working. Dedication refers to a sense of significance, enthusiasm, inspiration, pride, and challenge. Meanwhile, absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching from work^{12,15,16}. The items were measured on seven point Likert-like scale ranging from 0 (never) to 6 (always). The instrument has been reported to be reliable and valid in past studies^{12,15}. The scale has been validated in more than twenty languages such as Chinese, Japanese, African and Dutch language^{12,15}. The scale is also widely used in Malaysia to measure work engagement among employees in various occupational groups^{24,25}. The scale reliability estimate for each of the UWES domains tested in this study was acceptable (Cronbach alpha for vigor = 0.78, dedication = 0.88, absorption = 0.90, and overall work engagement = 0.89). The mean of items scores for each domain was computed in this study by adding up the item scores for each domain divided by the number of items. Meanwhile, the mean of items for the overall work engagement score was computed by adding up the item scores for all the three domains divided by the number of domains. The mean of item scores were used following past studies examining work engagement among cancer survivors¹¹. The mean of item score ranges from 0 to 6 with higher scores meant more engagement, vigor, dedication, and absorption, respectively.

The socio-demographic profile of the case and control groups was compared using Chi-Square statistics and t-test, where appropriate. A separate one-way between subject Analysis of Variance (ANOVA) test was performed to compare the differences in the overall mean scores of employee engagement and the mean scores of its respective domains of the case and control groups. To decrease the variance associated with socio-demographic characteristics, a series of Analysis of

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Covariance (ANCOVA) were also run for significantly different demographic characteristics between the groups, as covariates. Dummy coding was used for categorical variable.

RESULTS

Socio-demographic characteristics

Table 1 presents the socio-demographic characteristics of the case and control groups.

Table 1 Socio-demographic characteristics of case and control groups.

<i>Characteristics</i>	<i>Case Group</i>	<i>Control Group</i>	<i>p-value</i>
	<i>n = 80</i>	<i>n = 88</i>	
*Age	Mean = 42.28 years SD=6.70 years	Mean = 33.58 years SD=8.84 years	.0001
Race			
Malay	n =65; 81.3%	n =50; 56.8%	.001
Chinese	n = 12; 15%	n =16; 18.2%	
Indian	n =3; 3.8%	n =20; 22.7%	
Other	-	n =2; 2.3%	
Education			
Secondary level	n = 31; 38.8%	n = 28; 31.8%	.347
Tertiary level	n = 49; 61.3%	n = 60; 68.2%	
Marital status			
Single	n = 13; 16.3	n =33; 37.5%	.0001
Married	n = 48; 60.0%	n = 53; 60.2%	
Divorced/Widowed	n = 19; 23.8%	n = 2; 2.3%	
*Tenure with current employer	Mean = 14.01 years SD=8.92 years	Mean = 10.66 years SD=9.02 years	.019
Job Category			
Management	n = 48; 60.0%	n = 44; 50%	.193
Non-management	n = 32; 40.0%	n = 44; 50%	
Period since diagnosed (years)			
>2 years	n =32; 40.0	-	-
2-4 years	n = 26; 32.5%	-	
5-7 years	n =13; 16.3%	-	
8 years and above	n = 8; 10%	-	

* Independent sample t-test was used.

**Chi-square tests were used for other demographic characteristics.

A statistically significant difference in the mean age was found between cases and controls. The mean score shows that the breast cancer survivors (mean (SD) = 42.28 years; (6.70 years) were somewhat older than its healthy controls (mean (SD) = 33.58 years; (8.84 years). Although both the case and control group members were predominantly Malay, a statistical significant difference exists between the ethnicity of the case-control groups. There was a greater proportion of Indians in the control group (22.7%). There were no statistical differences in the level of education of both samples. A statistical significant difference exists in the marital status of both the groups. The proportion of divorced/widowed individuals was higher in the case group, meanwhile the proportion of single was higher in the control group. There was also a significant difference in the tenure of service with the current employer between the groups. The mean tenure (mean (SD) = 14.01 years; (8.92 years) was higher for the case group. No significant difference was found in the job

category of the case and control groups. Most of the cases (72.5%) were diagnosed with cancer since four years and below.

Comparing work engagement between case-control groups

A series of univariate ANOVAs and ANCOVAs were conducted to compare work engagement between the case and control groups. Since, age, ethnic group, marital status, and tenure with organization differed between the groups; these socio-demographic characteristics were controlled as covariate through the use of ANCOVA so as to reduce the variance associated with these socio-demographic characteristics. Result of work engagement score ANOVAs and ANCOVAs were presented in Table 2. A significant difference exists only in the vigor domain between case and control group members, $F(1,168) = 16.15, p < .001$. Result remained significant after controlling for covariates, $F(1,163) = 14.94; p < .001$. Nevertheless the effect size calculated using the Omega-squared

formula showed that the effect size was small ($\omega^2 = .004$). No significant difference exist in the over work engagement, dedication and absorption scores

between case and control group members. The result remained not significant after controlling for covariates.

Table 2 Comparison between case-group and control-group members on work engagement scores

Dependent variable	Observed mean, (SD)		ANOVA	Adjusted mean ^a		ANCOVA
	Case	Control		Case	Control	
Overall work engagement	4.66 (.92)	4.78(.85)	F(1,168) =.476	4.82	4.61	F(1,163) =1.698
Dedication	4.98 (1.00)	4.74 (.98)	F(1,168) =2.43	4.90	4.81	F(1,163) =.278
Absorption	4.92 (1.05)	4.78(.91)	F(1,168) =.476	4.82	4.87	F(1,163) =.091
Vigour	4.15 (1.02)	4.73(.87)	F(1,168) =16.15***	4.13	4.77	F(1,163) =14.94***

a. Adjusted means take into account the effects of covariates (age, ethnic group, marital status, and tenure with organization).

*** $P < .001$

DISCUSSION

In this research we compared the level of work engagement between female employed breast cancer survivors and healthy female employees in full time paid employment. The comparison was made based on the overall work engagement and by its dimensions namely dedication, absorption and vigor. The result revealed a significant difference exists only in the vigor domain between case and control group members. However, the effect size of the difference was small. No significant difference exist in the overall work engagement, dedication and absorption scores between breast cancer survivors and healthy female employees.

Therefore, the main conclusion can be drawn from this study is that there is no difference in the overall work engagement and in the domains of dedication and absorption experienced by breast cancer survivor compared to female employees without cancer. This suggests that the work engagement of breast cancer survivors who returned to work is similar to healthy female employees in terms of their absorption and dedication. They may have similar enthusiasm, pride and may be happily engrossed in their work as with healthy employees. This may signify that work enables cancer survivors to regain a sense of normality and control². This also supports the assertion that many women wish to continue their participation in the paid labor market even after a diagnosis of cancer². Hence, the findings suggest that being a breast cancer survivor may not be a critical factor that may lower their work engagement upon return to work among breast cancer survivors in this study. Although the researchers did not find a significant difference between the groups in dedication and absorption and total score of work engagement, a significant

difference was found between the two groups in vigor score. Similar finding was reported in Berg et al's¹³ study. The breast cancer survivors had low vigor score compared to healthy female employees. As vigor refers to high levels of energy and mental resilience¹⁴, breast cancer survivors may experience lesser vigor due to cancer-related symptoms such as fatigue, depression, physical complaints, cognitive dysfunction, and psychological distress which may affect their energy level and concentration at work²⁵. Fatigue has often reported as one of the major barrier for cancer survivors when they return to work^{25,26,27}.

The result of this study is consistent with previous findings in which breast cancer may not be an important factor to reduce work engagement despite poorer work ability, poorer health status and greater number of disease symptoms^{11,13}. In fact, work is regarded as a healthy activity that offers structure, purpose, distraction, sense of identity and signifies getting back to normal². Since return to work may improve the quality of life of cancer survivors⁴, provides sense of purpose and signifies recovery to survivors who return to work², it may also foster their work engagement.

This study thus provides further support to the limited studies conducted on work engagement among cancer survivors. The findings of this study suggest several implications. First, the result of this study suggest that despite work limitations and cancer-related symptoms experienced by breast cancer survivors they are equally as engaged in their work as employees without cancer. Hence, employers should not be reluctant to reintegrate female employees with breast cancer into employment when they return to work and should reasonably consider accommodating their physical impairment that may affect their work ability particularly if the jobs involve heavy lifting and

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require greater physical demands. Work accommodation by employers has been reported as one of the most influential components of a successful return to work experience among cancer survivors²⁸. For instance, practical support from supervisors by taking illness and fatigue in consideration when planning and managing work tasks is important for cancer survivors^{8,9}. Secondly, survivors are often disadvantaged in the labor market compared to those without cancer²⁰; this may be partly due to the misconceptions towards cancer survivors ability and commitment towards their work⁷. Due to this misconception, cancer survivors may be discharged from employment, laid-off, subject to pay-cuts and demotion²⁶. Studies have also shown that organizations consistently reported more negative beliefs about the impact of cancer and treatments on work and held more negative lines perceptions about cancer in relation to work^{7,8}. Therefore, the findings from this study may help to alleviate such misconceptions thereby giving better opportunity for breast cancer survivor to be fairly treated, find meaningful work and to progress in their career. Employers need more accurate and practical information to dispel misconceptions and concerns about hiring and retaining people with chronic illness such as cancer⁸. Therefore, the findings of this study could present to employer more accurate information about work-related outcomes experienced by cancer. Finally, the findings of this study, provide insight as to the possibility of work to serve as form of coping mechanism towards improving cancer survivor well-being as it provide sense of purpose in life, a sense of contributing, a distraction and improves one's self-esteem^{1,2,3,19}. There are three limitations to the study. First, this study used a case-control study design. Hence, a change in work engagement that may occur over time was not accounted in this study. Further research should use longitudinal study to examine work engagement of breast cancer survivors over time. Secondly, the case sample was drawn from hospitals in the Klang Valley using non-probability technique. Thus, the result may not reflect the experiences of breast cancer survivors in other geographical areas. Hence, more studies are needed to confirm the findings using matched control samples or larger control samples. Third, most of the research to date indicates that return to work can be related to health variables such as disease stage, cancer site, time since treatment, physical symptoms, and fatigue; work-related variables such as positive attitude of co-workers, control over work hours, manual labor, and physical demands at work, social support received at work, organizational climate, work accommodation, absenteeism from work; and personal related factors such as attitude towards the value of work, sense of optimism and quality of life^{3,10,11,29}. Hence,

further research should investigate some of these factors alongside examining work engagement of breast cancer survivors.

CONCLUSIONS

Based on the finding, breast cancer is not a critical factor to reduce work engagement in the workplace. Breast cancer survivors are a group of normal people that only have an experience about their chronic illness and they are able to continue their work after diagnosis and treatment of their cancer. Although based on the result of this study they may have less vigor in their activities, their absorption and dedication in work places are similar to people without cancer.

One of the important practical implication can be drawn from this study is that managers and supervisors in workplaces should be aware that cancer survivors may be as engaged in their work as normal employees. They may be different to other employees in their energy at work and this may be due to cancer-related symptoms they experienced. In order the increase the awareness among employers, it is timely to develop dissemination strategy to make employers aware about issues concerning return to work among cancer survivors. Through media we can disseminate messages about return to work and cancer survivors to employers. A board range of media coverage should be used such as through seminars on return to work, developing specific website on 'cancer and work', publication in business magazines and practitioners' journal, and through websites belonging to employers' associations such as the Malaysian Employers' Federation, Federation of Malaysian Manufacturers; international business chambers such as the Malaysian International Chambers of Commerce (MICCI), German Business Council (GBC), American Malaysian Chamber of Commerce (AM000000CC), etc and local business chambers such as National Chamber of Commerce and Industry of Malaysia (NCCIM). Besides media coverage, guideline on work accommodations should be made available to employers. Among the work accommodations suggested to accommodate for fatigue and weakness experienced by cancer survivors are; reduce or eliminate physical exertion, schedule periodic rest breaks away from the workstation, allow a flexible work schedule, provide parking close to work-site, etc.²⁸. Moreover, medical, clinical, and supportive services aimed at prevention and better management of symptoms after return to work are also needed for successful transition to employment among breast cancer survivors.

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