

RESEARCH ARTICLE

Non-Practice of Breast Self Examination and Marital Status are Associated with Delayed Presentation with Breast Cancer

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Abstract

Delay in seeking treatment for breast cancer is a barrier to the early diagnosis and management of the disease, resulting in a poorer prognosis. We here estimated the prevalence of delayed presentation for breast cancer and identified possible influential sociodemographic factors in a cross-sectional study of 250 patients diagnosed with primary breast cancer at the Radiotherapy and Oncology Clinic in Kuala Lumpur Hospital. Data were collected by face-to-face interview using a structured questionnaire and from medical records. We examined associations between delayed presentation (presenting to a physician more than 3 months after self-discovery of a symptom) and sociodemographic characteristics, practice of breast self examination (BSE), history of benign breast disease, family history of breast cancer and type of symptom, symptom disclosure and advice from others to seek treatment using multiple logistic regression. Time from self-discovery of symptom to presentation ranged from the same day to 5 years. Prevalence of delayed presentation was 33.1% (95% CI: 27.4, 39.3). A significantly higher proportion of delayers presented with late stages (stage III/IV) (58.3% vs. 26.9%, $p < 0.001$). Divorced or widowed women (OR: 2.23, 95% CI: 1.11, 4.47) had a higher risk of delayed presentation than married women and women who never performed breast self examination were more likely to delay presentation compared to those who regularly performed BSE (OR: 2.74, 95% CI: 1.33, 5.64). Our findings indicate that delayed presentation for breast cancer symptoms among Malaysian women is high and that marital status and breast self examination play major roles in treatment-seeking for breast cancer symptoms.

Keywords: Breast cancer - delayed presentation - breast self examination - marital status - Malaysia

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Introduction

Breast cancer is the most common cancer in Malaysian women. In 2006, 3,525 cases of breast cancer among women were registered in Peninsular Malaysia, which is 29.9% of cancer cases in women. It was the commonest cancer site in females in all age and ethnic groups (National Cancer Registry, 2002, National Cancer Registry, 2003), and the eighth leading cause of death in Malaysia in 2000 (1,109 deaths or 2.4% of all female deaths) (Institute for Public Health, 2004).

Early diagnosis and treatment is still currently the best defense against breast cancer morbidity and mortality. Patients diagnosed and treated at an early stage of the disease have better quality of life and longer survival (Richards et al., 1999). Therefore, efforts should be directed at improving early presentation rates.

Delay in diagnosis and treatment of cancer may be

distinguished into three types based on the stage at which the delay occurs, i.e. patient-mediated delay, which is the period from first onset of symptoms to first medical consultation; and provider delay (Facione, 1993; MacLeod et al., 2009), the period from first consultation to definite diagnosis or treatment and practitioner or hospital delay, or the interval between referral and initiation of treatment (Burgess et al., 1998). Presentation of breast cancer at late stages may be due to the patient delaying seeking medical attention for self-detected symptoms. The length of symptom duration commonly used to indicate this delay is more than 3 months (Burgess et al., 1998; Montazeri et al., 2003; Friedman et al, 2006). This categorisation is based on the evidence that patients who delay presentation for 3 months or more have lower 5-year survival rates than those with less delay (Richards et al., 1999).

Factors that have been suggested to influence patient delay are mainly socioeconomic and demographic factors

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and the nature of the presenting symptom. Among them are marital status (Ali, 2008; Gulatte, 2009), education status, income (Ali, 2008), living alone (Meechan, 2003) and having initial symptoms that did not include a lump (Burgess, 1998; Meechan, 2003).

In Malaysia it has been reported that many breast cancer patients present at late stages of the disease. In a 4-year review between 30-60% of new cases presented to tertiary hospitals were in stages 3 or 4 (Hisham and Yip, 2004). However, it is not clear whether late presentation is due to the patient delay, as such a study is lacking in Malaysia. We therefore, conducted this study to examine the extent of patient delay and if there are associations between sociodemographic, family history and breast lump with patients' delay in seeking help for symptomatic breast cancer.

Materials and Methods

Participants

We conducted a cross-sectional study at the Radiotherapy and Oncology Department of Hospital Kuala Lumpur (RTCHKL). The Kuala Lumpur Hospital was chosen because it is one of three public hospitals that provides tertiary oncology services in the Klang Valley (the other two are university hospitals) and receives patients not only from the Klang Valley but from almost all states in the northern, western and central regions of Peninsular Malaysia. The study population consisted of patients with primary cancer of the breast diagnosed within 24 months prior to interview with self-discovery of breast symptom attending the RTCHKL from September 2006 to June 2007. Cases diagnosed from routine screening mammography or accidental finding by clinician were excluded. All other patients who fulfilled the criteria were enrolled in the study. After obtaining signed informed consent, the patients were interviewed by a trained member of the research team in a private room within the clinic prior to their consultation with the oncologist. For patients not conversant in neither Malay nor English, the interview was conducted by proxy through a relative or companion. This study was approved by the Medical Research and Ethics Committee, Ministry of Health, Malaysia.

Measures

Patients were asked the nature of the presenting symptom and how it was discovered. The length of time between initial symptom detection and seeing a medical provider was extracted from the patients' medical records and interview. Whenever there were discrepancies between the two, the patient interview data were used. The outcome variable "delay" was assessed from the question "How long did you experience the symptoms before seeing a doctor?" The patient was categorised as a delayer if the duration was more than 3 months or 12 weeks (Burgess et al., 1998; Montazeri et al., 2003; Friedman et al., 2006).

Clinical variables, were extracted from the patients' medical records while sociodemographic information (age, place of residence, marital status, ethnicity, education level, income), family history of breast cancer, screening

behaviour and symptoms (previous benign breast disease, frequency of breast self-examination), and symptom disclosure (disclosed symptom to others, urged by others to see a doctor) were obtained from personal interview with the patient using a structured questionnaire.

Data analysis

Descriptive statistics were used to describe duration of symptoms before first medical consultation and sociodemographic and medical history, screening behaviour and symptoms and symptom disclosure. The chi-square test was used to assess crude associations between delay status (delayer or non-delayer) and predictor variables (sociodemographic, medical history, screening behaviour, symptoms and symptom disclosure). To identify the risk factors associated with delay, we calculated adjusted odds ratios of delaying for each of these factors using multivariable logistic regression. Variables associated with delay with chi-square p values less than 0.05 were entered into a logistic regression model. All analyses were performed using SPSS version 18 (SPSS Inc, Chicago) at 95% confidence level.

Results

A total of 246 breast cancer patients were eligible. Of the 246 patients, 6 refused to be interviewed and another 4 patients were excluded because they were unable to respond adequately due to severe pain and distress at the time of interview. Mean age of the sample was 51.2 years (SD=10.9; Range: 26-83). Forty eight percent (n=113) had a monthly household income of less than 1000 Malaysian ringgit (MYR), 39.7% (n=93) between MYR1000 to MYR5000 and 12% (n=28) more than MYR5000.

Symptom duration ranged from less than a day to 10 years. Distribution of patients by duration of symptoms is shown in Table 1. Of the 236 patients, 66.9% presented less than 3 months (non-delayers) while 33.1% waited for 3 months or more (delayers) before making the first visit to a doctor. Distribution of delay with stage at diagnosis is shown in Table 2. Overall, about 37% of patients were diagnosed at stage III or IV. More than 50% of delayers were diagnosed at late stages of breast cancer compared to 26.9% of non-delayers ($p<0.01$) (Table 2). About 56.8%

Table 1. Duration of Symptoms before First Medical Consultation

Duration	n	%
<1 week	63	26.7
1-2 weeks	33	14.0
2-4 weeks	17	7.2
4-8 weeks	28	11.9
8-12 weeks	17	7.2
>12 weeks	78	33.1

Table 2. Prevalence of Delayed Presentation and Breast Cancer Stage at Diagnosis

Duration	Stage O, I, II		Stage III, IV		X ²	p value
	n	%	n	%		
<3 months	106	73.1	39	26.9	20.3	<0.001
≥3 months	30	41.7	42	58.3		

(n=133) of patients reported having performed BSE, yet only about 54% (72) of them do so on a regular basis. Among the patients who performed BSE regularly, 23.6% were delayers (p=0.03).

Chi-square analysis showed that there was an association between ethnicity, marital status and breast self examination practice and delayed presentation (Table 3). There were more delayers among Chinese patients (47.1%) than Malays (31.1%) and Indians (22.5%). There were more delayers among unmarried (47.1%) and divorced/widowed women (48.8%) compared to married women (27.8%). There was an increasing trend in the proportion of delayers among those who performed BSE regularly (23.6%), performed BSE irregularly (27.9%) and never performed BSE (41.6%).

The variables ethnicity, marital status and breast self examination practice were entered into a multiple logistic regression model (Table 4). After controlling for other variables, Chinese was significantly associated with delayed presentation compared to Indians (OR: 3.76, CI: 1.41, 10.04). Divorced/widowed women were more likely to delay presentation compared to married women (OR:

Table 3. Comparison of Sociodemographic and Psychosocial Factors between Delayers and Non-delayers

Variables	Delay <3 months		Delay ≥3 months		X ²	p value
	n	%	n	%		
Age, mean (SD)	50.46	(11.09)	52.63	(10.36)	-1.44	0.151**
Place of residence						
Kuala Lumpur/Selangor/Putrajaya	107	66.5	54	33.5	0.05	0.815
Elsewhere	51	68.0	24.0	32.0		
Marital status					8.51	0.014
Unmarried	9	52.9	8.0	47.1		
Married	127	72.2	49.0	27.8		
Divorced/Widowed	22	51.2	21.0	48.8		
Ethnicity					6.8	0.033
Malay	100	69.0	45.0	31.0		
Chinese	27	52.9	24.0	47.1		
Indian	31	77.5	9.0	22.5		
Education					0.03	0.559
Primary or none	68	65.4	36.0	34.6		
Secondary or higher	89	69.0	50.0	31.0		
Estimated monthly household income					2.62	0.105
≤RM1,000	70	61.9	43.0	38.1		
>RM 1,000	87	71.9	34.0	28.1		
Family history of breast cancer					0.89	0.346
Yes	16	76.2	5.0	23.8		
No	142	66.0	33.0	34.0		
Previous benign breast disease					0.15	0.697
Yes	10	71.4	4.0	28.6		
No	146	66.4	74.0	33.6		
Performed breast self examination (BSE)					6.99	0.03
Regularly	55	76.4	17.0	23.6		
Irregularly	44	72.1	17.0	27.9		
Never	59	58.4	42.0	41.6		
Symptom included breast lump					1.04	0.309
Yes	141	68.1	66.0	31.9		
No	17	58.6	12.0	41.4		
Disclosed symptom to another					3.79	0.051
Yes	142	69.3	63	30.7		
No	16	51.6	15	48.4		
Did anyone urge you to see a doctor?					1.33	0.249
Yes	124	68.5	57	31.5		
No	13	56.5	10	43.5		

*t statistic; **p value from independent samples t test

Table 4. Odds Ratio for Delayed Presentation among Breast Cancer Patients Attending the Radiotherapy and Oncology Clinic, Kuala Lumpur Hospital

Variables	n	Adjusted OR (95%CI)*	Wald	p value
Marital status				
Married	176	Reference		
Unmarried	17	1.93 (0.66, 5.64)	1.45	0.229
Divorced/Widowed	43	2.67 (1.30, 5.50)	7.11	0.008
Ethnicity				
Indian	40	Reference		
Malay	145	1.93 (0.81, 4.61)	2.21	0.137
Chinese	51	3.76 (1.41, 10.04)	6.97	0.008
Performed BSE				
Regularly	72	Reference		
Irregularly	61	1.18 (0.53, 2.64)	0.16	0.686
Never	101	2.19 (1.09, 4.38)	4.86	0.028

*Multivariable logistic regression with adjustment for other variables in the model, Hosmer-Lemeshow goodness-of-fit p value=0.357

2.67, CI: 1.30, 5.50). However, only never performing BSE was significantly associated with delay, having a more than two-fold odds of delaying (OR: 2.19, CI: 1.09, 4.38) compared to women who performed BSE regularly.

Discussion

In a meta analysis involving studies in the USA (7 studies), Great Britain (3), Rome (1) and Singapore (1) between 1975 and 1992, it was reported that 34% of patients delayed (Facione, 1993). In our study, the proportion of delayers (33.1%) was lower than the figure from the meta analysis mentioned above, but slightly higher than 25% reported in Iran (Montazeri et al., 2003), and 21.2% in New Zealand (Meechan et al., 2003). Another Iranian study (Harirchi et al., 2005) and a South Indian study (Ali et al., 2008) reported even higher prevalences of 42.5% and 42.0% respectively.

In our study, the proportion of patients who presented at stage III or IV was consistent with a previous report that between 30-60% of new cases presenting to two major hospitals in Kuala Lumpur from 1998-2004 were in late stages (Hisham and Yip, 2004). As expected, delayed presentation was significantly associated with late stage disease, which has also been reported in other studies (Montazeri et al., 2003).

Breast cancer patients of Chinese ethnicity were most likely to delay in this study. The Third Malaysian National Health Morbidity Survey (NHMSIII) conducted in 2006 reported that low prevalence of seeking healthcare from a conventional healthcare facility and higher tendency to use self-care and traditional and complementary medicine among the Chinese which may partly explain why prevalence of delay is higher among the Chinese women compared to other ethnic groups (Institute for Public Health, 2008). Other studies in multiethnic communities (Nosarti, 2000; Meechan, 2003) have found no difference between patients of different ethnicities. It has been suggested though that cultural beliefs which vary between different ethnic groups have a significant impact on patients' health-seeking behavior (Lannin et al., 1998) which may influence their disease stage at presentation.

In the present study, neither education level nor income was significantly associated with delay. But we suspect that this is due to lack of variation in the distribution of these two variables in our sample. Therefore, the effect of differing socioeconomic status could not be assessed. However, a study conducted in the state of Sabah, Malaysia reported that patients who presented with advanced disease tended to be impoverished, non-educated and from rural areas (Leong et al., 2007).

We found that there were more delayers among divorced/widowed women than among married women. Other studies have found a similar pattern (Ali et al., 2008; Gulatte, 2009). However, one study (Harirchi et al., 2005) reported the reverse. As suggested by Ali et al. (2005) an explanation for this may be that married women have the advantage of having household, economic and emotional support from their husbands. A theoretical model posits that marriage may be beneficial to health because spouses positively influence their partner's health behaviors (Umberson, 1992). On the other hand, this also indicates that women without spouses lack such support and need help from other quarters to improve their health seeking behavior and their opportunity for obtaining optimum healthcare. Though unmarried women delayed more than married women, the difference was not significant after other factors had been controlled for.

In the present study, having a family history of breast cancer was not associated with delay, as did Burgess et al. (1998) and Meechan et al. (2003). Having a family history of breast cancer does not increase a woman's suspicion towards breast cancer symptoms. Yip et al. (2008) reported no difference in size, stage, and duration of symptoms of breast cancer between Malaysian women with a positive family history and those without, with only 10.7% of tumours in women with family history detected on screening. This indicates a general lack of knowledge of the genetic susceptibility to breast cancer (Pharaoh et al., 1997) among Malaysian women with a family history of the disease.

It has been shown that women are more likely to delay presenting if the initial symptoms do not include a breast lump (Meechan, 2003). However, not having a breast lump was not associated with delayed presentation in our study. In our study, a painless lump was the most common initial symptom reported. However, the women would only seek medical advice upon noticing a sudden or rapid increase in lump size, having additional symptoms or starting to feel pain (Taib et al., 2011). Some were unsure whether they actually had a lump. Most said the lump was not present all the time and could be felt on and off, raising doubts as to whether there was a lump in the first place and strengthening the belief that the lump was benign. Non-recognition of symptom seriousness is a common theme in patient delay (Burgess et al, 2001; McLeod et al., 2009; Lam et al, 2009). Absence of pain is usually assumed to indicate benign disease and therefore does not warrant a visit to the doctor (Burgess et al, 2001; McLeod et al., 2009; Lam et al, 2009). All this can be avoided if women have better knowledge of signs and symptoms of breast cancer, perform breast self examination correctly and have proactive help-seeking behavior.

We found that a high percentage of patients performed BSE, however only half of them performed regularly similar to a study among female teachers in which 55.6% had ever performed BSE, with 19% performing on a regular basis (Parsa et al., 2008). This translated into a significant association between BSE and delay. Our findings indicated that women who never perform BSE, are more likely to delay presentation. This suggests that women who perform BSE are more knowledgeable of breast cancer (Parsa et al., 2008), and conversely, those who do not perform BSE are less knowledgeable and therefore, less wary of changes in their breast or do not understand the urgency of seeking medical advice. This is in contrast with findings by Magarey (1977) and Meechan et al. (2002).

Several limitations of this study have been noted. Firstly, although our study location (RTCHKL) is the main referral centre for breast cancer in this country, but not all breast cancer cases are managed here. There are other public and private hospitals that provide treatment for breast cancer. Furthermore, those with high income are more likely to seek treatment in the private hospitals (Institute for Public Health, 2008). Therefore, our findings cannot be generalised to the breast cancer patient population in Malaysia.

Secondly, even though breast cancer is the most common among the Chinese (45.6%) (National Cancer Registry, 2003); we managed to recruit only 51 (21.6%) respondents of Chinese ethnicity which is under-representative of the proportion in the general population. We believe that this is due to the relatively lower attendance of this ethnic group in government clinics (Institute for Public Health, 2008). Multicentre studies nationwide composed of patients from diverse sociodemographic background would provide a better picture of delayed presentation in Malaysian women. Thirdly, recall bias is inevitable as we had to rely on self-report for the delay variable. However, we attempted to minimise this by cross-checking with the patients' medical records.

In conclusion, we conclude that Chinese, widowed or divorced women and women who never perform breast self examination are more likely to delay presentation for breast cancer. Therefore, our findings suggest a need to emphasise the importance of breast self examination in breast cancer awareness campaigns especially among the Chinese, divorced and widowed women.

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