The relationship of symptoms and psychological factors to delay in seeking medical care for breast symptoms

Geraldine Meechan, M.Sc., a John Collins, M.D., b and Keith J. Petrie, Ph.D. a, *

a Department of Health Psychology, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand
b Department of Surgery, Middlemore Hospital, Auckland, New Zealand

Abstract

Background. The psychological processes involved in the delay between noticing breast symptoms and seeking medical care are not well understood.

Methods. We evaluated 85 women referred to a specialist breast clinic prior to their clinic appointment. We assessed the relationship between delay and the type of breast symptom, immediate emotional response to the symptom, perceived risk of breast cancer, fear of breast cancer treatment, and disclosure of the breast symptom to others.

Results. Delay was unrelated to demographic factors but was related to the type of breast symptom; women who had a breast lump waited a significantly shorter time period before visiting the doctor than those without a breast lump. Initial symptom distress on the discovery of the breast symptom was also significantly related to delay. Knowledge of a friend or family member with breast cancer, perceived risk of breast cancer and fear of breast cancer treatment, and disclosure of the symptom to a partner or other person were all unrelated to delay.

Conclusions. The results show the importance of the type of symptom and initial emotional distress in delay and highlight the importance of widening public perceptions of breast symptoms other than breast lumps in order to reduce delay times.

Keywords: Breast cancer; Delay; Breast symptoms; Psychological factors

Introduction

Recent studies have demonstrated that a longer delay in presenting with breast symptoms is associated with a lower rate of survival from breast cancer [1,2]. Those patients waiting longer than 3 months before seeking medical attention for their symptoms have a significantly worse prognosis than those seeking help earlier. Despite the strong association between delay and survival, a considerable number of women wait for longer than 3 months before presenting with breast symptoms. For instance, a review found that 20–30% of patients had waited over 3 months before seeking medical help [1] and similar rates have been reported in the American literature [3].

Research on patient delay has identified that the initial stage of symptom interpretation, where the patient decides whether his or her symptoms need medical attention, accounts for the majority of the delay time in patients with breast symptoms [4]. The factors involved in this symptom appraisal process as it relates to breast symptoms are currently poorly understood. A number of studies have identified that women who experience a breast lump are less likely to delay than women who experience other breast symptoms such as nipple discharge or a change in shape of the breast [5–7], with a recent review finding a breast lump to be associated with shorter patient delay [8], suggesting that a breast lump is more likely to be recognized by women as a symptom needing medical attention.

The role of initial emotional response to discovery of breast symptoms and subsequent delay has not been adequately investigated. Previous research has examined whether anxiety is related to delay but the results have been inconsistent [9–11]. This may be due to the use of generalized rather than symptom-specific anxiety measures and the fact that women in these studies were often investigated...
following the diagnosis of breast cancer or while awaiting treatment, when their overall anxiety is likely to be high. Based on work with other illness populations, it seems likely that specific anxiety on discovery of breast symptoms would be associated with a shorter delay period [12].

Recent work has highlighted patients’ perceived risk of breast cancer to play an important role in preventative behavior, with women who believe they are more susceptible to breast cancer being more likely to participate in screening programs [13,14]. A family history of breast cancer and familiarity with the disease through friends and acquaintances are factors that may influence perceptions of the risk of developing breast cancer. To date, the association between perceived risk of breast cancer and delay following the discovery of breast symptoms has not been systematically investigated. Negative perceptions about breast cancer treatment have also been proposed as a factor that may play a role in delay, although the few studies that have investigated this have found inconsistent results [10,15].

Whether others play a significant role in encouraging women to seek help for breast symptoms is also unclear. In other illnesses, such as the onset of symptoms of myocardial infarction, discussion with other people can reduce delay by clarifying the degree of threat represented by the symptoms and the need for medical attention [16]. Family and significant others may also exert influence about seeking help by offering advice or recommendations about taking action. There is some evidence to suggest that women who talk to others about their breast symptom are less likely to delay [5,17]; however, this research has been carried out in women with diagnosed breast cancer rather than with women presenting with breast symptoms per se.

In this study we investigated the association between delay and type of breast symptom, initial emotional response to the symptom, perceived risk of breast cancer, and the role of talking to others about symptoms as well as standard demographic and clinical factors. In order to overcome previous methodological difficulties inherent in using a diagnosed breast cancer population, we assessed women without a history of breast cancer referred by their doctor to a breast clinic prior to their specialist appointment and diagnosis.

Participants and methods

Participants

Eighty-five women attending the South Auckland Health Breast Clinic participated in the study. The women were consecutive patients referred by their general practitioner to the clinic for specialist evaluation of breast symptoms. To be eligible for the study, participants needed to be female, have self-discovered breast symptoms rather than those detected through screening mammography or by a health professional, and have no previous history of breast cancer. Of the eligible participants referred to the clinic, 13 patients declined to participate in the study. Nonparticipants did not differ by age ($t(96) = 0.21, P = 0.83$) or ethnicity ($\chi^2(1, N = 98) = 1.68, P = 0.19$).

The mean age of the sample was 38.9 years (SD = 11.5; range 20–71 years) and 55 were married or in de facto relationships, 20 were single or never married, and 10 were separated, widowed, or divorced. The final sample comprised 49 Europeans, 16 Pacific Islanders, 13 Maori, and 7 from other ethnic groups. Seven women eventually received a diagnosis of breast cancer. Of those women, 2 had delayed over 3 months and the remaining 5 had seen their general practitioner within 1 month of symptom onset. In the total sample, 19 women were diagnosed with a benign breast lump and 1 with breast infection, and 58 had no abnormality detected (presenting symptoms in this group included breast lump, nipple discharge or indrawn, breast pain, and change in shape of breast).

Procedure and measures

All eligible women were approached on arrival at the breast clinic by the nursing staff. Once informed consent was obtained, participants completed a questionnaire, followed by an interview with a research psychologist prior to their consultation with the medical specialist.

Demographic and clinical data

As well as standard demographic data, participants indicated whether they were experiencing the following seven symptoms; breast lump, breast infection, breast pain, nipple discharge, nipple indrawn or changed, breast abscess, change in shape or dimpling of the breast. Women also were asked how the breast symptom was discovered; regular breast self-examination, by chance, or after experiencing pain. The number of days between initial symptom detection and before the patient saw their GP was taken from the patient’s medical record. This time was also verified by asking the patient how long they had experienced their symptom prior to their initial medical presentation. In the few cases where there was a discrepancy between the two measures of symptom duration, the patient interview data were used.

Emotional response to symptom discovery

Participants rated the extent they felt each of four items, “afraid,” “anxious,” “distressed,” and “scared,” when they first noticed their breast symptoms on a five-item Likert scale from 1, very slightly, to 5, very much. These items were summed to produce a symptom emotional distress scale (scale range 4–20; Cronbach’s $\alpha = 0.89$).

Perceived risk, fear of breast cancer treatment, and friends/family with breast cancer

Perceived risk of developing breast cancer and fear of breast cancer treatment were assessed using visual analogue
scales. Participants rated their perceived risk of developing breast cancer over their lifetime by marking a 10-cm line labeled “low risk” to “high risk” and how afraid they were of breast cancer treatment from “not afraid at all” to “very afraid.” Participants also completed items on whether any member of their family or friends had been diagnosed with breast cancer.

**Symptom disclosure**

Participants also were asked “Who did you talk to when you first discovered/experienced your breast symptom(s)?” with the following responses available: no one, my partner/husband, a family member, friend, or other.

**Analysis**

The delay time between discovery of breast symptom and seeing a doctor was positively skewed and a logarithmic transformation was used to normalize the distribution for statistical analysis. Comparisons of patient characteristics and delay time were conducted using Pearson product moment correlations, \( \chi^2 \) analysis, analysis of variance, and \( t \) tests for independent samples where appropriate. A step-wise multiple regression was used to examine the relative contribution of factors found in the study to be associated with delay.

**Results**

The median delay for participants between discovering the symptom and seeing their general practitioner was 14 days. Of the total sample, 40% had seen their doctor within 7 days, 52% within 14 days, 69% within 30 days, and 14% of women had waited over 90 days. Delay time was not significantly related to any of the demographic data gathered including age (\( r = 0.01, P = 0.96 \)), marital status (married/de facto versus not married); \( t(83) = -1.31, P = 0.19 \), living alone or not (\( t(83) = -0.60, P = 0.55 \)), and education (secondary school versus post school qualification; \( t(83) = -1.26, P = 0.21 \)) or between the ethnic groups of European, Maori, or Pacific Island women (\( F(2,76) = 1.22, P = 0.30 \)).

The most frequent symptom experienced was a breast lump, reported by 66 (78%) participants. Fifty-five (65%) participants reported breast pain, 17 (20%) nipple discharge, 9 (11%) nipple indrawn or changed, 6 (7%) change in shape or dimpling of breast (7%), and 1 (1%) breast infection. Women with a breast lump waited a significantly shorter time period before visiting the doctor than those without a breast lump (\( t(83) = -2.35, P = 0.02 \)). The median delay time for women with breast lump was 13 days compared to 30 days for women without a lump. No difference in delay was found for women experiencing breast pain or not (\( t(83) = 1.35, P = 0.18 \)) or those women experiencing nipple discharge or not (\( t(83) = 0.37, P = 0.71 \)).

Sixty-two percent of women stated that they regularly performed BSE. However, there was no difference in delay time between those who performed BSE and those who did not (\( t(83) = 0.59, P = 0.55 \)). Forty-one percent of women responded that they had discovered their breast symptoms by chance, with 37% noticing breast pain and 22% picking up their symptom following regular BSE. There was a trend apparent (\( F(2,82) = 2.83, P = 0.07 \)) for women who noticed their symptoms following pain to have a longer delay time (median = 30 days) than women who discovered their symptoms by chance (median = 14 days) or through regular BSE (median = 14 days).

The data showed a significant correlation between delay time and emotional response to symptom discovery with higher levels of emotional response being associated with shorter delay in seeking medical help (\( r = -0.29, P = 0.01 \)). Interestingly, while women with breast lumps waited a shorter time before seeking help, there was no difference in the level of emotional response to symptoms in the breast lump and non-breast-lump groups (\( t(74) = 0.58, P = 0.56 \)), suggesting that these factors may be operating independently. There was no significant association between delay time and perceived risk of breast cancer (\( r = 0.06, P = 0.57 \)) or delay time and fear of cancer treatment (\( r = 0.06, P = 0.59 \)).

The effect of knowledge of a family member or friend with breast cancer on delay was examined. Twenty-eight percent of the sample reported having a friend or family member with breast cancer and this was significantly associated with perceived risk of developing breast cancer (\( M = 49.76, SD = 27.01 \) versus \( M = 31.64, SD = 26.01 \); \( t(83) = 2.85, P = 0.005 \)), but unrelated to fear of treatment for breast cancer (\( t(83) = -0.92, P = 0.36 \)) or emotional response to the discovery of the breast symptom (\( t(74) = -0.98, P = 0.32 \)). There was, however, a trend for women who had a family member with breast cancer to have a longer delay time before seeking medical treatment (\( t(83) = 1.82, P = 0.07 \)). Twenty-nine percent of the sample reported having a friend who had been diagnosed with breast cancer but this was unrelated to perceived risk of developing breast cancer (\( t(83) = -0.19, P = 0.84 \)), fear of breast cancer treatment (\( t(83) = 0.51, P = 0.61 \)), emotional response to the discovery of the breast symptom (\( t(74) = 0.61, P = 0.54 \)), or delay (\( t(83) = -0.02, P = 0.98 \)).

The effect of social factors on delay was examined next. Of the 55 women who were married or in de facto relationships, 43 (78%) had talked to their partner about their breast symptom. However, there was no difference in delay in women who had told their partner compared with those who had not (\( t(53) = 1.26, P = 0.21 \)). Of the total sample, 67 (79%) had talked to their partner, family, or friend about their breast symptom. Again, there was no difference between those women who had talked to someone about their symptoms and those who had not (\( t(83) = -0.11, P = 0.91 \)).

Women in this study who had delayed more than 3
months before seeking medical advice were compared to women who delayed less than 3 months on the variables investigated in this study. These results are presented in Table 1 and show that women who delayed 3 months or longer were significantly less likely to have a breast lump than women presenting earlier. There was also a trend for women who delayed longer than 3 months to have had a family member previously diagnosed with breast cancer.

Finally, the variables found in this study to be related to delay in presenting with breast symptoms were entered into a stepwise multiple regression to determine the factors most related to delay in this sample. These variables were breast lump as a symptom, family member with breast cancer, symptom discovered following pain, and initial symptom distress at symptom discovery. Two variables entered the equation \( F(2,75) = 9.43, P = 0.0001 \) with the regression model having an adjusted \( R^2 = 0.18 \). Not having a breast lump (\( \beta = -0.35, t = -3.30, P = 0.0001 \)) and lower initial symptom distress (\( \beta = -0.32, t = -3.03, P = 0.001 \)) were found to be the factors most predictive of delay.

## Discussion

This study of women with self-discovered breast symptoms found that while 40% of women saw their doctor within 1 week, 14% waited for over 3 months before seeking medical help. We found delay to be significantly related to the type of breast symptom, with women who experienced a breast lump being less likely to delay. Initial emotional distress concerning the symptom was also an important factor in women seeking medical help sooner. As the study assessed women prior to specialist evaluation, it included a wider range of women than those that have been typically used in previous studies. In this investigation, demographic factors, the practising of BSE, perceived personal risk of breast cancer, knowledge of family or friends with breast cancer, self-rated health, and fear of breast cancer treatment were also unrelated to delay.

The results showing a relationship between a breast lump and shorter delay are consistent with previous research [5,7,18] and suggest that public education campaigns have been successful in terms of developing an association between a breast lump and prompt medical attention. Many women clearly have developed a lay perception or cognitive model of breast cancer that includes the symptom of a classical painless breast lump [19]. While this association shortens the time for women with breast lumps to seek help, the longer delay evident in women with other breast symptoms highlights the fact that future health campaigns should encourage women who discover other abnormal breast symptoms to also seek attention promptly. Research focusing on delay and other types of cancer has also found that delay in seeking medical help is more common when symptoms of a particular cancer are more diverse [4].

The finding that initial distress on symptom discovery was important in delay highlights the important role of emotions in driving help-seeking behavior. While previous studies have found that general psychological distress is more common among women who delay [18], the current study has demonstrated that initial distress on discovery of breast symptoms is important in seeking prompt medical help. This finding is consistent with previous experimental work looking at reactions to hypothetical breast symptom scenarios [20] and suggests that further research on this symptom appraisal period would help us to understand the factors that determine initial emotional distress.

While previous research with diagnosed breast cancer patients has suggested that disclosure of symptoms to others is associated with shorter delay periods [5,17], the current study using women with breast symptoms did not find any effect for symptom disclosure on delay. It could be that social influence tends to be more important in groups with established breast pathology or the high rates of disclosure in the current sample (approximately 80% of women) obscured this effect. Perceived susceptibility to breast cancer also did not have an effect on delay in this group and may play a more important role in deliberate cancer screening behaviors than delay.

### Table 1

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Women delaying less than 3 months (N = 67)</th>
<th>Women delaying &gt;3 months (N = 18)</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast lump (%)</td>
<td>85.1</td>
<td>50</td>
<td>0.002</td>
</tr>
<tr>
<td>Regular BSE (%)</td>
<td>64.2</td>
<td>55.6</td>
<td>0.50</td>
</tr>
<tr>
<td>Family member with breast cancer (%)</td>
<td>23.9</td>
<td>44.4</td>
<td>0.09</td>
</tr>
<tr>
<td>Friend with breast cancer (%)</td>
<td>29.9</td>
<td>27.8</td>
<td>0.86</td>
</tr>
<tr>
<td>Told to someone about symptom (%)</td>
<td>80.6</td>
<td>72.2</td>
<td>0.44</td>
</tr>
<tr>
<td>Distress upon symptom discovery (mean)</td>
<td>10.5 (4.8)</td>
<td>9.3 (4.3)</td>
<td>0.36b</td>
</tr>
<tr>
<td>Perceived risk of breast cancer (mean)</td>
<td>37.5 (26.6)</td>
<td>33.9 (30.9)</td>
<td>0.63b</td>
</tr>
<tr>
<td>Fear of breast cancer treatment (mean)</td>
<td>57.7 (34.5)</td>
<td>65.9 (35.3)</td>
<td>0.37b</td>
</tr>
</tbody>
</table>

* Comparisons made by \( \chi^2 \) test unless otherwise noted.

\( t \) test, two tailed.

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Some limitations of the study should be noted. The study is reliant on retrospective recall of patients for the onset of symptoms and while the delay period for most patients is relatively short, time estimation may be less accurate for patients with long delay periods. The study may also be subject to possible selection bias due to the fact that it only includes women who eventually seek medical help and does not include those who do not present to doctors for breast symptoms. Additionally, as the data collection was conducted at a breast clinic, no information is available for women who are not referred for specialist investigation. The relatively young age of the study participants suggests that caution is needed before generalizing our results to other groups. For example, a recent review by Ramirez and colleagues [8] found strong evidence for an association between older age and delay which was not apparent in this sample, the average age of which was under 40 years.

Bearing these limitations in mind, the study highlights the important role of the initial symptom appraisal process in determining delay. More research is needed in understanding what factors influence initial symptom distress as this process seems largely unrelated to the type of symptom. The study also suggests that health promotion efforts should be directed to widening the range of breast symptoms that are associated with needing prompt medical attention.

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References