

# Breast self-examination practice and its impact on breast cancer diagnosis in Alexandria, Egypt

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ممارسة الفحص الذاتي للثدي وأثرها في تشخيص سرطان الثدي في الإسكندرية، مصر

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**خلاصة:** قدّرت هذه الدراسة نسبة ممارسة الفحص الذاتي للثدي، وعلاقتها المحتملة بطور المرض عند تشخيصه، وتأخر التشخيص بسبب المريضة بين حالات سرطان الثدي المشخصة حديثا بالإسكندرية. ولقد تبين أن الفحص الذاتي للثدي كان يُمارَس سن يَبُل 10.4% من الحالات. وكانت اللواتي يمارسنه مريضات رفيعات المستوى الاجتماعي والاقتصادي أو ممن سبق أن حدثت في عائلتهن إصابات بسرطان الثدي أو كتل حميدة في الثدي. وثبت أن هناك ارتباطاً يَعتد به بين عدم ممارسة الفحص الذاتي للثدي وبين تأخر التشخيص. وإننا لنشدد على الحاجة إلى تنظيم حملات للتوعية بالفحص الذاتي للثدي كإجراء رئيسي لضمان التشخيص المبكر، وبالتالي تحقيق تطور إنذاري أفضل لمرضى سرطان الثدي في مجتمعنا.

**ABSTRACT** This study estimated the frequency of breast-self examination practice and its possible relation to the stage of the disease at diagnosis and patient-related delay in diagnosis among newly diagnosed breast cancer patients. Breast self-examination was practised in 10.4% of cases. It was performed by patients from higher socioeconomic levels and those with a positive family history of breast cancer or benign breast mass. There was significant association between failure to practise breast self-examination and diagnostic delay. We emphasize the need for breast self-examination awareness campaigns as a key measure for ensuring earlier diagnosis and hence better prognoses for breast cancer patients in our community.

## La pratique de l'auto-examen des seins et son impact sur le diagnostic de cancer du sein à Alexandrie (Egypte)

**RESUME** Cette étude a estimé la fréquence de la pratique de l'auto-examen des seins et sa relation éventuelle avec le stade de la maladie au moment du diagnostic et le retard dans le diagnostic dû à la patiente chez des patientes atteintes d'un cancer du sein nouvellement diagnostiqué. L'auto-examen des seins était pratiqué dans 10,4% des cas. Il était effectué par les patientes d'un niveau socio-économique élevé et celles ayant des antécédents familiaux de cancer du sein ou une grosseur bénigne au sein. Il y avait une association significative entre le défaut de pratique de l'auto-examen des seins et le diagnostic tardif. Nous soulignons la nécessité de mener des campagnes de sensibilisation à l'auto-examen des seins en tant que mesure essentielle pour permettre un diagnostic plus précoce et donc améliorer le pronostic de la maladie pour les patientes atteintes d'un cancer du sein dans notre communauté.

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## Introduction

Breast cancer is the most common cancer found in women and 37 600 women died of breast cancer in 1996 [1]. It is the most common malignant neoplasm among women in Alexandria and more than 1000 were diagnosed with breast cancer in 1997, 40.3% of all cancers diagnosed in women [2]. While very little can be done to limit the main causative risk factors which have been documented in epidemiological studies [3–5], important advances have been made in strategies for early detection and in therapeutic interventions which may contribute to more favourable outcomes for breast cancer patients [6].

Breast self-examination (BSE) remains the most controversial of commonly recommended strategies for breast cancer screening. Although it is simple, non-invasive, requires little time, has no medical cost and is intuitively attractive, its effectiveness has not been established [7–9]. Ample but conflicting literature now exists on the value of BSE with some studies showing an association with earlier diagnosis [10–14] and others failing to do so [15–17]. It is also not clear whether this earlier diagnosis leads to any clinically important benefit in terms of reduced cancer mortality [18]. Foster and Costanza (1984) reported a 5-year survival rate of 75% for women who performed BSE compared with 57% in those who did not [10].

In this study we sought to estimate the frequency of BSE practice among breast cancer patients in Alexandria (Egypt), as an example of a country in a state of health transition, and to identify any relationship to the stage of the disease at diagnosis and patient-related diagnostic delay.

## Subjects and methods

A cross-sectional study of all newly diagnosed and pathologically confirmed breast cancer patients was conducted over a 1-year period (July 1997–June 1998). The patients were recruited from nine general hospitals in Alexandria representative of the different health sectors dealing with breast cancer patients: two university hospitals (54.7%), two medical care organizations (6.4%), one health insurance hospital (22.8%), two Ministry of Health hospitals (2.8%) and two private hospitals (13.3%). For all patients, detailed information was collected using pre-coded standardized questionnaires completed by qualified physicians. The questionnaire included socio-demographic data (age, years of education, employment status and marital status), family history of breast cancer among first and second degree relatives and any documented history of benign breast diseases. Information on the time lag between observing the first symptom and seeking the first medical consultation and the practice of BSE was sought through patient interviews during their first stay in hospital. Patients were questioned on whether and how often they performed BSE, if regularly (at least once a month) or irregularly and where they had learned it.

Patient-related diagnostic delay is defined as the time interval between observing the first symptom and the first medical visit. Women with diagnostic delay greater than 3 months were compared with patients with no delay (less than 3 months). Similarly, women reporting regular monthly breast examinations were compared with patients who reported irregular or no BSE (regardless of its accuracy). Tumour staging was classified according to the international tumour-lymph node-metastasis (TNM) system.

Data were analysed using SPSS (version 6.1). The test of statistical significance for contingency tables was based on the chi-squared value comparing observed and expected numbers of events. The influence of BSE on both tumour staging at the time of diagnosis and patient-related diagnostic delay was analysed using odds ratio. A multiple logistic regression analysis was performed to assess the importance of BSE practice after adjustment for both age and education.

## Results

Of the 565 women studied, 59 (10.4%) reported practising BSE and of these, only 15 patients (2.7%) examined themselves on a regular monthly basis. Information on how long women had been practising BSE was available for 55 of these 59 women (93.2%): 25.5% for less than 12 months, 40.0% between 13 and 24 months and 34.5% for more than 2 years. Nineteen patients (32.2%) had learned the technique from their relatives or friends, 17 (28.8%) through their specialists, 7 (11.9%) from their general practitioners and the remaining 27.1% had either learned it by themselves or through magazines or educational campaigns (Table 1).

Sociodemographic characteristics of the women are shown in Table 2. BSE was positively associated with a higher educational level ( $P < 0.0001$ ), employment ( $P < 0.0001$ ), family history of breast cancer ( $P < 0.001$ ) and a history of benign breast diseases ( $P < 0.0001$ ). No association was found between BSE and either age or marital status.

The relationship between BSE and tumour staging at the time of diagnosis is shown in Table 3. Overall, women reporting RSE practice, regardless of its regulari-

**Table 1 Breast self-examination (BSE) practice by frequency, duration of practice and source of information**

BSE practice	No.	%
<i>Frequency of BSE practice</i>		
Regular monthly	15	2.7
Irregular	44	7.8
Never	506	89.5
<i>Duration of BSE practice (n = 55<sup>a</sup>)</i>		
< 12 months	14	25.5
13–24 months	22	40.0
> 24 months	19	34.5
<i>Source of information for BSE performers (n = 59)</i>		
Relatives or friends	19	32.2
Specialists	17	28.8
General practitioners	7	11.9
Others	16	27.1

<sup>a</sup>Data were not available for four patients

ty, had a higher proportion of early stage tumours (Stage I and II) (84.4%) compared with only 50.8% among those who never practised it.

The patient-related component of diagnostic delay was significantly related to BSE practice, even after adjusting for the effect of age and educational level (odds ratio = 18.5, 95% confidence interval = 2.4–142.7) (Table 4).

## Discussion

BSE is an expression of the cultural attitudes of women towards medicine. It reflects the way women perceive their bodies and the effect this has on prevention of female disorders directly or indirectly linked to aspects of sexuality and reproduction. Our data from Egypt, in an urban environ-

Table 2 Sociodemographic characteristics of patients and breast self-examination (BSE) practice

Sociodemographic data	Total	BSE practice						P-value <sup>a</sup>
		Regular		Irregular		Never		
		No.	%	No.	%	No.	%	
<b>Age (years)</b>								
≤ 50	358	6	0.8	26	7.3	326	91.9	0.1275
> 50	207	9	5.8	18	8.7	180	85.5	
<b>Years of education</b>								
> 9	122	12	9.8	35	28.7	75	61.5	0.000
1-9	75	0	0.0	4	5.3	71	94.7	
Illiterate	368	3	0.8	5	1.4	360	97.8	
<b>Employment status</b>								
Employed	146	11	7.5	30	20.5	105	71.9	0.000
Not employed	419	4	1.0	14	3.3	401	95.7	
<b>Marital status</b>								
Single	21	1	4.8	4	19.0	16	76.2	NV <sup>b</sup>
Married	463	13	2.8	31	6.7	419	90.5	
Divorced or widowed	81	1	1.2	9	11.1	71	87.7	
<b>Family history of breast cancer</b>								
No	516	11	2.1	37	7.2	468	90.7	0.0071
Yes	49	4	8.2	7	14.3	38	77.5	
<b>History of benign breast diseases</b>								
No	513	7	1.3	26	5.1	480	93.6	0.000
Yes	52	8	15.4	18	34.6	26	50.0	

<sup>a</sup>Using chi-squared test<sup>b</sup>NV = chi-squared test not valid

Table 3 Breast self-examination (BSE) performance and clinical stage at diagnosis

BSE	Tumour stage <sup>a</sup>				Crude OR (95% CI)	Adjusted OR (95% CI)
	Stage I or II (n = 305)		Stage III or IV (n = 238)			
	No.	%	No.	%		
Yes	49	87.5	7	12.5	6.3 (2.8-14.2)	4.0 (1.56-10.06)
No	256	52.5	231	47.4		

<sup>a</sup>Clinical staging was not available in 16 cases

OR = odds ratio      CI = confidence intervals

ment (which is already a favourable condition) and in a country which in 1994 hosted the International Conference on Reproduction, confirm this basic expectation. BSE is

almost exclusively confined to a select group of women who are more likely to hold the types of values and body perception found in those societies where BSE has

**Table 4 Breast self-examination (BSE) performance and time lapse between first symptom and first visit to a medical centre**

BSE	Diagnostic delay				Crude OR (95% CI)	Adjusted OR (95% CI)
	≤ 3 months (n = 350)		> 3 months (n = 215)			
	No.	%	No.	%		
Yes	58	98.3	1	1.7		
No	292	57.5	214	42.3	42.5 (5.8–309.3)	18.5 (2.4–142.7)

OR = odds ratio

CI = confidence intervals

been developed as an expression of self-awareness and autonomy.

Only 10.4% of the patients in our study reported any BSE and only 2.65% practised it monthly. These rates are very low in comparison to similar studies in Europe and the United States of America [7,19,20], but are comparable to figures reported from Saudi Arabia [21]. Differences in the frequency and quality of BSE examination can be attributed to cultural and educational variations.

BSE was positively associated with educational level, employment, family history of breast cancer, a history of benign breast diseases and significantly related to diagnostic delay and the tumour stage at the time of diagnosis. Besides concurring with the findings of many previous studies [7,14,15,22], the extreme *P*-values and odds ratios found are strongly suggestive of BSE as an expression of a more complex set of behaviours, which include awareness of the importance of body care, long-term education on sexual and reproductive rights and easy access to medical services which provide open advice on these issues.

A search of medical literature over the past 10 years revealed no studies discussing the value of BSE in the challenge against breast cancer in developing countries. Consistent with most published reports [10,14],

we found that BSE performers, regardless of the regularity or quality of the practice, were three times more likely to have their tumours diagnosed at an earlier stage. A further study including details about knowledge, attitudes and quality of BSE practice and their impact on delay in diagnosing breast cancer in our community is warranted.

Of those who practised BSE, we tested the hypothesis that the group of patients who were practising BSE on a regular basis would show less delay in diagnosis and better staging than those who practised on an irregular basis. However, no statistically significant differences were detected between these groups. This finding supports the idea that general knowledge about the problem and an individual's level of body self-awareness is more important than the strict practice of BSE. It also emphasizes the findings of Persson (1995), who stated that approximately 90% of those who seek medical care for breast cancer detect the disease themselves, usually as a result of random observation rather than regular self-examination [20]. Therefore, the practicality and acceptability of a mass campaign on BSE depends on the possibility of launching at the same time comprehensive programmes on the rights of women to health and self-determination in health is-

sues relating to women. As a priority, a campaign should be planned for doctors and women's groups, in order to develop messages which are not excessively intrusive to the basic cultural (and possibly religious) beliefs of the society.

These findings, in addition to the identification of a specific contribution by BSE to the prevention of breast cancer morbidity and mortality, highlight the value of education in protecting women at risk.

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