

RESEARCH COMMUNICATION

Factors Influencing Late Presentation for Breast Cancer in the Middle East: A Systematic Review

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Abstract

Background: Breast cancer is the most common female type of cancer in the Middle East. A review of the evidence about the reasons people did not seek medical care has not been conducted for this region. **Methods:** A systematic review was undertaken to identify the explanatory factors and assess the strength of the evidence leading to late or delayed presentation for breast cancer in the Middle East. **Results:** Electronic databases and websites were searched from 1970 to March 2011 and yielded approximately 1801 studies and of which, only 10 were relevant. Of these, 6 studies met the inclusion criteria and they were either Egyptian or Iranian. All studies employed quantitative methods to investigate late and delayed presentation for breast cancer, and most defined the term delay in number of weeks or months. Older age and lower educational level were found to have strong effects in explaining late presentation. Having no family history of breast cancer was found to have moderately effect on breast cancer late presentation. **Conclusion:** Our review revealed the need to conduct research in the Middle East and our findings indicated the importance of considering older age, low educational level and a family history of cancer when planning and developing health strategies to reduce the burden of late presentation.

Keywords: Breast cancer - late presentation - delay - systematic review - Middle East

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Introduction

Breast cancer is the commonest female cancer in world and the Middle East (Boyle and Levin, 2008). World Health Organization (WHO) expected worldwide cancer mortality to increase by 104% in 2020 and this increase is expected to be highest in the developing world, including the Middle East region (Rastogi et al., 2004), where a high proportion of breast cancer was diagnosed at advanced stages (stages III and IV) (WHO, 2009). Richards and colleagues (1999) found that delay in breast cancer significantly influence the survival rate. The delay of 3-6 months was shown to negatively reduce the five-year survival rate by 7%. The authors also found an association between longer duration of symptoms and advanced tumour stage.

A number of reviews have been conducted previously to describe the factors explaining breast cancer delay (Facione, 1993; Ramirez et al., 1999; Unger-Saldana & Infante-Castaneda, 2009) and one review also examined the strength of the evidence of these explanatory factors (Ramirez et al, 1999). However, none of these reviews has specifically addressed the evidence in the Middle East.

This paper presents a systematic review to assess and examine the strength of the factors influencing breast cancer late presentation in the Middle East. In addition, it aimed to examine how included studies presented late

and delayed presentation for breast cancer.

Methods

Electronic databases [MEDLINE (OVID), EMBASE (OVID), PsycINFO (OVID), BIOSIS preview (OVID), Global Health (OVID), ASSIA, PubMed, Cochrane library, CINAHL, and ISI Web of Knowledge] were searched from 1970 to March 2011. In addition, Google, Google scholar, the WHO website, available electronic Middle Eastern medical journals websites were searched. Grey literature was searched through the ProQuest dissertations and theses. Hand searching through reference lists of known key papers and Middle Eastern papers was also performed.

Our search strategy was based on the concept of Breast Cancer, Middle East, Late Presentation and Health Behaviour (eg. MeSH terms: exp Breast Neoplasms/, exp Middle East/, exp Late Presentation/, exp Health Behaviour/). In addition, the Middle Eastern countries, namely, Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates and Yemen were also included to ensure a comprehensive search. The searching strategy was restricted to English language, but in cases where full articles retrieved were published in French or Arabic, they

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Table 1. Description of the Included Studies

Reference	Country	Type of study	Data collection methods	Participants
Abdel-Fatah et al (1999)	Egypt	Quantitative	Pre-coded standardised forms and patient interviews	Breast cancer patients
Elzawawy (1999)	Egypt	Quantitative	Interview	Female breast cancer patients presenting with lumps, identified by self-examination
Elzawawy (1991)	Egypt	Quantitative	Interview	Female breast cancer patients presenting with breast lump and discovered by themselves
Harirchi et al (2005)	Iran	Quantitative	Cross sectional interview using a structured questionnaire	Female breast cancer (stage IIB, III and IV)
Harirchi et al (2005)	Iran	Quantitative	Patient interview using a structured questionnaire	Breast cancer patients
Stapleton et al (2010)	Egypt	Quantitative	Case to case comparison using questionnaire	Diagnosed female breast cancer

were read by BP and SA, respectively.

Quality assessment tool

We developed a quality assessment form based on West et al. (2002) and Vandembroucke et al., (2007) and used this to assess the quality of included studies.

Strength of evidence assessment tool

The tool developed by Ramirez et al. (1999) to assess the strength of evidence (influencing factors) of the studies selected for the present review was adopted. Evidence was classified into three categories: Strong if (a) there is higher portion of studies supporting the evidence of the effect in one direction of the hypotheses; (b) a higher number of patients in studies, (c) the effect of the factor would be unlikely to change if a new large study is implemented; Moderate if (a) at least two studies suggested a possible effect of the factor in one direction of the hypotheses, (b) a new large study would affect the direction of the evidence; Insufficient if the conclusion of the effect of the factor cannot be drawn because (a) insufficient number of studies or (b) findings of supporting vs. against the effect of the factor were balanced. Studies which did not report any of the above are classified as ‘uncertain’. This tool has been applied elsewhere (De Silva et al., 2005). For information of the methods used for validation of this tool, please refer to Ramirez et al. (1999).

Data abstraction and analysis

SA and JNWL (lead supervisor) individually read and selected the abstracts of the articles. The two lists were compared and disagreements were resolved in a supervision team meeting with BP and RW. SA extracted the results of the first two studies and JNWL checked the extracted data to ensure that all important data are captured. A data extraction sheet was designed and used for this purpose. The analysis was carried out by SA and JNWL.

Results

Figure 1 shows the selection process of the articles retrieved. 10 studies were found to be investigating the factors influencing breast cancer late presentation and of these, only 6 met the inclusion criteria. Table 1 provides a description of these studies.

Types of studies (research methods, country, focus)

Table 1 provides information on the research methods, country or study site and focus of the included studies. All the studies were quantitative in nature with a focus on patient related factors, except one that also examined health system related factors (Abdel-Fatah et al., 1999). The others were either Egyptian or Iranian studies.

A few qualitative studies exploring factors influencing breast cancer screening (Bener et al., 2002; Lamyian et al., 2007), coping strategies (Doumit et al., 2010b; Taleghani et al., 2006; Taleghani et al., 2008), spiritual and religious role (Harandy et al., 2010), social support (Alqaissi and Dickerson, 2010), breast cancer beliefs (Ghaderi et al., 2002) and the experience of living with breast cancer (Doumit et al., 2010a) were also located. These studies were excluded from the present review as they were not exploring factors influencing late presentation or delay or help seeking behaviour for breast cancer.

Evidence on the strength of the ‘factors’ influencing late presentation

Using Ramirez et al. (1999) evidence assessment tool, the factors investigated in the studies included in the present review will be assessed for their strength of evidence (Table 2). Strong evidence was found in the association between older age and late presentation. This was because there were 3 studies supporting a positive

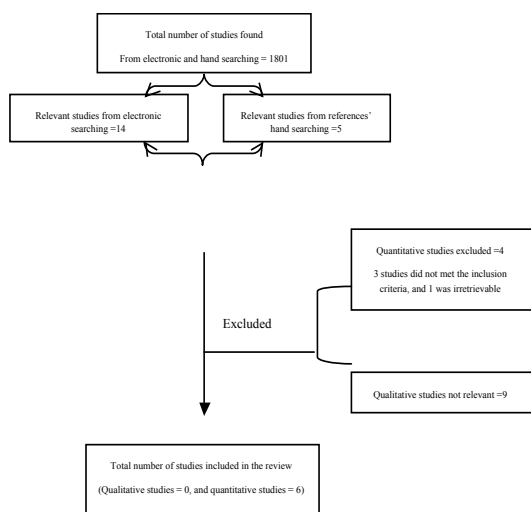


Figure 1. Diagram of Number of Studies Included in the Review Process

Table 2. The Strength of Evidence on Factors Related to Patients' Late Presentation

Factor	No. of studies	Supporting (sample size)	Not supporting (sample size)	Uncertain (sample size)	Evidence strength ⁺
Older age	6	3 studies (827) (1-3*)	2 studies (533) (5,6)	1 (200) (4)	Strong positive association
Lower educational level	4	3 studies (955)(1,4,5)	1 study (343)(6),	-	Strong positive association
Employment status	4	-	4 studies (1170) (1,2,3,6)	-	Strong no association
Marital status	5	2 studies (390) (4,5)	3 studies (827)(1-3)	-	Moderate no association
No family history	2	2 studies (390) (4,5)	-	-	Moderate positive association
Symptoms other than lump	2	-	2 studies (755) (1,5)	-	Moderate no association

* references numbered as list in Table 1; ⁺assessed using Ramirez et al (1999)

Table 3. Definitions of Late and Delayed Presentation Adopted by Studies

Reference	Definition
Abdel-Fatah et al (1999)	Patient delay: defined as interval between discovery of breast symptoms and seeking medical advice System delay: interval between first visit and establishment of the final diagnosis
Elzawawy (1999)	Lapse time: time from discovery of the breast lump to the time of seeking medical advice Delay: lapse of more than three months between self-palpation of breast lump and consultation
Elzawawy (1991)	Lapse time: time from discovery of the breast lump to the time of seeking medical advice Delay: lapse of more than three months between self-palpation of breast lump and consultation
Harirchi et al (2005)	Patient delay: a lapse of >1 month between recognition of first symptoms and initial medical attention
Montazeri et al (2003)	Time interval of more than 12 weeks from first symptom recognition to first medical consultation
Stapleton et al (2010)	Early stage; stage I, II ; late stage are III and IV

association between older age and late presentation with a large study population (a total of 827 patients) compared to 2 studies showing negative association with 533 patients. The effect of older age in one study cannot be assessed as the P value was not reported (Harirchi et al., 2005).

Strong evidence in these studies also suggested the influence of lower education level with late presentation for breast cancer, i.e. individuals with lower educational background tended to present late. Three studies with a total of 955 patients found the significant effect of the level of education on presentation of breast cancer (Abdel-Fatah et al., 1999; Harirchi et al., 2005; Montazeri et al., 2003) while one study with 343 patients did not (Stapleton et al., 2011).

Strong evidence also showed that employment status did not influence late presentation. All the 4 studies with a total of 1170 patients examined the effect of employment status on late presentation did not find significant association between the two variables (Elzawawy, 1991; 1999; Abdel-Fatah et al., 1999; Stapleton et al., 2011).

There was moderate evidence against the influence of the role of the marital status on late presentation as 3 studies (827 patients) found no association (Abdel-Fatah et al., 1999; Elzawawy, 1991; 1999) compared to 2 studies (390 patients) with positive association (Harirchi et al., 2005; Montazeri et al., 2003).

Having no history of breast cancer was found to be moderately influencing to late presentation (Harirchi et al., 2005; Montazeri et al., 2003). The effect of the presence of symptoms other than a lump was also investigated in only 2 studies and it was moderately not supported (Abdel-Fatah et al., 1999, Montazeri et al., 2003).

The strength of evidence for economic status, travelling time, familiarity of breast self-examination and knowledge of breast self-examination was not assessed because only 1 study examined these factors.

Definition of late and delayed presentation

Our analysis showed that in most of the studies, the term 'delay' was used to describe issues related to the waiting time from self discovery of symptoms until medical contact and/or the diagnosis of cancer (Table 3). In terms of definition of 'delay', this was mostly represented by the number of weeks or months. One study used tumour stages to denote the presentation of symptoms (Stapleton et al., 2011).

Discussion

In reviewing the studies examining factors influencing late presentation for breast cancer in the Middle East, based on the Ramirez et al (1999) strength of evidence assessment tool, we found strong evidence supporting the effects of older age and lower educational level on late presentation. There is also strong evidence to suggest that the employment status did not influence late presentation. The evidence on the effects of family history, marital status and presence of symptoms other than lump were shown to be moderate. Ramirez and colleagues (1999) found similar findings with regards to older age, education level and marital status but did not share the same finding on symptom presentation. And the authors did not assess the effect of family history of breast cancer and the employment status (Ramirez et al., 1999).

Having no family history of breast cancer and the presence of a lump were found to have a moderate effect on late presentation. Our findings however were based only on two studies (Harirchi et al., 2005, Montazeri et al., 2003) and thus need to be taken with caution. Further studies are required to investigate these factors and their effects on late presentation of breast cancer.

All of the studies found in the present review applied quantitative research methods to examine late presentation and most examined only patient-related factors (Abdel-Fatah et al., 1999, Elzawawy, 1999, Elzawawy, 1991; Montazeri et al., 2003; Harirchi et al., 2005; Stapleton et

al., 2011). Only one study looked at the provider/system role in late presentation (Abdel-Fatah et al., 1999). A number of qualitative studies were found exploring issues related to breast cancer but not on the issue of late presentation. Qualitative research to obtain a deeper understanding of the problem and to provide data for designing and developing health education and promotion strategies in the Middle East are urgently needed.

The term 'delay' was used in 5 of the 6 studies to define the period between self-recognition of symptom to first medical contact and diagnosis, and the duration (weeks or months) used to define delay differed by study. The use of this term is increasingly being avoided and replaced by 'late presentation' because of the confusion caused on whether 'delay' is related to time factor or the stage (advanced) of cancer. Furthermore, the term 'delay' might lead to the emphasis being placed on the patient's action and attitudes toward healthcare and it also implies the decision of 'inactivation' (MacLeod et al., 2009); leading to the neglect of the role clinical factors such as tumour aggressiveness (Al-Kuraya et al., 2005; Rakha et al., 2008). A meaningful definition of delay and late presentation that reflects the problem is crucial to advance research in this field.

In conclusion, in general, the evidence of interventions that are effective to reduce late presentation for cancer is limited (Austoker et al., 2009). For the Middle East, more studies are needed to provide information to develop effective interventions to address late presentation for breast cancer. At present, based on available evidence, the findings of this review suggested the importance of considering older age, low educational level and family history of cancer when planning and developing health strategies to reduce the burden of late presentation.

Despite our efforts, we found a limited number of relevant studies of good quality and this inadvertently affects our results. We may have excluded studies published in languages other than English and studies published in Middle Eastern journals that cannot be accessed on the internet. As Habibzadeh (2006) stated, there are over 400 medical journals published in Hebrew, Turkish, Arabic, Persian and Urdu in the Middle East which are not included in major indexing systems (Habibzadeh, 2006).

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