Understanding better the beliefs and attitudes toward breast cancer and breast screening practices among women living in Ras Al Khaimah, United Arab Emirates (UAE)

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Presented by
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Introduction

- Globally, breast cancer is the most frequently diagnosed malignancy among women; [1]

- With 1.67 million new cases in 2012 (accounting for 12% of all female cancers); [1]

- The incidence rates of breast cancer is low in Middle East and Arab countries, while death rates are high in these countries compared to Westernized countries; [2-3]

- Although breast cancer is one of the most common tumors globally, it has better survival rates compared with other tumors, if detected early [4].
UAE women and breast cancer: Some Facts

- Although the incidence rates of breast cancer remains low in UAE compared with westernized countries, it is increasing rapidly [5,6,7].
UAE women and breast cancer: Some Facts

- Younger age:
  - Women diagnose with breast cancer at younger age (less than 40s) [8];

- Late diagnosis
  - Diagnose with breast cancer in advance stage (III and IV),
  - Diagnose with breast cancer a decade earlier compared to women in Western countries; [9,10]

- Poor disease prognosis and outcomes [4].

- High mortality rates due to breast cancer
  - UAE women are currently facing a significant risk of high mortality rate from breast cancer.

- The recent data from World Health Organization (WHO) showed that:
  - 24.2% of all female deaths in UAE are from breast cancer
  - 15.7% deaths from breast cancer among Australian women [7].

- Lower participation in the breast cancer early detection practices including BSE, CBE and Mammography
Breast screening methods

- Breast screening methods increase likelihood of early detection, improving survival rates;

- Three (3) methods that are commonly used:
  1. Breast-self examination (BSE)
  2. Clinical breast examination (CBE)
  3. Mammography (11);

- Mammography is the gold standard and is able to detect very small tumors
Breast cancer screening practices among Arab women

Studies indicate that women in Arabic-speaking countries have low participation rates in BSE, CBE & Mammography - ranging from

- BSE - 4.3% to 24.7%.
- CBE - 21% to 31%
- Mammography 18.1% to 58.1%, respectively [12,13].

Regional and international studies have revealed important determinants and facilitators of screening practice. These factors include:

- **Demographic characteristics** such as age, health status, educational levels and employment status;
- **Physiological, social and cultural beliefs towards breast cancer and its screening practices**; such as
  - religious and fatalistic beliefs; fear of being diagnosed with breast cancer and discomfort associated with CBE and mammography procedures [13].
- doctor’s recommendations;
- perceived risk of breast cancer; and
- knowledge about breast cancer and its screening practices.
Study Objective

— The main aims of the study is to understand better RAK women’s beliefs, knowledge, practice and attitudes towards breast cancer and breast cancer screening practices so that the key element for public awareness program could be identified.
Methods

– **Design:** Cross-sectional study, quantitative method.

– **Participants:** Women over 35 years old, living in RAK for at least 10 years at the time of the survey;

– **Recruitment:**
  – Random sampling and snowball sampling (n=102).
  – Through RAK medical and Health Science University (RAKMHSU) and RAK hospital;
  – The face-to-face interviews were conducted by 4 medical female students using a structured survey questionnaire, which was developed based on validated questionnaires used in the US and Australia and recently used in Qatar.
  – Interview time: 35-45 minutes;
## Results: Demographic Information

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. (%)</th>
<th>Characteristic</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td><strong>Employment status</strong></td>
<td></td>
</tr>
<tr>
<td>≤40</td>
<td>45 (44.1)</td>
<td>Work full time</td>
<td>76 (75.5)</td>
</tr>
<tr>
<td>&gt;40</td>
<td>57 (55.9)</td>
<td>Unemployed</td>
<td>26 (25.5)</td>
</tr>
<tr>
<td><strong>Nationality</strong></td>
<td></td>
<td><strong>Current occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Emirati citizen</td>
<td>74 (72.5)</td>
<td>Teacher</td>
<td>46 (46.4)</td>
</tr>
<tr>
<td>Non-Emirati citizen*</td>
<td>28 (27.5)</td>
<td>Administration</td>
<td>19 (19.2)</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td><strong>Education level</strong></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>9 (8.8)</td>
<td>University or higher level</td>
<td>79 (78.2)</td>
</tr>
<tr>
<td>Married</td>
<td>93 (91.2)</td>
<td>School or diploma level</td>
<td>22 (21.8)</td>
</tr>
<tr>
<td><strong>Number of children</strong></td>
<td></td>
<td><strong>Monthly family income</strong></td>
<td></td>
</tr>
<tr>
<td>0-3</td>
<td>27 (29)</td>
<td>≤ 20,000 ADE a</td>
<td>19 (18.6)</td>
</tr>
<tr>
<td>≥4</td>
<td>66 (71)</td>
<td>≥ 41,000 ADE</td>
<td>19 (18.6)</td>
</tr>
<tr>
<td><strong>Overall health</strong></td>
<td></td>
<td>≥ do not know or refused</td>
<td></td>
</tr>
<tr>
<td>Good/Excellent</td>
<td>73 (72.3)</td>
<td>21,000-40,000 ADE</td>
<td>25 (24.5)</td>
</tr>
<tr>
<td>Poor/Fair</td>
<td>28 (27.7)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Other (22 homemakers and 12 professionals).

**African countries (Egypt, Tunisia, Sudan, and Somalia), Middle Eastern countries (Jordan, Syria, Palestine, Lebanon, Iran and Iraq).

a 1AED= 0.2723 USD.
RESULTS: PARTICIPATION IN BREAST SCREENING: BIVARIATE ANALYSIS

- **BSE (Yes, No)**
  - Non-Emirati were more likely to engage with BSE (p=0.04, OR=2.77).

- **CBE (Yes, No)**
  - Women who were >40 years old (p=0.002, OR=4.6),
  - unemployed (p=0.031, OR=3.3)
  - those who reported their health status to be poor or fair were significantly more likely to practice (p=0.002, OR=3.9)

- **Mammography (Yes, No)**
  - Women who were >40 years old (p=0.002, OR=5),
    - health status to be poor or fair (0.002, OR=12.8)
    - school or diploma level qualification (p=0.007, OR=3.9),
    - non-Emirati (p=0.02, OR=3) or
    - unemployed (p=0.001, OR=5.8)
The Beliefs, Attitudes and Knowledge Regarding Breast Cancer and Breast Screening Practices
Beliefs and Attitudes

I want to know if diagnosed with cancer*:
- No: 69.6%
- Yes: 30.4%

I believe that cancer could be prevented*:
- No: 77.5%
- Yes: 22.5%

I believe that cancer would threaten:
- My financial security: 77.2%
- My marriage or significant relationship: 71.3%
- My career: 50.5%
- My relation with loved one: 63.4%

People get cancer due to:
- Cancer is a contagious disease: 93.1%
- Lack of breast feeding: 78.4%
- They have unhealthy lifestyle: 56.9%
- Hereditary factor: 60.8%
- Fate: 81.4%

* No and Not sure answers were added together
- **BSE:**
  - Women who believed breast cancer is preventable, (OR=3.76; 95% CI=1.33, 10.52, \( p = 0.009 \)) and is due to unhealthy lifestyle (OR= 2.23; 95% CI=1.01, 5.01, \( p = 0.04 \)) were more likely to practice BSE.

- **CBE:**
  - Women who believed that breast cancer would threaten their relationship with loved ones were more likely to practice CBE (OR=4.00; 95% CI=1.45, 11.00, \( p = 0.006 \)).

**Mammography**
Mammography was less likely to be performed by participants who believed that:
- Breast cancer was due to fate (OR=0.27; 95% CI=1.33, 0.86, 0.77, \( p = 0.011 \));
- It was due to hereditary factors (OR=0.39; 95% CI=0.16, 0.94, \( p = 0.03 \));
- Or would threaten their relationship with loved ones (OR=0.35; 95% CI=0.14, 0.87, \( p = 0.02 \)) were less likely to engage with mammography compared with women who did not share these beliefs.

Women whose doctors have talked to them about breast cancer (50.5%) were more likely to engage in BCS practices compared with women who did not experience these conversations: for example:
- BSE (OR=3.75; 95% CI=1.59, 8.82, \( p = 0.002 \));
- CBE (OR=5.46; 95% CI=1.90, 15.64, \( p = 0.001 \));
- Mammography (OR=2.85; 95% CI=1.17, 6.89, \( p = 0.01 \)).
**Knowledge Regarding Breast Cancer:**

**Physical Signs and Treatment Options**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correct response, n (%)</th>
<th>Incorrect response, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical signs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lump in the breast</td>
<td>64 (65.3)</td>
<td>34 (34.7)</td>
</tr>
<tr>
<td>Nipple discharge</td>
<td>34 (34.7)</td>
<td>64 (65.3)</td>
</tr>
<tr>
<td>Crusting, ulcer or redness of the nipple</td>
<td>26 (26.5)</td>
<td>72 (73.5)</td>
</tr>
<tr>
<td>Redness or dimpling of the breast</td>
<td>33 (33.7)</td>
<td>65 (66.3)</td>
</tr>
<tr>
<td>Swollen underarm</td>
<td>52 (53.1)</td>
<td>46 (46.9)</td>
</tr>
<tr>
<td>Breast swelling</td>
<td>28 (28.6)</td>
<td>70 (71.4)</td>
</tr>
<tr>
<td><strong>Treatment options</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescription drugs</td>
<td>34 (33.7)</td>
<td>67 (66.3)</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>61 (60.4)</td>
<td>40 (39.6)</td>
</tr>
<tr>
<td>Radiation therapy</td>
<td>38 (37.8)</td>
<td>63 (62.4)</td>
</tr>
<tr>
<td>Hormone therapy</td>
<td>25 (24.8)</td>
<td>76 (75.2)</td>
</tr>
<tr>
<td>Surgery</td>
<td>63 (62.4)</td>
<td>38 (37.6)</td>
</tr>
</tbody>
</table>

- Although the majority of participants (95%) stated that they would seek medical help if they discovered any of the above indicative signs.

- Only 15.3% were able to correctly identify all indicative signs of breast cancer and only 17% were able to correctly identify all treatment options.
Source of Breast Cancer Information

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper and Magazine</td>
<td>58.8</td>
</tr>
<tr>
<td>Television or Radio</td>
<td>54.9</td>
</tr>
<tr>
<td>Friends or Family</td>
<td>49</td>
</tr>
<tr>
<td>Pamphlet</td>
<td>47.1</td>
</tr>
<tr>
<td>Doctor</td>
<td>33</td>
</tr>
<tr>
<td>Nurse</td>
<td>17</td>
</tr>
<tr>
<td>Health Care Educator</td>
<td>24</td>
</tr>
</tbody>
</table>
Breast Cancer Screening Practices
Participation Rates in Breast cancer Screening Practices

<table>
<thead>
<tr>
<th>Practice</th>
<th>No (%)</th>
<th>Yes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSE</td>
<td>50.5</td>
<td>50.5</td>
</tr>
<tr>
<td>CBE</td>
<td>45.2</td>
<td>54.8</td>
</tr>
<tr>
<td>Mammography</td>
<td>62.4</td>
<td>37.6</td>
</tr>
</tbody>
</table>
Breast-Self Examination (BSE)

- Although the majority of participants showed a good level of BSE awareness (74.5%) and knowledge (58.8%), around how to perform a BSE, only about half of the participants had practiced it previously.
Clinical Breast Examination (CBE)

- 71.6% of the participants demonstrated CBE awareness;
- only 55% had engaged with CBE previously.
- Of those who had practiced CBE, it was performed by:

![Pie chart showing percentages of professionals who performed CBE]

- Preference for a medical doctor to perform CBE:
  - 63.4% Preferred a doctor.
  - 43.1% Preferred an Arab health care provider.
  - 89.1% Preferred a female health professional.
- A female preference was shown to significantly increase CBE practice (p=0.009).
Mammography

- Mammography was the least frequently practiced breast cancer screening practice with only 37.6% of the study population undergoing this procedure.

- Of those who had practiced the test previously,
  - 73.7% had done so in the last year,
  - 18.4% performed it over a longer period of time,
  - and 7.9% did not remember the last time they performed the test,

- Respondents’ knowledge about the frequency and the screening age for a mammography:
  - Only 15.8% of the participants answered (correctly) that mammography has to be completed every two years.
  - Only 4% of the participants stated (correctly) that the exam was to be performed for women aged 40 years and older.

- More than 80% trusted their health care provider and would undergo mammography screening if recommended by them.
Barriers to breast screenings

- Fear of getting cancer: 40.6%
- Painful/uncomfortable: 40.9%
- I have a work: 37.5%
- Embarrassment: 37.5%
- I am doing BSE: 11.4%
- Doctor has not suggested: 38.6%

(CBE, n=32; Mammography, n=44).
Facilitators to breast screening

- Nurse recommended
  - Mammography: 12.5%
  - CBE: 9.4%

- Saw information in the media
  - Mammography: 22.9%
  - CBE: 17%

- Community lecture about cancer
  - Mammography: 22.9%
  - CBE: 20.8%

- Friend recommended
  - Mammography: 20.8%
  - CBE: 24.5%

- Fear of getting cancer
  - Mammography: 35.4%
  - CBE: 32.1%

- Doctor recommended
  - Mammography: 43.8%
  - CBE: 62.3%

- I am taking care of myself
  - Mammography: 81.3%
  - CBE: 7%

(CBE, n=53; Mammography, n=48).
Multivariate logistic regression of predictors associated with breast cancer screening practices.

<table>
<thead>
<tr>
<th>Predictors of breast cancer screening practices</th>
<th>P value</th>
<th>Adjusted OR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BSE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People get cancer because they have unhealthy lifestyle (*No, Yes)</td>
<td>0.47</td>
<td>1.48 [0.51, 4.29]</td>
</tr>
<tr>
<td>Nationality (*Emirati, Non-Emirati)</td>
<td>0.78</td>
<td>0.85 [0.26, 2.77]</td>
</tr>
<tr>
<td>Cancer could be prevented (*No, Yes)</td>
<td>0.03</td>
<td>5.88 [1.19, 29.18]</td>
</tr>
<tr>
<td>Doctor talked to participant about breast cancer (*No, Yes)</td>
<td>0.02</td>
<td>3.15 [1.13, 8.79]</td>
</tr>
<tr>
<td>BSE awareness (*No, Yes)</td>
<td>0.001</td>
<td>11.99 [2.90, 49.56]</td>
</tr>
<tr>
<td><strong>CBE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age group (*≤ 40, &gt; 40)</td>
<td>0.04</td>
<td>3.42 [1.03, 11.38]</td>
</tr>
<tr>
<td>Overall health (*Good/Excellent, Poor/fair)</td>
<td>0.36</td>
<td>1.97 [0.46, 8.48]</td>
</tr>
<tr>
<td>Doctor talked to participant about breast cancer (*No, Yes)</td>
<td>0.01</td>
<td>4.67 [1.38, 15.79]</td>
</tr>
<tr>
<td>Employment status (*Work full time, Unemployed)</td>
<td>0.47</td>
<td>1.71 [0.39, 7.45]</td>
</tr>
<tr>
<td>Cancer would threaten my relation with loved one (*No, Yes)</td>
<td>0.09</td>
<td>3.02 [0.83, 10.90]</td>
</tr>
<tr>
<td><strong>Mammography</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age group (*≤ 40, &gt; 40)</td>
<td>0.003</td>
<td>9.25 [2.08, 41.05]</td>
</tr>
<tr>
<td>Cancer would threaten my relation with loved one (*No, Yes)</td>
<td>0.50</td>
<td>1.66 [0.37, 7.32]</td>
</tr>
<tr>
<td>Overall health (*Good or Excellent, Poor or fair)</td>
<td>0.04</td>
<td>4.88 [1.07, 22.28]</td>
</tr>
<tr>
<td>Employment status (*Work full time, Unemployed)</td>
<td>0.11</td>
<td>4.01 [0.72, 22.29]</td>
</tr>
<tr>
<td>Participants who have a family doctor to visit (*No, Yes)</td>
<td>0.10</td>
<td>3.77 [0.76, 18.59]</td>
</tr>
<tr>
<td>Nationality (*Emirati, Non-Emirati)</td>
<td>0.06</td>
<td>4.33 [0.91, 20.63]</td>
</tr>
<tr>
<td>Education level (*University or higher level, School or diploma level)</td>
<td>0.55</td>
<td>1.69 [0.29, 9.67]</td>
</tr>
<tr>
<td>Doctor talked to participant about breast cancer (*No, Yes)</td>
<td>0.17</td>
<td>2.53 [0.67, 9.57]</td>
</tr>
<tr>
<td>People get cancer because it is fate (*No, Yes)</td>
<td>0.41</td>
<td>0.49 [0.08, 2.79]</td>
</tr>
<tr>
<td>People get cancer because it is hereditary (*No, Yes)</td>
<td>0.46</td>
<td>0.59 [0.15, 2.38]</td>
</tr>
</tbody>
</table>

$R^2 = 0.42$
Study implications

– Whilst around 70% of participants were aware of breast cancer early detection practices, less than 55% of the participants have practiced those activities previously.

– Moreover, those who participated failed to adhere to the international recommendations for undergoing BSE (monthly), CBE (every 3 years for women under 40 years old and annually for women aged 40 years old), and mammography (every 2 years) [11].

– This indicates that previous and the current health promotion and awareness campaigns in the RAK have not fully achieved the desired outcomes in terms of breast cancer screening participation rates. Lack of knowledge as well as the barriers to screenings discussed above could explain the low participation rates in breast cancer screening practices.

– Based on the above findings, which are consistent with the existing literature in the regions [13], there is an urgent need to develop a culturally-sensitive breast cancer screening intervention that includes comprehensive and effective public awareness and educational campaigns across all sectors of the community.
What need to be done?

— We suggested the following two main courses of action.
Suggested course of action

- The first is around proper education around breast cancer and its screening practices. Early education that targets younger women could have a positive impact when they reach the recommended age of screening.

- Such interventions would aim to increase participation rates in breast cancer screenings by cultivating and developing the factors that encourage engagement such as doctors’ recommendations whilst minimizing disincentives.
Suggested course of action

– The second course of action should be focused towards developing a cohort of empathetic, culturally-sensitive and informed health care providers including doctors who are fully trained in breast cancer signs and symptoms and who realize the importance of effective health care screening.

– Ideally therefore, expert counseling should be given routinely for RAK women during normal visits to health centers in such a way that existing barriers are removed, women’s knowledge about breast cancer is increased and the benefits of early detection practices including screening is explained.

– The importance of current, enthusiastic, and knowledgeable engagement between health care providers and women across the UAE cannot be understated.
Recommendations and Conclusion

Breast cancer has become a major public health concern in the UAE, and early detection may play a significant role in reducing morbidity and mortality. Guided by ours and existing data \([10,13,14]\), we suggest the following recommendations:

- Dissemination of breast cancer educational materials, including information on screening methods at the most visited places in RAK, such as shopping malls and the Corniche. These materials should be culturally sensitive and linguistically appropriate;

- Strengthening of the knowledge and role of religious leaders in breast health and preventive promotion care in the RAK community;

- Involvement of civil communities in publicising and supporting participation in breast cancer early detection practices. These communities include breast cancer survivors, women’s organisations and religious leaders;

- Adoption of methods to increase women’s participation in mammography screening at recommended ages including sending reminders in the form of an SMS, letters, and telephone calls as well as regularly scheduled and available mammographic screenings;

- Encouraging men to have an interest in breast cancer screening early detection practices for their wives and female relatives;

- Education and encouragement of health care professionals especially doctors so that they take an active role in promoting breast cancer screenings;
Reference list

Research team

- **University of Sydney:**
  - Professor Patrick Brennan (Lead CI)
  - A/Professor Dr Martin Mackey
  - Dr Syeda Zakia Hossain
  - Mr Salman Albeshan

- **Partner organisations:**
  - Ras al-Khaimah Medical and Health Sciences University (RAKMHSU).
    - Dr Syed Suhail

- **RAK Hospital**
  - Dr Rao (VC)
  - Dr David Arpan

- **Funding organization:**
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Any question?
Thank you for listening