



EXECUTIVE SUMMARY

Breast cancer is the leading cause of cancer deaths in the United Arab Emirates (UAE), and is the country's most common cancer in females. Currently, participation of UAE-based women in breast cancer screenings remains low, with women diagnosed at advanced stages, negatively impacting disease prognosis and survival rates. Early detection would enable more treatment options, improve the conditions of survivorship, and reduce the number of premature deaths. Health awareness campaigns and screening services need to address the barriers that are preventing women in the UAE from having early screenings and apply targeted methods of encouraging the participation of both Emirati and non-Emirati women. This policy paper explores women's use of breast cancer screening practices and other women's health services in the UAE, as well as the emirate's ecosystem of awareness building and support impacting their behaviours. This includes the current encouragement and outreach strategies and campaigns being utilized, the knowledge levels of health professionals on breast screening practices, and how organisations and institutions provide patient education. Using the perspectives of women, nurses, and representatives from health organisations, the policy paper concludes with recommendations for effective breast cancer public campaigns and improved breast screening participation.

Development and Implementation of Public Awareness Campaigns around Breast Cancer in the UAE: A Ras Al Khaimah Case Study

Dania Abu Awwad, Syeda Z. Hossain, Martin G. Mackey & Patrick C. Brennan, University of Sydney

Introduction

In the Gulf Cooperation Council (GCC) countries, breast cancer is the most common malignant cancer in women (Ravichandran & Al Zahrani, 2009) and accounts for almost 20% of cancer deaths in Western Asia (International Agency for Research on Cancer [IARC], 2018a). Women in Arab nations tend to be diagnosed at younger ages, with greater tumour sizes, and at more advanced stages, which in turn requires more radical forms of treatment (Chouchane, Boussen, & Sastry, 2013). This late presentation, or diagnosis, holds true for the United Arab Emirates (UAE), where breast cancer is the leading cause of cancer deaths, accounting for 26.4% of deaths (IARC, 2018b). It is attributable to an underutilisation of available screening programs and extremely low participation rates in screening practices (Al-Sharbatti, Shaikh, Mathew, & Albiate, 2013). Earlier detection would allow for more, less-invasive treatment options, improve the quality of life of survivorship, and reduce the number of premature deaths (Cancer Council Australia, 2018).

A 2017 study in the emirate of Ras Al Khaimah, UAE among young university students found that a majority of the students had good levels of breast cancer awareness or knowledge (Rabbani, Mutasen, Naser, & Hussein, 2017), while another similar 2018 study among women over 30 years old showed that they had lower levels of knowledge. Furthermore, study participants highlighted multiple perceived barriers to screening that were inhibiting their participation in screening practices (Albeshan, Mackey, Hossain, & Brennan, 2018). Breast cancer awareness and screening programs are being held in several institutions throughout Ras Al Khaimah to improve women's knowledge and increase screening participation rates. Therefore, it is vital to better determine which approaches are impactful and cost-effective in reaching the various target populations, such as tailoring information for women in different age brackets or life stages, and encouraging non-attending women to participate in regular cancer screenings (Brown, Kerr, Haoudi, & Darzi, 2012). The increased participation rates would improve early detection rates, which in turn would improve prognosis and increase survival rates (World Health Organisation, [WHO], 2007).

This policy paper builds upon the findings of Albeshan et al. (2018),¹ elaborating on women's use of screening services, methods of encouragement, knowledge of health

¹ Phase I of this study was conducted in 2014–16 and used close-ended surveys to explore women's perception towards breast cancer and breast screening participation. To get more in-depth information on barriers and attitudes, the current study, Phase II, used qualitative methods to build upon the findings from Phase I.

professionals, and breast screening campaigns available in Ras Al Khaimah, and their advertising and recruitment methods. The purpose of combining all three approaches is to provide a better understanding of complexity in women's participation in breast screening in Ras Al Khaimah. In particular, findings of this combined approach will provide policy makers with direction in identifying the role of health professionals and organisations for improving women's participation in screening.

The first section of the policy paper presents the findings from focus group discussions conducted with women, detailing their participation in screenings, as well as their access to and use of health services. The second section presents baseline results from surveys completed by community and hospital nurses regarding their knowledge and ability to convey breast cancer information to their patients. The third section presents the results of in-depth interviews conducted with representatives from various health institutions, exploring how organisations work towards improving breast cancer awareness and women's screening participation. Using these three different elements, the study concludes with recommendations on how to improve breast cancer awareness and participation in screening programs in Ras Al Khaimah, the greater UAE, and beyond.

Breast Screening Participation and Diagnosis of Breast Cancer

Recent studies continue to show low participation rates in breast cancer screenings, as well as low levels of knowledge about breast cancer in the UAE (Elobaid, Aw, Grivna, & Nagelkerke, 2014; So et al., 2018). For example, only 13.9% of UAE females surveyed in 2009 over 40 years old had a mammographic examination in a two-year period (So et al., 2018). Similarly, low screening rates have been also reported in neighbouring GCC countries (So et al., 2018). Low breast screening rates are a major health concern for society as a screening program is only effective if it screens more than 70% of the target population² (WHO, 2007).

Low participation rates in screening, and subsequent delays in seeking help when needed, contributes to the increasing number of women diagnosed at late stages. According to the World Health Organization (2007), the goals of early detection and screening programs should be to reduce the percentage of women diagnosed in late stages of breast cancer to less than 30%. In contrast, worryingly almost 60% of women in the GCC with breast cancer were diagnosed at advanced stages, with regional or distant metastasis, meaning that the cancer has spread beyond the breast and would require more intensive treatment plans (Al-Madoudj, Eldali, & Al-Zahrani, 2011). Furthermore, a study among women with breast cancer

in Saudi Arabia found that on average, women waited almost four months after first observing symptoms before seeking medical attention, with more than half then being diagnosed in advanced stages (Altwalbeh, El Dahshan, & Yassin, 2015). In the UAE, most women with breast cancer had breast lumps but did not seek medical advice until the symptoms progressed (Elobaid, Aw, Lim, Hamid, & Grivna, 2016). This delay in seeking medical attention was preventable and impedes the early detection of breast cancer, with potentially dire consequences.

Screening programs in the UAE have helped reduce the number of people getting diagnosed in advanced stages (Al-Othman et al., 2015). A delay in seeking help after breast cancer symptoms appear can lead to an increase in tumour size, advanced disease stages, and poorer prognosis such as low survival rates and premature death (Elobaid et al., 2016). Delays in seeking treatment are a result of limited knowledge about breast cancer, its symptoms, and the importance of early diagnosis on their survival and quality of life. The purpose of combining all three approaches are to provide a better understanding of complexity in women's participation in breast screening in Ras Al Khaimah. In particular, findings of these combined approaches will provide policy makers with direction in identifying the role of health professionals and organisations for improving women's participation in screening (Altwalbeh et al., 2015).

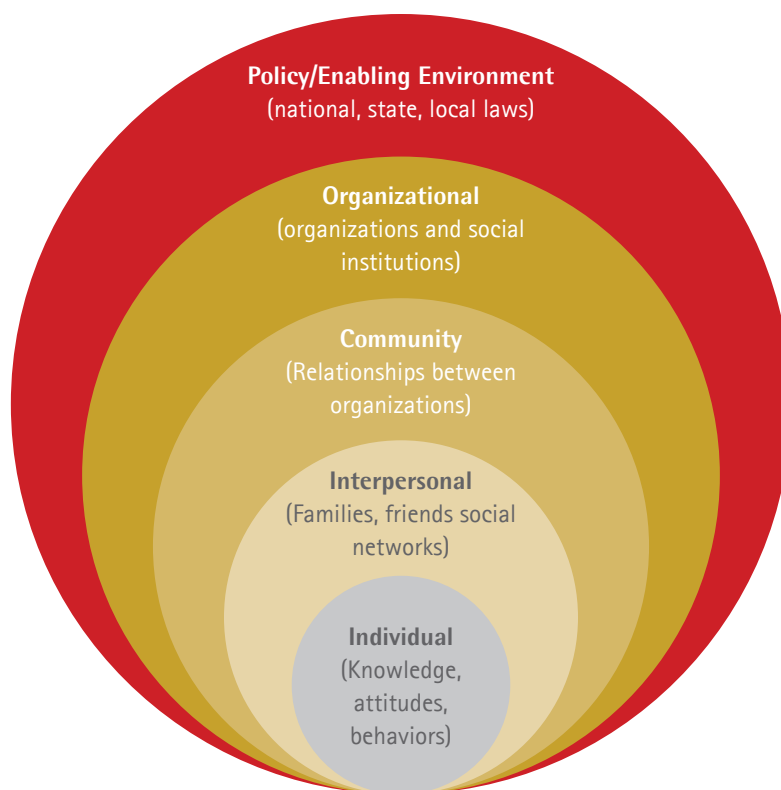
Factors Impacting Breast Screening Participation and Barriers

Understanding women's attitudes towards breast cancer, reasons for their reluctance to seek medical help, and their access to health services is important to identifying barriers to screening to better inform how health professionals and organisations can encourage and enable women to participate. The impact that communities and organisations have on individual's health behaviours is recognised in the Social Ecological Model (SEM) (United Nations Children's Fund [UNICEF], 2014). The SEM (see Figure 1) positions the individual with their beliefs and behaviour at the centre of the model, surrounded by influences from interpersonal, community, organisational, and policy or regulatory environments (Kuykendall, 2018; UNICEF, 2014). It is important to acknowledge the complexity or multiple factors at play regarding people's health behaviours (Kuykendall, 2018; UNICEF, 2014), and each factor should be addressed or considered when developing a health promotion and awareness campaign, such as for breast cancer.

This policy paper positions the study findings and recommendations within the context of the SEM, and incorporated the understanding and perception of women as individuals, nurses as community workers,

² The Ministry of Health and Prevention (MOHAP) regulates health in Ras Al Khaimah, and their own breast cancer screening guidelines also state that participation rates should be greater than 70% of the target population (UAE MOHAP, 2014).

Figure 1. The Social Ecological Model. Source: UNICEF, 2014. [Reprinted with permission]



and organisational representatives as health institutions within Ras Al Khaimah.

Women's Knowledge and Attitudes towards Breast Cancer and Breast Screening

This qualitative study had six focus group discussions with Ras Al Khaimah women to get an in-depth perspective on women's attitudes towards breast cancer related topics. There was one group with Emirati women and one with non-Emirati women for each age group; 25-34, 35-44, and >45 years. Fifty-four women participated; 28 were Emirati (52%), and 26 non-Emirati (48%) mostly from European (17%) or Asian countries (15%). The women were aged 24 to 65 years, with an average age of 39. The majority of women were premenopausal (72%), married (54%), had children (56%), had studied at university (76%), were employed (44%), and lived in urban areas (78%).³

The participants completed a short demographic survey, and then participated in a semi-structured focus group discussion, with approximately eight participants in each focus group session. The questions were divided into three sections: breast cancer screening knowledge, attitudes towards breast cancer, and knowledge of women's health services. The discussions were mediated by researchers

from the University of Sydney, transcribed, and analysed using thematic analysis.

1: Breast Cancer Screening Knowledge

All focus groups were familiar with breast self-examinations (BSE), clinical breast examinations (CBE), and mammography. Participants' high level of knowledge may be due to the fact that a great majority of the participants have higher educations (74% with university degree). Participants reported the need to get girls involved in BSE and CBE so that they become comfortable with their body and being examined by doctors, especially since breast cancer can also affect young women. Most women said that mammography should start at age 40, conducted yearly or biennially, but above 35 and 45 were also common responses. However, participants did indicate that if they had symptoms or were at higher risk of having breast cancer, they would undergo a mammogram earlier or more frequently.

Many women in each group indicated they had practiced BSE previously, but only some practiced it monthly. Women in the 35-44 age groups were more likely to list reasons for having CBE, such as having symptoms or participating during awareness campaigns. In contrast, older women reported having CBE more regularly or during health check-ups.

³ Participation in the study was advertised by posters and shared online, and participants were also recruited using convenience sampling methods. All participants were provided with study information in both English and Arabic and their written consent was obtained before participation in the focus group discussions.

Most women in the older age groups had a mammogram. Those who didn't indicated they would encourage others to be scanned, but personally neglected the scan themselves. Younger women had mammograms if they had symptoms, and those who didn't said they would if needed. For example, an Emirati participant aged 35-44 stated that:

If we're scared from something or we feel something abnormal we'll ask the doctor. After the check-up he'll check...if needed we'll go for the screening.

2: Attitudes towards Breast Cancer

Women in each focus group explained that they did not believe that their religious or cultural beliefs could cause or result in breast cancer. Some non-Emirati women mentioned that people in their home country might have different attitudes, though. Examples included people in high-risk areas that might maintain unhealthy behaviours because they are convinced that they are going to get cancer regardless, and some people only go to the doctor to investigate symptoms and not for disease prevention.

In addition, when going to health appointments, it was common for women in each group to go by themselves. However, some women preferred a support person to accompany them. If abnormal breast changes occurred, women in each group said that they would go to the doctor or hospital immediately, but possibly not immediately for some, depending on their circumstance. In the meantime, they would check the internet and monitor the changes.

3: Women's Health Services

Public Health Services

The participants praised the services and resources provided to them in the UAE. In general, participants felt there was no public health service not available to them, and that the services did not fall short of their needs. These services were used predominately by Emirati women, especially among older Emirati women who preferred public services over private ones. They stated that private services didn't always meet their needs, while public services are available to them for free anyway.

However, women explained that medical appointments were often prolonged, which can delay others who are waiting. Also, medical doctors do not usually follow appointment schedules which increases waiting times, and is inconvenient for women with children or are employed. Long waiting lists for appointments can also result in some women going to other emirates for public health services or pay to use private services. One Emirati woman said:

In government also, you will wait for long time for your service, but in private, maybe they will see

you and they'll do few hours. But in government, usually it will take long time and sometimes they will refer, they will give you far appointment, or they will see you in emergency.

Participants said that full oncology services were available in the UAE, but if not available in a particular hospital, patients would be transferred to hospitals outside of Ras Al Khaimah.

Private Health Services

Both Emirati and non-Emirati women have used private health services, but they were more common among non-Emiratis. Private health and specialist services were described by most women in each group as easy to use and to book appointments, with no need for a family doctor's referral, nor waiting periods. Non-Emiratis reported that the available private services met all their needs. However, women were less enthusiastic about the appointment times in private clinics, described as short and rushed.

Cost and Insurance

Women described the cost of accessing specialist and private health services, such as surgeries or treatment without insurance cover, as very expensive, particularly in comparison to other countries. For these women, they would prefer to either go without the services they needed, wait until it became an emergency, or go back to their home country to access the service. However, participants were also familiar with the UAE's health medical camps, health services in labour camps, associations that set-up free health checks for specific groups, or campaigns for various health problems that provided free services or check-ups. For instance, as insurance typically does not cover the cost of breast screening services, women would seek free or subsidised screening offers that are usually available in October, which is breast cancer awareness month internationally. A 45+ year-old non-Emirati woman stated:

They [insurance companies] very rarely cover screening. They cover treatment afterwards but they don't do anything proactive. They don't cover proactive stuff.

Sources of Information

Study participants advised that at present, they received information on breast cancer or campaigns from various sources, including pamphlets, social media, mass media, and their doctors in hospitals, primary health care centres, clinics, as well as from the Ministry of Health and Prevention (see Table 1). However, their most preferred mediums for receiving information were social media and WhatsApp. The participants also recommended having advertisements in waiting areas, reading printed materials, reliable information online, and inclusion of contact details in advertisements so that women can

follow-up on the information presented (See Table 1). To improve breast cancer awareness and breast screening participation, participants stated that women should get information from doctors or nurses, receive SMS reminders for follow-up examinations from breast screening clinics, longer continuous campaigns for breast screening, and incorporating group screening. For example, a 45+ year-old Emirati woman stated:

It would be proper if there is a bit of attention. They should call you for reminders. Like, this is an important point, some people forget. I might remember within two years, from 2014 to 2016. Maybe some people would forget

Nurses' Knowledge and Confidence in Providing Breast Cancer Education

To better explore the knowledge of nurses and provide some breast cancer education, a train-the-trainer workshop on breast cancer and breast screening was conducted for 17 nurses with an average age of 37 years, from public and private clinics and hospitals, and universities in Ras Al Khaimah. The nurses completed a survey with open-ended questions before and after the workshop on their knowledge about breast cancer and screening, and how they provided patient education in their workplace. The workshop covered breast cancer statistics, anatomy, diagnosis, and treatment. After the workshop, the nurses are expected to teach other nurses

about the workshop content. The responses below go over the nurse's responses on different breast cancer diagnosis methods.

1. Breast Self-Examination Screening Knowledge

Table 2 also presents the findings from the nurse's responses on breast screening age, frequency, and their confidence before and after the training workshop. The results show that all nurses knew how to perform BSE, most of whom learnt so during their nursing studies. Seventy-one percent practiced BSE, but half stated that they did not do so consistently. Initially, half of the nurses knew that BSE should be practiced beginning at age 20, but puberty and age 30 were additional common responses. After the workshop, all nurses were more specific and stated that BSE is practiced at 20 years. The majority knew that BSE is performed monthly, and a couple stated that it's performed with every bath, and this did not change between before and after the workshop. Prior to the workshop, the nurses were confident to teach patients how to perform BSE, but a third wanted to review their knowledge and felt more confident after the workshop. One participant said:

Pre: If I have more knowledge and skills about breast self-examination I will do in more confidence.

Post: After lecture I have more knowledge and skills to do for others.

Table 1: Women's breast cancer information sources and promotion activities, including preferred communication channels and methods

Sources of Information		Promotions
<ul style="list-style-type: none"> Pamphlets Internet Hospitals PHCC Malls Social Media Posters 	<ul style="list-style-type: none"> Radio Schools SMS Newspapers Doctors Facebook 	<ul style="list-style-type: none"> Breast cancer awareness campaigns October month Pink Caravan Free mammogram screening School health programs Mammogram during annual health check-up Interviews with breast cancer survivors in news Combined women's health check (pap smears and breast screening)
Preferred Mediums		Preferred Methods
<ul style="list-style-type: none"> Social Media Facebook Instagram WhatsApp Mobile Phones Phamphlets Printed materials 	<ul style="list-style-type: none"> Encouragement from men Information from doctors & specialists Free service 	<ul style="list-style-type: none"> Advertisements in waiting areas Reliable information online Inclusion of contact details in advertisements SMS reminders for follow-up examinations Longer continuous campaigns Incorporate group screening

Table 2: Pre- and Post-Workshop Comparisons for Breast Screening Knowledge and

Breast Self-Examinations		
	Pre	Post
Age	<ul style="list-style-type: none"> >20 years >30 years After puberty 	<ul style="list-style-type: none"> >20 years
Frequency	<ul style="list-style-type: none"> Monthly or every cycle With every bath 	<ul style="list-style-type: none"> Monthly With every bath
Hospitals	<ul style="list-style-type: none"> Yes Yes, I learnt how to perform BSE I want to help I need to review knowledge and skills I need more training 	<ul style="list-style-type: none"> Yes Yes, I am trained I want to help I reviewed and updated my knowledge I am more confident with my knowledge

Clinical Breast Examinations		
	Pre	Post
Age	<ul style="list-style-type: none"> >20 years >30 years >40 years >45 years Symptomatic women 	<ul style="list-style-type: none"> >40 years or 40-69 years Symptomatic women
Frequency	<ul style="list-style-type: none"> Yearly and/or more if symptomatic or high risk Yearly for high risk Monthly or biannually Every 3 years 	<ul style="list-style-type: none"> Yearly and/or more if high risk Biennially or more if symptomatic
Confidence	<ul style="list-style-type: none"> Yes No I want to help I need to review knowledge & skills I need training No, I never practiced it 	<ul style="list-style-type: none"> Yes No, I need practice I want to help I gained more knowledge & skills

Mammography		
	Pre	Post
Age	<ul style="list-style-type: none"> >30 years >40 years and/or symptomatic or high risk >45 years After menopause 	<ul style="list-style-type: none"> >40 years or 40-69 years and/or symptomatic women
Frequency	<ul style="list-style-type: none"> 6-12 months Biennially Every 3 years and/or yearly if high risk Symptomatic women 	<ul style="list-style-type: none"> Yearly and/or more if high risk Biennially and/or symptomatic women

2. Knowledge on Clinical Breast Examination

Forty percent of respondents had experienced a CBE, even though 82% were less than 40 years old. All participants learned about breast cancer through their nursing studies, but only two participants had undergone breast cancer training at work. Almost half of the nurses correctly identified that CBE is required for women at age 40, but the remainder stated ages 20, 30, or 45, or for symptomatic women. After the workshop the majority stated that CBE is performed for women at age 40, and a couple mentioned that it's for symptomatic women at any age. Most nurses already knew that CBE is performed yearly, and post-workshop the nurse's responses were more detailed, with more stating that "high risk women should practice six to twelve months in a year" (See Table 2).

Eighty-two percent of nurses worked in organisations that conducted CBE. Seventy-one percent of nurses believed that they would be allowed to conduct CBE along with doctors. However, 60% stated they need training or were not confident in conducting CBE. The remaining 40% stated that they felt CBE is important and they would want to help patients with breast screening. After the workshop, nurses stated that they had gotten more knowledge on CBE and were more confident than before, but some wanted to have more or "need practice" and "it can help all women to have early detection".

3. Knowledge on Mammography

For mammography, more than half of the nurses knew that mammography is performed for women at age 40, but a few stated at age 30 or 45, and after the workshop all of them wrote age 40. Half of the nurses knew the recommendation that mammography be performed every two years. However, yearly mammograms, or every three years, or only when symptomatic were also common responses by the remainder of participants. After the workshop, two thirds of participants stated that mammography is required every two years, but a third still believed it was required yearly. This could be a result of the increased frequency of mammography for women of high risk accompanied with the discussion on risk factors including gender, age, and common lifestyle factors such as smoking and lack of exercise.

4. Nurse's Confidence in Educating Patients

The next aspect of the surveys explored how the nurse's use their knowledge to educate others in their community. Almost half of the nurses advised family members to have breast screening, whilst almost 70% of nurses advised their patients to also do so. All participants working in clinics or universities did educate their patients on screening. In contrast, some nurses such as those working within operating theatre did not

have an opportunity to give patient education on breast screening. This suggests that work place environments and facilities are important for professionals (nurses) to educate others, in particular patients. Therefore, nurses in these clinics or institutions should be equipped and confident to provide patients with breast cancer education.

The nurses found the training workshop to be "highly informative ... [we] learned more of BSE, CBE, signs and symptoms, risk factors, etc.", and all nurses believed that they would be able to convey the information they have gained from the training workshop to other nurses, with one participant stating, "it's a huge responsibility." All the nurses believed that it's important to receive breast cancer training in their workplace because it improves their own knowledge and it makes them aware of the impact of breast cancer on women in Ras Al Khaimah. The main perceived benefit was the impact it can have on patients, particularly increasing breast cancer awareness and early detection. For example, one of the study participants stated:

It is very important to give awareness to the clients so that we can reduce the risk factors of breast cancer and prevent it.

The nurses also stated that in general, women in the UAE were reluctant to have BSE, CBE and mammograms because of lack of knowledge, not understanding the importance of early screening, self-neglect, or were too busy. For CBE and mammogram, nurses also argued that barriers included cost, shyness, reluctance to wait for a doctor or appointment, or not having symptoms. Women would not practice BSE if they didn't know how, and mammograms were perceived as painful.

Organisations' Role in Improving Women's Participation in Breast Screening

In order to explore organisations' initiatives towards improving women's breast cancer awareness and participation in breast screening, in-depth interviews were held with eight representatives from various health organisations in Ras Al Khaimah. All participants had been involved in breast cancer awareness campaigns or programs within their organisation. The participants completed a short demographics survey, and participated in a semi-structured, in-depth interview. The questions addressed the organisations' breast cancer campaigns, national programs, and changes to campaigning over time. Thematic analysis was used to analyse the transcribed interview data.

The average age of the participants was 46 years (range was 29-65 years) and they were from public and private hospitals, clinics, and universities. All participants were tertiary educated, mostly of Asian

ethnicity (75%), educated outside of the UAE (75%), had a nursing background (50%), and worked in private hospitals (50%). Their work experience ranged between seven and 43 years, with an average of 17 years. The responses below cover different features of breast cancer campaigns provided in Ras Al Khaimah.

1. Organisations' Breast Cancer Campaigns

All participants were employed at organisations that had played a role in breast cancer awareness and campaigns within their institution and the community. Courses, programs, and campaigns in universities, hospitals, malls, and clinics are planned according to the UAE's priorities or the specific health focus of the month. Free consultations were common, with subsidised or free mammogram screening services provided to help people who would otherwise not be able to afford breast screening. National and regional campaigns facilitated easier access for women to breast screening and doctor consultations by providing screening services in various open public spaces and rural regions. The campaigns were an extension to the services provided in existing breast cancer clinics in the region. One of the organisational representatives stated:

When they will hear about the campaign it would be easier for them. They can see the doctor face to face and get the consultation and the results immediately.

When participants were asked whether it would be beneficial to combine different monthly health campaigns, the majority stated that it would be better to keep campaigns separate as they currently were because each health focus gets its due attention and campaigning would be more effective. However, some participants mentioned that women's health topics could be combined together. During general health check-ups, some doctors and nurses in clinics or hospitals tell female patients about breast cancer and screening routinely.

2. Breast Cancer Clinics

Campaigns in breast cancer clinics were held more frequently throughout the year than in other institutions providing breast screening services, and there was a greater focus on ensuring a positive, friendly atmosphere within the clinic. The workflow structure in the clinic enables patients to be checked by a nurse and specialist, be screened, receive their results quickly, and then return home without a long wait or worry. The clinic collaborates with other organisations to continuously give women referrals to the clinic and increase access to screening financially.

3. National Cancer Strategies

The organisational representatives perceived the Ministry of Health (MOH) campaigns as being stronger and more effective than other local campaigns, and part of that

was because their campaigns were relevant to the whole population without being limited to patients within one organisation. Most participants either supported or worked directly with the national screening program, Pink Caravan, which was well recognised in the region. The MOH has also helped local breast clinics get breast-screening equipment, including for mammograms. The MOH encouraged nurses to join early screening programs, and helped sponsor nurses' university education.

4. Strengths and Weaknesses of Campaigns

The strengths of the campaigns run by the various organisations included having a large attendance from women, facilitated by multiple advertising methods and social media platforms, having a doctor that people trust, and being able to offer free screening. Campaigns hadn't changed very much in the past decade but women's attitudes have improved, being more proactive to follow-up screening, and provoking less fear. One of the participants stated:

Not all the campaigns change, the acceptance of society changes. People were hungry to take the knowledge about health, about their wellbeing.

A major issue raised by organisational representatives was that most of them were not familiar with breast cancer campaigns run by other organisations, except for Pink Caravan. Other issues raised included lack of specialists and staff in breast clinics, needing to send patients outside of Ras Al Khaimah for cancer treatment, covering screening costs, and having limited time and resources to organise campaigns.

To help dedicate more time for patient education, most participants believed that nurses or other trained personnel could raise awareness before patients saw a doctor. Patient education would be implemented in group formats, having print media available to read, or playing videos. However, the role of the nurses should not extend beyond breast screening awareness.

5. Measuring Effectiveness of Campaigns

To assess the effectiveness of campaigns or programs, most of the participants' organisations would record attendance numbers and send screening numbers and number of breast cancer positive cases to the MOH. It was deemed important to have a comprehensive national cancer database, and the participants were supportive of providing data to the MOH. This data also helps organisations ensure they meet the minimum number of screenings needed by the MOH breast screening guidelines. Other techniques implemented included seeing how many people had screenings after attending an awareness campaign, having pre- and post-tests, checking which advertisements people responded to, and checking how many women continue to have follow-up screenings.

Implications and Recommendations

This policy paper has presented results that provide insight into behavioural and environmental influences on health decisions and attitudes. It is important that barriers to breast cancer screening are known and taken into consideration when forming policies and planning screening programs (Anderson et al., 2011). Preventing cancer through screening programs is a cost-effective method that also helps to reduce the burden of the disease, but breast cancer campaigns need to be able to identify the target population and encourage them to participate in regular screening (Al-Othman et al., 2015). The following recommendations are made to help maximise the benefits from breast cancer campaigns:

1. In the focus group discussions, cost was a major consideration for the participants. While discounted or free screening were offered, it was often limited to October. Reducing patient cost to access screening services increases screening participation rates (Baron et al., 2008; Community Preventive Services Task Force [CPSTF], 2012; Sabatino et al., 2012) but there needs to be year-round free breast screening services available in Ras Al Khaimah, or funds from public and private bodies to subsidise screening costs for people who can't afford it.
2. 'Prevention is better than cure' is a common phrase used, and encourages a more proactive attitude towards health. However, none of the participants had health insurance that covered diagnostic or screening mammograms. Prevention and screening services across different health problems should be incorporated into insurance coverage, including mammograms.
3. The participants preferred receiving information directly from doctors or health personnel. Trained personnel or nurses can help meet demands outside of campaigns, in clinics or hospitals, by giving either individual or group education, which have been effective in increasing screening participation (Agide, Sadeghi, Garmaroudi, & Tigabu, 2018; CPSTF, 2012; Sabatino et al., 2012). In this way, women get the opportunity to ask questions and their personal barriers are identified and addressed.
4. Nurses need to have regular training on breast cancer and the UAE's health priorities to ensure they are confident to relay accurate information to patients, are able to respond to patient queries on breast cancer, and replace common myths and false beliefs with facts. Whilst nurses in our study have learnt about breast cancer in their nursing studies, very few had breast cancer courses as a qualified nurse. They believed training was important and their confidence improved greatly after attending a training workshop.
5. Contacting patients to help them schedule their screening appointments is more effective than recommending women to have mammograms (Camilloni et al., 2013). Navigation programs help women to access mammography services individually, address their concerns, and make them aware of free services available (Drake et al., 2015). Navigation programs have resulted in a significant increase in participation rates (Hunt, Allgood, Kannon, & Benjamins, 2017; Drake et al., 2015).
6. Reminders should also be sent out to encourage people to have regular general health checks, regardless of whether they have symptoms (Agide et al., 2018; CPSTF, 2012; Sabatino et al., 2012). This would help foster a culture of preventative health, becomes a good opportunity for patient education, and helps to address the UAE's health priorities.
7. Studies have shown that organisations had difficulties in collecting data to help determine whether implementing strategies impacted on their service, and were resistant to spend resources and funding to do so (Leeman et al., 2013). However, data collection is important to determine whether improvements or increased access to diagnostic and treatment services have been effective in reducing mortality rates and the burden of a disease (Anderson et al., 2011). As such, it is essential that all organisations with screening services send data to the MOH and to have a system to monitor non-communicable diseases, otherwise there would be difficulties to review progress in tackling the burden of diseases (Al-Othman et al., 2015).
8. The UAE MOH breast cancer guidelines (2014) require breast cancer clinics to complete 1,000 mammograms annually. The set minimum has been an encouraging factor for the organisations in this study to continuously conduct breast cancer campaigns throughout the year. However, breast clinics need support and resources to meet the minimum requirements. The GCC together have recommended collaboration when ensuring healthcare centres are equipped to teach and diagnose cancer, ensuring services and equipment are of a high quality and provide timely services (Al-Othman et al., 2015), and these factors need to be applied to breast cancer clinics to help ensure they can meet the MOH guidelines.
9. Part of cancer resources and services, the participants were not aware of any cancer treatment available in Ras Al Khaimah. Emirati women said that they would travel to either Dubai or Al-Ain. Non-Emiratis echoed the same view, but it was not uncommon for them to have treatment overseas because it was cheaper. It is essential that the UAE has enough resources to meet the needs of

its population without delays to cancer treatment, and for each emirate to also be independent in its service provision. Data from national cancer registries, hospitals, and waiting lists should be used and monitored to ensure that needs are met, and increase capacity to ensure patients get treatment and care without delay.

10. Other recommendations include:

- a. Creating a more supportive way of having mammograms. One participant went for screening as part of a group, and it was a popular suggestion among the rest of the participants. Because of the stress associated with screening, particularly among Emirati women, having

same-day results or having a consultation with a doctor immediately after screening helps to alleviate stress. Clinics should be encouraged to incorporate something similar, and clinics that already have that system should be continuously supported.

- b. Screening services should be available in both public and private services. From our focus group discussions, Emirati women preferred public services whilst non-Emirati women tended to use private services.
- c. Use social media, particularly WhatsApp, to share information about health topics, campaigns, and screening services.

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Authors

Ms. Dania Abu Awwad is a PhD candidate in the Discipline of Behavioural and Social Sciences in Health at the University of Sydney.

Dr. Syeda Zakia Hossain is a Senior Lecturer and a Course Director of Bachelor of Health Sciences at the University of Sydney. She is involved with a range of women's health research in Australia and internationally. She is the Chief Investigator of the study.

Associate Professor Martin Mackey is the Associate Dean of Research Education at the Faculty of Health Sciences of the University of Sydney and is a Co-Principal Investigator for the study.

Professor Patrick Brennan is the leader of the Imaging, Optimisation and Perception Group MIOPeG at the University of Sydney. His research has involved major imaging modalities including X-ray, computerised tomography, ultrasound and magnetic resonance imaging, with a particular focus on breast and chest imaging. He is a Co-Principal Investigator of the study.

References

- Agide, F., Sadeghi, R., Garmaroudi, G., & Tigabu, B. (2018). A systematic review of health promotion interventions to increase breast cancer screening uptake: from the last 12 years. *European Journal of Public Health, 28*(6), 1149–1155. <https://doi.org/10.1093/eurpub/ckx231>
- Albeshan, S. M., Mackey, M. G., Hossain, S. Z., & Brennan, P. C. (2018). *Transforming breast cancer diagnosis in Ras Al Khaimah* (Sheikh Saud Bin Saqr Al Qasimi Foundation for Policy Research Policy Paper No. 25). <http://dx.doi.org/10.18502/aqf.0057>
- Al-Madouj A. N., Eldali, A., & Al-Zahrani A. S. (2011). *Ten-Year cancer incidence among nationals of the GCC states 1998–2007*. Riyadh, Saudi Arabia: King Faisal Specialist Hospital and Research Center.
- Al-Othman, S., Haoudi, A., Alhomoud, S., Alkhenizan, A., Khoja, T., & Al-Zahrani, A. (2015). Tackling cancer control in the Gulf Cooperation Council Countries. *The Lancet Oncology, 16*(5), e246–e257. [https://doi.org/10.1016/S1470-2045\(15\)70034-3](https://doi.org/10.1016/S1470-2045(15)70034-3)

- Al-Sharbatti, S., Shaikh, R., Mathew, E., & Albiate, M. (2013). Breast self examination practice and breast cancer risk perception among female university students in Ajman. *Asian Pacific Journal of Cancer Prevention: APJCP*, 14(8), 4919–4923. <https://doi.org/10.7314/APJCP.2013.14.8.4919>
- Anderson, B., Cazap, E., El Saghir, N., Yip, C., Khaled, H., Otero, I., ... Harford, J. (2011). Optimisation of breast cancer management in low-resource and middle-resource countries: executive summary of the Breast Health Global Initiative consensus, 2010. *Lancet Oncology*, 12(4), 387–398. [https://doi.org/10.1016/S1470-2045\(11\)70031-6](https://doi.org/10.1016/S1470-2045(11)70031-6)
- Baron, R., Rimer, B., Coates, R., Kerner, J., Kalra, G., Melillo, S., ... Leeks, K. (2008). Client-Directed Interventions to Increase Community Access to Breast, Cervical, and Colorectal Cancer Screening. *American Journal of Preventive Medicine*, 35(1), S56–S66. <https://doi.org/10.1016/j.amepre.2008.04.001>
- Brown, R., Kerr, K., Haoudi, A., & Darzi, A. (2012). Tackling cancer burden in the Middle East: Qatar as an example. *Lancet Oncology*, 13(11), e501–e508. [https://doi.org/10.1016/S1470-2045\(12\)70461-8](https://doi.org/10.1016/S1470-2045(12)70461-8)
- Camilloni, L., Ferroni, E., Cendales, B., Pezzarossi, A., Furnari, G., Borgia, P., ... Ferroni, E. (2013). Methods to increase participation in organised screening programs: a systematic review. *BMC Public Health*, 13(1), 464–464. <https://doi.org/10.1186/1471-2458-13-464>
- Cancer Council Australia. (2018). Understanding breast cancer a guide for people with cancer, their families and friends. Retrieved from the Cancer Council website: <https://www.cancer.org.au/about-cancer/types-of-cancer/breast-cancer/>
- Chouchane, L., Boussen, H., & Sastry, K. (2013). Breast cancer in Arab populations: molecular characteristics and disease management implications. *Lancet Oncology*, 14(10), e417–e424. [https://doi.org/10.1016/S1470-2045\(13\)70165-7](https://doi.org/10.1016/S1470-2045(13)70165-7)
- Community Preventive Services Task Force. (2012). Updated Recommendations for Client- and Provider-Oriented Interventions to Increase Breast, Cervical, and Colorectal Cancer Screening. *American Journal of Preventive Medicine*, 43(1), 92–96. <https://doi.org/10.1016/j.amepre.2012.04.008>
- Drake, B., Tannan, S., Anwuri, V., Jackson, S., Sanford, M., Tappenden, J., ... Colditz, G. (2015). A Community-Based Partnership to Successfully Implement and Maintain a Breast Health Navigation Program. (Report), 40(6), 1216–1223. <https://doi.org/10.1007/s10900-015-0051-z>
- Elobaid, Y., Aw, T., Grivna, M., & Nagelkerke, N. (2014). Breast cancer screening awareness, knowledge, and practice among Arab women in the United Arab Emirates: A Cross-Sectional Survey. *PLoS ONE*, 9(9), e105783. <https://doi.org/10.1371/journal.pone.0105783>
- Elobaid, Y., Aw, T., Lim, J., Hamid, S., & Grivna, M. (2016). Breast cancer presentation delays among Arab and national women in the UAE: a qualitative study. *SSM – Population Health*, 2, 155–163. <https://doi.org/10.1016/j.ssmph.2016.02.007>
- Hunt, B., Allgood, K., Kanoon, J., & Benjamins, M. (2017). Keys to the Successful Implementation of Community-Based Outreach and Navigation: Lessons from a Breast Health Navigation Program. *Journal of Cancer Education*, 32(1), 175–182. <https://doi.org/10.1007/s13187-015-0904-2>
- International Agency for Research on Cancer. (2018a). *Estimated number of deaths in 2018, Western Asia, all cancers, females, all ages*. Retrieved December 14, 2019, from <http://gco.iarc.fr/today/home>
- International Agency for Research on Cancer. (2018b). *Estimated number of deaths in 2018, United Arab Emirates, all cancers, females, all ages*. Retrieved December 14, 2019, from <http://gco.iarc.fr/today/home>
- Kuykendall, S. (2018). *Encyclopedia of public health: principles, people, and programs*. Santa Barbara, California: Greenwood.
- Leeman, J., Moore, A., Teal, R., Barrett, N., Leighton, A., & Steckler, A. (2013). Promoting Community Practitioners' Use of Evidence-Based Approaches to Increase Breast Cancer Screening. *Public Health Nursing*, 30(4), 323–331. <https://doi.org/10.1111/phn.12021>
- Rabbani, S. A., Mutasem, H., Naser, R. A., & Hussein, Y. (2017). Awareness and perception of breast cancer among the future healthcare providers of Ras Al Khaimah, United Arab Emirates. *Journal of Applied Pharmaceutical Science*, 7(2), 142–146. doi: 10.7324/JAPS.2017.70219

- Ravichandran, K., & Al Zahrani, A. (2009). Association of reproductive factors with the incidence of breast cancer in Gulf Cooperation Council countries. *Eastern Mediterranean Health Journal*, 15(3), 612–621. <https://doi.org/10.26719/2009.15.3.612>
- Sabatino, S., Lawrence, B., Elder, R., Mercer, S., Wilson, K., Devinney, B., ... Glanz, K. (2012). Effectiveness of Interventions to Increase Screening for Breast, Cervical, and Colorectal Cancers. *American Journal of Preventive Medicine*, 43(1), 97–118. <https://doi.org/10.1016/j.amepre.2012.04.009>
- So, V., Channon, A., Ali, M., Merdad, L., Al Sabahi, S., Al Suwaidi, H., ... So, V. (2018). Uptake of breast and cervical cancer screening in four Gulf Cooperation Council countries. *European Journal of Cancer Prevention*, 0(0), 1–6. <https://doi.org/10.1097/CEJ.0000000000000466>
- United Arab Emirates Ministry of Health and Prevention. (2014). The national guidelines for breast cancer screening and diagnosis. Retrieved from the Insurance System for Advancing Healthcare in Dubai website: <http://www.isahd.ae/Home/LawAndRegulations>
- United Nations Children's Fund. (2014). *MODULE 1: What are the Social Ecological Model (SEM), Communication for Development (C4D)?*. Retrieved from https://www.unicef.org/cbsc/files/Module_1_SEM-C4D.docx
- World Health Organisation. (2007). *Cancer control: Early detection WHO guide for effective programmes*. Retrieved from the World Health Organisation website: https://www.who.int/cancer/publications/cancer_control_detection/en/

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