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Breast health awareness in an Arabic culture: A qualitative exploration

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Abstract

Background

There is a high incidence of advanced breast cancer (BC) in young women in developing countries including the Kingdom of Saudi Arabia (KSA), but no standardised information regarding breast self-examination, nor a national screening programme.

Aim

To explore breast health awareness and the early diagnosis and detection methods of BC from the perspective of women and primary healthcare providers (HCPs) in KSA.

Methods

This qualitative study was conducted in eight states across the Jizan region of KSA. Purposive sampling was used to recruit Saudi women n= (24), general practitioners n= (20) and nurses n= (20). Semi-structured interviews were conducted from November 2015-February 2016. Inductive thematic analysis was undertaken.

Results

The cultural views towards health, BC and its screening were embedded in women's concept of health behaviour. Religious infrastructure informed how Saudis as Muslims should live, react to BC and death, and view their breast health. Health service provision was aimed at reactively treating BC symptoms rather than proactively offering preventative BC strategies.

Discussion

Women and nurses require knowledge of BC, and early detection methods. HCPs should be engaged in providing education and screening services. National comprehensive policies are required in developing countries including KSA to help inform screening programmes and increase knowledge of BC.

Conclusion

This study provides new evidence on the complexity of poor breast health awareness and lack of resources in KSA. Additional resources are needed to remove such barriers and provide targeted health education and services in developing countries where breast health services are poorly developed.

Key words: breast cancer, breast health awareness, breast self-examination, clinical breast examination, general practitioners, mammograms, nursing, qualitative, Saudi Arabia

Contribution of the paper

What are they key findings

- Presentation of breast cancer at with poor prognosis, across age groups, is a critical health issue in developing countries including KSA and has implications regarding treatment options and the chances of a cure.
- There are no current national breast cancer education and screening programmes or standardized breast health information in developing countries including KSA.
- The cultural views towards health, BC and its screening were embedded in women's concept of health behaviour. Religious infrastructure informed how Saudis as Muslims should live, react to BC and death, and view their breast health. Health service provision aimed at reactively treating BC symptoms rather than proactive preventative BC strategies.

Why is this study needed?

- There are no current national breast cancer education and screening programmes in the kingdom of Saudi Arabia, nor are there cancer centres or cancer services in KSA. It informs policy and help to establish national BC education and screening programmes in developing countries including KSA where breast health services are poorly developed.
- This research may inform BC service provision for Muslim women outside KSA as they shared Islamic principles and laws, which should promote seeking help for poor health.
- There is no qualitative evidence that explores the factors important to women and health care providers in relation to this topic in KSA.
- Breast cancer is a 'malignant and evil illness'. It is likely to uncover cultural perspectives and barriers not previously investigated.

How should the findings be used to influence policy/practice/research/education

- Considering women's and healthcare providers' experiences of breast health awareness helps to inform policy and applicable screening and education breast programs for Arab women. This may help to improve health services, minimising waiting times for diagnosed and appropriate care and treatment. Thus, physical and psychological pain resulting from predominant a late breast cancer diagnosis may be reduced.

- Health care providers at Health Centres in Saudi Arabia require additional knowledge about women’s experience of breast health education and examination to reflect on and improve their role in these processes.

Introduction

BC constitutes 29.1% of all cancer cases in women in the Kingdom of Saudi Arabia (KSA), the highest rate being in the 30-44 age group (SCR, 2013). In KSA, BC usually presents at advanced stages and occurs more frequently in young, pre-menopausal women (Chiedozi et al., 2003) than in Western countries. The mean age of BC cases is 46 years and invasive ductal carcinoma (IDC) or infiltrating duct carcinoma, accounts for 78.2% of all morphological BC variants (Albasrei, 2014; Abulkhair et al., 2012; Rudat et al., 2012a). In contrast, in the USA, the mean age of BC diagnosis is 63 while ductal carcinoma in situ (DCIS) is the most common type of BC and approximately 62.2% of BC cases present with localized disease. Most patients who die as a result of BC in the USA and UK are now aged ≥65 years and present with other health problems, such as hypertension and mild dementia (Albasrei, 2014; Rudat et al., 2012a; DeSantis et al., 2013; Muss, 2010). The decline in mortality in the USA and UK can be attributed to several factors, including early detection, following recommended health behaviours, utilizing BCS, and improvements in the use of systemic therapies (Narod et al., 2015). However, this improvement in survival rates has not been observed in less developed countries including KSA due to the absence of national breast cancer education and screening programmes, and poor breast health awareness (Anderson et al., 2008).

Background

There are many factors that affect BC and cause delays for women presenting with BC in developing countries, including KSA. For example: there is no national health promotion or screening for BC; there are lengthy waiting times at all medical facilities and long referral processes to access cancer healthcare and management,. This has been attributed to the limited healthcare facilities and infrastructure in remote regions (Abdulhadi, 2008; Alsaleh, 1994). Lack of training and communication skills, which limit the establishment of trusting relationships between women and HCPs, as well as cultural and social effects, may impact on care (Saeedi et al., 2014; Yosuf et al., 2012). Additionally, some physicians do not consider the provision of health education their role (Al-Amoudi and Abduljabbar, 2012). There may

be an assumption that Saudi women will be afraid or embarrassed if HCPs, especially males, provide breast health education or examination (Al-Amoudi and Abduljabbar, 2012). Social and cultural traditions in Saudi may also result in HCPs being embarrassed or afraid to provide breast health education or perform BCE and prescribe mammograms. Breasts are considered a sensitive part of a woman's body, and not all women are willing to talk about this sensitive topic with HCPs. Additionally, women may not trust HCPs to perform BCS correctly, or to provide health education (Alaboud and Kurashi, 2006). Many women are afraid of finding an abnormality if they present to their doctor (Alrudaini and Selim, 2010; Alaboud and Kurashi, 2006). Abdelhadi's study (2008) found that some women with BC postponed seeking medical advice because of inherited misconceptions about BC, which tend to override knowledge.

In reviewing the literature conducted in KSA, all studies are quantitative in nature with no qualitative work undertaken exploring the experiences of breast health awareness. There is a need to understand women's perspectives and experiences, in terms of BC and its detection, to enable the development of national BC programmes. In addition, understanding the views and experiences of HCPs working at Primary Healthcare centres (PHCCs) is important, as they are the first point of contact for all citizens. This novel study will provide evidence about Saudi women's and HCPs' experiences living in KSA and inform policy.. The aim of this study was to explore the perceptions and experiences of women from the general population and primary healthcare providers (physicians and nurses) towards breast health awareness and the early diagnosis and detection methods of BC in KSA.

Design

Full details of the study design are published elsewhere (Madkhali et al., 2016). The study consisted of two data collection phases (Phase 1 with women from the general population and Phase 2 with HCPs (general practitioners (GPs) and nurses). A qualitative approach was selected to gain detailed understanding of a topic that has received very little attention in the BC literature in KSA. Both phases were run concurrently. Symbolic interactionism facilitated insight into how meanings of BC and BCS were created and modified by participants while the theory of planned behaviour helped to explain the health behaviours of participants in relation to breast health awareness and BC.

Data collection

Data were collected from November 2015 until Feb 2016. Semi-structured interviews were conducted with women in their home (n=15), or in health centres (n=9). Semi-structured interviews were conducted with general practitioners (n=20) and nurses (n=20) in healthcare centres. The recruitment process was previously detailed (Madkhali et al., 2016). Interviews ranged from 30-90 minutes in length. The majority of interviews were conducted and recorded in Arabic (n=60) apart from three interviews that were conducted and recorded in English (n=4). Interview were transcribed (by NM in English or Arabic) verbatim and then transcribed Arabic interviews were translated into English. Finally, 1/4 of those Arabic translations were checked for accuracy (from Arabic to the English version) by a third person, an Arabic speaker. After interviewing 24 women, 20 female nurses and 20 female GPs, data saturation was reached with no new themes or information emerging from the data (Gerrish and Lacey 2010).

Data analysis

The data set was analysed via inductive thematic analysis (Braun and Clarke 2006), as previously described (Madkhali et al., 2016). This process involves firstly inductive coding to identify and establish patterns and categories. This is followed by deductive data analysis looking backward at the data from the themes to find out if there was any more evidence that could be gathered from the transcript to support each theme (Creswell, 2013). Therefore, while the analysis process is a cyclical not a liner process that begins inductively, deductive thinking also plays a significant role as the analysis process moves forward which is needed in qualitative nursing research (Bergdahl and Berterö, 2015; Creswell, 2013). Finally, the themes and sub-themes were checked to ensure that they told a clear story and captured the depth and breadth of the data. NVIVO 11 software was used to aid data management.

Ethical considerations

Fundamental principles of good practice including the provision of user friendly information sheets, informed consent, voluntary participation, and confidentiality and data protection procedures were applied as a minimum standard within this study. Professional gatekeepers established primary contact with potential participates about this study. Ethical approval was gained prior to commencing (Ref no: 17.NMadkhali.08.15.M7.V2).

Rigour

The rigour of qualitative data may be scrutinized, namely credibility, transferability, dependability and confirmability (Lincoln and Guba, 1985). These criteria have been previously described in a protocol paper (Madkhali et al. 2016). Each transcript was initially analysed by the main author and reviewed and verified by all other authors as a means of validating the accuracy of the interpretations to explore the degree of inter-rater reliability and improve the rigour of this qualitative study (Mays and Pope, 1995; Power, 2001).

Findings

Three overarching themes: *Culture, Religion and Resources*, emerged from the interviews with the women, and two overarching themes: *Resources and Culture*, from the interviews with the GPs and nurses. These themes captured the range of perceptions, feelings, attitudes and actions of the participants towards BC and BCS services.

Culture

The first overarching theme *Culture* provides insight into the influences of cultural background and social environment on participants' perceptions towards BC and BCS. It was evident that the knowledge and beliefs of women and nurses regarding breast health were driven primarily from social interaction with friends and family and resulted in limited awareness. For example, there was little difference in the level of BC knowledge and breast health awareness between female nurses, and females from the general population without personal experience of breast cancer. Women and nurses perceived BC as a malignant or evil illness, labelled in Arabic as 'the wicked one'. Both groups tended to call cancer, or any type of cancer such as BC, by different names, such as 'that illness', 'malignant illness' and that verbalizing the word cancer could cause disease in the speaker.

"This disease [breast cancer] kills people in an evil manner, Allah forbid...and people are afraid of it.... I think most patients with this malignant illness [breast cancer] are going to die... Allah please protect us." (F5)

Women and nurses had misconceptions and myths regarding the causes of BC included: drinking cold drinks, taking a cold bath, walking barefoot on a cold floor during menses, keeping money inside a bra, jealousy and talking about BC as causes of BC.

"Some women drink cold soft drinks or have cold shower.....they do not take care of themselves during menses and walk barefoot on a cold floor...You know this is not good

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3 *...You know the money, I mean the note, contains a lot of germs. Some women keep their own*
4 *note inside their bra...People say that jealousy can cause a bad illness... or even talk about*
5 *that illness could bring the disease upon them....” (F12)*
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9 Women and nurses viewed health as the absence of symptoms. They were accustomed to
10 visiting PHCCs or other health institutions only for help with managing their symptoms when
11 they could not resolve them at home and they became intolerable.
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16 *“People here don’t go to the health centre or to the hospital without having severe pain. All*
17 *women including me don’t share with doctors their breast health issues unless they are*
18 *suffering from a problem, like when they find some wounds or a big breast lump. There is no*
19 *point in seeking medical advice or being screened if I don’t have a health issue...” (N7)*
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24 These cultural views towards health, cancer and BCS were embedded in the women’s and
25 nurse’s concept of healthy living and everyday practice. For example, they believed there was
26 no need to seek medical advice, perform BSE or attend health screening in the absence of
27 symptoms.
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32 *“She could go through breast health screening if she would, or perform breast self-*
33 *examination but I think if she has no signs and symptoms she might not go; no need for that.*
34 *No need...Why should I go if I am fine” (F2)*
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38 In relation to the use of hormonal contraceptives by women in KSA, some women did not use
39 hormonal contraceptives as per manufacturer’s instructions and used them to manage lifestyle
40 events. For example, to manipulate the onset of their menses to prevent menses for prolonged
41 periods of time, such as when they had exams or assignment submissions, or going on a trip.
42 The GPs acknowledged that some Saudi women both single and married often did not
43 understand the side effects of long term contraceptive use and the link to breast cancer risk.
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50 *“Hormonal contraceptives are misused here among many women. This is the most common*
51 *risk factor here among the community. I notice that many young women here, even single*
52 *women, have hormonal disturbance related to menses and breast issues..... This is very*
53 *common here.” (GP 7)*
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Findings offer insight into the cultural meanings women attached to breasts: representing love, tenderness, motherhood, security, sexual desire or female sex drive, and femininity to men and women in KSA. Therefore, the notion of losing one or both breasts or the risk of poorly aligned breasts could alter self-image for women with BC. This alteration in self-image or self-perception could become a major issue for some women as well as their partners.

“A husband likes the breasts of his wife very much... You know breasts are the most feminine body part of women...and they [breasts] can have a key role in her sexual attraction.... The husband could feel that there is something missing during his sexual interventions...Maybe the husband could not continue to be intimate with his wife or please her sexually...” (F18)

Religion

The second overarching theme *Religion* uncovers how women viewed health as one of the greatest blessings bestowed on humankind by Allah (God) and espoused that the gift of health should be preserved. They viewed a BC diagnosis or dying from BC from a religious viewpoint, as a test of their faith in Allah and a sign of his love.

“Health is a greatest gift from Allah [God] ...When Allah [God] loves one he tests him...That test could be cancer or breast cancer. We tried to do our best perform our religious duties and doing good deeds but we still faulty, Oh Allah forgive us. Having this illness or any other test might be a message that reminds us to do more for the sake of Allah [God] and have deep thinking in the aim of our life. (F11)

All participants believed that women with BC should do everything possible to be cured from cancer such as seeking and following medical consultations, attending appointments, following a healthy life style, and using medicine or treatments whilst trusting in Allah.

“I think alternative medicine could be an effective treatment in these cases [breast cancer cases] and use something like holy water... Be certain that Allah is able to treat patient. She must do everything possible to treat herself...she must follow the doctors advices, accept the treatment alongside has faith in God” (F7)

They were certain that Allah would not charge a soul with anything beyond its capacity, or place any burden on it greater than it can bear. All participants strongly believed women with BC would be able to overcome the problems they faced during their BC illness journey, by their faith in Allah and determination. Faith and determination would help women with breast health issue or BC diagnosis to start the treatment journey immediately.

“Almighty Allah (God) created us and knows our capacity for endurance, no one could know you better than your creator, and Allah does not burden any human being with more than he/she will be able to bear... Faith in Allah (God) and determination are crucial in this situation. ” (F16)

Family members, friends and HCPs did not know how to help sufferers of BC due to poor health information. They turned to their faith, praying for the BC patient, believing that prayer could not only help them to minimize their own professional and personal distress but could also cure BC patients or relieve their pain.

“She [young woman who presented in the advanced stage of breast cancer] was very brave and I felt constrained and helpless by the limited facilities and expectations. I don’t have any guidelines to follow... I could not do anything for her except pray for her.... It was a very painful moment for me as a GP.” (GP15)

GPs relied on religious beliefs when communicating with women who had suspected BC. They experienced anguish and frustration when constrained by the lack of a fast track facility to specialized oncology services, limited health services and treatment options due to late presentation of the disease and, thus, a poor survival rate. They believed their faith in Allah would not only help patients and their family members to feel more relief but also help the GPs themselves during the medical consultation session:

“Sharing the same faith in Allah with patients helps me a lot to deliver such bad news especially when I don’t have any guidelines to follow... My faith empowers me and makes me more comfortable” (GP19)

GPs utilized the Islamic concept of health as a *gift from Allah* [God] to be preserved to convince patients of the benefits of attending cancer screening and accepting cancer treatment. GPs believed that utilizing Muslim patients’ religious values and principles when providing health education, screening and medical consultations would help to convince them

of the usefulness of treatment. They believed this would optimize not only the uptake of cancer screening but would also encourage Muslim patients to accept treatment, rather than relying only on their faith to help them:

“It is necessary to remind the patient about the ability of Allah to cure her and to preserve health...you know health is a major gift from Allah... she will be fine and be cured after treatment, insha’Allah [if God is willing] but she needs to have this treatment and do all the necessary investigations....” (GP11)

Resources

The third overarching theme *Resources*, relates to the limited healthcare services and supporting infrastructure in KSA. The findings outline the current gap in breast healthcare provision in KSA and how HCPs working in PHCCs experienced and accepted these shortcomings. Findings uncovered a lack of standardized public health information in relation to BC and BCS, absence of clinical guidelines or protocols for communicating bad news to patients and their family members, poor training in relation to breast health, breast cancer screening or breast cancer and little control over the appointment system .

“I have never been invited to attend any training programme either for breast cancer or anything else.... You know, nothing is available for us to read...I don’t have any guidelines or protocols or even leaflets about breast cancer or breast cancer screening. I am using my personal background and experiences, that’s all. The referral procedure is not good and is very long... I don’t know anything about the case after transferring.... The patient has a different medical record at each health institution... You know the medical records here are missing much information... You know the appointment booking system here is not good. It is old fashioned and it is based on paper. Patients are examined based on their place in the queue. GPs are in a hurry to treat the huge number of patients who are waiting outside...This reflects negatively on patients and the quality of healthcare services” (GP15)

All the participating groups (women, nurses and GPs) felt that GPs and nurses were inadequately skilled and ill-equipped to deal with women who presented with breast abnormalities or with suspected BC. In addition GPs and nurses did not believe BC education and screening services were integral to their role perceiving their sole role was to treat the physical symptoms of illness and relieve pain.

“If someone comes to us complaining of breast health issues like breast lumps, then physicians educate and examine them. Otherwise, no, we don’t educate everyone, we only treat and manage symptoms... Me? I think I might cry with the patient because I wouldn’t be able to help her or advise her. I am not that strong person. I don’t have enough knowledge or confidence to advise or support her... I don’t want to give incorrect information to women...honestly, I don’t have any idea about breast cancer.” (N10)

There were issues related to treatment pathways. For example, referral reports and written correspondence from one department to another were written in English, not the native language of the KSA. This meant that although some GPs/physicians could talk to patients in their native language (Arabic) and explain the correspondence, many patients were unable to read the information written in English and fully understand the seriousness of their condition due to limited English proficiency. This caused delays in patients attending secondary and tertiary healthcare facilities for investigations and treatments.

“The referral report is written in English and has some medical terminology but the receptionist and patients can’t read it or understand it. Receptionist just give them an appointment based on availability when there is a space available not based on the patient’s condition and severity...also we try to explain the reports to the patients in Arabic as much as we could...The patient has a different medical record at each health institution... You know the medical records here are missing much information...” (GP13)

Discussion

All participants within this study (women, GPs and nurses) were Muslims and viewed health as one of the greatest blessings that Allah (God) has bestowed on humankind and a gift that must be preserved. They also view a BC diagnosis or dying from BC from a religious viewpoint, as a test of faith in Allah (God) and a sign of his love, Therefore, they also believed that women with BC should do everything possible to be cured and use any medicine or treatment available while having complete trust in Allah. Findings from this study add a novel perspective by discovering no differences in the level of BC knowledge and breast health awareness between female nurses, participating in this study, working in PHCCs and females from the general population without personal experience of breast

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3 cancer. This finding confirmed previous quantitative study findings obtained by Abdel Hadi,
4 (2000), that highlighted the lack of breast health awareness and knowledge of the BC
5 screening procedures among female HCPs in KSA. Nurses in KSA without previous
6 experiences with BC had no awareness of BC and BCS or knowledge on the methods of
7 conducting BSE, or mammographic screening or BCE. The main reason for this was breast
8 health is not formally taught in the Saudi nursing programmes or included in nurse education
9 or training. Thus, the nurses' ability to provide breast health education or identify women
10 with high risk category of BC or BC symptoms is limited.
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17 The present study offered insight into the meaning that women attached to their breasts. For
18 example, losing one or both breasts or the possibility of extensive scarring and alterations to
19 breast and nipple sensation can be devastating. This altered self-image can also create a
20 stigma for women with BC, who perceived themselves less attractive and less feminine than
21 other women free from BC. These finding align with Nasiri et al's (2012) interview study that
22 found Iranian men believed any deformity in the wife's breasts could negatively impact on
23 the value of her breasts, and the physical and emotional image of breasts in the husband's
24 mind while there is no actual physical change in sexuality.
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31 Cancer was identified as a 'malignant' or 'evil' illness, associated with imminent death
32 among all participants. These results concur with previous research conducted in Muslim and
33 Arab countries that discussed the cultural misconceptions and myths associated with BC
34 (Taha et al., 2012; Ravichandran et al., 2010). However, the present findings rebut a previous
35 focus group study (n=29) of immigrant Somali women in the USA which found that no word
36 exists for cancer in Somali Muslim society, and that cancer is not a well-known disease
37 among Somali immigrant women living in the developed world. The present findings also
38 supported previous research that linked cultural beliefs; such as pangs of jealousy; bad omens
39 resulting from talking about cancer, 'the wicked one' or any such thing, it would bring that
40 bad omen, the disease, or the cancer to them; keeping money inside a bra; , to the causes and
41 meaning of cancer among Arab populations (Akuoko et al., 2017; Elobaid et al., 2016;
42 Salman, 2012; Saleh, 2012; Arshad et al., 2011; Kavar, 2012; Sbitti et al., 2011). The present
43 findings adds a novel perspective by identifying further misconceptions and myths regarding
44 the causes of BC. These include: drinking cold drinks, taking a cold bath, and walking
45 barefoot on a cold floor during menses as causes of BC. These misconceptions affected their
46 behaviour, for example, not walking on cold floors or drinking cold drink during menses.
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Many women and nurses within this study viewed health as the absence of symptoms; they frequently postponed seeking medical assistance and used self-prescribed medicine or alternative medicine. This response has also been found in other countries including Pakistan, UAE, and Palestine (Anwar et al., 2015; Elobaid et al., 2016; Majaj et al., 2013). The GPs participating in this study also confirmed that women with BC often presented at the advanced stage of the disease when they experienced severe pain or found large breast lumps that could not be managed at home. Similar to previous qualitative work conducted in United Arab Emirates (UAE), survivors of BC (n=19) experienced a delay in initially seeking medical advice or HCPs input (Elobaid et al., 2016). The findings from this study add new information to the international literature by identifying that female GPs were sometimes constrained by the culture of modesty within KSA and felt compelled to refer patients to level two healthcare for additional investigations without any prior clinical examination.

These findings confirm a previous focus group study conducted by Taha et al. (2012) in Jordan, which found that BC was accepted as a test from Allah. However, the present findings rebutted a previous qualitative study conducted by (Jassim et al., 2014) with a Muslim population in Bahrain, which found Allah's punishment was believed to be the cause of BC. This faith is mainly based on Muslims' understanding of Islamic principles and laws, but not all Muslims have a proper understanding of these principles and laws and thus act less proactively towards maintaining their health. This study has identified that participants viewed cancer as Allah's will and did not feel stigmatised. Any kind of stigmatizing or labelling of patients is considered a great sin against Allah's will. However, this finding rebutted the previous qualitative studies conducted in Muslim populations that found that BC was a cause of shame and social stigma among Jordanian and Palestinian women in Jordan and USA (Kawar, 2013; Kawar, 2012; Taha et al., 2012). This contradiction is another example of how Muslims have different attitudes towards the stigma of BC based on their understanding of Islamic principles and laws and faith in Allah.

Both the participating GPs and the nurses did not believe BC education and screening services were integral to their role. However, nurses who participated in this study were adamant that explanations of healthcare at any stage of breast cancer trajectory lay with the GPs not with them. Previous quantitative studies carried out in KSA suggest that breast cancer education and screening are not expected to be part of the HCP's role (Al-Darweesh et al., 2016; Al-Amoudi et al., 2010). However, the present study, highlights that many GPs and

nurses in KSA expressed a fear of being ill-equipped to support women during their BC trajectory, from primary BC prevention to supporting women with BC after treatment.

This is the first qualitative study conducted in KSA and contributes to international literature by describing the current gap in breast healthcare provision in KSA. This gap includes a lack of standardized public health information in relation to BC and BCS, a lack of clinical guidelines and protocols for communicating bad news to patients and family members, a lack of training in relation to BH, BCS or BC. The study highlights the limited role primary health services play in supporting women during their BC trajectory while GPs and nurses at PHCCs are the primary point of contact for women in the KSA when they first detect a breast irregularity.

Limitations

Despite proactively approaching males this study did not recruit any male HCPs. Most interviews were conducted in Arabic (n=60) and then transcribed and translated into English with potential for misinterpretation of data. This risk was reduced as all interviews were conducted and transcribed into Arabic, and then translated into English by one researcher (NM), who is bilingual in Arabic and English. In addition, a random sample of 1/4 of these translated transcripts (women, GPs and nurses) was validated by a third party who independently validated the transcriptions. Due to cultural constrictions, the researcher could not ask questions about the possible impact of a BC diagnosis on sexual activity within the interview guide without the participant's permission. It is recognised that the current conflict zones between the Saudi government and Yemen restricted access to all states (n=12) in the Jizan region. Reflective of this, this study accessed eight states which were current safe zones.

Conclusion

In conclusion, novel key findings from this study confirm that women and nurses in KSA require more health education about BC and BCS. The study has provided important new knowledge in relation to social barriers, cultural taboos, misconceptions and myths that currently exist surrounding BC in developing countries including KSA where breast health services are poorly developed. This research may inform BC service provision for Muslim

and Arab women outside KSA as they share cultural resources and Islamic principles to help promote the uptake of breast cancer screening services. The study has demonstrated little difference in the level of BC knowledge and breast health awareness between the female nurses participating in this study working in PHCCs and non HCP females in the general population. The study also demonstrated that previous personal experiences in relation to breast health issues influenced women's and nurse's understanding of breast health, BC, BCS, and the holistic impact of a BC diagnosis. This study has highlighted deficits in the healthcare system including a lack of resources and poor post-registration training for HCPs, at primary healthcare centres. Guidance must be evidence based and formalised to ensure that breast health is incorporated into the national protocols of the Ministry of Health (MoH). It also suggested that MoH should work to address all issues related to breast cancer prevention and health promotion in this area. There is a need for the MoH to train HCPs at PHCCs, with a particular focus on health education, screening services and lifestyle choices. Future research should focus on interventions to support and improve on breast health and include additional qualitative and quantitative studies with policy makers, HCPs, women with BC and their family members.

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Conflict of Interest

None to declare

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