

# The Determinants of Breast Cancer Screening Behavior: A Focus Group Study of Women in the United Arab Emirates

Abdulbari Bener, PhD, MFPHM, FRSS, Gladys Honein, MPH,  
Anne O. Carter, MD, MHSc, Zahra Da'ar, MPH, Campbell Miller, MB, ChB, MSc,  
and Earl V. Dunn, MD

**Purpose/Objectives:** To explore perceptions, knowledge, attitudes, and beliefs about breast cancer and its screening among Emirati national women in Al Ain, United Arab Emirates.

**Design:** A qualitative study using focus group methods.

**Setting:** Primary healthcare centers and a community-based women's association in the United Arab Emirates.

**Sample:** 41 women, aged 25–45 years.

**Methods:** Four 90-minute focus group discussions exploring perceptions, knowledge, attitudes, beliefs, and practices regarding breast cancer were audiotaped, transcribed, translated, and analyzed.

**Main Research Variables:** Social and cultural themes related to breast cancer and its screening.

**Findings:** Focus group methodology worked well in this setting. The women's perceptions, knowledge, attitudes, and beliefs regarding cancer and screening, together with aspects of the healthcare system and social milieu, appeared to strongly influence the women's preventive practices. Some of these factors had an encouraging effect on the women's practices, and others had a deterring effect. The encouraging factors included feelings of susceptibility, high levels of knowledge in some women, attitudes and beliefs about personal responsibility for health, and a supportive social milieu. Detering factors included anxiety and fear leading to denial; lack of knowledge about cancer and the screening program; fear, embarrassment, and mistrust of health care; and belief in predestination.

**Conclusions:** Health planners and healthcare providers must capitalize on encouraging factors and minimize deterring factors to optimize breast cancer screening practices among these women.

**Implications for Nursing:** Identifying and accounting for the factors that encourage or deter women in their breast cancer screening practices will help to optimize screening programs.

## Key Points . . .

- ▶ Women have encouraging and deterring factors that affect their breast cancer screening practices.
- ▶ Healthcare providers must identify and account for women's encouraging and deterring factors when planning and implementing breast cancer screening programs.
- ▶ Focus group methods can be used successfully to identify factors that affect women's breast cancer screening practices.

**B**reast cancer is the most commonly diagnosed cancer in women and the second leading cause of mortality and morbidity in women in western countries (Caplan, Wells, & Haynes, 1992; Davis, Arnold, Berkel, & Nandy, 1996;

*At the time this study was conducted, Abdulbari Bener, PhD, MFPHM, FRSS, was a professor in the Department of Community Medicine in the Faculty of Medicine at United Arab Emirates (UAE) University in Al Ain. Gladys Honein, MPH, is a course manager in the Department of Health Policy Management and Evaluation at the University of Toronto in Canada, and Anne O. Carter, MD, MHSc, is an associate professor in the Department of Community Medicine in the Faculty of Medicine at UAE University. At the time this study was conducted, Zahra Da'ar, MPH, was a health educator in the Department of Preventive Medicine in the Ministry of Health in Al Ain. Campbell Miller, MB, ChB, MSc, is an assistant professor in the Department of Family Medicine in the Faculty of Medicine, and Earl V. Dunn, MD, is a professor in the Department of Family Medicine in the Faculty of Medicine, both at UAE University. This work was supported by a grant (NP/99/5) from the Faculty of Medicine and Health Sciences, UAE University, Al Ain, Abu Dhabi, UAE. (Submitted July 2001. Accepted for publication March 30, 2002.)*

Digital Object Identifier: 10.1188/02.ONF.E91-E98

Jemal, Thomas, Murray, & Thun, 2002). Screening and early detection of breast cancer through a combination of monthly breast self-examination (BSE), regular clinical breast examination, and annual mammography beginning at age 40 are the best ways to limit morbidity and mortality from breast cancer (Fletcher, Black, Harriss, Rimer, & Shapiro, 1993; Pearlman, Clark, Rakowski, & Ehrich, 1999; Schweitzer, 1988).

Lack of knowledge about the benefits of breast cancer screening is a significant barrier for some women (McPhee et al., 1997; Pham & MCPhee, 1992; Philips, Cohen, & Moses, 1999; Remennick, 1999; Yi & Prows, 1996). In particular, lack of knowledge has been associated with underuse of screening services in low-income, poorly educated minorities and the elderly (Gotay, Issell, Hernandez, & Serxner, 1996; Morgan, Park, & Cortes, 1995; Rakowski et al., 1992; Suarez, Roche, Nichols, & Simpson, 1997; Sung, Blumenthal, Coates, & Alema-Mensah, 1997; Vietri, Poskitt, & Slaninka, 1997).

Recently, some studies have reported that improved knowledge and attitudes positively affect the screening behavior of women (McPhee et al., 1997; Pearlman et al., 1999; Suarez et al., 1997; Tang, Solomon, Yeh, & Worden, 1999; Underwood, Shaikha, & Bakr, 1999). In their study, Erblich, Bovbjerg, and Valdimarsdottir (2000) suggested that examining the impact and role of psychological distress on the practice of BSE may be particularly important.

Focus groups and surveys have been used extensively to study breast cancer screening behavior and barriers to screening among Anglo American women (Zapka & Berkowitz, 1992), African American women (Hoffman-Goetz & Mills, 1997; Philips et al., 1999; Tessaro, Eng, & Smith, 1994), Vietnamese American women, Mexican women (Suarez et al., 1997), Russian immigrants in Israel (Remennick, 1999), Native American women (Coughlin, Uhler, & Blackman, 1999), and Asian American women (Tang et al., 1999). These studies offer explanations for mammography screening in women and emphasize the strength of naturally existing sources of social support for designing interventions to increase breast cancer screening.

Focus group interviewing has been used extensively to examine a variety of healthcare-related issues, belief, attitudes, and practices. Focus group methodology is particularly effective in collecting information about sensitive topics, such as breast cancer, because it breaks barriers of shyness and silence through group interaction (Philips et al., 1999; Tessaro et al., 1994). Usually, small group discussions of 4–12 individuals are held in neutral and nonthreatening settings to allow for the collection of subject-generated data that are not captured by quantitative techniques (Morgan et al., 1995). However, focus group findings are directional and nondefinitive and, therefore, may not be generalizable (Krueger, 1994).

A breast cancer screening program was introduced at the beginning of 1998 in the inland desert city of Al Ain in the United Arab Emirates (UAE). The age-standardized incidence of breast cancer for 1998 in this population was 15.5 per 100,000 (Denic & Bener, 2001). By way of comparison, the age-standardized incidence of breast cancer for 1998 in Kuwait was 31.8 per 100,000 and 18.6 per 100,000 in Saudi Arabia (Denic & Bener). One of the main target groups of this screening program is traditional, Muslim Bedouin women more than 40 years old who are citizens of the UAE (i.e., Emirati nationals).

This focus group study was designed to explore the determinants of breast cancer screening behavior and assist in the development of the program. Because healthcare services are free to all Emirati nationals, the cost of screening was not explored as a determinant. The perceptions, knowledge, attitudes, beliefs, and practices of the women in relation to breast cancer and breast cancer screening were the specific research issues addressed. This study was approved by the research ethics committee of the Faculty of Medicine and Health Sciences at UAE University.

## Methods

Participants in the focus groups were Emirati women volunteers who were 25–45 years of age. For three of the four focus groups, women were recruited by personal invitation of the nurses who worked in their primary healthcare (PHC) centers. Two of these three centers are in semirural areas, and one is in an urban area. Because the breast cancer screening program already had been implemented in these centers at the time of recruitment, the women most likely were exposed to the program prior to their participation in the focus group. However, this was not a requirement for group membership. The fourth focus group consisted of women attending a social and educational center for Emirati women in urban Al Ain. They were less likely to have been exposed to the breast cancer screening program than those recruited from the PHC centers.

The four group meetings were held in the PHC and women's centers because the settings were familiar. The focus groups met for 60–90 minutes, and participants spoke in Arabic. The purpose of the first three focus group meetings was to generate data and identify key concepts that emerged from the discussions. These concepts then were tested and refined in the fourth focus group, which was held in the urban PHC center.

A semistructured guide was designed to focus the discussion on the following issues: perceptions related to cancer and screening for cancer; knowledge about the etiology of breast cancer, its symptoms, and the screening techniques used for early detection; attitudes and beliefs concerning screening and treatment services; and practices and barriers related to screening. The discussion was not limited to the guide; new ideas were welcomed and encouraged. The discussion guide was modified for the last focus group to test the concepts that emerged from preliminary analysis of the first three focus groups.

Two bilingual investigators attended the focus group meetings: One acted as a facilitator, and the other took notes and observed. An additional individual, who had been involved in recruiting the women, attended the discussions to help create an atmosphere of trust and openness. Each focus group session was taped using a multidirectional microphone placed in the center of the group, which was capable of recording all voices. At the beginning of each session, the facilitator introduced herself and the other investigators, stated the aim of the meeting, and asked for consent to audiotape the discussion. The women then were asked to complete a brief questionnaire regarding their basic demographic information (illiterate women were assisted). The facilitator followed the discussion guide beginning with broad questions to initiate discussion. Probing questions were used to gain a deeper understanding of participants' initial responses.

Audiotapes of all focus group discussions were transcribed in Arabic and translated into English because three of the study's investigators could not read Arabic. The audiotapes usually were transcribed by the person involved in recruiting the women under the supervision of the investigator who observed the discussion at each focus group session. Two investigators independently reviewed and manually analyzed the transcripts by dissecting each line into ideas. Similar ideas were grouped together into concepts. The investigators then met to compare their findings. Differences were resolved by returning to the Arabic transcripts to clarify issues of meaning. After the third focus group session, a complete list of concepts was generated and used to prepare the discussion guide for the fourth focus group where the concepts were tested and refined. The concepts that emerged from the fourth focus group session were integrated into a conceptual framework.

## Results

Forty-one Emirati women participated in the study; their sociodemographic characteristics are presented in Table 1. They ranged in age from 25–45 years, with a mean age of 40 years and a median age of 38.4 years. None of the participants had more than a middle school education. They were married at a young age (on average at age 17), and 14 had more than 10 children. Seven women had relatives who had experienced breast cancer, and 30 had heard of the breast can-

**Table 1. Sample Demographics**

Variable	%
<b>Age (years)</b>	
$\bar{x}$ = 40 ± 6.05	–
Median = 38.4	–
<b>Marital status</b>	
Married	83
Single/divorced/widow	17
<b>Number of children</b>	
< 10 children	66
> 10 children	34
<b>Education</b>	
No formal education	58
Formal education	43
<b>Occupation</b>	
Unemployed	88
Employed	12
<b>Ethnicity</b>	
United Arab Emirates national	100
<b>Religion</b>	
Muslim	100
<b>Living area</b>	
Urban	76
Semi-urban	24
<b>Clinic visits per year</b>	
≤ 10 visits	72
> 10 visits	29
<b>Monthly income in dirhams<sup>a</sup></b>	
< 5,000	29
5,000–10,000	44
> 10,000	27

<sup>a</sup> 1 U.S. dollar = 3.68 dirhams

Note. Because of rounding, percentages may not total 100.

cer screening program. Thirteen women had experienced screening mammography at least once.

The focus group approach was effective in collecting information from participants by breaking barriers through group interaction. After an initial period of limited communication, they began to express their thoughts freely and almost every woman participated actively.

## Perceptions of Cancer

Personal perceptions of susceptibility to breast cancer appeared to have a positive impact on the women's screening behaviors.

We heard that this disease is spreading too much in the country, so we are afraid, and we want to treat it early before it spreads.

Some women are thinking that they may have problems with their breast and go to do tests.

In addition, fear of cancer, in some, led to a positive attitude toward prevention.

If I know that I have any tumor, I want to get treatment.

I do not want to neglect myself.

If I feel signs and symptoms that the television program told us about, I will feel afraid that I may have the disease without knowing it.

I imagine that there was pain, here and there, after which I go to the hospital for treatment and for examination.

Religious faith attenuated the women's fear and reduced the threat of the disease.

Many problems may happen but one must have patience like Job.

God is wonderful, and we depend on him.

A person is always afraid of getting sick but the treatment or getting better is from God.

This trust in divine providence may have had a positive effect in giving women more courage; however, it also may have reduced the incentive to seek screening.

Various perceptions of breast cancer and screening appeared to negatively affect women's screening behavior. Cancer was an enigma to them and a source of anxiety.

It is a dangerous disease and a bad one. . . . It is a big disease.

From its name, we do not like this disease; we feel sad.

This led to avoidance associated with a desire for reassuring evidence of their lack of susceptibility.

Thank God we do not have anybody who had cancer.

There is no need to go and search for and look around for it.

When I feel that I do not have anything, why would I take precautions?

We are breastfeeding so we are not afraid.

For some, fear of finding out that they may have cancer had a negative effect.

I feel afraid when I have no disease and have an examination and after that, they will tell me that I have a disease. . . . It is better if they do not discover it.

## Knowledge About Breast Cancer and Screening Tests

The knowledge demonstrated by the participants ranged from little or none at all to adequate knowledge. Misconceptions about etiology, symptoms, and screening tests existed. These factors appeared to have both positive and negative effects on preventive behavior. Women who were appropriately aware of the etiology of the disease and symptoms had a positive approach to seeking prevention.

The disease may start without pain. First the nodes, then the pain.

Breastfeeding decreases the risk of having breast cancer.

It will take time before it spreads; therefore, the lady should be examining herself to find it early.

I know it could be treated if discovered early.

Lack of knowledge and misconceptions about etiology, symptoms, and screening methods were deterring factors for appropriate preventive behavior.

The reasons [for cancer] are an injury in the breast and pollution and she did not go for treatment.

Mammography may cause disfigurement.

Bleeding causes infection, infection causes cancer.

A lady had 14 children and yet got breast cancer.

If the girl treated her forearm following the trauma, she would not have had cancer.

Many were aware of their lack of knowledge.

We do not know what causes cancer.

No one [in the group] has any idea what are certain signs and symptoms for cancer.

Women knew that treatment is possible but cure may not be.

She is taking chemotherapy but the effect is only temporary.

If the disease spreads, one can do nothing about it.

Such misconceptions may have discouraged women from seeking screening and treatment.

Sources of knowledge for the informed women included both healthcare providers and the media.

I heard about the disease on the television.

Yes, we read about it in magazines.

The nurse teaches us how to do BSE and what to feel.

She told us to do it every month.

The self-exam we make at home; the nurse taught it to us.

## Attitudes Toward Cancer and Screening

An encouraging feature identified in this study was the women's eagerness to learn about the disease and participate in screening.

If they tell me, I will go.

If something is related to my health and future, why not do it?

We are interested to know more.

Once you know how to do breast self-examination at home, you know how to do it, no problem.

Despite the fact that most women in the sample were not well informed about screening methods, those who were informed complied willingly and according to recommendations.

We are doing yearly examinations.

I do it periodically.

What the doctor is telling us, we are doing.

We do it for precaution, and when we feel anything, we go to the doctor.

Mammography is normal. I do it regularly.

They also were open to discussion about the disease and screening tests.

We discuss our health problems.

We are warning each other about this cancer disease.

These attitudes had a positive effect on preventive behavior.

Women should listen to their physician and go on time to see her, and if she tells her to do a test, she should quickly go and do it.

However, fear and embarrassment created barriers to health-seeking behavior.

She is afraid of the doctor.

The doctor is the one making fear inside me.

I feel shy with the doctor.

## Beliefs About Cancer and Screening

Participants were unanimous in their belief in patients' rights to informed decision making about health care. They wanted to be told about diagnoses so they could have input into management decisions.

We feel sad because they made a mistake and did not tell us about the disease, and they were giving him [a participant's acquaintance] different treatment (than we would have wanted).

Yes, they should inform us.

Yes, they should tell us. Why should they hide things related to my health?

The women strongly believed in personal responsibility regarding cancer prevention and management.

I have responsibility to look for treatment.

Because she was careless with her health and this is not the mistake of the doctor but herself only.

I have responsibility to look for treatment. . . . We shall examine ourselves, and if we find a lump, we should go to the doctor.

They also believed that screening led to better outcomes.

If discovered early, it could be treated.

If one takes the treatment, he [sic] will be well. If he neglects it, he will deteriorate.

One relative had cancer in the blood. They took him, and now he is cured.

If discovered early, it could be treated.

They believed that God could act through screening.

Doctors are messengers from God for treatment.

“Act and I will act with you,” said God.

These beliefs may have a positive effect on their screening practice. However, the same faith made some women passive.

I am not afraid. Everything is in the hand of God.

The disease is from God.

People should accept God’s action.

It is from God that this disease will not happen to us.

If her life is long, she will live but if short, she will die.

God is curing all the people, and we depend on Him.

Life from God.

Death is by the hand of God.

Some women believed in turning to folk medicine for treatment.

Some people are doing cauterization [i.e., similar to acupuncture, except that a hot metal rod is used to cauterize the skin].

My sister’s son was affected by the disease.

They went for cauterization.

These beliefs and practices may have had a negative effect on screening practice.

## Health Services and Social Milieu

Study participants received support from their husbands, family members, and friends in seeking screening and treatment.

She thanked her friend because she advised her not to neglect herself.

I tell my friends everything.

No, the husband will not refuse anything to do with health.

Most women had a positive attitude toward doctors and the healthcare system.

The knowledge is usually with the doctor.

I would come to the doctor, and she will show me how.

If they are not concerned about our health, they will not ask us to do this test or that.

We thank them for taking care of us.

They viewed the government’s provision of care positively, including screening tests: “The government provided everything.” These factors seemed to positively affect screening behaviors. However, certain services or options were not available in all locations, such as female doctors and women’s clinics: “There must be female doctors.” One woman said, “The well-woman clinic is now closed,” which may mean that some women required transport to an alternative screening location.

Some women complained about a lack of confidence in the healthcare system.

Why are the doctors outside more qualified than the doctors here?

They advised me to go abroad because treatment there is better.

I feel that the second physician opinion is better than the first.

One woman had pus and blood in her breast; she was not treated until her breast was swollen and told she had cancer.

They also complained that lack of educational services within the healthcare facilities led them to neglect their health.

We heard about those tests but we thought that sick ones had to do them.

I delivered 10 children. Nobody told me to do those tests.

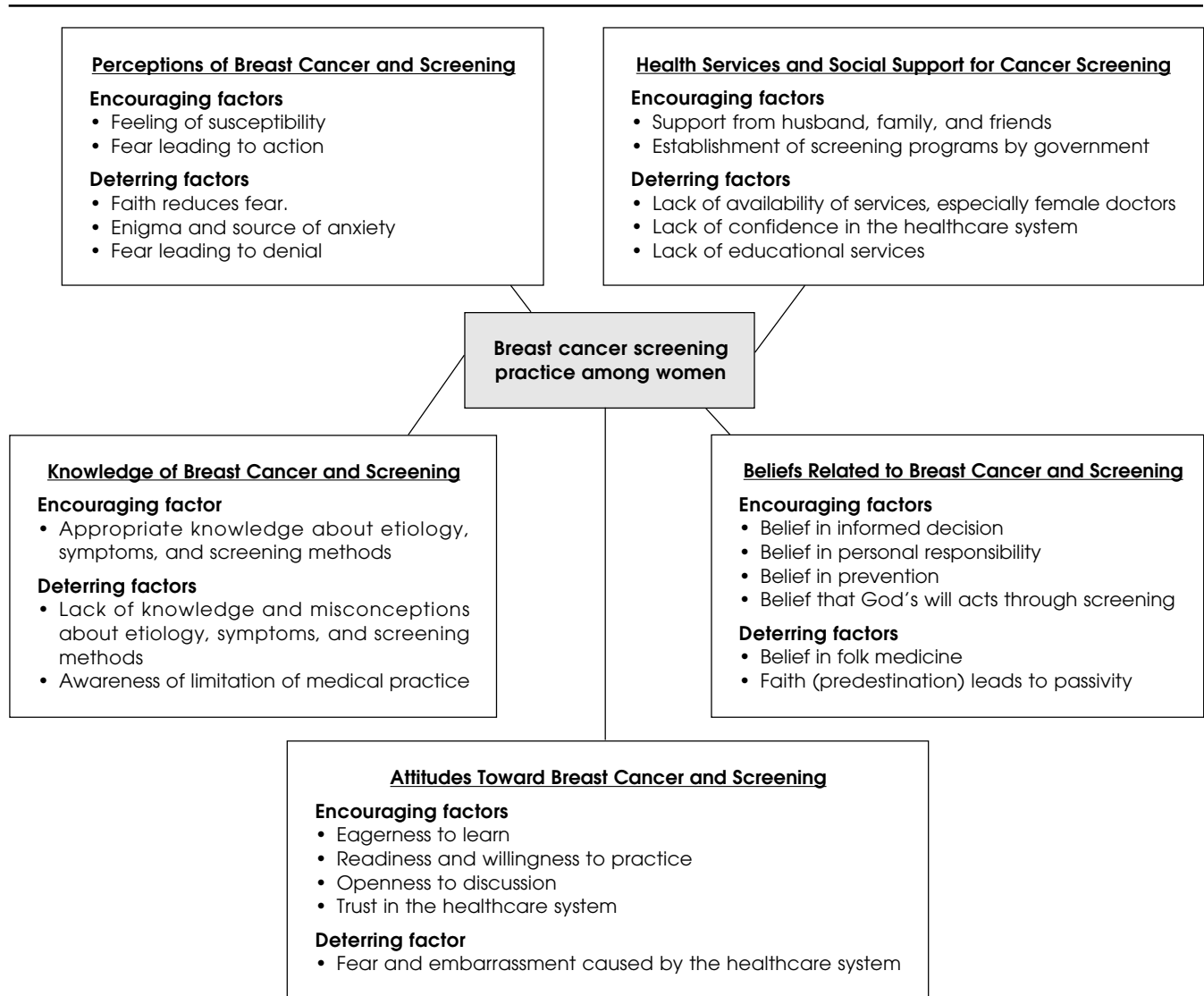
These deficits in the availability of services, confidence of the women, and in health education were deterring factors that affected screening behavior in participants.

## Discussion

This study provided new insights into the perceptions, knowledge, beliefs, attitudes, and practices of the Emirati women of Al Ain with respect to breast cancer and the breast cancer screening program. Many features were encouraging, and many perceptions were positive. Some of the women were very knowledgeable, many attitudes and beliefs supported the program, and the local social milieu and healthcare system supported the program. However, many deterring factors also were found: Some perceptions, attitudes, and beliefs were negative or led the women to avoid the program, and some aspects of the social milieu and healthcare system discouraged good practices. Healthcare planners from the Ministry of Health, who initiated the breast cancer screening program, and the local doctors and nurses providing the program must capitalize on the encouraging factors and eliminate the discouraging factors as much as possible. The analysis of the group discussions produced the concepts and theoretical framework outlined in Figure 1.

## Perceptions of Cancer

Any breast health promotion or public awareness program must reinforce the perceptions that lead to good screening practices and alter those that discourage such practices. For example, the realistic fears and concerns about cancer, as expressed by these women, should be used in a nonthreatening and supportive manner to encourage women to seek screening. Dismissing such feelings may lead to avoidance and denial that would be counterproductive for a screening program.



**Figure 1. Determinants of Screening Practice Among Women in the United Arab Emirates**

Breast cancer should be put into the context of all of the other diseases that women commonly encounter. This is congruent with the findings of Tessaro et al. (1994) in their study of breast cancer screening in older African American women. They found that women under 60 years of age were concerned about breast cancer, and the major barriers to screening were the fear of finding the disease and the social consequences of losing a breast.

### **Knowledge About Breast Cancer and Screening**

A public health promotion program supporting breast cancer screening should build on existing community knowledge. Women who were informed participated in screening. The main knowledge barrier for participants in the current study was lack of information about screening. Both Caplan et al. (1992) and Weinberger et al. (1992), in their studies of breast cancer screening among several groups in the United States, noted that their subjects faced the same barrier, which resulted, in part, from a lack of health promotion and disease

prevention practices in the healthcare setting. An effective health promotion program that is disseminated widely in the Al Ain community would meet the needs of the study participants. The program should involve healthcare professionals and the media because the women in the current study reported that their information had been derived from both sources.

### **Attitudes Toward Cancer and Screening**

The very positive attitudes already present in the community, such as the women's eagerness to learn, willingness to participate in screening, and their generally positive attitudes toward the healthcare system, should be capitalized on by any health promotion program. For example, an authority figure in a healthcare system, such as a doctor or nurse, could be featured in a media campaign. Any attitudes that discourage women from seeking screening, such as fear and embarrassment, should be dealt with by the healthcare system. The provision of comfortable, supportive settings for screening that positively alter women's fears and concerns would be

helpful (Benedict, Williams, & Baron, 1994). As major sources of referral for screening, PHC centers must be able to dedicate time and educate women about breast screening.

## Beliefs About Cancer and Screening

The very positive beliefs in informed decisions and personal choice must be incorporated into the attitudes and practices of healthcare professionals through continuing professional development. The culture of the healthcare system should be developed to support these beliefs. The study participants' strong personal faith in God and His actions through the provision of health care should be encouraged actively and supported by the healthcare system and health promotion programs, whereas any tendency by the subjects to accept their fate passively must be confronted through education. Health promotion messages must be tailored to the strong Muslim faith of these women and should support the Muslim concept that God wishes people to take responsibility for themselves.

## Healthcare Services and the Social Milieu

The community and family support felt by the study participants is a very positive aspect of their coping system and should be supported by the screening program and healthcare system. Other researchers have found similar support in other communities. Benedict et al. (1994), when studying American women living in the South and undergoing diagnosis for a breast lesion, found that those who could talk with others found comfort and caring in the conversations. Women who already are knowledgeable about breast cancer could be recruited to participate in peer teaching and support, which would strengthen the peer support network already present in the community.

To successfully implement a breast cancer screening program among the study women, their concerns about the healthcare system must be addressed by the Ministry of Health and local healthcare providers through policy development and continuing professional development.

## Health Services in the United Arab Emirates

The inequitable geographic distribution of healthcare resources in UAE has long been recognized as a problem that has continued despite immense progress. Healthcare personnel, like those in many other professions, tend to locate in large towns and cities. Specialization in medicine, nursing, and many other healthcare professions has made it necessary for practitioners to be located in areas with larger populations to ensure an adequate patient base. Health services in UAE have undergone a remarkable development since the establishment of the Federation in 1971, when the country was created by joining seven emirates. The healthcare infrastructure has

grown tremendously. The high-quality and accessibility of healthcare services are reflected by a sharp decline in infant mortality from 14.7 per 1,000 live births in 1983 to 6.57 per 1,000 live births in 1999. Also, the life expectancy approaches levels found in western and developed countries (i.e., 74 years for males and 76 years for females) (Al-Hosani, 2000).

The PHC clinics are part of a comprehensive care package offered to UAE citizens, expatriate workers, families, and the community. The Ministry of Health has made a great effort to develop PHC services to make them more equitable and accessible to all residents in UAE. The number of PHC centers increased from 45 clinics in 1977 to 105 by the end of 1999 (Al-Hosani, 2000). Although curative medical services received more careful attention by the UAE government than public health services, early screening programs for children and adults, promotion of occupational health and safety, and promotion of a healthy lifestyle are gaining ground (Alwash & Abbas, 1999).

## Focus Group Approach

The current study's researchers found focus groups to be a productive and effective approach for gathering information about the social, environmental, and personal aspects associated with breast cancer and breast cancer screening practices in this population of women. Despite the deficiencies in their knowledge and practices, most women were capable of expressing their views and needs. Encouraged by the group synergy, they had no difficulty communicating freely. By starting with simple concepts (e.g., BSE) and proceeding to more complex issues (e.g., the adequacy of the healthcare system), the women described their behavior and the factors that influence their behavior. Through these discussions, participants were able to provide information that will help to improve the breast cancer screening program and stimulate further research. This supports the view of Hoffman-Goetz and Mills (1997) that the contribution of qualitative approaches to the development of cancer prevention and control programs and policies is threefold: to collect a greater depth of information, identify processes and relationships among behaviors, and develop variables and hypotheses for quantitative research.


Health planners and healthcare providers must capitalize on encouraging factors and minimize deterring factors to optimize breast cancer screening practices among this group of women.

*The authors very gratefully acknowledge Tariq Gaber, MD, director of Primary Health Care Clinics, for providing support and assistance throughout the research survey.*

**Author Contact:** Anne O. Carter, MD, MHSc, can be reached at [anne.carter@uaeu.ac.ae](mailto:anne.carter@uaeu.ac.ae), with copy to editor at [rose\\_mary@earthlink.net](mailto:rose_mary@earthlink.net).

## References

- Al-Hosani, H. (2000). Health for all in the United Arab Emirates. *Eastern Mediterranean Health Journal*, 6, 838–840.
- Alwash, R., & Abbas, A. (1999). Public health practice, the United Arab Emirates. *Public Health Medicine*, 1, 113–117.
- Benedict, S., Williams, R., & Baron, P. (1994). Recalled anxiety: From discovery to diagnosis of a benign breast mass. *Oncology Nursing Forum*, 21, 1723–1727.
- Caplan, L.S., Wells, B.L., & Haynes, S. (1992). Breast cancer screening among older racial/ethnic minorities and whites: Barriers to early detection. *Journal of Gerontology*, 47(Special issue), 101–110.
- Coughlin, S.S., Uhler, R.J., & Blackman, D.K. (1999). Breast and cervical cancer screening practices among American Indian and Alaska Native women in the United States, 1992–1997. *Preventive Medicine*, 29, 287–295.

- Davis, T.C., Arnold, C., Berkel, H.J., & Nandy, I. (1996). Knowledge and attitude on screening mammography among low-literate, low-income women. *Cancer*, 78, 1912–1920.
- Denic, S., & Bener, A. (2001). Consanguinity decreases risk of breast cancer—Cervical cancer unaffected. *British Journal of Cancer*, 85, 1675–1679.
- Erblich, J., Bovbjerg, D.H., & Valdimarsdottir, H.B. (2000). Psychological distress, health beliefs, and frequency of breast self-examination. *Journal of Behavioral Medicine*, 23, 277–292.
- Fletcher, S.W., Black, W., Harriss, R., Rimer, B.K., & Shapiro, S. (1993). Report of the International Workshop on Screening for Breast Cancer. *Journal of the National Cancer Institute*, 85, 1644–1656.
- Gotay, C.C., Issell, B.F., Hernandez, B.Y., & Serxner, S. (1996). Barriers to mammography in a low income, multiethnic clinic population. *Hawaii Medical Journal*, 55(8), 136–140.
- Hoffman-Goetz, L., & Mills, S. (1997). Cultural barriers to cancer screening among African American women: A critical review of the qualitative literature. *Women's Health: Research on Gender, Behavior and Policy*, 3(3–4), 183–201.
- Jemal, A., Thomas, A., Murray, T., & Thun, M. (2002). Cancer statistics, 2002. *CA: A Cancer Journal for Clinicians*, 52, 23–47.
- Krueger, R.A. (1994). *Focus groups* (2nd ed.). Thousand Oaks, CA: Sage.
- McPhee, S.J., Bird, J.A., Davis, T., Ha, N.T., Jenkins, C.N.H., & Lee, B. (1997). Barriers to breast and cervical cancer screening among Vietnamese-American women. *American Journal of Preventive Medicine*, 13, 205–213.
- Morgan, C., Park, E., & Cortes, D.E. (1995). Beliefs, knowledge and behaviour about cancer among urban Hispanic women. *Journal of the National Cancer Institute Monographs*, 18, 57–63.
- Pearlman, D.N., Clark, M.A., Rakowski, W., & Ehrich, B. (1999). Screening for breast and cervical cancers: The importance of knowledge and perceived cancer survivability. *Women and Health*, 28(4), 93–113.
- Pham, C.T., & McPhee, S.J. (1992). Knowledge, attitudes, and practices of breast and cervical cancer screening among Vietnamese women. *Journal of Cancer Education*, 7, 305–310.
- Philips, J.M., Cohen, M.Z., & Moses, G. (1999). Breast cancer screening and African American women: Fear, fatalism and silence. *Oncology Nursing Forum*, 26, 561–571.
- Rakowski, W., Dube, C.E., Marcus, B.H., Prochaska, J.O., Velicer, W.F., & Abrams, D.B. (1992). Assessing elements of women's decisions about mammography. *Health Psychology*, 11, 111–118.
- Remennick, L.I. (1999). Breast screening practices among Russian immigrant women in Israel. *Women and Health*, 28(4), 29–51.
- Schweitzer, R.J. (1988). A cancer education and prevention center: A community program. *Cancer*, 15(Suppl. 8), 1821–1822.
- Suarez, L., Roche, R.A., Nichols, D., & Simpson, D.M. (1997). Knowledge, behavior and fears concerning breast and cervical cancer among older low-income Mexican-American women. *American Journal of Preventive Medicine*, 13, 137–142.
- Sung, J.F., Blumenthal, D.S., Coates, R.J., & Alema-Mensah, E. (1997). Knowledge, beliefs, attitudes, and cancer screening among inner-city African women. *Journal of the National Medical Association*, 89, 405–411.
- Tang, T.S., Solomon, L.J., Yeh, C.J., & Worden, J.K. (1999). The role of cultural variables in breast self-examination and cervical cancer screening behavior in young Asian women living in the United States. *Journal of Behavioral Medicine*, 22, 419–436.
- Tessaro, I., Eng, E., & Smith, J. (1994). Breast cancer screening in older African-American women: Qualitative research findings. *American Journal of Health Promotion*, 8, 286–292.
- Underwood, S.M., Shaikha, L., & Bakr, D. (1999). Veiled yet vulnerable: Breast cancer screening and the Muslim way of life. *Cancer Practice*, 7, 285–290.
- Vietri, V., Poskitt, S., & Slaninka, S.C. (1997). Enhancing breast cancer screening in the university setting. *Cancer Nursing*, 20, 323–329.
- Weinberger, M., Saunders, A.F., Bearon, L.B., Gold, D.T., Brown, J.T., Samsa, G.P., et al. (1992). Physician-related barriers to breast cancer screening in older women. *Journal of Gerontology*, 47(Special issue), 111–117.
- Yi, J.K., & Prows, S.L. (1996). Breast cancer screening practices among Cambodian women in Houston, Texas. *Journal of Cancer Education*, 11, 221–225.
- Zapka, J.G., & Berkowitz, E. (1992). A qualitative study about breast cancer screening in older women: Implications for research. *Journal of Gerontology*, 47, 93–100. 

## For more information . . .

- ▶ Health Canada: Canadian Breast Cancer Initiative  
[www.hc-sc.gc.ca/hppb/ahi/breastcancer](http://www.hc-sc.gc.ca/hppb/ahi/breastcancer)
- ▶ Breast Clinic  
[www.thebreastclinic.com](http://www.thebreastclinic.com)
- ▶ Questions and Answers About Screening Mammograms  
[http://cis.nci.nih.gov/fact/5\\_28.htm](http://cis.nci.nih.gov/fact/5_28.htm)

*These Web sites are provided for information only. The hosts are responsible for their own content and availability. Links can be found using ONS Online at [www.ons.org](http://www.ons.org).*