Factors Influence Breast Cancer Screening Practices Amongst Arabic Women Living in the State of Qatar

Dr Tam Truong Donnelly

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH · EDUCATION · RESEARCH صحة · تعليم · بحوث

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR

الرعاية الصحية الأولية
PRIMARY HEALTH CARE

Acknowledgement

- Funded by the Qatar National Research Fund, National Priorities Research Program, in Collaboration with the University of Calgary-Qatar, Hamad Medical Corporation, and Qatar Primary Health care.

Research Key Investigators

Dr. Tam Truong Donnelly

Dr. Al-Hareth Al-Khater

Dr. Mohamed Ghaith Al-Kuwari

Dr. Nabila Al-Meer

Dr. Salha Bujassoum Al-Bader

Dr. Mariam A Malik

Dr. Rajvir Singh

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH · EDUCATION · RESEARCH صحة · تعليم · بحوث
Hamad

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR
جامعة كالجاري قطر

الرعاية الصحية الأولية
PRIMARY HEALTH CARE


Awali
Bahrain
Ar Rumaythah
Al Khuwayr
Ra's 'Ushayriq
Al Ghashamiyah
26° 00'
Al Ka'ban
Al Ghuwairiyah
Gulf of Bahrain
Al Busayyir
Al Khawr
Umm Swai Jah
Hawar (disputed between Qatar and Bahrain)
Al Jumailiyah
Ar Rufayq
25° 30'
Bi'r Zekrit
Dukhan
Umm Salal Mohammed
Ash Shahaniyah
Al Gharrafah
Doha
Qatar
Ar Rayyan
Umm Bab
Al Wakrah
Al Wukayr
Kuwait
Iran
Al Kir'anah
Umm Said
25°00'
Area mapped
Qatar
Saudi Arabia
U.A.E
Al Kharrarah
As Salwá
N

Background

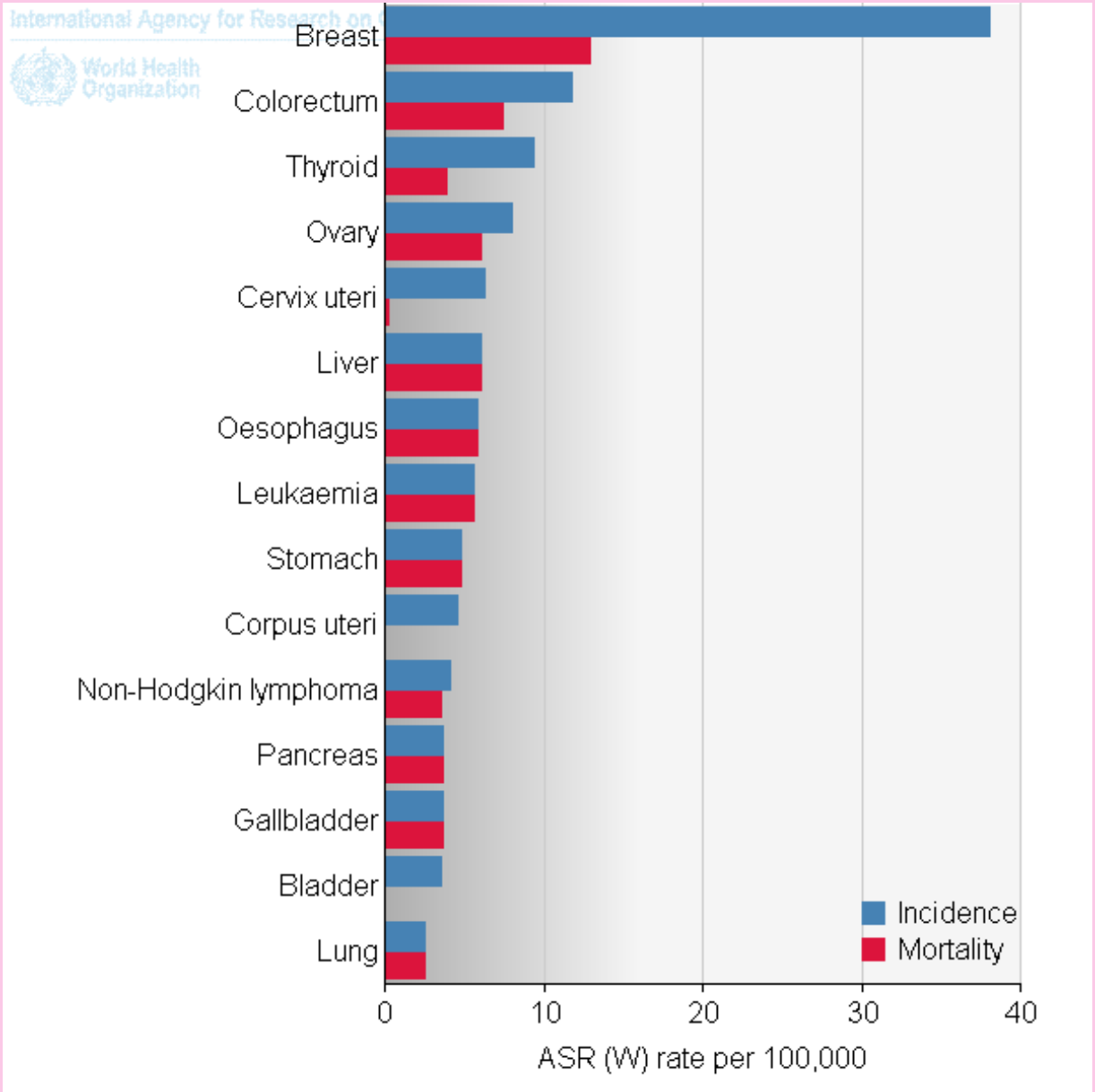
Qatar Statistics Authority, 2010

- Population: 1,696,563
- Qatari citizens represent 24.4% of the population
- Qatari female citizens represent 36.7% of the female population
- GDP per capita: More than $88,000 for 2010 (http://www.forbes.com)

Background

- Breast cancer most common cancer in Qatar
- 20% cancer cases receiving treatment in 2007 at Al Amal Hospital in Doha, were breast cancer

Most frequent cancers for women in Qatar in 2008 (IARC, WHO 2008)



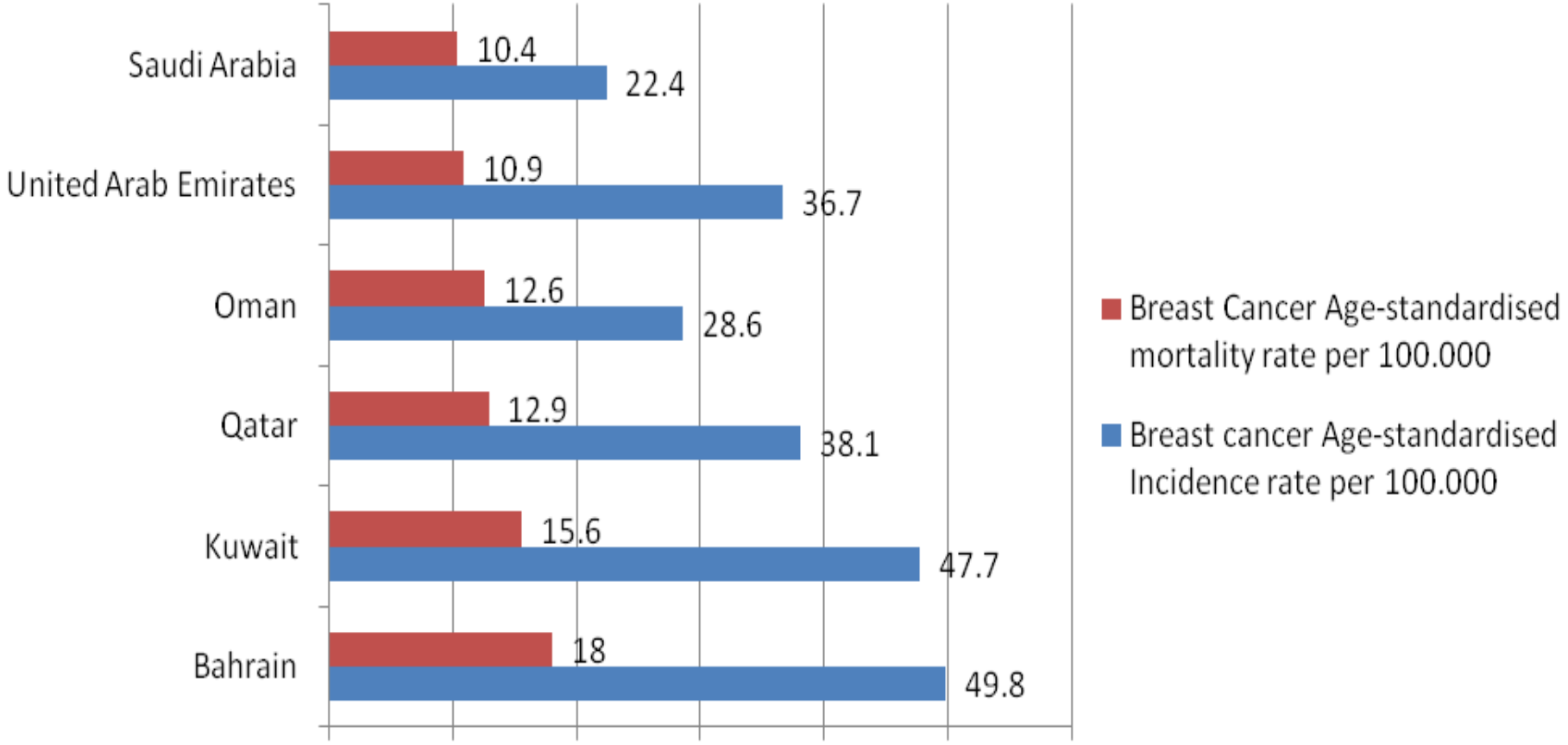


Figure 1. GCC Breast Cancer, Age standardised incidence and mortality rates per 100.000

IARC International Agency for Research Cancer, WHO. World cancer report 2008 and Global cancer statistics.
[http://globocan.iarc.fr/factsheet.asp]

Background

- The incidence for breast cancer in Qatari women occurs at an early age (25-34 years)

- Arabic women are often diagnosed at advanced stages of breast cancer

- Qatar National Cancer Society and Hamad Medical Corporation recommend BSE for all women, yearly CBE for women 35 +, and mammography every two years for women 40-69 unless otherwise advise by physicians.

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH · EDUCATION · RESEARCH صحة · تعليم · بحوث

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR

الرعاية الصحية الأولية
PRIMARY HEALTH CARE

Background

- Among Qatari women, 24% do BSE, 23% have had CBE, and 23% have had a mammography

  (Bener et al., 2009).

- Low rate of screening suggest that Arab women in Qatar are at risk for lack of early detection and treatment of breast cancer in its early stages.

Research Goal

- To develop, implement, and sustain an intervention program that will raise awareness of breast cancer and increase women's participation in breast cancer screening activities and therefore reducing breast cancer's morbidity and mortality for Arab women living in the State of Qatar

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH · EDUCATION · RESEARCH صحة · تعليم · بحوث
Hamad

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR
جامعة كالجاري قطر

الرعاية الصحية الأولية
PRIMARY HEALTH CARE

Ecological Conceptual Framework

- Individuals and their physical and socio-cultural environment of individuals
- Health care behaviour and the physical environmental variables, intrapersonal, and other social determinants of health
- Health promotion and interventions should occur at multiple social, cultural, and environmental levels

Kleinman's Explanatory Model

- Individuals' explanatory models are derived from their knowledge and values, which are informed by their specific socio-cultural backgrounds
- Providing effective health care requires that providers be able to elicit and recognize clients' beliefs and values with respect to their understandings of illnesses and treatments, and to negotiate these differing perspectives.

Study 1

- Cross-sectional Community -Based Survey of Breast Cancer Screening Practices Amongst Arabic Women Living in the State of Qatar

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH · EDUCATION · RESEARCH صحة · تعليم · بحوث

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR
جامعة كالجاري قطر

الرعاية الصحية الأولية
PRIMARY HEALTH CARE

Study 1: Research Questions

1. What is the participation rate of Arabic women on breast self examination, clinical breast examination, and mammogram?
2. To what extent are Arabic women's cultural knowledge and values, knowledge of breast cancer and its screening, socioeconomic status, and social support networks, associated with their breast cancer screening behaviours?

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH · EDUCATION · RESEARCH صحة · تعليم · بحوث

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR
جامعة كالجاري قطر

الرعاية الصحية الأولية
PRIMARY HEALTH CARE

Methodology Study 1

- Sites: Doha, Al Wakrah (S), Al Khor (N)

	Population of women 35 years and over	Sample Size using a margin of error of 3.5%	Sample Size using a margin of error of 5%
Doha	60,937	640	315
South of Qatar (W)	7,909	83	41
North of Qatar (K)	3,394	36	18
Total	72,240	759	374

Study sample size calculation based on Cochran's formula for sample size

- Sample: convenience 1063 (87.5% response rate) Arabic women aged 35+ various healthcare settings, live in Qatar for at least 10 years
- Data collection: structured survey-face to face
- Data analysis: SPSS version 19

Results of the survey

Table 1. Selected socio-demographic data (N=1,063)	
Variable	**N (%)**
Age (*M*=44.9, *SD*=8.4)	
35-39 years	365 (34.4)
40-49 years	399 (37.6)
50-59 years	220 (20.7)
60+ years	77 (7.2)
Marital status	
Single/never married	83 (7.8%)
Married	839 (78.9%)
Other (separated, divorced, widowed)	141 (13.3%)
Nationality	
Qatari citizens	554 (52.1%)
Non-Qatari Arab residents	509 (47.9%)
Religion	
Muslim	1044 (98.2%)
Christian	19 (1.8%)
Living area	
Urban	943 (88.7%)
Semi-urban	120 (11.3%)
Years in Qatar (*M*=34.8, *SD*=14.6)	
10-29 years	332 (31.2)
30-49 years	551 (51.8)
50+ years	180 (16.9)
Has participant ever had breast cancer?	
Yes	43 (4%)
	1020 (96%)

Table 2. Awareness of breast cancer and breast cancer screening (N=1063)

Awareness of breast cancer **Participant must have correctly answered both questions:**	**Yes** **n (%)**	**No** **n (%)**
Have you ever heard of breast cancer? **[Yes]**	993 (93.4%)	70 (6.6%)
Have you ever had any information about breast cancer from: [participant must say **"Yes"** to at least one]:		
Family member or friend	713 (67.1%)	350 (32.9%)
Newspapers/magazines	692 (65.2%)	371 (34.8%)
Television	781 (73.5%)	282 (26.5%)
Pamphlet	505 (47.6%)	558 (52.4%)
Doctor	305 (28.7%)	758 (71.3%)
Nurse	185 (17.4%)	878 (82.6%)
Health educator	176 (16.6%)	887 (83.4%)
Number (%) of participants who correctly answered both questions	**964 (90.7%)**	

Awareness of breast self examination **Participant must have correctly answered both questions:**	**Yes** **n (%)**	**No** **n (%)**
Have you ever heard of women performing breast self-examination at home? **[Yes]**	436 (41.0%)	627 (59.0%)
Do you know how to examine your own breast? **[Yes]**	469 (44.1%)	594 (55.9%)
Number (%) of participants who correctly answered both questions	**307 (28.9%)**	

Awareness of clinical breast examination **Participant must have correctly answered both questions:**	**Yes** **n (%)**	**No** **n (%)**
Have you ever heard of an exam where a doctor or a nurse examines a woman's breast to feel for a small lump that could be an early sign of breast cancer? **[Yes]**	753 (70.8%)	310 (29.2%)
Have you ever had such a breast examination by a doctor / a nurse? **[Yes]**	451 (42.4%)	612 (57.6%)
Number (%) of participants who correctly answered both questions	**444 (41.8%)**	

Awareness of mammography **Participant must have correctly answered both questions:**	**Yes** **n (%)**	**No** **n (%)**
At what age does the Qatar screening program suggest that women should start having mammograms? **[40-50]**	387 (36.4%)	676 (63.6%)
How often does the screening program suggest that women should have a mammogram? **[once a year, once every two years]**	509 (47.9%)	554 (52.1%)
Number (%) of participants who correctly answered both questions	**281 (26.4%)**	

Table 3. Basic knowledge of breast cancer screening (N=1063)

Participant must have correctly answered all 6 questions:	**Yes** **n (%)**	**No** **n (%)**
At what age does the screening program suggest that women should start having mammograms? **[40-50]**	387 (36.4%)	676 (63.6%)
How often does the screening program suggest that women should have a mammogram? **[once a year, once every two years]**	509 (47.9%)	554 (52.1%)
Have you ever heard of an exam where a doctor or a nurse examines a woman's breast to feel for a small lump that could be an early sign of breast cancer? **[Yes]**	753 (70.8%)	310 (29.2%)
Have you ever had such a breast examination by a doctor or a nurse? **[Yes]**	451 (42.4%)	612 (57.6%)
Have you ever heard of women performing breast self-examination at home? **[Yes]**	436 (41.0%)	627 (59.0%)
Do you know how to examine your own breast? **[Yes]**	469 (44.1%)	594 (55.9%)
Number (%) of participants who correctly answered all 6 questions	**81 (7.6%)**	

Table 4. Breast cancer screening participation rates

Participant practiced BCS activities	At appropriate time* n (%)	At some point n (%)	Never practiced n (%)
Breast Self Examination (BSE) (N=1063)	**148 (13.9%)**	294 (27.7%)	621 (58.4%)
Clinical Breast Examination (CBE) (N=1063)	**333 (31.3%)**	118 (11.1%)	612 (57.6%)
Mammogram (only women aged ≥40) (N = 696)	**187 (26.9%)**	87 (12.5%)	421 (60.6%)

Table 5. Awareness, knowledge, education and participation in breast cancer screening activities

Variable	Appropriate practice of BSE		Appropriate practice of CBE		Participation in Mammogram	
	Yes (%) N=148	No (%) N=915	Yes (%) N=333	No (%) N=730	Yes (%) N=187	No (%) N=508
Awareness of Breast Cancer	144 (97.3)	820 (89.6)	324 (97.3)	640 (87.7)	180 (96.3)	441 (86.8)
	$\chi2(1, N=1062) = 8.74, p=0.003$		$\chi2(1, N=1062) = 26.81, p=0.001$		$\chi2(1, N=695) = 12.82, p=0.001$	
Awareness of BSE	115 (77.7)	192 (21.0)	163 (48.9)	144 (19.7)	80 (42.8)	116 (22.8)
	$\chi2(1, N=1063) = 199.53, \ p=0.001$		$\chi2(1, N=1063) = 95.08, p=0.001$		$\chi2(1, N=695)= 26.86, p=0.001$	
Awareness of CBE	115 (77.7)	329 (36.0)	326 (97.9)	118 (16.2)	164 (87.7)	164 (32.3)
	$\chi2(1, N=1063) = 91.28, p=0.001$		$\chi2(1, N=1063) = 628.10, p=0.001$		$\chi2(1, N=695) = 168.44, p=0.001$	
Awareness of Mammogram	56 (37.8)	225 (24.6)	129 (38.7)	152 (20.8)	82 (44.1)	91 (17.9)
	$\chi2(1, N=1062) = 11.44, p=0.001$		$\chi2(1, N=1062) = 38.14, p=0.001$		$\chi2(1, N=694) = 49.84, p=0.001$	
Basic Knowledge of BCS	38 (25.7)	43 (4.7)	66 (19.8)	15 (2.1)	33 (17.6)	25 (4.9)
	$\chi2(1, N=1063) = 79.63, p=0.001$		$\chi2(1, N=1063) = 102.53, p=0.001$		$\chi2(1, N=695) = 28.94, p=0.001$	
Education participant						
Never went to school	8 (5.4)	138 (15.1)	29 (8.7)	117 (16.0)	20 (10.7)	112 (22.0)
Primary school	16 (10.8)	197 (21.6)	60 (18.0)	153 (21.0)	40 (21.4)	122 (24.0)
High School	39 (26.4)	248 (27.1)	90 (27.0)	197 (27.0)	46 (24.6)	127 (25.0)
Trade school	11 (7.4)	51 (5.6)	23 (6.9)	39 (5.3)	15 (8.0)	29 (5.7)
University	74 (50.0)	280 (30.6)	131 (39.3)	223 (30.6)	66 (35.3)	118 (23.2)
	$\chi2(4, N=1062) = 31.14, \ p=0.001$		$\chi2(4, N=1062) = 16.16, p=0.003$		$\chi2(4, N=695) = 18.36, p=0.001$	
Education husband						
Never went to school	3 (2.4)	109 (14.1)	23 (7.8)	89 (14.8)	16 (9.8)	87 (19.8)
Primary school	9 (7.2)	155 (20.1)	42 (14.2)	122 (20.3)	25 (15.2)	89 (20.2)
High School	31 (24.8)	202 (26.2)	85 (28.7)	148 (24.7)	43 (26.2)	106 (24.1)
Trade school	13 (10.4)	46 (6.0)	23 (7.8)	36 (6.0)	10 (6.1)	29 (6.6)
University	69 (55.2)	259 (33.6)	123 (41.6)	205 (34.2)	70 (42.7)	129 (29.3)
	$\chi2(4, N=896) = 38.65, \ p=0.001$		$\chi2(4, N=896) = 17.15, \ p=0.002$		$\chi2(4, N=604) = 15.34, \ p=0.004$	

Table 7. Multivariate logistic regression analysis of selected factors associated with practice of breast cancer screening

Variables	Category	OR	95% CI	P value
Appropriate practice of BSE				
BSE awareness	Yes	6.40	3.97 – 10.33	< 0.001
CBE awareness	Yes	2.78	1.63 – 4.73	< 0.001
Doctor talked to participant about breast cancer	Yes	2.08	1.05 – 4.14	0.037
Participant received information about breast cancer from a newspaper/magazine	Yes	2.10	1.05 – 4.18	0.035
Appropriate practice of CBE				
CBE awareness	Yes	185.56	81.50 – 422.50	< 0.001
Doctor talked to participant about breast cancer	Yes	3.52	1.63 – 7.61	0.001
Participant received information about breast cancer from a nurse	Yes	2.72	1.29 – 5.75	0.009
Participant received information about mammography from a doctor	Yes	1.74	1.02 – 2.95	0.041
Participant received information about mammography from television/radio	Yes	2.03	1.03 – 3.99	0.041
Appropriate practice of mammogram				
CBE awareness	Yes	6.51	3.65 – 11.63	< 0.001
Doctor talked to participant about breast cancer	Yes	3.15	1.35 – 7.40	0.008
Participant received information on mammogram from a doctor	Yes	10.10	5.85 – 17.44	< 0.001
Participant received information on mammogram from a pamphlet	Yes	2.26	1.08 – 4.70	0.030

Selected Beliefs Participants towards Breast Cancer (N=1,063)

Variable	No. (%) of Participants
Health Status	
Poor – Fair	252 (23.7)
Good – Excellent	809 (76.1)
Don't know	2 (0.2)
Is there anything you can do to prevent cancer?	
Yes	455 (42.8)
No	536 (50.4)
Not sure	72 (6.8)
Would you want to know if you were diagnosed with cancer?	
Yes	921 (86.9)
No	92 (8.7)
Don't know	47 (4.4)
Why do people get cancer – God's punishment?	
Yes	149 (14.0)
No	914 (86.0)
Why do people get cancer – It's fate/destiny?	
Yes	1029 (96.8)
No	34 (3.2)
Why do people get cancer – It's bad luck?	
Yes	103 (9.7)
No	960 (90.3)
Why do people get cancer – Cancer is hereditary?	
Yes	714 (67.2)
No	348 (32.8)
Why do people get cancer – Unhealthy lifestyle?	
Yes	992 (93.4)
No	70 (6.6)
Why do people get cancer – Not breastfeeding?	
Yes	866 (81.5)

Beliefs, Values and Participation in Breast Cancer Screening Activities

Variables	BSE practice			CBE practice			Mammogram practice		
	Yes (%) n = 148	No (%) n = 915	*P* value	Yes (%) n = 333	No (%) n = 730	*P* value	Yes (%) n = 187	No (%) n = 508	*P* value
Participant's self-described health status			$\chi2(1, N=1061) = 12.76$, $p<0.001$			$\chi2(1, N=1061) = 5.50$, $p=0.019$			$\chi2(1, N=1061) = 5.72$, $p=0.017$
Poor-Fair	18 (7.1)	234 (92.9)		64 (25.4)	188 (74.6)		44 (20.9)	167 (79.1)	
Good-Excellent	130 (16.1)	679 (83.9)		269 (33.3)	540 (66.7)		143 (29.6)	340 (70.4)	
Is there anything participant can do to prevent cancer?			$\chi2(1, N=1063) = 16.45$, $p<0.001$			$\chi2(1, N=1063) = 23.75$, $p<0.001$			$\chi2(1, N=695) = 13.44$, $p<0.001$
Yes	86 (18.9)	369 (81.1)		179 (39.3)	276 (60.7)		100 (34.1)	193 (65.9)	
No	62 (10.2)	546 (89.8)		154 (25.3)	454 (74.7)		87 (21.6)	315 (78.4)	
Participant would want to know if she had cancer			$\chi2(1, N=1063) = 0.95$, $p=0.326$			$\chi2(1, N=1063) = 2.72$, $p=0.099$			$\chi2(1, N=695) = 4.88$, $p=0.027$
Yes	132 (14.3)	789 (85.7)		297 (32.2)	624 (67.8)		168 (28.5)	422 (71.5)	
No	16 (11.3)	126 (88.7)		36 (25.4)	106 (74.6)		19 (18.1)	84 (81.9)	
Reasons participant believes people get cancer									
It's God's punishment			$\chi2(1, N=1063) = 3.91$, $p=0.048$			$\chi2(1, N=1063) = 14.05$, $p<0.001$			$\chi2(1, N=695) = 8.29$, $p=0.004$
Yes	13 (8.7)	136 (91.3)		27 (18.1)	122 (81.9)		14 (14.7)	81 (85.3)	
No	135 (14.8)	779 (85.2)		306 (33.5)	608 (66.5)		173 (28.8)	427 (71.2)	
It's fate or destiny			$\chi2(1, N=1063) = 0.406$, $p=0.524$			$\chi2(1, N=1063) = 0.39$, $p=0.535$			$\chi2(1, N=695) = 0.81$, $p=0.368$
Yes	142 (13.8)	887 (86.2)		324 (31.5)	705 (68.5)		182 (27.2)	487 (72.8)	
No	6 (17.6)	28 (82.4)		9 (26.5)	25 (73.5)		5 (19.2)	21 (80.8)	
It's bad luck			$\chi2(1, N=1063) = 1.69$, $p=0.194$			$\chi2(1, N=1063) = 4.29$, $p=0.038$			$\chi2(1, N=695) = 4.07$, $p=0.044$
Yes	10 (9.7)	93 (90.3)		23 (22.3)	80 (77.7)		14 (17.5)	66 (82.5)	
No	138 (14.4)	822 (85.6)		310 (32.3)	650 (67.7)		173 (28.1)	442 (71.9)	
Cancer is hereditary			$\chi2(1, N=1063) = 9.80$,			$\chi2(1, N=1063) = 18.24$,			$\chi2(1, N=695) = 13.07$,
Yes	116 (16.2)	598 (83.8)		254 (35.6)	460 (64.4)		138 (31.6)	299 (68.4)	
No	32 (9.2)	317 (90.8)		79 (22.6)	270 (77.4)		49 (19.0)	208 (81.0)	

Reasons for NOT planning to have a CBE by a health care professional

Variables	BSE practice			CBE practice			Mammogram practice		
	Yes (%) n = 148	No (%) n = 915	*P* value	Yes (%) n = 333	No (%) n = 730	*P* value	Yes (%) n = 187	No (%) n = 508	*P* value
Might be painful or uncomfortable			$\chi^2(1, N=1063) = 0.38, p=0.539$			$\chi^2(1, N=1063) = 26.20, p<0.001$			$\chi^2(1, N=695) = 17.41, p<0.001$
Yes	19 (12.3)	135 (87.7)		21 (13.6)	133 (86.4)		9 (9.4)	87 (90.6)	
No	129 (14.2)	780 (85.8)		312 (34.3)	597 (65.7)		178 (29.7)	421 (70.3)	
Fear of knowing you might have cancer			$\chi^2(1, N=1063) = 0.61, p=0.436$			$\chi^2(1, N=1063) = 14.89, p<0.001$			$\chi^2(1, N=695) = 17.06, p<0.001$
Yes	19 (11.9)	140 (88.1)		29 (18.2)	130 (81.8)		13 (11.3)	102 (88.7)	
No	129 (14.3)	775 (85.7)		304 (33.6)	600 (66.4)		174 (30.0)	406 (70.0)	
Embarrassment			$\chi^2(1, N=1063) = 5.86, p=0.015$			$\chi^2(1, N=1063) = 44.27, p<0.001$			$\chi^2(1, N=695) = 21.94, p<0.001$
Yes	18 (8.7)	189 (91.3)		25 (12.1)	182 (87.9)		10 (8.9)	102 (91.1)	
No	130 (15.2)	726 (84.8)		308 (36.0)	548 (64.0)		177 (30.4)	406 (69.6)	
It won't do her any good			$\chi^2(1, N=1063) = 3.27, p=0.070$			$\chi^2(1, N=1063) = 5.38, p=0.020$			$\chi^2(1, N=695) = 0.66, p=0.417$
Yes	5 (6.8)	68 (93.2)		14 (19.2)	59 (80.8)		11 (22.0)	39 (78.0)	
No	143 (14.4)	847 (85.6)		319 (32.2)	671 (67.8)		176 (27.3)	469 (72.7)	
Because a male will examine her breasts			$\chi^2(1, N=1063) = 0.11, p=0.739$			$\chi^2(1, N=1063) = 8.39, p=0.004$			$\chi^2(1, N=695) = 0.54, p=0.464$
Yes	13 (15.1)	73 (84.9)		15 (17.4)	71 (82.6)		10 (22.2)	35 (77.8)	
No	135 (13.8)	842 (86.2)		318 (32.5)	659 (67.5)		177 (27.2)	473 (72.8)	
Husband or male relatives not supportive of the idea			$\chi^2(1, N=1063) = 0.03, p=0.868$			$\chi^2(1, N=1063) = 4.75, p=0.029$			$\chi^2(1, N=695) = 5.26, p=0.022$
Yes	2 (12.5)	14 (87.5)		1 (6.3)	15 (93.8)		0 (0.0)	14 (100.0)	
No	146 (13.9)	901 (86.1)		332 (31.7)	715 (68.3)		187 (27.5)	494 (72.5)	

Recommendations

- Public educational campaigns
- Breast health education for both female and male
- Multidisciplinary team approach (physician, nurses, health educators, other HCPs)
- Encouragement of female and male physicians' roles in BCS

Recommendations

- Establishment of the National BCS program
- Staff strained and informed of National BCS guideline
- Increase accessibility to BCS information and screening clinics
- BCS mobile to provide closer to home services
- Increase roles of media
- Train- the- trainer program

Thank you

مؤسسة حمد الطبية
Hamad Medical Corporation
HEALTH • EDUCATION • RESEARCH صحة • تعليم • بحوث

الصندوق القطري لرعاية البحث العلمي
Qatar National Research Fund
Member of Qatar Foundation

UNIVERSITY OF CALGARY QATAR
جامعة كالجاري قطر

الرعاية الصحية الأولية
PRIMARY HEALTH CARE