

ORIGINAL ARTICLE

AWARENESS AND BELIEF REGARDING BREAST CANCER AMONG WOMEN LIVING IN SELANGOR, MALAYSIA

Hasanain Faisal Ghazi¹, Mohammed A. AbdalQader¹, Mohammed Faez Baobaid¹, Tiba Nezar Hasan¹, Povaneswari A/P Maratha Pillai¹, Mohd Rohaizat Hassan², Han Yung Wen³ and Alabed Ali A. Alabed⁴

¹International Medical School, Management & Science University, Selangor, Malaysia.

² Department of community health, Univeristi Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

³ EcoSoul Clinic, Setia Alam, Selangor, Malaysia.

⁴ Head of Community medicine department, Faculty of medicine, Lincoln University College, 47301, Petaling Jaya, Selangor, Malaysia

Corresponding author: Mohammed A. AbdalQader

Email: mohd_abdalqader@msu.edu.my

ABSTRACT

Breast cancer is one of the leading causes of mortality among women. The aim of the current study was to find out the level of awareness and belief about breast cancer among women in Selangor, Malaysia. A cross-sectional study was conducted among women living in Selangor aged 18 to 65 years old, with a total of 483 participants. A validated questionnaire regarding awareness and belief was used. The questionnaires consist of 25 questions comprising of socio-demographic, history of other diseases, awareness and belief. The prevalence of poor awareness among women was 63.4%. while the poor level of belief was 84.7%. There was a significant association between awareness and educational background, family history of breast cancer ($P=0.001$, $P=0.032$) respectively. The association between awareness and belief was significant ($P=0.02$). As a conclusion: There is a high level of poor belief and poor awareness among women in Selangor, Malaysia regarding breast cancer. Source of information such as the internet plays a major role in breast cancer prevention, and the majority of them do not know the technique of breast self-examination. More health promotion is needed to target general population through big campaign of awareness.

Keywords: Awareness, belief, breast cancer, educational level, Selangor, Malaysia.

INTRODUCTION

Breast cancer is one of the most heated topics of debates among the healthcare community as well as the general public. According to the World Health Organization (WHO), breast cancer is the most common cancer involving high mortality rates among women with reported of 627,000 deaths in 2018¹. In Malaysia, breast cancer among women is still at large with a reported case of 7,593 Compared to 2018 with a reported case of 6,378, there is a significant increase in reported cases².

A previous study done in Penang, Malaysia among 200 women who studied in a public university was found out that the level of awareness about breast cancer was still inadequate (60.7%)³. This study concluded that the level of awareness among Malaysian, especially young adults was still not sufficient even though they belong in a group of people with the highest level of education (Tertiary). In a research with respect to breast cancer understanding, results showed that more than two-third of respondents realize that painless breast lump (72%), secretions from nipples (74.5%), mass in the armpit (78.5%) and changes in the size of breast (81.5%) as signs and symptoms of breast malignancy. Even so, only half the number of respondents agreed that retraction of skin around the breast (58.5%) as one of the signs and symptoms³. In Malaysia, study done in

Shah Alam City among 250 women carried out by (Al-Dubai et al., 2011)⁴ has shown that majority of the respondents acknowledged genetic or family history as able to contribute to the possibility of getting breast cancers evidenced by 88%, followed by smoking (65%), consumption of alcohol (56.8%) and prolonged exposure to radiation (67.2%).

Apart from that, there had been few common faiths of mythical causes of cancer that can be used as a tool to survey the general public belief in breast cancers. The tool includes myths like exposure to electromagnetic frequencies, consuming additives meals or food containing artificial sweeteners or genetically modified food, living near powerline, stress emotion, trauma to any parts of the body, drink from plastic bottles, usage of the cleansing product, mobile smartphone, aerosol containers & microwave oven. Past research stated that faith about malignancy might cause mindfulness in an individual who can encourage them to do an early screening. Hence, this clarified the differences between early diagnosed malignancy and late-diagnosed malignancy cases. Nonetheless, the prevalence of faith can vary from place to place that affected by some sociodemographic variables, and it may change over a period of time⁵. Subsequently, it is critical to survey people's faith in mythical causes of malignancy in order to assess cancer awareness among the population.

This is due to the influence of their belief on the choice of treatment, hence enhancing appropriate strategies in dealing with the cancer cases⁶. The aim of the current study was to find out the level of awareness and belief about breast cancer among women in Selangor, Malaysia.

METHODS

A cross-sectional study was conducted among 483 women living in Selangor using self-administered questionnaires that consist of sociodemographic details as well as awareness and belief regarding breast cancer. The inclusion criteria include women living in Selangor and age ranging from 18 to 65 years old while exclusion criteria those who have a mental disability, a male and those who refused to give consent. Data was collected using non-probability convince sampling at a Private clinic in Selangor.

Sample size was calculated using single population proportion formula and based on prevalence from previous study $p = 0.607$ ³. Total sample size required is 440 respondents.

$$N = \frac{z^2 (p(1-p))}{d^2}$$

$$N = \frac{1.96^2 (0.607(1-0.607))}{0.05^2} \quad N = 367 + 20\% \text{ non respondents} = 440$$

Questionnaires consist of Part A, B and C. Part A consist part A1 which is about socio-demographic characteristics such as age, race, marital status, family income, education level and occupation. While Part A2 is about family and past medical history. Part A3 is about the source of information. While part B is about awareness of breast cancer among women in Selangor and it was adopted from (Hasan et al., 2017)⁷ the total number of questions is 18. It consists of 3 parts which are sign and symptoms, risk factors and protective factors. The cut-off value is 9. So those who answered more than 50%, which is > 9 is considered as having good awareness level. Part C is about the belief of breast cancer and it was adopted from Smith et al., 2018. The total number of questions is 12, in which options scoring as follow: not sure, agree, strongly agree is incorrect = 0, strongly disagree or disagree is correct = 1 score. The cut off value is 6 so those who scored > 6 is considered as having good belief⁵. All respondents will fill up a consent form before the questionnaire. Ethical approval was obtained by Management and Science University (MSU-RMC-02/FR01/04/L1/004). All details will be used for research only.

Statistical analysis

Data were analysed using JASP version 0.10 software⁸. Frequency, percentage, mean and SD were used in descriptive statistics while chi

square analysis was used to examine associations between breast cancer awareness and socio-demographic characteristics of the respondents.

RESULTS

In our study, the mean age of the women was 32.81 ± 12.90 . Most of the respondents were Malay 54.0% followed by Indian and Chinese 29.0%, 14.4% respectively. The majority of women were single, having university degree (75.5%) as shown in table 1. Regarding the breast cancer awareness, out of 483 participants, 350 (72.5%) are aware that painless lump in the breast is a symptom of breast cancer whereas 341(70.6%) respondents stated it is true that bloody secretions from the nipples also a symptom of breast cancer. However, more than one-third of them, which is around 189 of them stated that they were not aware of oedema in the arm and pitting in the areola as a symptom of breast cancer. More than half of the respondents stated true for the presence of a lump in the armpit and change in breast size with a percentage of 57.6% and 53.2% respectively as shown in table 2A.

Three hundred sixty-six respondents stated that having a positive family history as one of the risks of breast cancer with the highest percentage of 75.8%. Almost half of the participants (43.5%) were not aware that using contraceptive pills has a higher risk of developing breast cancer. Many stated that late marriage is not a risk factor in developing breast cancer with a percentage of 40.0%. Only 25.1% aware that irregular menstrual cycle as a risk factor with a frequency of 121 respondents as shown in table 2B.

Out of 483 respondents, 274 participants with a percentage of 72.9% highly aware that proper nutrition and being physically active could protect against breast cancer. Followed by the second highest, about 56.7% of the respondents are aware that breastfeeding can be one of the protective measures. Only a few were aware that early menopause and late menstruation could protect against this with respondents of 92 and 93 respectively. Most of the respondents had heard about breast self-examination with the frequency of 394 and 81.6%. However, about 123 with a percentage of 52.8%, they are not very often to practised breast self-examination. This is because they do not know the technique with the frequency of 171 and 68.4% respectively based on Table 3. While for awareness about the mammogram, about 338 with a percentage of 70.0% had heard about mammogram but did not do a mammogram before with frequency of 405 and 83.9% respectively.

Table 1: Socio-demographic characteristics of the respondents

Variable	N	%	Min	Max	Mean (SD)
Age			18.0	65.0	32.81 (12.90)
Race					
Malay	261	54.0			
Chinese	69	14.3			
Indian	29	29.0			
Others	13	2.7			
Marital status					
Married	198	41.0			
Divorced	10	2.1			
Single	264	54.6			
Widow	11	2.3			
Educational level					
No formal education	9	1.9			
Primary	10	2.1			
Secondary	99	20.5			
University	365	75.5			
Occupation					
Government servant	88	18.2			
Housewife	61	12.6			
Private employer	136	28.2			
Student	198	41.0			
Family history of breast cancer					
Yes	118	24.4			
No	365	75.6			

Table 2a: Awareness regarding breast cancer among females in Selangor

Sign and symptoms	N	%
Painless lump in the breast		
Don't know	86	17.8
False	47	9.7
True *	350	72.5
Bloody secretions from the nipples		
Don't know	115	23.8
False	27	5.6
True *	341	70.6
Oedema in the arm		
Don't know	189	39.1
False	95	19.7
True *	199	41.2
Pitting in the areola		
Don't know	189	39.1
False	66	13.7
True *	228	47.2
Lump in armpit		
Don't know	134	27.7
False	71	14.7
True *	278	57.6
Change in breast size		
Don't know	127	26.3
False	99	20.5
True *	257	53.2

Table 2b: Awareness regarding breast cancer among females in Selangor

Risk factors	N	%
Use of contraceptive pills		
Don't know	210	43.5
False	102	21.1
True *	171	35.4
Positive family history		
Don't know	58	12.0
False	59	12.2
True *	366	75.8
Using infertility drugs		
Don't know	231	47.8
False	117	24.2
True *	135	28.0
Irregular menstrual cycle		
Don't know	195	30.4
False	167	34.6
True *	121	25.1
Late marriage		
Don't know	180	37.3
False	193	40.0
True *	110	22.8
First child at older age		
Don't know	176	36.4
False	183	37.9
True *	124	25.7
Protective factors		
Breast feeding		
Don't know	130	26.9
False	79	16.4
True *	274	56.7
Good nutrition and physically active		
Don't know	72	14.9
False	59	12.2
True *	352	72.9
Late menstruation		
Don't know	222	46.0
False	168	34.8
True *	93	19.3
Early menopause		
Don't know	251	52.0
False	140	29.0
True *	92	19.0
Pregnancy earlier than 40 years		
Don't know	254	52.6
False	120	24.8
True *	109	22.6
Early marriage		
Don't know	222	46.0
False	157	32.5
True *	104	21.5

According to table 4A, about 48.4% with a frequency of 234 respondents highly believe that is eating food containing additives, followed by eating food containing artificial sweeteners with 39.3% might cause breast cancer. Participants also believed that being stressed could also be one of the factors with 38.1%.

Many believe that physical trauma (29.4%) followed by using microwave ovens (21.1%), then using mobile phones (20.1%) could not be a factor. The highest number of participants with a frequency of 284 respondents (58.8%) were not

sure of using aerosol containers can be one of the causes of breast cancer as shown in table 4B. This was followed by usage of microwave ovens with 46.6% then, living near power lines with 46.0%. Almost half of the respondents with a frequency of 217 (44.9%) were not sure about using clean products could cause this cancer. About 81 of the participants, with 16.8% strongly agreed that eating food containing additives influences the risk of developing breast cancer. About 7.9% were firmly disagreed the fact that living near power lines could be the reason for this problem as shown in table 4A.

Table 3: Awareness about breast self-examination and mammogram among females in Selangor

	N	%
Heard of breast self-examination		
No		
Yes	89	18.4
	394	81.6
Heard of mammogram		
No	145	30.0
Yes	338	70.0
Perform breast self-examination		
No		
Yes	250	51.8
	233	48.2
How often breast self-examination is practised		
More than once in quarter of a year		
Not very often	25	10.7
Once in 3 months	123	52.8
Once in a month	77	33
	8	3.4
Reason for not doing		
Afraid of finding a lump	22	8.8
I don't the technique	171	68.4
I don't trust my examination	26	10.4
I don't think it is of benefit	31	12.4
Did Mammogram before		
No	405	83.9
Yes	78	16.1
Breast examination by specialist		
No	387	80.1
Yes	96	19.9

From table 5, it is shown that education level (P=0.001) and family history of breast cancer (P=0.032) have a significant association with awareness compared to race (P=0.392) and marital status (P=0.333). Among the races, Indians has good awareness with, N=39.3% followed by other race with N=38.5%. However, Chinese women have an inferior awareness, with N=72.5% about breast cancer. Single women have very good awareness, with 38.3% and least awareness among divorced women. Women who went to university have a good awareness (41.4%) when

compared to those who have no formal education with poor awareness of 88.9%. Those with positive family history has a good awareness (44.9%) compared to those who do not have any family history. Respondents those who gain a source of information about breast cancer via primary healthcare centres have good awareness with 56.0%, followed by their education with 52.3%. However, those who gain a source of information via television and friends have a very poor awareness with 63.2% and 63.0% respectively.

Table 4a: Beliefs regarding breast cancer among females in Selangor

	Frequency	Percentage
Exposure to electromagnetic force		
Agree		
Disagree	154	31.9
Not sure	78	16.1
Strongly Agree	163	33.7
Strongly Disagree	64	13.3
	24	5.0
Eating food containing additives		
Agree	234	48.4
Disagree	51	10.6
Not sure	96	19.9
Strongly agree	81	16.8
Strong disagree	21	4.3
Living near power lines		
Agree	100	20.7
Disagree	91	18.8
Not sure	222	46.0
Strongly agree	38	7.9
Strongly disagree	32	6.6
Feeling stressed		
Agree	184	38.1
Disagree	66	13.7
Not sure	144	29.8
Strongly agree	69	14.3
Strongly disagree	20	4.1
Eating food containing artificial sweeteners		
Agree		
Disagree	190	39.3
Not sure	53	11.0
Strongly agree	155	32.1
Strongly disagree	69	14.3
	16	3.3
Using cleaning product		
Agree	95	19.7
Disagree	116	24.0
Not sure	217	44.9
Strongly agree	30	6.2
Strongly disagree	25	5.2

Table 4b: Beliefs regarding breast cancer among females in Selangor

Using mobile phones		
Agree	126	26.1
Disagree	97	20.1
Not sure	187	38.7
Strongly agree	42	8.7
Strongly disagree	31	6.4
Eating genetically modified food		
Agree		
Disagree	191	39.5
Not sure	39	8.1
Strongly agree	166	34.4
Strongly disagree	65	13.5
	22	4.6
Using aerosol containers		
Agree	91	18.8
Disagree	77	15.9
Not sure	284	58.8
Strongly agree	16	3.3
Strongly disagree	15	3.1
Physical trauma		
Agree		
Disagree	84	17.4
Not sure	142	29.4
Strongly agree	197	40.8
Strongly disagree	23	4.8
	37	7.7
Using microwave ovens		
Agree	103	21.3
Disagree	102	21.1
Not sure	225	46.6
Strongly agree	26	5.4
Strongly disagree	27	5.6
Drinking from plastic bottles		
Agree	158	32.7
Disagree	79	16.4
Not sure	188	38.9
Strongly agree	37	7.7
Strongly disagree	21	4.3

The association between awareness and belief regarding breast cancer was highly significant ($P = 0.02$). Most of the respondent has poor awareness and poor belief with 268 and 65% respectively shown in Table 6.

DISCUSSION

The main finding of our research was that the awareness of breast cancer was inadequate or unsatisfying as most of the respondents did not know the various signs, symptoms, risk factors and protective factors of breast cancer. However, the level of breast self-examination practice was low, signifies that the practice of breast self-

examination is not extensive. Few studies have shown that Asian women have low to moderate knowledge with weak to moderate breast self-examination practice⁹⁻¹³. In our research, most of the respondents had heard of breast self-examination (81.6%) and mammogram (70%). However, among a total of 484 respondents, only 171 respondents (36.6%) have a good awareness of breast cancer, while 306 respondents (63.4%) have poor awareness of breast cancer.

In our study, knowledge about signs, symptoms, risk factors and protective factors of breast cancer was investigated. The majority of respondents knew about a few signs and symptoms of breast cancer such as painless lump in the breast (72.5%), bloody secretions from the nipples (70.6%). However, other signs and symptoms like oedema in the arm (41.2%), pitting in the areola (47.2%), a lump in armpit (57.6%) and

changing breast size (53.2%) were not recognized by the majority of respondents. A previous study in Malaysia also showed a similar finding of high knowledge about blood discharge as a symptom of breast cancer and low knowledge about nipple retraction¹⁴. A recent study in Singapore found that the most frequent symptoms recognized by respondents were palpable breast lump and nipple discharge. A similar finding was reported whereby a significant increase in the awareness and practices of BSE by 43% and 53% respectively were observed after the interventional health education was administered among women in a semi-urban area of India¹⁵. According to our research, the most common reason for not performing breast self-examination is not knowing the technique (68.4%) followed by not thinking it is of benefit (12.4%), not trusting the examination (10.4%) and afraid of finding lump (8.8%).

Table 5: The association between socio-demographic factors and awareness about breast cancer among females in selangor

Social demographic	Awareness		X2	P		
	Poor	Good				
	N	%			N	%
Race						
Malay	163	62.5	98	37.5	2.996	0.392
Chinese	50	72.5	19	27.5		
Indian	85	60.7	55	39.3		
Others	8	61.5	5	38.5		
Marital status						
Divorced	9	90.0	1	10	3.407	0.333
Married	127	64.1	71	35.9		
Single	163	61.7	101	38.3		
Widowed	7	63.6	4	36.4		
Education level						
No formal education	8	88.9	1	11.1	16.24	0.001*
Primary school	6	60.0	4	40.0		
Secondary school	78	78.8	21	21.2		
University	214	58.6	151	41.4		
Family history of breast cancer						
No	241	66.0	124	34.0	4.559	0.032*
Yes	65	55.1	53	44.9		

*Chi square test was performed. Level of significance at p<0.05

As for the risk factors of developing breast cancer, the vast majority of respondents answered a positive family history of breast cancer (75.8%). However, many did not recognize other risk factors such as the use of contraceptive pills, using infertility drugs, irregular menstrual cycle, late marriage and having a first child at older age. 72% of respondents answered proper nutrition and being physically active reduces the risk of breast cancer. 56.7% of respondents recognized breastfeeding as a protective factor for

developing breast cancer. However protective factors such as late menstruation (19.3%), early menopause (19%), pregnancy earlier than 40 years of age (22.6%) and early marriage (21.5%) were recognized by a minority of respondents. Inadequate knowledge about risk factors of breast cancer was also reported by previous researches, not only among the general population^{16,17}, female teachers and health providers such as nurses were found to have inadequate knowledge on breast cancer^{14,18}. These two previous studies

have found that only 55.0% of Malaysian teachers¹⁴ and 35.0% of Pakistani nurses had good knowledge on risk factors of breast cancer¹⁸. Those studies also have found that breastfeeding,

age of menopause and menarche were not recognized as risk factors of breast cancer by the majority of respondents.

Table 6: Association between awareness and belief regarding breast cancer among females in selangor

Belief Level	Awareness Level		X2		P Value
	Poor	Good			
	N	%	N	%	
Poor	268	65.0	141	35.0	5.423 0.020*
Good	38	51.4	36	48.6	

*Chi square test was performed. Level of significance at $p < 0.05$.

Based on a study done in 2018, it was found that participants have myths like exposure to electromagnetic frequencies, consuming additives meals or food containing artificial sweeteners or genetically modified food, living near powerline, stress emotion, trauma to any parts of the body, drink from plastic bottles, usage of cleansing product, mobile smartphone, aerosol containers & microwave oven⁵. According to our research done on beliefs regarding breast cancer, about 48.4% with a frequency of 234 respondents highly belief that eating food containing additives, then about 39.5% belief eating genetically modified food and followed by eating food containing sweeteners with 39.3% might cause breast cancer. Feeling stressed also believed could be one of the factors with a percentage of 38.1%. However, many participants believe that exposure to electromagnetic with 33.7%, using a mobile phone with (20.1%) and physical trauma with (40.8%) could not be a factor causing breast cancer. The highest number of respondents, with 58.8% were not sure about using aerosol containers. This was followed by living near power lines (46.0%) and using cleaning products (44.9%). Most of the respondents (65%) are found to have poor awareness with poor belief, followed by 51.4% who have poor awareness with good belief, good awareness with good belief (48.6%) and 34.5% having good awareness with poor belief. Lastly, the association between awareness and belief regarding breast cancer was highly significant

CONCLUSION

In conclusion, the level of poor awareness is 63.4%, while the level of poor belief is 84.7%. This study shows that the internet plays a significant role as a source of information of breast cancer among females in Selangor. Thus, more education should be done using the media to increase the level of awareness and belief on breast cancer.

Conflict of interest

The authors declare no potential conflict of interest.

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