



Knowledge, attitudes and practices of nurses working in basic health care networks in Morocco vis-à-vis breast cancer

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ABSTRACT

Background

Breast cancer is a major challenge for public health. In Morocco, breast cancer is by far the most common cancer in women. The standardized incidence of this cancer among Moroccan women of average age is 36.4 new cases / 100.000 women / year. The estimated number of deaths from this cancer was 2878 in 2012, a standardized mortality rate of 18 per 100 000 women.

The objective of this study was to measure the knowledge, attitudes and practices of nurses working in the basic health care networks in Morocco vis-à-vis breast cancer.

Methodology

It was a cross-sectional study on nurses working in the basic health care networks (BHCN) in Morocco. A self-administered questionnaire was used for data collection. The analysis was performed with Version 7 of Epi-info software.

Results

The mean age was 45.34 ± 10.83 years. 95.5% of our study cases were female. 91.6% had received training on the prevention of cancers. 77.2% routinely advised the practice of breast self-examination. 87.0% had a knowledge score ≥ 8 on the Risk Factors. Only 9.0% of nurses systematically did a clinical breast exam. Great awareness of breast cancer risk factors stood out as a contributing factor to the systematic practice of clinical breast examination of women at risk ($p = 0.013$; $OR=2.99$; $95\% CI = [1.21; 7.39]$).

Conclusion

This study showed a fairly good knowledge of nurses on risk factors of breast cancer.

Keywords: Breast Cancer, Knowledge, Attitudes and Practice (KAP), Moroccan Nurses

INTRODUCTION

Breast cancer is a major challenge for public health. Worldwide, it is the first cause of female death cancer with 522,000 deaths estimated in 2012.¹ There are

huge inequality between rich and poor countries said. Incidence rates remain the highest in the more developed regions, but mortality is much higher in

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poor countries, lack of early detection and access to treatment.²

In Morocco, breast cancer is by far the most common cancer in women. The standardized incidence of this cancer among Moroccan women of average age is 36.4 new cases / 100,000 women / year.³ The estimated number of deaths from this cancer was 2878 in 2012, a standardized mortality rate of 18 per 100 000 women.⁴ The diagnosis of breast cancer is made at stage I in only 6% against 57% of stage III and IV.⁵ Screening is a strategic pillar of fight and control of this cancer, Morocco has provided since 2010 of a National Plan for Prevention and Cancer Control (PNPCC).^{6,7} Since 2011, the Ministry of Health is preparing the installation of a screening program based on infrastructure and network of basic health care staff being the importance of their role in breast cancer screening has been demonstrated by several authors.^{8,9} They can effectively contribute to awareness, information and motivation of population about the screening.^{10,11}

The objective of this study was to measure the knowledge, attitudes and practices of nurses working in the basic health care networks in Morocco about breast cancer.

METHODOLOGY

It was a cross sectional study which conducted in July 2011 on a representative sample of nurses working in primary health care networks in Morocco.

A total, 22 centers for 5 regions were selected where 307 nurses responded questionnaires. The response rate was approximately 99%. A self-administered questionnaire was used to collect data outside of working hours. The information collected included: socio-demographic characteristics, seniority in the current position and public service, place the prevention of cancers in their activity, Knowledge of breast cancer's risk factors, perception and practice about breast cancer prevention. Data were entered and analyzed using Epi-Info Version 7 software.

First, we conducted a descriptive analysis. Categorical variables were described in proportions

and quantitative variables with their means and standard deviation.

A knowledge score of breast cancer's risk factors was calculated with reference to a model of literature.¹⁴ Every correct answer to a question equivalent to 1 point. Depending on the responses, we dichotomized the score to 8 thresholds. Scores greater than or equal to 8 corresponded to a good knowledge of breast cancer's risk factors.

Secondly, univariate analysis was performed to look for potentially significant associations between nurse's knowledge level on Breast Cancer's risk factors with, sociodemographic characteristics and the systematic practice of breast clinical examination to women at risk. We used the Chi Square test for comparing two percentages and the Student test for two averages. The significance level was fixed at 5%.

Thirdly, a multivariate analysis by the model of binary logistic regression was used by introducing into this model all variables associated significantly at the threshold of 20 % with the score of knowledge of the breast cancer risk factors at the end of the univariate analysis.

The informed consent of each participant was obtained and the data were processed in confidentiality and anonymity.

RESULTS

Socio Demographic Characteristics of Participants

A total of 307 nurses were enrolled in this study. The mean age was 45.34±10.83 years and the female predominated with 95.5%. 91.6% of nurses had reported receiving training sessions in the prevention of cancer (Table 1).

Opinions and Attitudes of Nurses about Prevention of Cancers in Morocco

A large majority (90.4%) of nurses had affirmed that prevention should have a major role in their activity. 52.8% had educational materials on non-gynecological risk factors for breast cancer. 77.2% of participants, routinely advised their patient practice of breast self-examination (Table 2).



Table 1 Socio Demographic Characteristics and Professional of Nurses (n=307)

Variables	N	%	M±SD*
Age (ans) n=283			45.15±10.66
<30	35	12.4	
30-40	49	17.3	
40-50	61	21.6	
≥ 50	138	48.8	
Sex			
Female	278	95.5	
Male	13	4.5	
Place of Study			
Morocco	291	100	
Foreign	0	0	
Practice Location			
Urban	241	83.4	
Rural	48	16.6	
Seniority in the Public Service (Years)			21.66±11.67
Seniority in Current Position (Month)			12.23±10.38
Training Sessions on the Prevention of Cancer	273	91.6	

M±SD*: Mean ± Standard Deviation

Table 2 Opinions and Attitudes of Nurses on Cancer Prevention in Morocco

	N	%
Is that Prevention should have a major role in your activity?		
Totally Agree	273	90.4
Rather Agree	19	6.3
Rather not all right	6	2.0
Not agree at all	4	1.3
Have you got educational materials on:		
The mischiefs of tobacco? (n=173)		
Yes	153	52.8
No	123	42.4
Don't Know	14	4.8
The harmful effects of alcohol? (n=287)		
Yes	49	17.1
No	218	76.0
Don't Know	20	7.0
The bad dietary habits? (n=290)		
Yes	97	33.4
No	175	60.3
Don't Know	18	6.2
Skin Risks associated with exposure to Sun? (n=287)		
Yes	39	13.6
No	219	76.3
Don't Know	29	10.1
The risks related to STI*? (n=165)		
Yes	182	61.1



No	102	34.2
Don't Know	14	4.7
Do you advise breast self-examination to your patients?		
Systematically	224	77.2
Often	57	19.7
Sometimes	9	3.1
Never	0	0.0

Nurses' Knowledge of Breast Cancer's Risk Factors

A large majority (87.0%) nurses had good knowledge (score ≥ 8) on breast cancer risk factors. 84.0% knew that the likelihood of breast cancer increases with age. The presence of family antecedents of breast cancer, nulliparity, elderly primiparity, early age at

menarche, late menopause were confirmed by nurses as risk factors with respectively 96.1% , 55.9% 95.2%, 38.0% and 46.9%. Smoking was the most known among the risk factors for non-gynecological breast with 87.9%. (Table 3)

Table 3 Knowledge of Nurses about Breast Cancer Risk Factors

	Risk factors		Protective factors		Has no role		Do not Know	
	N	%	N	%	N	%	N	%
Mean knowledge score	10.66 \pm 2.98							
Age	252	84.0	6	2.0	31	10.3	11	3.7
Family antecedent of breast cancer	292	96.1	4	1.3	5	1.6	3	1.0
Age at first pregnancy ≥ 30 years	177	95.2	19	6.4	75	25.1	28	9.4
Nulliparity	166	55.9	14	4.7	89	30.0	28	9.4
Early age at menarche (≤ 12 years)	113	38.0	10	3.4	100	33.7	74	24.9
Breastfeeding	9	3.0	269	90.0	19	6.4	2	0.7
late menopause (age ≥ 55 years)	130	46.9	32	10.8	74	25.0	60	20.3
Hormone replacement therapy (HRT) for menopause	243	81.8	17	5.7	7	2.4	30	10.1
mastodynia	151	52.2	6	2.1	77	26.6	55	19.0
Antecedent of benign breast tumors	255	85.0	6	2.0	33	11.0	6	2.0
Use of oral contraceptives	255	84.4	14	4.6	26	8.6	7	2.3
Use of injectable contraceptives	207	69.5	22	7.4	49	16.4	20	6.7
Obesity	174	68.0	0	0.0	58	22.7	24	9.4
Overweight	178	59.5	2	0.7	90	30.1	29	9.7
Sedentarity	149	53.8	7	2.5	68	24.5	53	19.1
Smoking	261	87.9	3	1.0	27	9.1	6	2.0

Nurses' Knowledge of Breast Cancer Screening and Early Diagnosis

For 94.7% of participants, breast self-examination is important for early diagnosis of breast cancer. They were totally agree that breast clinical examination and mammography are important for early diagnosis

and breast cancer screening with respectively 63.3% and 95.3%. 56.8% of nurses believed that breast cancer screening is necessary for women aged between 45 and 70 years. (Table 4).



Table 4 Nursing Knowledge on Early Diagnosis and Breast Cancer Screening

	N	%
Breast cancer is a public health problem in Morocco		
Totally agree	287	94.7
Rather agree	11	3.6
Tend to disagree	1	0.3
Not agree at all	3	1.0
Don't know	1	0.3
Breast self-examination is important for early diagnosis of breast cancer		
Totally agree	288	94.7
Rather agree	3	1.0
Tend to disagree	4	1.3
Not agree at all	8	2.6
Don't know	1	0.3
Clinical breast examination is important for early diagnosis of breast cancer		
Totally agree	190	63.3
Rather agree	47	15.7
Tend to disagree	18	6.0
Not agree at all	41	13.7
Don't know	4	1.3
Mammography is important for breast cancer screening		
Totally agree	286	95.3
Rather agree	6	2.0
Tend to disagree	3	1.0
Not agree at all	5	1.7
Don't know	0	0.0
Breast cancer screening is necessary for women over 30 years		
Totally agree	225	75.5
Rather agree	32	10.7
Tend to disagree	7	2.3
Not agree at all	32	10.7
Don't know	2	0.7
Breast cancer screening is necessary for women aged between 45 and 70 years		
Totally agree	263	56.8
Rather agree	164	35.4
Tend to disagree	1	0.2
Not agree at all	7	1.5
Don't know	16	3.5

Clinical Practice of Nurses about Breast Cancer Prevention

Only 9.0% nurses practiced systematically a clinical breast exam while 11.4% never practiced. Nurses routinely practiced clinical breast examination to all women at risk in 32.0% of cases (Table 5).

Relations Between Knowledge of Risk Factors with Socio-demographic Characteristics and Systematic Practice of Clinical Breast Examination

A statistically significant association was found between the level of knowledge of nurses and the sex ($p = 0.000$), OR = 2.35; 95% CI = [1.93 - 2.86] and the systematic practice of clinical breast examination ($p = 0.030$); OR = 2.74; 95% CI = [1.1 - 6.8].



Table 5 Indications of the Practice of Clinical Breast Examination by Nurses

	Always		Often		Sometimes		Never	
	N	%	N	%	N	%	N	%
For any woman visiting the center	27	9.0	101	33.8	137	45.8	34	11.4
For every woman between 45 and 70 years old presenting at the center	162	54.5	76	25.6	54	18.2	5	1.7
For any woman of childbearing age	42	14.2	65	22.0	158	53.4	31	10.5
Family antecedents of breast cancer	201	67.2	46	15.4	45	15.1	7	2.3
Age at first pregnancy \geq 30 yearsv	90	30.4	59	19.9	116	39.2	31	10.5
Nulliparity	62	21.0	59	20.0	124	42.0	50	16.9
Early age at menarche (\leq 12ans)	38	13.1	34	11.7	112	38.6	106	36.6
late menopause (age \geq 55 years)	98	33,4	60	20,5	106	36,2	29	9,9
Obesity	71	24.0	59	19.9	113	38.2	53	17.9
Mastodynia	170	60,7	40	14,3	45	16,1	25	8,9
Antecedents of benign breast tumors	210	70.9	43	14.5	35	11.8	8	2.7
Use of oral contraceptives	158	54.5	63	21.7	55	19.0	14	4.8
Other situations	80	63.5	20	15.9	18	14.3	8	6.3
Systematic practice of clinical breast examination to all women at risk								
Yes	98	32.0						
No	208	68.0						

Table 6 Relation Between Knowledge Level of Nurses on Risk Factors of Breast Cancer and Socio-Demographic Characteristics, Systematic Practice of Clinical Breast Examination

Variables	Univariate Analysis		Multivariate Analysis			
	Good Knowledge of Risk Factors (n=307)		P	OR*	95% CI	P
	Yes (Score \geq 8) 267 (87.0)	No (Score < 8) 40 (13.0)				
Age			0.62			
20-30	32 (91.4)	3 (8.6)				
30-40	44 (89.8)	5 (10.2)				
\geq 40	172 (86.4)	27 (13.62)				
Sex			0.051	0.000		
Male	9 (69.2)	4 (30.8)	1			
Female	244 (87.8)	34 (12.2)	2.35 [1.93-2.86]			
Seniority in the public service (years)			0.25			
< 10	46 (92.0)	4 (8.0)				



≥ 10	205 (86.5)	32 (13.5)			
Seniority in the post current (years)			0.21		
< 1	3 (100)	0 (0.0)			
1-10	124 (90.5)	13 (9.5)			
>10	115 (83.9)	22 (16.1)			
Training session					
No	20 (80.0)	5 (20.0)			
Yes	240 (87.9)	33 (12.1)	0.34		
Systematic practices of breasts clinical examination to woman presenting the risk factors of the breast cancer			0.013		
No	174 (83.7)	34 (16.3)		1	
Yes	92 (93.9)	6 (6.10)		2.74	[1.1–6.8] 0.030

OR*: Odds ratio; CI*: Confidence interval

DISCUSSION

Breast cancer screening is a priority in the fight against cancer. In Morocco, there is a well-established program in this sense which one of the objectives is to involve all health actors in promoting cancer prevention.

The aim of our study was to measure the general knowledge of nurses about breast cancer in order to involve them more in it early detection.

The average age of our study participants was 45.34 ± 10.83 years. 95.5% of our sample were female. In studies of Sabatino S.A. and al and that of Meral Turk Soyer and. al. the mean age was respectively of 30.59 ± 12.34 , 48 ± 5.96 years and female gender was also the most represented.^{12,13} The mean our participants' experience professionals was 21.66 ± 11.67 years against 19.5 ± 7.5 years reported in studies of O. Olumuyiwa Odusanya and Olufemi O. Tayo.¹⁴

Regarding the knowledge of nurses on the risk factors, 267 (87.0%) nurses had a knowledge score ≥ 8 let be an average of 10.66 ± 2.98 . This good result may be explained in part by the establishment since 2010 of a National Plan for Prevention and Cancer Control and the implementation of this plan through screening programs. Moreover, almost all (91.6%) of nurses had benefited training sessions on prevention cancers. This score is relatively better than 1.34 ± 0.83 reported by Adenike.O Akhibe and al. in a study conducted in Nigeria.¹⁵ This same trend was observed in the study of Vikas Fotedar et al in which 89.1% had

a knowledge score ≥ 8 .¹⁶ Our score of knowledge about breast cancer's risk factors was significantly better than reported by Shadia Abdullah Yousuf and al in a study conducted in Saudi Saudit where 65% of nurses had a knowledge score ≥ 8 .¹⁷

For almost all (94.7%) of nurses, breasts self-examination is very important for early diagnosis of this cancer. They were also quite agree that clinical examination and mammography are important for early diagnosis and breast cancer screening with respectively 63.3% and 95.3%.

For 56.8% of nurses, breast cancer screening is necessary for women aged between 45 and 70 years. Overall, a very similar trend to ours was reported by Samia Ghanem et al and Venkatramana M et.al.^{18,19}

In our study only 9.0% nurses, practiced systematically a breast clinical examination among all women visiting their center and 32.0% to any woman at risk.

A statistically significant association between the level of nurses' knowledge about breast cancer's risk factors and some explanatory variables such as gender and systematic practice of breast clinical examination.

CONCLUSION

This study found that nurses had in general a good level of knowledge about breast cancer's risk factors (87.0%). It has also highlighted that little nurses



realized systematically a breast clinical examination even to women at risk.

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