

Analytical Study about Breast Self-Examination BSE Knowledge Practice and Attitude among Female Medical Workers in Gezira State in Sudan

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Abstract: Introduction: Breast cancer, a genetically and histopathological heterogeneous disease that cause a hundreds of thousands of women to lose their life each year mainly in the developing countries. Breast self-examination BSE is a useful tool for early detection of breast cancer; it increases women's chances for treatment, thereby increasing the survival rate in women. In the developing countries, the percentage of the awareness and practice of BSE among female medical workers was low. **Objective:** To evaluate the knowledge, Practice and Attitude of breast self-examination BSE among medical female workers in Gezira state in Sudan. **Method:** This is analytical cross sectional descriptive study conducted in Gezira state, 113 participants were randomly selected from the total population of the state. The data for the research were collected using online questionnaire compose of several parts firstly Socio- Demographic part consisted of three questions about ages, marital status, occupation. Secondly Knowledge of breast cancer and family history consisted of ten questions thirdly Practice of breast self-examination BSE consisted of 5 questions. Data was analyzed using statistical package for social sciences (SPSS). **Result:** Out of 113 female medical workers were randomly selected, 113 participants responded to the questionnaire, their mean age was (29.05, standard Deviation (SD): 5.9) years. Age from 20 to 53 years old, with the largest age category was the ages 20 - 25 years was 42 (37.2%). The age 26 - 30 years was 40 (35.4%). The age > 30 years was 31 (27.4%). Regarding their marital status 60 were single (53.1%), 48 were married (42.5%) furthermore, 5 were divorced (4.4%). Concerning their occupation, the majority were Medical laboratory 55 (48.7%), Doctors were 15 (13.35), Nurse were 8 (7.1%), Pharmacist were 27 (23.9%), Other medical staff were 8 (7.1%). **Conclusion:** degree of knowledge about breast cancer between female medical workers is good represented as 35.4% but, their level of practice of breast self-examination BSE was low. Therefore, more health education movements are suggested among medical workers in all health care facilities.

Keywords: Breast Self-Examination BSE. Gezira State, Sudan. knowledge and practice.

Introduction:

Cancer is a leading cause of death worldwide. An estimated 12.7 million new cancer cases occurred in 2008, of which about 715,000 new cancer cases resulted in 542,000 deaths in Africa (1). In the developing countries majority of cases were diagnosing in late stages. The top most common cancers in both sexes are breast, non-Hodgkin lymphoma, leukemia, esophagus, and colorectum (2).

Breast cancer, a genetically and histopathological heterogeneous disease that cause a hundreds of thousands of women to lose their life each year and affects countries at all levels of modernization (National Breast Cancer Foundation, 2016). In 2018, there were 2.1 million newly diagnosed breast cancer cases among women, accounting for almost one in four cancer cases among women (3). The World Health Organization (WHO) reported that an estimated 627,000 women died from breast cancer in 2018, representing approximately 15% of all cancer deaths among women (WHO, 2019). Breast cancer is the second most common cancer in the world and the most frequent cancer among women, with an estimated 1.67 million new breast cancer cases diagnosed in 2012 (4,5). Globally, breast cancer represents about 12% of all new cancer cases, and 25% of all cancer cases in women (World Cancer Research Fund, 2015). Despite the high incidence rate, around 89% of women in Western countries diagnosed with breast cancer are still alive 5 years after diagnosis, with this high survival rate attributed to early detection and treatment (Worldwide Breast Cancer, 2011). Diagnosing of cancer at an early stage when it is still small and has not yet spread is more likely to be treated successfully (Cancer Research UK, 2018). It is estimated that one-third of all cancers can be prevented, and a further third of all cancers may be cured if diagnosed at an early stage (5). Sadly, in developing countries the majority of cases are diagnosed in late stages (9).

Sudan was the largest country in Africa until 2011, when South Sudan separated into an independent country. Officially is called the Republic of Sudan. Sudan is bordered by Ethiopia to the east, Kenya to the southeast, Uganda to the south, the Democratic Republic of the Congo to the southwest, the Central African Republic to the west, and Egypt to the north. Currently, its total area is about one million square miles. The Sudanese population, 34,206,710 million, is highly diverse, consisting of about 19 different ethnic groups and almost 600 subgroups. Sudanese Arab form approximately 70% of the population, with Fur, Beja, Nuba, and Fallata make the rest of the population (6,7).

Cancer continues to receive low public health priority due to Lack of awareness about the magnitude of the current and future cancer burden among policy makers and the public in Sudan.

The screening methods currently used for early detection of breast cancer is Breast self-examination (BSE), clinical breast examination, and mammography, they are commonly recommended screening methods (5). BSE is a screening technique for early breast cancer detection that can be performed by women at home. This is a simple, inexpensive, easy, and effective technique that allows women to examine their breast tissue for any changes. BSE increases women’s chances for treatment, thereby increasing the survival rate in women (8). BSE can help screen for tumors, cysts, and other abnormalities in the breasts. The American Cancer Society recommends BSE for early detection of breast cancer as it assists women to become familiar with the appearance and sense of their breasts, and helps them to detect any changes in their breasts as soon as possible (American Cancer Society, 2008).

BSE is something all women should prioritize breast cancer can be treated in the early stages of the disease. Awareness about breast cancer is an important factor that has a major impact on the incidence and outcomes of the disease (5) so if all the medical field females have sufficient knowledge about breast cancer, they can help early detection of cancer in themselves and in their community

Therefore, we aimed to evaluate the knowledge, Practice and Attitude of breast self-examination BSE among female workers in medical field in Gezira state in Sudan.

Material and Method:

Study design: Analytical cross sectional descriptive study.

Sample size: A total of 113 females medical field workers in different specialization from Sudan was included in the study.

Age: All participants were females aged between 20 to 53 years' old.

Data collection: Data was carried out between 17/12/2021 to 1/1/2022 randomly.

Data collection tools: The data for the research were collected using online questionnaire compose of several parts. One, Socio-Demographic part consisted of three questions about ages, marital status, occupation. Two, Knowledge of breast cancer and family history consisted of ten questions. Three, Practice of breast self-examination BSE consisted of five questions. incomplete questionnaires were excluded. The questionnaire has been reformed from previously validated breast cancer awareness investigation (10).

Data evaluation: Statistical package for the Social Sciences SPSS was used for statistical analysis.

Result:

Table (1): Soci-Demographic characteristics of the study participants.

		Frequency	Percent
Age			
Mean		29.05	
Std. Deviation		5.955	
Median		27	
Minimum		20	
Maximum		53	
Age Group	20 - 25 Years	42	37.2
	26 - 30 Years	40	35.4
	> 30 Years	31	27.4
	Total	113	100
Marital status	Single	60	53.1
	Married	48	42.5
	Divorced	5	4.4
	Total	113	100
Occupation	Medical Laboratory	55	48.7

	Doctors	15	13.3
	Nurse	8	7.1
	Pharmacist	27	23.9
	Other Medical Staff	8	7.1
	Total	113	100

Out of 113 female medical workers were randomly selected, 113 participants responded to the questionnaire, their mean age was (29.05±, 5.9) years with range from 20 to 53 years old, the largest age group was between 20 - 25 years 42 (37.2%) followed by the age 26 - 30 years 40 (35.4%) and the age > 30 years was 31 (27.4%). Regarding their marital status 60 were single (53.1%), 48 were married (42.5%) furthermore, 5 were divorced (4.4%). Concerning their occupation, the majority were Medical laboratory 55 (48.7%), Doctors were 15 (13.35), Nurse were 8 (7.1%), Pharmacist were 27 (23.9%), Other medical staff were 8 (7.1%). Table 1 demonstrates the Soci-demographic characteristics of the study participants. About the participants' age, Marital status and occupation. Table (1)

Table (2): Knowledge and practice of Breast self-examination BSE.

4- Have you ever heard about breast self-examination BSE?		
Yes	94	83.2
No	19	16.8
Total	113	100
5- What is your source of knowledge?		
Internet	39	34.5
Lecture	51	45.1
Friends	8	7.1
Others	15	13.3
Total	113	100
11- Do you know how to do breast self-examination?		
	Frequency	Percent
Yes	95	84.1
No	18	15.9
Total	113	100
6- Do you have any idea about breast self-examination purpose?		
Yes	101	89.4
No	12	10.6
Total	113	100
7- Have any members of your family been diagnosed of breast cancer?		
Yes	39	34.5
No	74	65.5
Total	113	100
8- If your answer to the above question is 1, what is your relationship to the patient?		
Aunt	10	30.3

Aunt, Other from your extended family	1	3
Mother	4	12.1
Other from your extended family	18	54.5
Total	33	100
9- Have you obtained additional information about breast self-examination BSE?		
Yes	63	55.8
No	50	44.2
Total	113	100
10- What is your source of knowledge?		
Internet	39	34.5
Lecture	51	45.1
Friends	8	7.1
Others	15	13.3
Total	113	100
12- Do you know that breast self-examination is a useful tool for early detection of breast cancer?		
Yes	92	97.9
No	2	2.1
Total	94	100
13- Have you done breast self-examination BSE before?		
1	68	72.3
No	1	1.1
2	25	26.6
Total	94	100

Table 2 demonstrate the participant's knowledge and practice of breast self-examination BSE it was estimated as (83.2%) and the most common source of this knowledge was lectures were 51 (45.1%) the internet were 39 (34.5 %) others were 15 (13.3%) friends were 8 (7.1%). Their knowledge about how to do breast self-examination was 95 (84.1%) and the participants who do not have any idea about how it will be done were 18 (15.9%).

The participant's knowledge about BSE purpose was 101 (89.4%), 12 (10%) have no idea about BSE purpose. There were 39 (34.5%) participants have one of their relatives been diagnosed with breast cancer including 10 (30.3%) have their aunt been diagnosed, 1 (3%) have her aunt and other from her extended family, 4 (12.1%) have their mothers and the majority were 18 (54.5%) have one of their extended family been diagnosed with breast cancer .74 (65.5%) have no family history of breast cancer. When the participants were asked if they obtained more information about breast self-examination more than half 63 (55.8%) had obtained additional info, 50 (44.2%) had not collected more data about it. 95 (84.1%) had already known how to do BSE, 18 (15.9%) had no idea about BSE procedure. As medical field workers all most about 92 (97.9%) were aware that BSE is a useful tool for early detection of breast cancer, 2 (2.1%) had no idea. 68 (72.3%) from participants have done BSE before, 26 (27.7%) had not done it before.

Table 3: Degree of knowledge among participants:

	Frequency	Percent
Very Good	22	19.5
Good	40	35.4
Bad	30	26.5

Very Bad	21	18.6
Total	113	100

Among 113 participants, 22 (19.5 %) have a very good degree of knowledge. 40 (35.4%) have a good degree of knowledge. 30 (26.5%) have a bad degree of knowledge. 21 (18.6%) have a very bad degree of knowledge.

Participant	Degree of Knowledge								Total
	Very Good		Good		Bad		Very Bad		
	F	%	F	%	F	%	F	%	
Medical Laboratory	13	59	16	40	16	53	10	48	55
Doctors	3	14	7	18	3	10	2	10	15
Nurse	0	0	3	8	3	10	2	10	8
Pharmacist	4	18	9	23	7	23	7	33	27
Other Medical Staff	2	9	5	13	1	3	0	0	8
	22	100.0	40	100	30	100	21	100	113

Among the participants 55 were medical laboratory, 13 (59%) have very good degree of knowledge, 16 (40%) have good degree of knowledge, 16 (53%) have bad degree of knowledge, 10 (48%) have very bad degree of knowledge. Between 15 doctors 3 (14%) have very good degree of knowledge, 7 (18%) have good degree of knowledge, 3 (10%) have bad degree of knowledge, 2 (10%) have very bad degree of knowledge. Through 8 nurses 0 (0%) have very good degree of knowledge, 3 (8%) have good degree of knowledge, 3 (10%) have bad degree of knowledge, 2 (10%) have very bad degree of knowledge. Among 27 pharmacists 4 (18%) have very good degree of knowledge, 9 (23%) have good degree of knowledge, 7 (23%) have bad degree of knowledge, 7 (33%) have very bad degree of knowledge. Between 8 other medical staff 2 (9%) have very good degree of knowledge, 5 (13%) have good degree of knowledge, 1 (3%) have bad degree of knowledge, 0 (0%) have very bad degree of knowledge.

Discussion:

Breast cancer prevalence is dramatically increasing every year and so both mortality and morbidity of the disease do [14, 15, 19], in study conducted in Sudan the mean age of breast cancer patients was 47.7 (standard deviation (SD) 13.0) years, representing 63% of our study population. The remaining 37% were non-cancer patients with an average age of 34.7 (SD 12.4) years. Approximately 60% of our study participants were not aware of BSE and 70% did not know the signs and symptoms of breast cancer. When asked about the usefulness of BSE, 58.8% More than half of the breast cancer patients (54%) presented with advanced stage disease. BSE practice was found to be associated with reduced patient-related delays in diagnosis. Those who did not practice BSE took longer to recognize.

(p=0.000), become aware (p=0.001) and seek medical help (p=0.01) for their breast lump than those who practiced regularly (Fig 2).

No correlation was found between BSE and early stage breast cancer (p=0.619).

The results of this study indicated that the majority of women had medium level of knowledge of breast cancer and screening, however, significant percentage of women had low and unsatisfactory level of knowledge.

In this study out of 113 female medical workers were randomly selected, 113 participants responded to the questionnaire, their mean age was (29.05, standard Deviation (SD): 5.9) years. Age from 20 to 53 years old, with the largest age category was the ages 20 - 25 years was 42 (37.2%). The age 26 - 30 years was 40 (35.4%). The age > 30 years was 31 (27.4%). Regarding their marital status 60 were single (53.1%), 48 were married (42.5%) furthermore, 5 were divorced (4.4%). Concerning their occupation, the majority were

Medical laboratory 55 (48.7%), Doctors were 15 (13.35), Nurse were 8 (7.1%), Pharmacist were 27 (23.9%), other medical staff were 8 (7.1%).

In this study the awareness of them about BSE was 101 (89.4%), 12 (10%) have no idea about BSE purpose. There were 39 (34.5%) participants have one of their relatives been diagnosed with breast cancer including 10 (30.3%) have their aunt been diagnosed, 1 (3%) have her aunt and other from her extended family, 4 (12.1%) have their mothers and the majority were 18 (54.5%) have one of their extended family been diagnosed with breast cancer. 74 (65.5%) have no family history of breast cancer. When the participants were asked if they obtained more information about breast self-examination more than half 63 (55.8%) had obtained additional info, 50 (44.2%) had not collected more data about it. We also found 95 (84.1%) had already known how to do BSE and only 68 (72.3%) from participants have done BSE before. As medical field workers all most about 92 (97.9%) were aware that BSE is a useful tool for early detection of breast cancer this finding is consistent with the literature [16, 17, 18]. When in other study conducted in Iran revealed that (74.8%) of women never practice BSE ever, and (9.8%) did the first breast examination after they felt pain in the breast [19]

Research findings in Iran also revealed that the most important information source considering breast cancer was mass media (48%) which was similar to findings of this study (Montazeri et al., 2008).

The sources of information in the current study of almost the half of the participants (45.1%) from lectures since they are medical field workers followed by the media (i.e. TV, radio, and the Internet). This finding was inconsistent with previous studies conducted in Saudi Arabia, the United Arab Emirates, Egypt and Yemen, which showed that mass media (i.e. TV and radio) were the main sources of information about BC. [20,21, 22]

Therefore, this study suggests that creating awareness of BC and BSE through media and needs to be strengthen in order to raise awareness of the community.

This study generated new information and insights about the level of awareness about breast cancer and BSE among the females in medical field. Among 113 participants, 22 (19.5 %) have a very good degree of knowledge. 40 (35.4%) have a good degree of knowledge. 30 (26.5%) have a bad degree of knowledge. 21 (18.6%) have a very bad degree of knowledge. Two limitations of our study you have to know. The first one that our results are based on self-reports from the participant and we cannot assess the accuracy of these reports. The second limitation is using participants from only medical field. So the generalize ability of the results of this study is limited to this study population.

References:

- 1- Boyle, P., and B. Levin. 2008. World cancer report 2008. IARC Press, International Agency for Research on Cancer, Lyon, France.
- 2- Ferlay, J., Soerjomataram, I., M. Ervik, R. Dikshit, S. Eser, C. Mathers, et al. 2012. GLOBOCAN 2012 v1.0. Cancer Incidence Mortality Worldwide [Internet]. 2014 3/13/2014; IARC CancerBase.
- 3- Bray F, Ferlay J, Soerjomataram I, et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2018;68:394–424
- 4- Ferlay J, Soerjomataram I, Dikshit R, et al. Cancer incidence and mortality worldwide: Sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer.* 2015;136:359–86
- 5- Noreen M, Murad S, Furqan M, Sultan A, Bloodsworth P. Knowledge and awareness about breast cancer and its early symptoms among medical and non-medical students of Southern Punjab, Pakistan. *Asian Pac J Cancer Prev.* 2015;16:979–84
- 6- Bechtold, P. K. 1990. More turbulence in Sudan: a new politics this time? *Middle East J.* Vol.44 No.4:579–595
- 7 - Gurdon, C. G. 2013. 2 The economy of Sudan and recent strains. *Sudan Nimeiri* 18:18–33.
- 8- Erbil , Bolukbas N. Health beliefs and breast self-examination among female university nursing students in Turkey. *Asian Pac J Cancer Prev.* 2014;15:6525–9
- 9- World Health Organisation (WHO). Breast cancer: prevention and control. <http://www.who.int/cancer/detection/breastcancer/en/print.html> (last access: 28/09/10)

10- Rakkapao N, Promthet S, Moore MA, Solikhah S, Hurst, CP. Assessing breast cancer awareness in Thai women: Validation of the breast cancer awareness scale (B-CAS). *Asian Pac J Cancer Prev* 2017; 18:995–1005. <https://doi.org/10.22034/APJCP.2017.18.4.995>.

11- Al Junaibi RM, Khan SA. Knowledge and awareness of breast cancer among university female students in Muscat, Sultanate of Oman - A pilot study. *J Appl Pharm Sci* 2011; 1:146–9.

12- Rakkapao N, Promthet S, Moore MA, Hurst CP. Development of a breast cancer awareness scale for Thai women: Moving towards a validated measure. *Asian Pac J Cancer Prev* 2016; 17:851–6. <https://doi.org/10.7314/apjcp.2016.17.2.851>.

13- Awareness of Breast Cancer Risk Factors, Symptoms and Breast Self-Examination Among Omani Female Teachers A cross-sectional study <https://doi.org/10.18295/squmj.2020.20.02.010>

14- Azubuike SO, Okwuokei SO. Knowledge, attitude and practices of women towards breast cancer in Benin City, Nigeria. *Ann Med Health Sci Res* 2013;3:155-60. <https://doi.org/10.4103/2141-9248.113653>

15- Elamin A, Ibrahim ME, Abuidris D, Mohamed KE, Mohammed SI. Part I: cancer in Sudan - burden, distribution, and trends breast, gynecological, and prostate cancers. *Cancer Med* 2015;4:447-56. <https://doi.org/10.1002/cam4.378>.

16- T. Tewabe and Z. Mekuria, “Knowledge and practice of breast self-examination among undergraduate students in Bahir Dar University, North-West Ethiopia, 2016: a cross-sectional study,” *Journal of Public Health in Africa*, vol. 10, no. 1, 2019.

17- M. O. Jalambo, B. Kanoa, M. Kareri, S. Younis, S. Aljazzar, and M. Ellulu, “Women’s knowledge, attitude and practices about breast cancer in Gaza strip, Palestine,” *Public Health and Preventive Medicine*, vol. 6, no. 1, pp. 1–7, 2020.

18- S. Baloushah, W. J. Salisu, A. Elsous et al., “Practice and barriers toward breast self-examination among Palestinian women in Gaza city, Palestine,” *The Scientific World Journal*, vol. 2020, Article ID 7484631, 7 pages, 2020.

19- Rosmawati NH. Knowledge, attitudes and practice of breast self-examination among women in a suburban area in Terengganu, Malaysia. *Asian Pac J Cancer Prev* 2010;11(6):1503-8

20- Dandash KF, Al-Mohaimed A. Knowledge, attitudes, and practices surrounding breast cancer and screening in female teachers of Buraidah, Saudi Arabia. *Int J Health Sci (Qassim)* 2007; 1:61–71.

21- Radi SM. Breast cancer awareness among Saudi females in Jeddah. *Asian Pac J Cancer Prev* 2013; 14:4307–12. <https://doi.org/10.7314/apjcp.2013.14.7.4307>.

22- Ahmed BA. Awareness and practice of breast cancer and breast-self examination among university students in Yemen. *Asian Pac J Cancer Prev* 2010; 11:101–5.