

# Knowledge and Practice of Breast Self-Examination Among Women of Reproductive Age Attending Meru Teaching and Referral Hospital, Kenya

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## ABSTRACT

Globally, more than 2.3 million women of reproductive age were diagnosed with breast cancer in 2020 alone. Breast cancer can be detected early through breast self-examination (BSE) practice. The World Health Organization (WHO) recommends that women should start Breast Self-Examination (BSE) from the age of 20 years to detect breast cancer early. Early detection of the disease in the preclinical stage when the disease is localized and asymptomatic has greater chances of cure and survival. The objective of this study was to determine level of knowledge on breast self-examination among women aged above 20 years attending the Meru Teaching and Referral Hospital (MeTRH). Meru County has recorded an upsurge of breast cancer in the last five years.

**Methods:** The study adopted descriptive cross-sectional study design. A sample of 423 respondents selected by systematic random sampling was interviewed using a researcher administered questionnaire, and an observation checklist. Data collection tools were pretested and validated at Githongo Sub-County hospital. Descriptive and inferential statistics were used for data analysis, using the Statistical package for Social Sciences (SPSS) Software Version 26.

**Results:** The results showed that majority (57%) of the respondents had poor BSE knowledge (mean score 46.14±9.7SD). The majority (70%) had poor BSE practice with a mean score breast self-examination practice at 44.4±30SD.

**Conclusions:** The study concluded that both the level of knowledge and practice of breast self-examination were poor.

**Recommendations:** The study recommends that health care providers offer regular health education, and demonstrations on BSE procedure, using appropriate teaching aids.

**Key Words:** Cancer, Knowledge, Breast Self-Examination

## INTRODUCTION

Breast cancer is a disease that is characterized by the abnormal growth of cells in the breast (CDC, 2020). Breast cancer starts in the breast cells and affects more women than men. According to the World Health Organization (WHO). Breast cancer prevalence grew by more than 20% globally between 2012 and 2015 (while

associated deaths increased by more than 14 % (WHO, 2018). The disease had been diagnosed in 14.1 million women in 2015 alone, with 59.8% of these cases occurring in low and middle-income countries (LMICs) (Udoh, 2020). In Kenya, over 6,000 incidences of breast cancer cases are diagnosed annually with more than 2,500 deaths annually (WHO, 2021). Women

aged between 20–49 years in developing nations are twice as likely as women in industrialized countries to have developed breast cancer (Vladimir, 2017).

Breast cancer is the most prevalent cancer amongst women but has the highest survival rates amongst all cancer if detected early (Loh, 2015). Screening through Medical imaging is the common diagnostic strategy; however, poor infrastructure and costs of imaging are an obstacle to this strategy in most developing countries including Kenya. Breast self-examination (BSE) is an important screening option technique for early detection of breast cancer. Breast self-examination involves a systemic check-up that any woman can carry out by herself on breast to check for any changes that may be affecting her breast tissue, leading to early detection of any breast diseases (Oladimeji *et al.*, 2015).

According to Marco *et al.* (2020), a large percentage (85%) of breast abnormalities can be identified by the clients themselves as they routinely perform the BSE. Monthly BSE is recommended for all women above 20 years as a strategy for early detection of breast cancer (WHO, 2020). However, in most of the developing countries, breast cancer is diagnosed at advanced stages, due to lack of early detection strategies such as BSE, compared to developed nations where early breast cancer detection strategies are routinely practiced. The consequence of the late diagnosis in developing countries has been poor disease prognosis and high fatality rate.

A study conducted by Udoh (2020), among women of Sub-Saharan Africa revealed knowledge variations on BSE with majority having low level of knowledge of BSE. Additionally, Kalliguddi, (2019) in another study reported that although practice of BSE is important for early detection of breast cancer, it was not frequently practiced and there is a wide gap between knowledge and practice of BSE. In a related study, Tewabe & Mekuria (2019) found that only 54% of the respondents in his study practiced BSE with only 35% of them

carrying it out regularly, but over 70% carrying it out occasionally. Similar results were reported by Chepkwurui *et al.*, (2020) at Mbale Regional Referral Hospital in Uganda. In Tanzania, it was reported that majority of women do not practice BSE due to limited knowledge of BSE (Ngi'da *et al.*, 2019),

In Kenya, breast cancer is the most commonly diagnosed cancer among women (WHO, 2020). Breast cancer accounts for 23% of all cancer cases among women in Kenya (Antabe *et al.*, 2020). Eighty percent of the breast cancer cases are identified at advanced stages, when disease prognosis is very poor (MOH, 2015). Breast tissue is quite accessible to all women, simply because of its anatomical location on the external surface of the chest. This makes it easy to identify breast changes early through physical observation, and practice of self-breast examination.

This study sought to assess the level of Knowledge on BSE among women aged 20-49 years attending the Meru Teaching and referral Hospital in Kenya. Meru County is one of the counties in Kenya with a high prevalence of Breast Cancer. Most breast cancer patients appear at the hospital when the disease is at an advanced stage and the prognosis is poor. Breast self-examination (BSE) is a simple and cost-effective method for detecting breast cancer early. Knowledge of the basics of breast cancer, including its prevalence, risk factors, and symptoms, is essential for motivating women to engage in regular BSE. When women are aware of the high incidence of breast cancer and the potential consequences of late detection, they are more likely to prioritize their breast health and adopt preventive behaviors such as BSE. The Ministry of Health in Kenya also advocates for BSE as a strategy to combat the disease.

## **METHODOLOGY**

The study adopted a descriptive cross-sectional study design. A total of 429 women of reproductive age (20-49 years)

attending the hospital were recruited by systematic random sampling. Data on knowledge of BSE was collected using a researcher administered questionnaire and an observation checklist. The instruments had been pre-tested at Githongo Hospital in Imenti Central Sub County-Meru County and yielded a reliability coefficient of 0.8, well above the recommended threshold of 0.7 (Mligo, 2016). Data was analyzed with the aid of SPSS computer software. Descriptive statistics of means and standard deviations as well as Chi square tests were used to analyze the collected data. The study received approval from the Ethics and Research Committee of Chuka University. A research permit was also obtained from the National Commission for Science, Technology and Innovation (NACOSTI). Permission to carry out the study was also obtained from Meru Teaching and Referral Hospital Management Team (HMT) education committee. The research study

adhered to all the required ethical standards of confidentiality and privacy of the respondents. Anonymity of the respondents was maintained through use of numbers. All data collected was stored in the computer, and use of password to restrict access. Only authorized persons had access to the data.

## RESULTS

Social demographic characteristics of the respondents

Majority of the respondents i.e. 58.9% (n=249) were aged between 18-28 years. The minimum age was 20, maximum was 49 and the mean age was 29.06±6.9SD years. Majority 63.8%, (n=270) were married, and most of them, that is, 43.5% (n=184) had secondary education. Majority (54.4%, n=230) were Protestants, and most of them, that is, 46.3% (n=196) were self-employed.

Socio-demographic characteristics are summarized in table 1.

Table 1: Social demographic characteristics of the respondents

Characteristic	Frequency (n)	Percentage (%)
Age in years		
20-28	249	58.9
29-38	129	30.5
39-48	44	10.4
49	1	0.2
Total	423	100
Marital status		
Single	116	27.4
Married	270	63.8
Divorced	22	5.2
Widow	15	3.5
Total	423	100
Level of education		
University/College	128	30.3
Secondary level	184	43.5
Primary education	99	23.4
None	12	2.8
Total	423	100
Religion		
Protestant	230	54.4
Catholic	160	37.8
Muslim	26	6.1
None	7	1.7
Total	423	100
Occupation		
Formal employment	78	18.4
Self-employment	196	46.3
None	149	35.2
Total	423	100

Level of knowledge on breast self-examination

Knowledge was tested using twelve question items. The individual scores on

knowledge of BSE are summarized in table 2.

**Table 2: Specific knowledge of self-breast examination**

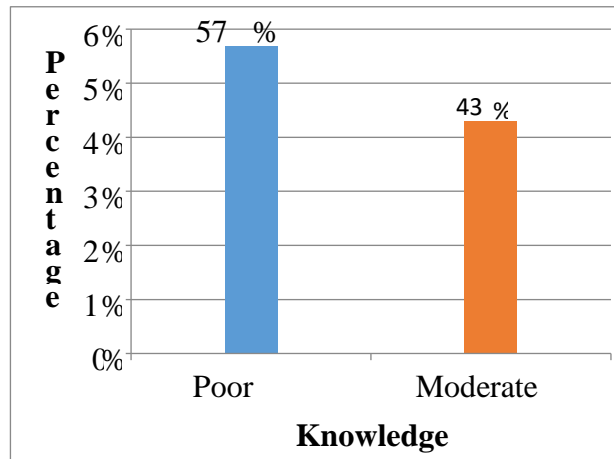
Knowledge item	Knowledgeable Respondents	
	Frequency (n)	Percentage (%)
BSE is palpating your breast using fingers to feel for any abnormality by oneself-	361	85.3
BSE is a technique for early detection of breast cancer-	67	15.8
BSE should be encouraged to all women of reproductive age-	356	84.2
Early detection of breast cancer though BSE improves breast cancer treatment outcomes-	70	16.5
BSE helps detect other breast changes early-	352	83.2
BSE is cheap and accessible to all women	352	83.2
BSE helps women have control of their own health-	76	18.0
BSE helps women to be more breast aware-	67	15.8
BSE is a good breast exercise-	91	21.5
BSE does not consume a lot of time	66	15.6
There is no specialized training required for one to perform BSE-	147	34.8
BSE is a good practice-	337	79.7
	Mean	46.14±9.7SD

Table 2 Shows that the mean score on knowledge of BSE was 46.14% and standard deviation was 9.7.

The level of knowledge was further categorized as follows; Respondents who had correct responses in <6 knowledge items out of the possible 12, were

considered as having poor knowledge level, those who scored 6-9 were considered as having moderate knowledge level, while those who scored >9 was considered as having good knowledge level of BSE.

The results are presented in Fig 1.



**Figure 1: Knowledge level of BSE**

Fig. 1 shows that most 57%, (n=241) of the respondents had poor knowledge; 43% (n=182) had moderate knowledge. The level of BSE knowledge is summarized in figure 1.

### Practice of BSE

Practice of BSE was assessed using a combination of practice questions scale and an observation checklist. The practice questions and observation checklists were converted into a practice scale with a total of 10 items. The findings are summarized in table 3

**Table 3: Specific practice of BSE**

	Practice item	Correct practice	
		Frequency (n)	Percentage (%)
1	Look in the mirror at your breasts with your shoulders straight and your arms behind your occipital area, checking for any color changes, dimpling, or size changes.	206	48.7
2	Lying down on bed divide the breast imaginary into four quadrats.	154	36.4

3	Check the entire breast with a pad of your fingers.	251	59.3
4	Use of small circle movements and following up and down pattern.	168	39.7
5	Use of light, medium or firm pressing over each quadrat.	142	33.6
6	Feeling the breast with 2 <sup>nd</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> finger systematically in circular motion from nipple to outside.	126	29.8
7	Gentle squeeze off the nipple	205	48.5
8	Check for any discharge	249	58.9
9	If BSE is done at home	161	38.1
10	Frequency of BSE at home	126	29.8
		Mean	44.4±30SD

Table 3 shows that the mean score for correct breast self-examination practice was 44.4±30SD.

Individual practice scores were further categorized into correct practice in ≥7 items

were considered as having good BSE practice level those with <7 items were considered as having poor practice level. The results are summarized in figure 2.

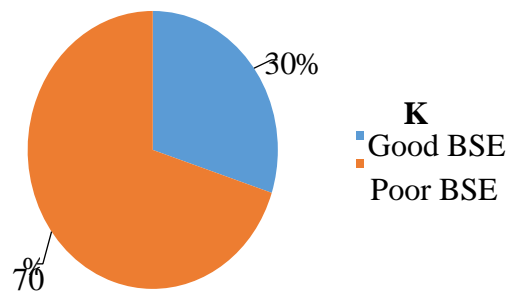


Figure 2: Practice Level of BSE

Figure 2 shows that only 30% (n=127) of the respondents had good BSE practice level,

Association of BSE knowledge and practice

The level of BSE knowledge was cross tabulated with practice of BSE, to establish if there was any significant association. The results are presented in Table 4

Table 4: Association between knowledge level and BSE practice

		Practice level				Statistics
		Good practice		Poor practice		
		n	%	n	%	
Knowledge level	Moderate	35	19.2%	147	80.8%	$\chi^2 = 17.711$ , $df=1$ , $p<0.001$
	Poor	92	38.2%	149	61.8%	

The results in table 4 show that there was a significant association between knowledge and practice ( $p<0.05$ ). Those who had poor knowledge level were more likely to have good BSE practice compared to those who had moderate knowledge (OR=1.985, CI=1.415-2.784). These findings are summarized in table 4

## DISCUSSION

The overall knowledge of BSE was poor. The finding was similar to findings of a study by Fouelifack, *et al.*, (2021), in which out of 402 participants, majority 213 (53%) had poor knowledge, 62 (15.4%) had insufficient knowledge, 90 (22.4%) had moderate while only 37 (9.2%) had good knowledge about BSE. The findings are also similar with those of Arif (2018) whereby, 58% of the respondents were

found to have inadequate knowledge of BSE. The findings were also in agreement with those according to a study by Dadzi, (2019), where only 43.3% of those polled had heard of BSE, while the majority 56.7% had no knowledge about BSE. These findings are critical because understanding of BSE and the risks of delayed diagnosis can lead to high mortality of women which could otherwise be prevented.

Regarding BSE practice, only 38.1% (n=161) were practicing BSE at home. This finding is similar to findings of a survey carried out among 1000 female students in Karachi, Pakistan where only 33.1% of the respondents had practiced BSE (Ahmed, 2018). This finding was also in agreement with that of Mehrnoosh (2015), and that of Jeyaakerthi (2015), who reported poor BSE practice, despite the respondents having good BSE knowledge. The finding is important and points at the need to encourage women to practice BSE. Breast self-examination (BSE) is an essential practice for women to monitor their breast health and detect any changes or abnormalities. BSE plays a crucial role in early detection and prompt treatment of breast cancer, which significantly improves the chances of successful outcomes and survival rates, although BSE should not be considered a standalone method for breast cancer screening but a starting point in screening of breast cancer. BSE should be complemented by regular clinical breast examinations performed by healthcare professionals and mammography screenings as recommended by medical guidelines.

There was a significant association between knowledge and practice ( $p < 0.05$ ). Interestingly, respondents with poor BSE knowledge level were more likely to have good BSE practice. These findings were different from those of a study on practice and associated factors among women of reproductive age in southeast Ethiopia by Hussien. *et al.*, (2023) where majority of the respondents had knowledge about BSE, but most of them stated that they never practiced it. Perhaps the respondents with

poor knowledge on BSE level who were mainly those of low socio-economic level and could not afford expensive radiography saw this as the only method to detect cancer. The women of high socio-economic status may be of the opinion to seek medical expertise since they could afford it. The findings also agreed with those of (Kalliguiddi, 2019) who reported that, the practice of BSE although perceived as being very important for early detection of breast cancer is not frequently practiced, and there is a wide gap between knowledge and practice.

## CONCLUSION AND RECOMMENDATIONS

The level of knowledge and practice on breast self-examination was poor among women of reproductive age attending Meru teaching and referral hospital. The knowledge levels were significantly associated with practice ( $p < 0.05$ ), but there was knowledge practice mismatch. All these findings demonstrated knowledge of BSE alone may not be sufficient to make women practice BSE. The health care providers should provide regular health education on breast self-examination, perform demonstrations of the procedure and encourage regular BSE. Since there is a knowledge-practice mismatch, there is need for further investigation into other factors that can positively influence women to practice BSE regularly.

### Declaration by Authors

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**Conflict of Interest:** The authors declare no conflict of interest.

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