Breast self-examination practice and associated factors among female healthcare workers in Western Ethiopia 2019: A cross-sectional study

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Cancer Biology

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Abstract

I. Abstract

Objective: Breast cancer is the leading cause of death among reproductive age women worldwide. Regular breast self-examination is one of the most cost-effective methods for early detection of breast cancer. Therefore, this study intended to assess the magnitude of breast self-examination practice and associated factors among female healthcare workers in public health facility in Western Ethiopia. Institutional based cross-sectional study was conducted among 379 female healthcare workers. The study participants were recruited by lottery method. Data were collected from March to April 2019. Data were entered into Epi data version 3.1 and analyzed using SPSS version 25. Bivariate and multiple logistic regressions analysis were done to identify factors significantly associated with the dependent variables. With 95% CI, the level of significance was decided at p-values ≤ 0.05

Results: The magnitude of regular breast self-examination practice was 32.6%. After adjusting for possible confounders; educational level, being aware of the risk factors of breast cancer, knowledge towards breast self-examination were independent predictors of regular breast self-examination practice. Regular awareness creation forum on breast self-examination technique, risk factors, and related matters should be facilitated so that all female health care workers will be reminded.

Keywords: breast self-examination practice, female health workers.

Introduction

Background

Breast cancer is the leading cause of cancer mortality worldwide. In 2017, an estimated 252,710 new cases of invasive breast cancer were diagnosed among women and approximately 40,610 women were expected to die from breast cancer (1). It’s also the most frequently diagnosed cancer in women, with an estimated 1.7 million new cases and 521,900 deaths (2).

Since breast cancer is serious, an important factor in the prognosis of breast cancer is early detection of the disease (4). Breast self-examination (BSE) is one of the simple, quick, and cost-free procedure for early detection of breast cancer among women (5). In developing countries, breast self-examination is the recommended method because it is easy, convenient, private, safe and doesn’t require equipment (6, 7). Several studies proposed it because of there is a difference among women
who practice BSE and those not (8).

Early detection of breast cancer plays an important role in decreasing its morbidity and mortality. However, women in developing countries do not have the behavior of breast self-examination practice (9, 10). Most of the early breast tumors are self-discovered and the majority of early detection are by BSE, and 80% may be detected by expert professionals (11). However, in the developing countries, women present for health care at late stages of breast cancer, at which treatment is most ineffective (12).

A report indicated that a 5-years survival rate was 56% for late detection and reached to 85% for early detection of breast cancer (13). Despite early detection of breast cancer plays an important role in decreasing its morbidity and increasing survival rate, the rate of early detection and BSE practice is low among the women in developing countries (10). Evidence indicates that lack of time, lack of self-confidence in their ability to perform the technique correctly, fear of possible discovery of a lump, and embarrassment associated with manipulation of the breast have been cited as reasons for not practicing BSE (14).

Early detection and diagnosis rate of breast cancer among Ethiopia women is considerably low when compared to women in Western countries. This fact put the Ethiopian women’s to be diagnosed at the late stage of the disease. Therefore, many women miss early detection and treatment opportunities due to the lack of information and knowledge of breast cancer, as well as cancer screening skills (10).

Methods
This study was conducted in seven Public hospitals found in west Shoa Zone Oromia regional state, Ethiopia using institutional-based cross-sectional study design. Data was collected from March to April 2019.

The sample size was determined using single population proportion formula with the assumption of marginal error of 5%, 10% of non-response rate, 95% confidence level and the prevalence of the breast self-examination practice to be 33.7% from the study conducted in Wollaga, Oromia (12). Since the sample was drawn from a finite population, the correction formula was applied. Finally, the sample size of 379 was determined. The calculated sample size was proportionally allocated to each
Hospital based on the number of female health care workers in the hospital. Inclusion and Exclusion criteria

All-female healthcare workers who were actively on job during data collection at each selected hospitals were included.

Data collection tools and techniques

Data was collected using a self- administered questionnaire. The questionnaire was developed in the English language after reviewing and extracting from different pieces of literature developed for the same purpose. For measuring knowledge towards BSE, there were 10 questions measuring knowledge towards BSE. Answering a correct answer will result in scoring a mark and loosing will attract zero scores. Accordingly, the final total mark will be added up out of ten and graded for the decision of knowledge level.

To measure attitude towards BSE, Likert scale based items were prepared (total of ten questions). The scales reached from strongly agree to strongly disagree. To assess the internal consistency of the items, Cronbach alpha was assessed and it was 0.87 indicating good internal consistency of the items.

Operational Definitions

Good practice of breast self-examination:- those who performed breast self-examination practice a week after each menses by their palm and middle three fingers otherwise called poor practice

Good knowledge: participant those who answered greater than 75% of the 10 knowledge questions towards breast self-examination.

Medium knowledge: participants who answered 50–75% of knowledge questions toward breast self-examination.

Poor knowledge: participants who answered less than 50% of knowledge questions toward breast self-examination.

Favorable attitudes: participants who scored points equal to or greater than mean score of breast self-examination related attitude questions as measured by Likert scale.

Unfavorable attitude: participants who scored points less than the mean score of attitude
questions (17, 26.28).

Data management and analysis

The collected data were checked visually for completeness, then coded and entered into Epi data version 4.5 statistical packages. Descriptive analysis was computed. To assess the association between dependent and independent variables by controlling for confounders, first binary logistic regression was run and variables with p-value < 0.25 and the variables which are known to have an association with dependent variables from reviewed literature were selected for Multiple logistic regression analysis. Statistical significance was declared at P-value <0.05 with 95% confidence interval (CI).

Study Variables:

Dependent variable
Breast self-examination practice (BSE)

Ethical consideration

Ethical clearance was obtained from the Ethical Review Committee of the College of Medicine and Health Sciences, Debra Markos University. During the fieldwork, the objective of the study was clearly explained for the study participants, the confidentiality of the data to be collected and the right not to participate was also assured. Before starting the data collection process, written consent was taken from each respondent after they read and signed the consent form.

Result

Socio-demographic characteristics of the study participants

A total of 340 female healthcare workers were responded to the distributed questionnaires, making a response rate of 89.7%. The mean age of the respondents was 28.0±4.8 SD which was ranging from 19–43. About 187 (55.0%) was married. Out of the total participants, about 198 (58.2%) were nurse professionals and the majority of participants were degree 232 (68.2%) holder followed by diploma 71 (20.9%).

Knowledge towards breast self-examination and breast cancer

The majority of 227 (66.8%) the study participants know the screening methods of breast cancers.

The commonly mentioned breast self-screening techniques were: mammography (5.0%), clinical
breast self-examination (7.9%), and 23.2% mentioned breast self-examination. About one hundred-six (31.2%) stated the three screening methods of breast cancer. Out of the total participants, two hundred twenty-eight (67.1%) ever heard about breast self-examination. The main source of information of the breast self-examination was the knowledge they received during the lecture which accounts for one hundred thirty-two (38.8%).

Figure 1- Knowledge towards breast self-examination and breast cancer among female health care workers at west Shoa zone hospitals, Oromia region, Western Ethiopia, 2019

The attitude of the study participants towards BSE practice
The attitude mean score of the study participants was calculated and used as a cutoff point for classifying attitude towards BSE as favorable or not. Accordingly, the mean attitude score was 30.0±4.5 SD. More than half of the participants 202 (59.4%) had a favorable attitude towards breast self-examination.

Table 1. Socio-demographic characteristics of the female health care workers in West Shewa zone public hospitals, Western, Ethiopia 2019. regression analysis results for the association between the practice of breast self-examination and independent variables among female healthcare workers, West Shoa Zone Hospitals, Oromia region, Western Ethiopia, 2019.

Discussion
Evidence from different researches indicated that women who correctly practice breast self-examination monthly are more likely to detect breast lump in the early stage of its development, and early diagnosis has reported influencing early treatment to yield a better survival rate (5). In this study, the prevalence of the correct and regular practice of breast self-examination was (32.6%). This finding is comparable with the study conducted in Wollege (33.7%), in Addis Abeba (35.5%), Debra Birhan University (28.2%) and Zambia (28.2%) (2, 12, 15). But its higher than the finding in the study conducted in Adwa Town (6.25%), Northern Ethiopia, West Gojjam, of Amhara region(14.4%) and Burami (21%) (16) (9) 17). The differences could be due to the difference in the study period, study area.

This study indicates, as the educational level of the females’ increase, the likely hood of BSE practices
also increase. Compared to those females’ in diploma level, degree holders were 12 times more likely to practice BSE correctly and regularly. This finding is consistent with a study conducted in Western Ethiopia (12). Female health care workers who don’t teach BSE to their clients during routine clinical activities were more than 50% less likely to practice breast self-examination 0.42 (AOR = 0.42, 95% CI: 0.23, 0.75) (P-value 0.004) compared their counterparts, which is similar to study conducted at Western Ethiopia (12).

This study also showed that there is a significant association between participants’ level of knowledge about breast cancer and BSE practice.

The commonest reasons reported why the females were practicing BSE were: for early detection and seeking treatment 67 (19.7%) and fear of developing breast cancer in the future 48 (14.1%). In contrast to this finding, the study conducted in Eritrea showed that females avoided BSE in fear of developing breast cancer(13).

Though they had sufficient knowledge and awareness about BSE, about 27% of the females didn’t practice it because of negligence.

In conclusion, the finding of the study indicated that BSE practice was low and it was associated with different factors.

There was also a gap in knowledge and awareness among the female health care professionals towards BSE, and even those who had sufficient knowledge were not practicing BSE because of negligence.

Short term training on breast cancer and breast self-examination should be better organized by the hospital administrator.

Limitation Of The Study

The self-reported information is subjected to bias specifically to social desirability bias. There was no internationally recognized standardized tool to assess BSE. This results in a variation of measurements and limits comparing the findings of this study with other studies. In addition, we didn’t include a qualitative aspect in this study which could have strengthened the finding of a quantitative one.
Declarations

Ethical approval and consent to participate

The proposal for the study was submitted to the Ethical Review Committee of College of Health and Medical Sciences, Debra Markos University for approval and clearance. Accordingly, the study was checked for its ethical issue and permission letter was obtained. The letter for support was written from the college of medicine and Health Sciences, Debra Markos University to all concerned Hospitals.

Consent for publication
Not applicable

Availability of data and material
All data generated or analyzed during this study were included in this published article and its supplementary information files are available from the corresponding author on reasonable request.

Competing interests
The authors declare that they have no competing interests in this section.

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Ethiopian Federal Ministry of science and higher education has covered the costs of data collectors and supervisors per diem. The funded organization has no role in designing the study, data collection, or manuscript preparation.

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All authors read and approved the final manuscript.

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List of Acronyms and Abbreviations

ACS - American Cancer Society

AKTH - Aminu Kano Teaching Hospitals

AOR - Adjusted Odd Ratio
BC- Breast Cancer
BSE - Breast Self-Examination
CBE - Clinical Breast Examination
CI - Confidence Interval
COR - Crude odd ratio
DBU - Debra Berhan University
FHWs - Female healthcare workers
HEWS - Health Extension Workers
SHE- Ministry of Science and Higher Education of Ethiopia

SPSS Statistical Package of Social Science

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Tables
Table 1. Socio-demographic characteristics of the female health care workers in West Shewa zone public hospitals, Western, Ethiopia 2019.
| Characteristics       | Frequency | Percentage |
|-----------------------|-----------|------------|
| Age                   |           |            |
| 19-25                 | 141       |            |
| 26-30                 | 141       |            |
| ≥31                   | 58        |            |
| Marital status        |           |            |
| Single                | 153       |            |
| Married               | 187       |            |
| Ethnicity             |           |            |
| Oromo                 | 276       |            |
| Amhara                | 48        |            |
| Others                | 16        |            |
| Religion              |           |            |
| Orthodox              | 138       |            |
| Protestant            | 177       |            |
| Muslims               | 23        |            |
| Others                | 2         |            |
| Profession            |           |            |
| Nurse                 | 198       |            |
| Midwife               | 57        |            |
| Pharmacy              | 21        |            |
| Laboratory            | 18        |            |
| Medical doctors       | 31        |            |
| Others                | 15        |            |
| Educational level     |           |            |
| Diploma               | 71        |            |
| Degree                | 232       |            |
| Masters               | 37        |            |
| Work experience       |           |            |
| < 5                   | 174       |            |
| ≥ 5                   | 166       |            |
| ward units            |           |            |
| Inpatient service     | 240       |            |
| Outpatient service    | 100       |            |

Table 2. Multiple logistic regression analysis results for the association between the practice of breast self-examination and independent variables among female healthcare workers, West Shoa Zone Hospitals, Oromia region, Western Ethiopia, 2019.
| VARIABLES | BSE practice | COR with 95% CI | COR with 95% CI |
|-----------|-------------|----------------|----------------|
|           | Good | Poor |                  |                 |
| Educational level | | | | |
| Diploma | 23  | 48  | 0.013(0.002,0.103) | 0.03(0.004,0.26) |
| Degree | 118 | 114 | 0.029(0.004,0.213) | Ref             |
| Masters | 36  | 1   | Ref              | Ref             |
| Work experience | | | | |
| < 5 | 100 | 74  | 1.6 (1.02, 2.39)  | 0.9 (0.56, 1.65) |
| ≥5 | 77  | 89  | Ref              | Ref             |
| Ward unit | | | | |
| Inpatient service | 133 | 107 | 1.6 (0.98, 2.53)  | 1.13 (0.64, 1.98) |
| Outpatient service | 44  | 56  | Ref              | Ref             |
| Do you taught BSE to the client? | | | | |
| Yes | 19  | 60  | 0.25 (0.16, 0.39) | 0.4 (0.23, 0.75) |
| No | 97  | 47  | Ref              | Ref             |
| Do you know people with Breast cancer | | | | |
| Yes | 118 | 80  | Ref              | Ref             |
| No | 59  | 83  | 0.5 (0.3, 0.75)  | 0.9 (0.45, 1.57) |
| Knowledge about BSE | | | | |
| Good knowledge | 110 | 26  | 13.2(7.09,24.56) | 6.7(3.24, 14.04) |
| Medium knowledge | 42  | 59  | 2.2(1.22,4.04)  | 1.8 (0.96, 3.39) |
| Poor knowledge | 25  | 78  | Ref              | Ref             |
| Attitudes towards BSE | | | | |
| Favorable | 112 | 90  | 0.7(0.46, 1.105) | 0.6(0.53, 0.9)  |
| Unfavorable | 65  | 73  | *                |                 |

** significantly associated, AOR= adjusted odd ratio COR: crude odd ratio

Figures
Figure 1

Knowledge towards breast self-examination and breast cancer among female health care workers at west Shoa zone hospitals, Oromia region, Western Ethiopia, 2019