Module 3.8

Assessment and referral of suspected breast cancer at primary health care
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INTRODUCTION

Breast cancer is one of the most common forms of cancer among women in both developed and less developed regions of the world. The incidence of breast cancer is increasing rapidly in the less developed world due to increase in life expectancy, urbanization and the adoption of fast-paced lifestyles. While minor risk reduction may be achieved with prevention, these strategies cannot eliminate the majority of breast cancers that develop in low- and middle-income countries where the disease is largely diagnosed at a very late stage. Therefore, early diagnosis is the cornerstone for improving breast cancer outcomes and survival. This module provides information about (i) breast cancer risk factors, signs and symptoms; (ii) how to perform clinical examination of the breast; and (iii) referral criteria for women with suspected breast cancer at primary health care using the WHO PEN algorithm.

LEARNING OUTCOME

At the end of the session, participants will be able to:

- Comprehend the concepts of screening and early diagnosis methods for breast cancer.
- Apply the risk factors, signs and symptoms of breast cancer for early identification of patients with breast lumps.
- Examine the breast and identify any suspected breast cancer lesions.

TOPICS COVERED

- Basic information about breast cancer.
- Risks factors for breast cancer.
- Signs and symptoms of breast cancer.
- Technique of clinical breast examination.
- Appropriateness of breast cancer screening.
- Use of algorithm for early detection of breast cancer.
- Patient communication on breast awareness and cancer.
COMPETENCY

- Ability to evaluate woman with breast complaints and manage suspected breast cancer using the algorithm.

TEACHING AND LEARNING ACTIVITIES

Total session time: 90 minutes

Activity 1. Identifying normal breast and suspected breast cancer: 15 minutes

Start with following statement: If breast cancers are identified at an early stage, more effective treatment can be used and the risk of death from breast cancer can be reduced. Although some risk reduction might be achieved with prevention, these strategies cannot eliminate the majority of breast cancers that develop in low- and middle-income countries. Therefore, early detection in order to improve breast cancer outcome and survival remains the cornerstone of breast cancer control.

Step 1. Present the powerpoint slides with the following contents.

- basic information about breast cancer
- risk factors for breast cancer
- signs and symptoms of breast cancer.

Step 2. Show the presentation with pictures of:

- normal breast with asymmetry, including accessory breast, inverted nipple,
- possible breast cancer: lump, depression, erythema, skin thickening (peau d’orange), recent nipple retraction (turning inward), scaliness around the nipple, nipple discharge, ulceration.

Step 3. Ask the participants to identify and describe the abnormality in each picture.
Activity 2. Performing clinical breast examination: 30 minutes

Step 1. Perform a group practice with breast model.

Step 2. Each participant has to perform breast examination and lymph nodes with breast model.

Step 3. Observe the participants when they perform breast examination with the model and record the result of each participant for pre-test.

Step 4. Show the presentation slides with short video for the technique of clinical breast examination (CBE).

Step 5. Perform a group practice session with breast model.

Step 6. Each participant has to perform breast examination with breast model.

Step 7. The trainer has to observe the participants when they perform breast examination with the model and record the result of each participant for post-test.

Step 8. Explain the shortcomings of each participant's technique of CBE and how to improve this technique.

Activity 3. Managing woman with suspected breast cancer: 20 minutes

Step 1. Show the protocol for assessment and referral of women with suspected breast cancer at the primary health care level.

Step 2. Emphasize to the participants that referral of women with small breast lumps may lead to diagnosis of “early breast cancer”.

Assessment and referral of suspected breast cancer at primary health care
### Protocol for assessment and referral of women with suspected breast cancer at primary health care

**Women who present with the following persistent and unexplained signs and symptoms seeking consultation at a PHC:**

(a) Breast lump or any change in the shape or consistency of the breast  
(b) Breast lump that enlarges and/or is fixed and hard  
(c) Other breast problems (i.e. eczematous skin changes, nipple retraction, peau d’orange, ulceration, unilateral nipple discharge – particularly bloody discharge, lump in the axilla) with or without palpable lump.

- Assess signs and symptoms (i.e. history, intensity, duration, progression)  
- Identify relevant breast cancer risk factors (including age, family history of breast or ovarian cancer, previous history of breast cancer, chest irradiation)  
- Clinical examination of both breasts, axillae and neck (supraclavicular and infra-clavicular regions)  
- Differential diagnosis: benign breast diseases (e.g. fibroadenoma, fibroadenosis, mastitis, abscess).

#### Flowchart

Presenting with (a)  
Women 30 years and above  

- Presenting with (a)  
  - Risk reduction advice and follow-up after menstrual period  
  - At follow-up visit: If (b) or (c)  

- Presenting with: (a) + relevant risk factors, Or (b) or (c)  

- Presenting with (a), (b) or (c)  
  - Refer immediately to a next level health facility with appropriate services for imaging and/or tissue sampling for diagnosis

Note: Referral of women with small breast lumps may lead to diagnosis of ‘early breast cancer’.
Activity 4. Breast cancer screening: 10 minutes

Present the powerpoint with the following contents.

- defining cancer screening compared with early diagnosis
- difference between screening in breast cancer and cervical cancer
- breast self-examination (BSE), clinical breast examination (CBE) and mammography (MMG)
- use of mammogram: its benefits and risks.

Activity 5. Patient communication on breast health and cancer: 15 minutes

Engage the participants to do the role play with one participant acting as primary health care provider and one participant acting as patient.

- Role play 1: Primary health care provider informing the patient with normal breast findings following CBE.
  Primary health care provider informs the patient and her breasts were found to be normal. Health care provider encourages the patient to be conscious of how their breasts normally look and feel, so that she can recognize any abnormality. Patient has to be advised that if she finds abnormalities in her breast she should return for an examination.

  Message: According to IARC’s review of data in a recent monograph, there is “inadequate” data to support routine breast self-examination. Woman can be taught about breast awareness, but not self-examination as a screening method.

- Role play 2: Primary health care provider informing the patient with breast lump following CBE.
  Primary health care provider should inform the patient that there is an abnormality in her breast. Breast lump may be benign or malignant and need further investigation. Patient should be told that it is important to consult a doctor soon so that if there is any issue of concern, it is detected early and cured. Listen patiently to her fears/concerns and offer her help.

- Role play 3: Primary health care provider informing the patient with advanced breast cancer (such as ulceration).
  Talking to a patient with advanced breast cancer can be difficult as the very word “cancer” is expected to make her anxious and depressed. Primary health care provider should inform the patient that there is a severe abnormality in her breast that requires the urgent attention of a doctor. Advise her to attend the appropriate health facility as early as possible, where she may have to undergo further investigation. Explain that it is important to consult a doctor soon so that if there is any disease that is of concern, there is a better opportunity for successful treatment. Listen patiently to her fears/concerns and offer your help if she needs it.
- Discuss with participants how the communication could be improved.
- Provide breast cancer brochures to participants in order to further educate people.

**Pre- and post-tests**

**Breast model examination form**

<table>
<thead>
<tr>
<th>Correct</th>
<th>Incorrect</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use pads of middle three fingers to examine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Circular motion with three levels of depth: superior, medium, deep</td>
<td></td>
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<tr>
<td>3. All parts of the breast must be completely examined</td>
<td></td>
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<tr>
<td>4. Examine at the nipple and areola area</td>
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<tr>
<td>5. Describe three or more abnormal finding</td>
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</table>
1. **Which statement is true?**

   (a) Breast cancer is one of the most common types of cancer among women and is the leading cause of death by cancer.
   (b) Men don’t get breast cancer.
   (c) All women have a risk of developing breast cancer.
   (d) The majority of women who develop breast cancer have a positive family history.

2. **Which statement is false?**

   (a) Breast cancer can be prevented by reducing risk factors.
   (b) Breast cancer can be detected in the early stages.
   (c) Breast cancer is curable in the early stages.
   (d) Most breast lumps are cancerous.

3. **Based on WHO PEN algorithm, what is the appropriate management for women who present with the breast lump?**

   (a) When the primary health care provider detects breast lumps, the patient has to immediately be referred to the next-level health facilities with appropriate services in every case.
   (b) When the primary health care provider detects breast lumps in a 24-year-old woman, she has to be followed up after the menstrual period.
   (c) When the primary health care provider detects breast lumps in a 30-year-old woman, she has to be immediately referred to the next-level health facility with appropriate services.
   (d) When the primary health care provider detects fixed and hard breast lumps in a 21-year-old patient, she has to be followed up after the menstrual period.

4. **Which statement is true?**

   (a) Mammography is the only screening tool for breast cancer that can reduce specific mortality.
   (b) Organized breast cancer screening must be offered for early detection with mammography in every country.
   (c) Clinical breast examination can reduce breast cancer mortality.
   (d) Breast self-examination is effective for breast cancer screening.
5. **What should the primary health care provider communicate with a 35-year-old woman who is presented with breast lump?**

(a) Most breast lumps are non-cancerous, don’t worry about it

(b) There are different types of breast lumps. You should go to appropriate health facilities for further investigations as soon as possible

(c) Most breast lumps are cancerous. You should go to appropriate health facilities for further investigation and treatment

(d) There is abnormality in your breast. You should go to the appropriate health facility when it is convenient.
BACKGROUND INFORMATION

Breast cancer burden

Breast cancer is the most frequent cause of cancer among women, impacting over 1.5 million women each year, and also causes the greatest number of cancer-related deaths among women. In 2015, 571,000 women died from breast cancer, or approximately 15% of all cancer deaths among women. While breast cancer rates are higher among women in more developed regions, rates are increasing in nearly every region globally.

Breast cancer survival rates vary greatly worldwide, ranging from 80% or over in North America, Sweden and Japan to around 60% in middle-income countries and below 40% in low-income countries (Coleman et al., 2008). The low survival rates in less developed countries can be explained mainly by the lack of early detection programmes, resulting in a high proportion of women presenting with late-stage disease, as well as by the lack of adequate diagnosis and treatment facilities.

Breast cancer risk factors

Several risk factors for breast cancer have been well documented. However, for the majority of women presenting with breast cancer it is not possible to identify specific risk factors (IARC, 2008; Lacey et al., 2009).

A familial history of breast cancer increases the risk by a factor of two or three. Some mutations, particularly in BRCA1, BRCA2 and p53 result in a very high risk for breast cancer. However, these mutations are rare and account for a small portion of the total breast cancer burden.

Reproductive factors associated with prolonged exposure to endogenous estrogens, such as early menarche, late menopause, late age at first childbirth are among the most important risk factors for breast cancer. Exogenous hormones also exert a higher risk for breast cancer. Oral contraceptive and hormone replacement therapy users are at higher risk than non-users. Breastfeeding has a protective effect (IARC, 2008, Lacey et al., 2009).

The contribution of various modifiable risk factors, excluding reproductive factors, to the overall breast cancer burden has been calculated by Danaei et al. (Danaei et al., 2005). They conclude that 21% of all breast cancer deaths worldwide are attributable to alcohol use, overweight and obesity, and physical inactivity. This proportion was higher in high-income countries (27%), and the most important contributor was overweight and obesity. In low- and middle-income countries, the proportion of breast cancers attributable to these risk factors was 18%, and physical inactivity was the most important determinant (10%).

The differences in breast cancer incidence between developed and developing countries can partly be explained by dietary effects combined with later first childbirth, lower parity, and shorter breastfeeding (Peto, 2001). The increasing modes of adoption of Western lifestyle habits in low- and middle-income countries is an important determinant in the increase of breast cancer incidence in these countries.
Breast cancer control

Raising general public awareness on breast cancer and the mechanisms for its control as well as advocating for appropriate policies and programmes are key strategies of population-based breast cancer control.

Prevention

Control of specific modifiable breast cancer risk factors as well as effective integrated prevention of noncommunicable diseases which promotes healthy diet, physical activity and control of alcohol intake, overweight and obesity, could eventually have an impact in reducing the incidence of breast cancer in the long term.

Early detection

Early diagnosis strategies focus on providing timely access to cancer treatment by reducing barriers to care and/or improving access to effective diagnosis services. The goal is to increase the proportion of breast cancers identified at an early stage, allowing for more effective treatment to be used and reducing the risks of death from breast cancer. Although some risk reduction may be achieved with prevention, these strategies cannot eliminate the majority of breast cancers that develop in low- and middle-income countries. Therefore, early detection in order to improve breast cancer outcome and survival remains the cornerstone of breast cancer control (Anderson et al., 2008).

There are two early detection methods:

- early diagnosis or awareness of early signs and symptoms in symptomatic populations in order to facilitate diagnosis and early treatment, and
- screening – that is the systematic application of a screening test in a presumably asymptomatic population. It aims to identify individuals with an abnormality suggestive of cancer.

A screening programme is a far more complex undertaking than an early diagnosis programme. (WHO, 2007). In the vast majority of less developed regions, early diagnosis of breast cancer should be prioritized over breast cancer screening (WHO, 2014).

Irrespective of the early detection method used, central to the success of population-based early detection is careful planning and a well organized and sustainable programme that targets the right population group and ensures coordination, continuity and quality of actions across the whole continuum of care. Targeting the wrong age group, such as, younger women with low risk of breast cancer, could lead to a lower number of breast cancers found per woman screened and, therefore, reduce its cost-effectiveness. In addition, targeting younger women would lead to a greater evaluation of benign tumours causing unnecessary overload of health-care facilities due to the use of addition diagnostic resources (Yip et al., 2008).

Mammography screening

Mammography screening is the only screening method that has proven to be effective, though the studies evaluating mammography were all done in high-income countries with well-resourced health systems. Although there is evidence that organized population-based mammography
screening programmes can reduce breast cancer mortality by around 20% in the screened group versus the unscreened group across all age groups, in general there appears to be a narrow balance of benefits compared with harms, particularly in younger and older women. A WHO position paper on mammography screening concluded that in well-resourced settings women aged 50–69 should undergo organized, population-based mammography screening if pre-specified conditions on programme implementation are met. In limited resource settings with weak health systems, mammography is not cost-effective, and early detection should focus on diagnosis at early stage through improved awareness. For women aged 40–49 years or 70–75 years, WHO recommends systematic mammography screening only in the context of rigorous research and in well-resourced settings. There is uncertainty about the magnitude of the harms, particularly overdiagnosis and overtreatment. Mammography screening is very complex and resource intensive and no research on its effectiveness has been conducted in low-resource settings.

Breast self-examination

There is no evidence on the effect of screening through breast self-examination. However, the practice of breast awareness has been seen to empower women, taking responsibility for their own health. Therefore, breast awareness is recommended for improving the rate of early diagnosis of breast cancer among women at risk.

 Clinical breast examination (CBE)

It is an examination of both breasts performed by a trained health professional. CBE can be used as a diagnostic test in a woman who has a breast lump or as a screening test in a woman during a screening programme. CBE seems to be a promising approach for low-resource settings and could be implemented depending on the evidence from ongoing studies. Research is underway to evaluate CBE as a low-cost approach to breast cancer screening that can work in less affluent countries. Promising preliminary results show that the age-standardized incidence rate for advanced-stage breast cancer is lower in the screened group compared with the unscreened group (Sankaranarayanan, 2011).

Since screening requires substantial investment and carries significant potential personal and financial costs, the decision to proceed with screening should be pursued only after (i) basic breast health services including effective diagnosis and timely treatment are available to an entire target group; (ii) its effectiveness has been demonstrated in the region; and (iii) resources are available to sustain the programme and maintain quality.

Additional reading resources

Assessment and referral of suspected breast cancer at primary health care

- Lacey JV Jr. et al. (2009). Breast cancer epidemiology according to recognized breast cancer risk factors in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial Cohort. BMC Cancer, 9, 84.
Assessment and referral of suspected breast cancer at primary health care

Activity 1: Step 1 and 2

Basic information about breast cancer

- Most common cancer in women
- Male breast cancer is about 1% of breast cancer
- Most common cause of cancer death in women worldwide
- Breast cancer survival rates vary greatly worldwide (over 80% to below 40%).
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Risk factors

Non-modifiable risks
- Woman
- Age
- Family history of breast and ovarian cancers in first degree relatives
- Benign breast disease
- Menarche/Menopause, LMP
- History of radiation to chest area

Modifiable risks
- Parity, age at first child birth, history of breast-feeding
- History and duration of hormonal use (oral contraceptives before age 20)
- Alcohol drinking
- Smoking
- Obesity

Signs and symptoms of breast cancer

- Lump or mass
- Depressed
- Erythema
- Skin thickening (peau d’orange)
- Recent nipple retraction (turning inward)
- Scaliness around the nipple
- Nipple discharge
- Ulceration

Normal breast
Assessment and referral of suspected breast cancer at primary health care

Breast lump

- Normal breasts are often lumpy
- Cancers → hard, fixed, and irregular
- Benign → soft or cystic, movable, and regular
- Clinicians rarely diagnose breast cancer with CBE, further evaluation with other tests is then required.

What is a clinical breast examination (CBE)

- CBE is a physical examination performed by a health care professional who is well trained in the technique
- This may be a physician, nurse or other medical staff.
Assessment and referral of suspected breast cancer at primary health care

Patient preparation

- Introduce yourself to patient
- Inform patient as many unaware of length of time required
- Explain procedure and obtain the patient’s consent
- Conduct in a bright room that ensures privacy
- Patient should be in a gown.

Key components in CBE

1. Visual inspection
2. Patient positioning
3. Palpating technique
4. Breast boundary
5. Pattern of search

Visual inspection

- Dimpling/Retraction
- Nipple changes
- Erythema
- Edema
- Lumps
- Ulceration
- Asymmetry
Patient positioning

- Lying flat on the table
- Place their hand over their head

Palpation technique

1. Pads of middle 3 fingers
2. Circular motion with 3 level of depth: superior, medium, deep

Breast boundary

- Clavicle
- Sternum
- Mid-axilla
- Inframammary crease (bra line)
Pattern of search

1. Vertical strip pattern
2. Concentric circle pattern
3. Radial spoke pattern

Lymph node examination

The patient should be in a seated position with relaxed shoulders and arms bent.

The regional nodes are examined with careful attention to the axillary, supraclavicular, infraclavicular LN basins.

3 Components of CBE to influence the accuracy

- The finger technique: 3 fingers
- The search patterns: 3 patterns (choose one)
- Time spent: 3 minutes (each breast).
Activity 3: Step 1

Activity 4: Step 1
What is difference between screening in breast cancer and cervical cancer

- Cervical cancer: screening for precancerous lesion, decrease incidence of cancer
- Breast cancer: screening for early detection in asymptomatic, decrease staging of cancer

### Screening

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<thead>
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<th>Methods</th>
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<tbody>
<tr>
<td>1. Mammography</td>
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<tr>
<td>2. Clinical Breast Examination: CBE</td>
</tr>
<tr>
<td>3. Breast Self Examination: BSE?</td>
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### Mammography

- Low-energy X-rays
- Reducing breast cancer mortality for women aged 50-74 years (40% for age 50-69 years)
- Adverse effects: false positive results, overdiagnosis, and radiation-induced breast cancer
Breast density

Spiculated mass

Clinical breast examination

- Low-cost approach to breast cancer screening
- Sufficient evidence for detection of smaller and earlier-stage tumors
- No evidence for support a reduction in breast cancer mortality.
Breast self examination

- No evidence for support a reduction in breast cancer mortality
- Useful for breast health awareness.

Appropriateness of breast cancer screening

- Screening should be pursued only after
  1. Basic breast health services are available
  2. Effectiveness
  3. Can sustain the program and quality
- Based on age group and resource setting.