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Incorporating Breast Cancer Screening Program in the Medical Curriculum of Cebu Institute of Medicine

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The objective of the study was to describe the incorporation of breast cancer screening program in the medical curriculum of a medical school and determine its feasibility in finding breast cancer.

Methods: From school year 2011 - 2012, a 3-hour module that assesses third year medical students' proficiency in clinical breast examination (CBE) was incorporated into the pre-clinical clerkship program at the Cebu Institute of Medicine. The students who have satisfactorily completed the module were invited to participate in the Breast Cancer Control Outreach Program (BCAcop). Pertinent data included: number of participating consultants and students, number of patients seen as well as their demographic and clinical profile, breast cancer cases found.

Results: Four BCAcop were conducted and 6 consultants supervised the medical students in the CBE modules and BCAcop. Seventy seven medical students passed the CBE module and participated in BCAcop. A total of 254 patients with age range of 8 to 80 (mean-32 years) attended the lay forum while 246 patients (96.9%) consulted at the on-site breast clinic. Among those examined, 146 patients (59.3%) had essentially normal breasts. Fibrocystic change was the most frequent diagnosis with 49 patients (19.9%), followed by fibroadenoma with 34 patients (13.8%). Six patients (2.4%) were suspected to have breast cancer. Four patients (66.7%) proceeded to have a biopsy and were confirmed. Two patients availed of treatment.

Conclusion: Incorporating breast cancer screening program in the medical school curriculum encourages medical students to participate in breast cancer control outreaches where their basic knowledge and skills on clinical breast exam are reinforced with actual patient contact. Furthermore, women with breast cancer are found and offered treatment through this program.

Key words: Breast cancer awareness, community outreach, clinical breast exam, medical students?

According to the local cancer registry of Metro Cebu, breast cancer is the leading cancer in terms of incidence and mortality in the female population from 1998 to 2002.[1] This is consistent with the breast cancer statistics of 2010 Philippine Cancer Facts and Estimates.[2] While there have been many advances in the treatment of breast cancer, early detection is critical for improving survival. The Philippine College of Surgeons advocates monthly breast self examination (BSE) starting age 20, yearly clinical breast examination (CBE) starting age 30, and yearly mammogram starting age 50. Physicians continue to play a significant role in the detection of breast cancer by encouraging women to do monthly BSE and recommending annual mammography and CBE. All physicians-in-training, generalists, and specialists need to be proficient in breast cancer prevention and screening since the future in eradicating breast cancer depends on the concerted efforts of multidisciplinary specialties.[3]

The study by Kann, et al. on breast cancer screening knowledge and skills revealed that most of the medical students reported needing additional training in CBE and more curricular time devoted to education about breast cancer screening.[4] Formalized instruction in breast cancer screening during medical school may help improve early breast cancer detection. Since the focus of the clinical years of medical school is on the diagnosis and treatment of pathologic processes, education regarding cancer prevention and screening is often not given appropriate

priority. Medical students must be trained in screening recommendations and techniques for patient education in all disease processes, including cancer.

A local effort in breast cancer screening called "Breast Cancer Control Outreach Program" (BCAcop) was developed and implemented in different areas of Cebu Province since 2001 by the Breast Center of Vicente Sotto Memorial Medical Center. The BCAcop components were as follows: a) breast cancer lay forum, b) breast self-examination (BSE) classes, and c) breast clinic. Passing a clinical breast exam proficiency course was a pre-requisite for surgical residents manning the breast clinic. The lay fora and BSE classes aimed to educate the women on: a) breast cancer risks factors; b) early warning signs of breast cancer; and c) how to properly examine their own breasts in order to detect breast abnormalities and early manifestations of breast cancer. The on-site breast clinic activities included history taking, clinical breast examination, diagnostic work-ups such as breast ultrasound and fine needle aspiration biopsy, core needle biopsy or open biopsy whenever cancer is suspected. Over an eight year period, there were 27 outreaches conducted and 1719 women served. There were 19 cases of early breast cancers found.[5] This particular program format can give medical students actual clinical exposure and experience in breast cancer screening activities that will become relevant in their future medical practice.

The objective of this paper was to describe the incorporation of a breast cancer screening program in the medical curriculum and determine its feasibility in finding breast cancer cases. The specific objectives were to: 1. describe a breast cancer screening program for medical students to be incorporated in the medical curriculum; 2. describe the demographics of consultant and medical student participants of the program; 3. describe the demographic and clinical profile of patients participating in the program; 4. determine the feasibility of finding breast cancer cases through the program.

Methods

A breast cancer screening program similar to BCAcop was developed for the medical students. From the start of the school year 2011 - 2012, a 3-hour module that teaches and assesses third year medical students' proficiency in clinical breast examination (CBE) was incorporated into the pre-clinical clerkship program at the Cebu Institute of Medicine. The whole third year class was divided into 8 groups of about 15 to 20 students who were assigned to 1 preceptor (a general surgeon) for each CBE module. Upon entering the module, students were directed to watch the eleven-minute California Department of Health Services video featuring detailed instructions on performing CBE. After the video, the assigned preceptor would give a 30 minute-lecture on breast cancer basic facts and then allow students to ask questions for clarifications. A short review of the CBE technique was also done. After the review, the students individually underwent a practical exam (return demonstration of CBE) and were objectively graded by the preceptor. The practical exam aimed to assess 3 components of CBE: 1. ability to do the proper patient positioning; 2. knowledge & ability to palpate the correct breast perimeter, and 3. accuracy in palpating breast masses in commercial latex breast models with findings ranging from normal as well as benign and malignant masses. The structured assessment on CBE simulation based on the lectures, videos and latex breast models utilized in the course was designed by the consultant organizers of the program.

The third year medical students who had satisfactorily completed the module on CBE were invited to participate in BCAcop on voluntary basis. Furthermore, first year, second year, and some other third year medical students (those who have not undergone the clinical breast examination module in time for BCAcop) were also offered an opportunity to participate in the outreach program as volunteers. In a separate schedule, these volunteer students were required to undergo the same CBE module. Just before the BCAcop event, all the volunteer student participants were instructed on how to conduct a lay forum and teach a breast self-examination class. During the BCAcop, the students conducted the lay fora and BSE classes under the supervision of the consultants. They also did history taking and clinical breast exams on patients during the breast clinic together with the surgeons. All the BCAcop were conducted at the Cebu Institute of Medicine-Community Medico-Social Services (CIM-CMSS), a training center and field

laboratory for the community-oriented activities of the Department of Family and Community Medicine, located in the barrio of Pakna-an, Mandaue City.

Pertinent data recorded were: number of participating consultants and students and their year level, number of patients seen during the outreach as well as their demographic and clinical profile, breast cancer cases found and their intermediate outcome. These data are tabulated and analyzed.

Results

From 2011 to 2014, four BCAcop were conducted. There were 6 consultants of the Department of Surgery, who were also faculty members of Cebu Institute of Medicine, who participated and supervised the medical students in the CBE modules and BCAcop. A total of 77 medical students satisfactorily passed the CBE module and voluntarily participated in BCAcop. Sixteen medical students (20.8%) were at first year level, 17 (22.1%) were at second year level and 44 (57.1%) were at third year level. All of the student participants passed the practical exam on first take. A total of 254 patients with age range of 8 to 80 (mean of 32 yrs) participated in BCAcop. All of these patients attended the lay forum while 246 patients (96.9%) consulted at the on-site breast clinic. Among those examined, 146 patients (59.3%) had essentially normal breast exam findings. Fibrocystic change of the breast was the most frequent diagnosis for breast disease with 49 patients (19.9%), followed by fibroadenoma with 34 patients (13.8%). (Table 1) Six patients (2.4%) were suspected to have breast cancer, out of which 4 (66.7%) proceeded to have a biopsy. All 4 were histologically confirmed to have breast cancer. Two patients refused further work-up (core needle biopsy) and were lost to follow-up. Among the 4 patients confirmed to have cancer, 2 patients were subsequently treated with removal of the diseased breast and systemic treatment while the other 2 patients refused further intervention. (Table 2)

Table 1. Scoring system used to measure proficiency in the clinical breast examination.

CBE findings	2011	2012, March	2012, Sept.	2014	Total	%
Essentially normal breast	56	19	33	38	146	59.3
Fibrocystic changes	13	19	7	10	49	19.9
Fibroadenoma	8	10	6	10	34	13.8
a. Mass Only		9	5	9	30	
b. With fibrocystic changes	7	1	1	1	4	
Breast Cancer	1	4	0	1	6	2.4
Sebaceous cyst	2	0	1	0	3	1.2
Nipple papilloma	2	0	0	0	2	0.8
Macrocyst	0	0	2	0	2	0.8
Axillary lymphadenopathy	1	0	0	0	1	0.4
Breast abscess	0	1	0	0	1	0.4
Contact dermatitis	0	0	1	0	1	0.4
Fungal infection, areola	0	0	0	1	1	0.4
Total	83	53	50	60	246	100

Table 2. Statistics of BCAcop conducted from 2011 to 2014.

Year	Consultant Surgeons	Venue	Medical student participants (%)	Patients seen (%)	Patients seen with biopsy-confirmed breast CA (%)
2011	6	CIM-CMSS	24 (31.2)	83 (32.7)	1 (1.2)
2012 March	6	CIM-CMSS	30 (40.0)	53 (20.9)	4 (7.5)
2012 Sept.	6	CIM-CMSS	14 (18.2)	50 (19.7)	0 (0)
2014	6	CIM-CMSS	9 (11.7)	68 (26.8)	1 (1.5)
Total			77	254	6 (2.4)

Of the 2 patients who followed up with biopsy-confirmed breast cancer, one 32 year old pre-menopausal patient was seen during the BCAcop conducted in March 2012. She was diagnosed with ER (+) Stage III B (cT4N1M0) invasive ductal carcinoma. She underwent 4 cycles of neo-adjuvant chemotherapy prior to modified radical mastectomy and bilateral oophorectomy at Vicente Sotto Memorial Medical Center. Afterwards, she was maintained on tamoxifen as hormonal therapy. The other patient was a 46 year old pre-menopausal patient and was seen during the BCAcop conducted in September 2014. She was diagnosed with ER(+) PR (+) Her2Neu (-) Stage III A (cT3N1Mx) invasive ductal carcinoma and underwent modified radical mastectomy at Cebu Velez General Hospital. Subsequently she took tamoxifen as adjuvant treatment.

Discussion

The importance of training future doctors to examine and detect early signs of breast cancer cannot be overemphasized. One of the main objectives of the BCAcop which is to find breast cancer cases in the community was achieved with the active participation of the medical students who were taught the fundamentals of breast cancer screening. This led to finding 2 breast cancer cases in the community who were amenable to treatment. The integration of the module on clinical breast examination and its implementation through the BCAcop at Cebu Institute of Medicine can be considered as a unique way of reinforcing the newly learned cancer screening knowledge and skills of the medical students. When a focused physical examination skill such as CBE is learned and applied to actual patients, the students will find personal relevance in the fight against breast cancer by guiding women who are clinically suspected to harbor the malignancy to access breast cancer care services in the community.

A study by Kann, et al. stated that among students surveyed for a self-assessment on their knowledge and skills for clinical breast exam, the students reported that they had learned the most about clinical breast examination and mammography from the surgery department. The department provided the most training in breast examination which was due to the experience they gained from their rotations in the breast clinic, where the medical students participated in the workups of women with breast masses, including performing breast palpation. Students found examining patients to be the most valuable method for learning breast examination, more so than breast models, videos, textbooks, and conferences. In terms of instructors, the majority of the students valued standardized patients, followed by attending physicians, physical diagnosis instructors, and residents.[4] A study on assessing the breast cancer screening skills of the third year medical students at the University of Massachusetts Medical School showed that the students performed significantly better on the CBE after going through one extra training session with a standardized patient.6 Medical school is a critical time for students to gain competence in the

basic history-taking and physical examination skills involved in breast examination and breast cancer risk-factor assessment. Clinical training in breast cancer screening must be integrated into more medical school rotations to ensure that students gain enough experience in breast examination. Without careful attention to breast cancer screening in the curriculum, the important component of preventive services will continue to be inadequately addressed.[4] A study at Boston University School of Medicine, where the number of hours of cancer education including early detection of breast cancer was increased from 6 to 15 hours, showed that cancer education can be interwoven into the existing medical school curriculum and produce improvements in students' skill levels for counseling and examinations.7 The effectiveness of a modular education for medical students in increasing the knowledge about breast cancer has been studied and documented by several authors.[3,4,5,6] Madan, et al. showed that there was a statistically significant improvement on knowledge regarding breast cancer screening, following the formalized teaching session with a 60-minute structured lecture session given to the medical students.

Furthermore, the authors concluded that until a formal course becomes a fundamental aspect of medical education, a short structured session should be instituted.[3]

Barrett, et al. emphasized that it is important to directly measure students' breast cancer screening and physical examination skills because students' reported self-confidence for some skills might not accurately reflect their actual levels of performance. Additionally, while knowledge may be an important step to acquiring skills, it may not be a good indicator of students' performances of risk assessment, counseling, or physical examination.[6] In the future, a pre- and post-activity student assessment as to their participation in this screening training and outreach can help define more accurately the extent of clinical benefit of this program. The integration of the CBE module and its implementation through the BCAcop in our institution can be considered an academically significant addition to the curriculum for students rotating in the Department of Surgery.

In this series only 2 of the 6 patients with breast cancer acceded to treatment. There are no local studies that documented the actual reasons why patients diagnosed with breast cancer refuse surgical treatment and are lost to follow-up. Clegg-Lamptey, et al. in their study on women diagnosed with breast cancer in Ghanafound that the four main causes of patients absconding are the same as the common causes of delayed presentation, namely fear of mastectomy, the use of herbal treatment, resort to prayers and prayer camps, and financial incapability. The study showed that educative measures should include making patients aware of the dangers of breast cancer, the importance of early diagnosis, and dispelling the fears and misconceptions that keep women with suspected breast cancer from reporting to hospital. Also, dealing with the main fears and misconceptions of patients at the time of diagnosis is likely to reduce the number of patients who subsequently abscond.[8] Ibrahim et al, on their study on factors and reasons associated with delay in breast cancer presentation on Nigerian women, also had similar results where ignorance of the nature of illness, belief in spiritual healing, fear of mastectomy and belief in herbal treatment were the leading reasons for delay.[9] El-Shinawi, et al. with similar results as well upon assessing the level of breast cancer awareness among recently diagnosed patients in Ain Shams University Hospital, suggested that low knowledge of risk factors, early detection and management of breast cancer should be addressed by designing patient education programs, where less educated patients are supported by health care professional to participate in the management of breast cancer.[10] While there is no further data on patients who refused biopsy or treatment in this series, a timely and consistent patient educational lay forum and BSE classes can help improve the situation. A medical student-based navigation system with the CMSS for patients clinically diagnosed with breast cancer may further minimize the number of patients lost to follow-up and expedite their eventual access to treatment. Better still, a fourth station, which debriefs patients who are clinically diagnosed with breast cancer and further enhance their understanding of the disease, may be added to the outreach program. This can help patients cope better with further interventions. The Breast Cancer Control Outreach Program (BCAcop), if conducted regularly can be a promising program that can enhance the medical students' proficiency in performing clinical breast

exam on actual patients as well as improve breast cancer case detection among women.

Conclusion

Incorporating breast cancer screening program in the medical school curriculum encourages medical students to participate in breast cancer control outreaches where their basic knowledge and skills on clinical breast exam are reinforced with actual patient contact. Furthermore, women with breast cancer are found and offered treatment through this program.

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