Expanding the Role of Nigerian Primary Care Providers in Cancer Control through Continuing Education: Findings from Government-led Collaborative Intervention

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ABSTRACT

Objectives: Cancer causes contribute to rising morbidity and mortality in Nigeria. Most cancer control efforts in Nigeria are private-sector driven. The study describes a government-led cancer education initiative by Abia State Primary Health Care Development Agency and American Society of Clinical Oncology in Abia State. **Methods:** The 5-day cancer control in primary care course was delivered in March 2017 with a focus on breast, cervical, and prostate cancers. It featured didactic lectures, plenary sessions, hands-on and simulations, as well as free cancer screening for the community. Participants (*n* = 128) included physicians and nurses in Abia State. Data collected from course evaluation as well as pre-and post-tests were used for this study. **Results:** Nearly 59% of participants (75/128) completed the evaluation. 99% of respondents said that they intend to make practice changes based on what they learned in the course. These intended changes include creating awareness about cancer, screening patients for cancer, and advocacy. In addition, 97% of respondents reported an increase in their understanding of cancer risk factors, 99% reported an increase in their ability to help patients with their family history, and 100% reported an increase in their ability to communicate with patients about cancer and cancer risk. **Conclusion:** The project demonstrates that visionary leadership of government organizations can contribute significantly to improving cancer control in Nigeria. Workshop achieved its objectives of improving the cancer management competence of participants.

Key words: Cancer control, continuing medical education, Nigeria, primary health care, simulation

INTRODUCTION

Cancer control continues to be challenging in low-income countries due to challenges in public awareness, the competence of clinicians and access to treatment modalities.[1-3] In Nigeria, the burden due to cancers is rising, with an associated increase in mortality and morbidity. The absence of an organized cancer control strategy continues to limit the response of the health system in addressing this trend.[4]

Meanwhile, cancer control services (especially early diagnosis and treatment) in Abia State are provided largely by physicians in the secondary and tertiary health institutions. The role of primary care providers (PCPs) in this regard was largely seen as peripheral. Given the frequent disruptions in service delivery by instability in the health system, it has become imperative to increase the involvement of PCPs, especially physicians and nurses in private practice, in cancer control. Current evidence shows that the involvement of PCPs

in cancer control often leads to care that is more holistic and patient-centered.[5] It also leads to providing care closer to the patient home, where they can receive more psychosocial support from their families.

The purpose of this paper is to describe the approach and results from a course on cancer control that was organized in March 2017 by Abia State Primary Care Development Agency and American Society of Clinical Oncology (ASCO). The cancer control in primary care (CCPC) course was developed by ASCO in 2015 in response to a growing need for cancer education in primary health care.[6-8] The aim of the CCPC course in Abia was to increase the knowledge of primary health providers regarding signs and symptoms of common cancers, increase their ability to talk with patients about their risk, and to know how and when to refer patients for additional screening or diagnostic testing. The course also sought to equip participants with skills in early detection of breast, cervical, and prostate cancers through clinical examination and visual inspection with acetic acid (VIA).

METHODS

Educational design
The course was designed as a continuing education intervention for physicians and nurses in Abia State. This method of learning has been shown to be effective in raising the competence of health providers in several clinical areas, including cancer control.[3,9]

Educational objectives
As a result of attending this course, attendees should:
1. Better understand cancer and risk factors for cancer in their setting.
2. Be equipped to help patients with their family history.
3. Be equipped to communicate with patients about reducing their risk for cancer.
4. Better understand the resources available in Nigeria for cancer diagnosis and treatment.
5. Be equipped to provide care to patients receiving cancer treatment.
6. Be equipped to provide care to patients who are cancer survivors.
7. Feel more comfortable referring patients suspected of having cancer to a specialist.

Several teaching methods were used to deliver the course content, including didactic lectures with multimedia components ($n = 16$), hands-on and simulations ($n = 7$), as well as plenary sessions ($n = 7$). The 5-day course focused on breast, cervical, and prostate cancers. Participants used simulation models to train on breast, pelvic, and rectal examination. They also used volunteer community members to train on VIA and cryotherapy.

A total of 128 individuals attended the course. Participants were largely PCPs (physicians, nurses, and midwives) from the 17 Local Government Areas in Abia State. We also selected one focal person from each LGA to serve as a pilot resource in providing cancer prevention services in remote areas. The faculty for the course included surgeons (2), family physicians (3), Community Physician and public health practitioners (2), Obstetrician/Gynecologists (2), and Nurses (3). Participants were recruited in partnership with various professional organizations, including the Abia State chapters of Nigerian Medical Association, National Association of Nigerian Nurses and Midwives, Association of General and Private Nurses and Midwives, and other organizations.

The course was sponsored by ASCO, Government of Abia State, Dr. Ejike Orji Foundation, Stand Up to Cancer Foundation, Marjorie Bash Foundation (MBF), Initiative for Public Health Advancement and Research and Broadcasting Corporation of Abia State. MBF provided subsidized copies of the book, "where there is no oncologist"[10] to course some participants to enhance ongoing practice.

Data collection

Data were collected using two methods

Pre- and post-test
Participants were asked to complete a pre-test at the beginning of the 1st day of the course, and a post-test at the conclusion of the final day of the course. 70 people completed the pre-test, and 71 completed the post-test. Questions for pre- and post-test were adapted from the Cancer Awareness Measures, developed and validated by Cancer Research UK.[11]

On-site evaluation form
They were also asked to complete a written evaluation at the end of the course. This evaluation was a mix of close- and open-ended questions. Of the 128 participants who attended, 75 completed the evaluation form (response rate: 59%).

As this was an educational evaluation, ethics approval was not required. However, participants were informed of their right to refuse participation in the pre-test, post-test, and course evaluation at any point during the course. Data were analyzed using descriptive statistics.

RESULTS

Demographics
Most respondents were nurses or midwives who work at private institutions and spend 25% or less of their time with cancer patients. Respondents had on average 19 years of work experience. Before the course, 26% (17/66) said that they had attended a previous training about cancer and 18% (11/62) said that they had managed a patient with cancer in the last 6 months. Table 1 shows the demographic distribution of the

Table 1: Baseline characteristics of respondents		
Characteristic	Number of respondents	Proportion (%)
Profession		
General nurse	42	56
Nurse/midwife	5	7
General physician	10	13
Other/no response	18	24
Proportion of time spent in oncology (%)		
Do not know/none	16	31
up to 25	20	38
25–50	9	17
51 or more	8	14
Setting of primary practice		
Government	28	41
Private	41	59
Previous training on cancer		
Yes	17	26
No	49	74
Managed cancer in the past 6 months		
Yes	11	18
No	51	82

75 participants who completed course evaluation, giving a response rate of 58.6% (75/128).

Evaluation of course outcome based on learning objectives was done using descriptive statistics. Figure 1 shows that the majority of respondents reported an increase in their understanding or ability for each of the objectives. The results from CCPC Nigeria were similar to or exceeded the average for all CCPCs.

On most objectives, respondents rated their understanding or ability before the course as fair, with average ratings ranging from 2.08 to 2.38. On average, respondents rated their understanding resources available for cancer diagnosis and treatment before the course as poor (Mean: 1.65), After the course, the average ratings ranged from 3.96 to 4.55; the average increase for each objective ranged from 2.04 to 2.32 points. While very few respondents rated each objective as good or excellent before the course, after the course between 76% and 96% of respondents rated each objective as Good or Excellent. Table 2 describes the magnitude of improvement on participants understanding using a 5-point Likert scale.

The pre- and post-test was used to objectively measure the exchange of knowledge during this course. More people reported a positive change in their readiness to "avoid discussion about cancer" (95% pre vs. 10% post). Most participants demonstrated limited improvement in
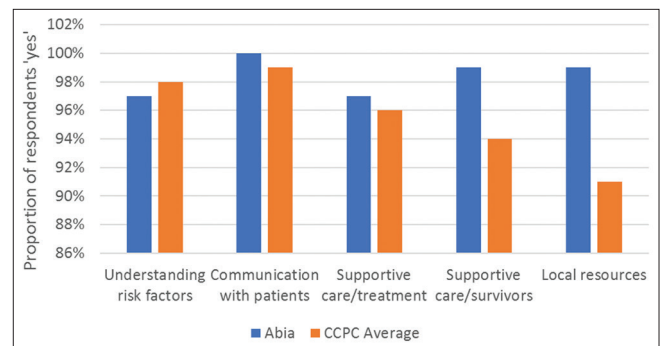

Figure 1: Comparison of Abia cancer control in primary care (CCPC) with other CCPC using learning objectives

knowledge of cervical cancer symptoms (5% change), while most of the knowledge gained was regarding prostate cancer (21% change). Overall, there was an increase in self-reported confidence in identifying symptoms of breast (32%), cervical (43%), and prostate cancers (49%).

Figure 2 compares the scores for knowledge of symptoms of the cancers of interest, before and after the course.

Most participants reported that they learned new skills in the early detection of certain types of cancer, as follows:
- Breast cancer: 94% (68/72)
- Cervical cancer: 100% (72/72)
- Prostate cancer: 97% (67/69).

Objective	Mean before	Mean after	Mean difference	Before very good or excellent (%)	After very good or excellent (%)
My understanding of the resources available in Nigeria for cancer diagnosis and treatment	1.65	3.96	2.32	3	76
My ability to provide care to patients who are cancer survivors	2.13	4.33	2.22	8	90
My ability to communicate with my patients about cancer and cancer risk	2.32	4.53	2.21	11	96
My ability to provide supportive care to patients receiving cancer treatment	2.08	4.26	2.20	10	86
My ability to help my patients with their family history	2.38	4.54	2.14	12	93
My understanding of risk factors for cancer	2.51	4.55	2.04	13	96

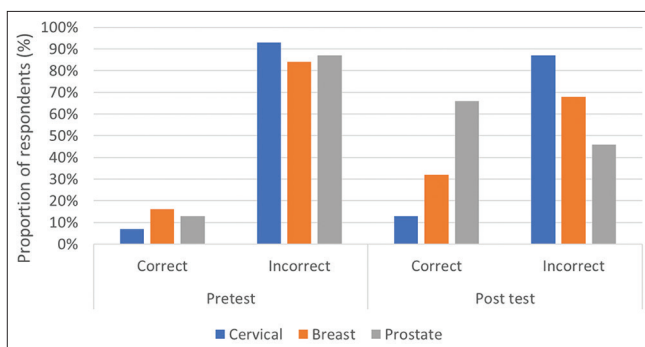**Table 2:** Magnitude of Improvements

Figure 2: Comparison of knowledge of cancer symptoms

In addition, 96% of respondents said they plan to work with specialists to plan the treatment of their patients with cancer. While reflecting on their overall course experience, most participants agreed or strongly agreed with each of the following statements:

- 99% (72/73) of respondents said they learned what they hoped and expected to learn at the meeting.
- 93% (67/72) of respondents agreed sufficient time was allowed for interactive dialogue with faculty.
- 92% (68/74) of respondents agreed sufficient time was allowed for networking with other participants.

DISCUSSION

The response rate of 58.6 (75/128) is similar to what has been reported for similar programs held in Nigeria.[1,12] This course, however, had more nurses in attendance compared to physicians. Despite intense marketing of the program to physicians, only 10% of them completed the course evaluation. It is important to explore other ways to engage physicians to attend events such as this one. Average years in practice were 19 years and most (38%) spend <25% of their practice time with cancer patients. This pattern of more nurses and years of practice about 20 years was similar to the findings by Ekanem *et al*. and Nwogu *et al*.[1,12]

Most respondents self-reported an increase in their understanding or clinical competence regarding the course objectives. For instance, the average rating for "understanding resources available for cancer diagnosis and treatment" was 1.65 (poor) before the course, whereas post-course rating was 3.96 (excellent). The average increase for each objective ranged from 2.04 to 2.32 points. While very few respondents rated each objective as Good or Excellent before the course, after the course between 76% and 96% of respondents rated each objective as Good or Excellent. Regarding skill acquired in early detection of cancers (breast, prostate, and cervical), most respondents reported improvement in skills; 100% for cervical, 97% and 94% for prostate and breast cancers, respectively. This pattern is similar to the findings by Ekanem *et al*.[1] where most respondents reported that they had gained new skills on breast (98%) and cervical cancer (99%). This increase in self-reported skills may be due to the fact that course organizers allocated more time to hands-on training compared to previous courses. Participants were exposed to plenary sessions about early diagnosis, then had practical session where everyone was made to watch and then a participant, in turn, on both simulation models and volunteers.

In addition, 99% of respondents to the on-site evaluation said they planned to make practice changes based on what they learned. These practice changes include: Creating awareness (20); screening patients for cancer (14), and advocacy (12). However, half also anticipated barriers, including: Lack of support from administration (17); financial issues (17); and lack of support from colleagues (6).

While the results from the evaluation form are consistently positive, those from the pre- and post-tests are mixed. After the course, 94% or more of participants said they felt confident or very confident they would be able to recognize a symptom of breast, cervical, or prostate cancer, an increase of between 33% and 48% points. However, only between 13%

and 34% of respondents correctly identified all symptoms for these cancers, and between 11% and 24% correctly identified all risk factors for cervical and breast cancers, respectively (54% correctly identified all risk factors for prostate cancer after the course). This could be due to overconfidence on the part of respondents or the complexity of the questions on the tests, as some of these questions had 10 or more response items.

It is important to highlight that this is the 1st time a primary health agency in Nigeria is directly involved in improving cancer education. The success achieved in this course speaks to the leadership of Abia State Primary Health Care Development Agency, under Dr. Chukwuemeka Oluoha. The agency could attract strategic stakeholders from different areas of the society. This goes to demonstrate the impact leadership could play in cancer control efforts in Nigeria.[13] It is our hope that training physicians and nurses together our course could reduce the incessant industrial disharmony which affects the smooth running of the Nigerian health-care system.[14]

Opportunities to improve
The evaluations from CCPC Nigeria also highlighted areas for enhancement for future courses.
1. Several respondents had suggestions for future courses. The most frequently cited suggestion was to include hold the course again or regularly.[10] Eight respondents said that materials or equipment to provide services or education should be provided. In addition, eight respondents commented that the venue and/or catering could be improved.
2. After the course, four respondents said that cryotherapy remained unclear. In addition, one respondent commented that referral centers for cryotherapy and treatment remained unclear. Two respondents also said that aspects related to VIA remained unclear; one said the process itself was unclear, while another said that they did not understand how to obtain acetic acid.

CONCLUSION

Cancer control is an emerging issue in Nigeria. The CCPC course developed by ASCO has become a useful medium for improving the competence of clinicians regarding cancer advocacy, prevention, and management. Findings from this research suggest that our intervention achieved its objective of enhancing the role of PCPs in cancer control. Such courses should be organized more frequently. Our project demonstrates that government agencies can make significant contributions toward improving cancer control in developing countries, especially with visionary leadership. To sustain the quality and impact of these courses, efforts should be made to explore blended-learning options. This involves incorporation of online training with face-to-face components.

Course participants will be surveyed again in early 2018 to evaluate their use of the knowledge and skills that were acquired through this course.

Data availability
The evaluation data used to support the findings of this study may be released on application to the corresponding author, who can be contacted at keguzo@gmail.com.

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