Cancer Education in Nigeria: Findings from a Community-based Intervention by a Physicians' Association

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Abstract Objectives: Cancer causes significant morbidity and mortality in Nigeria, but the country lacks an organized cancer control system. Low awareness of cancers among health professionals in the country contributes to weak cancer control capabilities and poor patient outcomes in Nigeria. This study describes findings from a community-based education intervention by Medical Women's Association of Nigeria and American Society of Clinical Oncology in Akwa Ibom State. Methods: Intervention was the Cancer Control in Primary Care Course. It featured didactic lectures with multimedia components (n=11), demonstrations and simulations (n=4), as well as plenary sessions (n=7). Topics covered included cancer epidemiology (breast/cervical), patient navigation, cancer management, inter-professional collaboration and discussions on Akwa Ibom cancer control framework. Participants (n=124) included physicians, nurses and health policymakers in the state. Mixed methods evaluation of the course formed the basis for data collection and analysis. Results: Ninety-two percent of participants (114/124) completed the evaluation. Majority (51%, 58/114) were general nurses, and the average number of years in practice was 20 (± 12.3) years. Evaluation of knowledge showed a median knowledge score of 21 (maximum = 25) points. "I have been able to [learn] about cancer in a more detailed way for the first time" (#7). Ninety-seven percent (111/114) planned to improve their practice patterns, especially regarding patient/public education on cancer prevention and advocacy for early detection. Identified barriers to knowledge implementation were lack of support from administration, colleagues and inadequate manpower. Conclusions: This workshop achieved its objectives of improving the cancer management competence of participants, while promoting inter-professional collaboration.

Keywords Medical Education, Medical Oncology, Nigeria, Multimedia, Primary Health Care, Cooperative Behavior

1. Introduction

Cancer has become an increasingly important source of morbidity and mortality in Nigeria. This development is largely associated with increasing life expectancy, improved survival from infectious diseases, as well as rise in risk factors such as cigarette smoking, physical inactivity, obesity and changing dietary patterns. [1-3] Jedy-Agba et al [1] observed that 4, 521 new cases of invasive cancers were reported in some population cancer registries between 2009 and 2010, with 66% of the cancer occurring in females. Common cancers in Nigeria include breast, cervical, prostate and colorectal cancers. [1, 2]

Despite the rising burden of cancers none of the states in Nigeria have organized national cancer control systems. [2, 4] This absence of an organized cancer control program contributes as well as low cancer-related awareness among health professionals (HCP) contribute to poorer patient outcomes in Nigeria. [5-9] Many providers have deficient knowledge and inappropriate beliefs about cancers. [8, 9] This culminates in poorer prevention practices, as only about 12% of physicians in a Nigerian city ever recommended cervical cancer screening for their patients. Current evidence has also highlighted the less-than-optimal cancer-related training of healthcare professionals in Nigeria. [10, 11]

In an effort to improve the cancer-related competence of healthcare professionals, the Medical Women's Association of Nigeria, Akwa Ibom State Branch (MWAN-AKS)

embarked on a continuing medical education intervention, called the Cancer Control in Primary Care (CCPC) course. This article seeks to describe the findings from evaluating this educational intervention. Other details about the CCPC course, planning of this intervention and MWAN-AKS have been published elsewhere. [12]

2. Methods

2.1. Course Description

The main learning objectives for course delegates were the following:

- To provide health care providers (physicians and nurses) working in primary care in Akwa Ibom State with essential knowledge on cancer control
- To provide evidence-based management strategies
- To promote multidisciplinary approach to help improve care for people dealing with cancers, especially for breast and cervical cancers
- To promote the formulation of a cancer control policy in the State
- Share knowledge and common experiences with others working in the field

We also sought to do a pilot research on the cancer-related experience and expectations of patients, health care professionals and health policymakers in Akwa Ibom State regarding cancer control. [12]

In order to achieve these objectives, the CCPC course was delivered using a combination of teaching methods. There were didactic lectures with multimedia components (n=11), demonstrations and simulations (n=4), as well as plenary sessions (n=7). The lectures included topics in cancer epidemiology, especially breast and cervical cancers. Lectures were simple, easy to understand and key concepts were explained exhaustively. Short videos, hands-on demonstrations with models and color images were used to improve retention and hold the attention of the participants. Interactive sessions were used to discuss issues such as cancer control framework, inter-professional collaboration and strategies for implementing the lessons from the course. Furthermore, there were real-life; expository accounts from a cancer survivor, relatives of cancer patients and health professionals who had managed cancer patients, on their experiences with cancer care in the State and Country. This helped demystify the disease spectrum and set the stage for open discussions.

The course was held over 3 days (February 17-19, 2016), with each day lasting about 8 hours. Each day of the course began with a summary and questions from the previous day. Course participants were health care professionals (physicians and nurses), primary health care coordinators in each of the 31 Local Government Areas in Akwa Ibom State as well as students (medical and nursing).[12] The faculty for the course included surgeon (1), family physician (1), Community Physicians (3), Anesthesiologist (1),

Obstetrician/Gynecologist (1) and Nurse (1).

2.2. Participant Recruitment

Course participants included physicians, nurses and health policy makers in Akwa Ibom State, especially people at the primary and secondary levels. A multi-pronged approach was used to recruit our target 120 participants from all the 31 Local Government Areas in the state. We worked with a number of governmental corporate and professional organizations to ensure equitable recruitment across the various disciplines and local government areas. These include Local Government Service Commission, the Hospital Management Board, the local branch of Nigerian Medical Association and Association of General and Private Medical Practitioners.

2.3. Study Design

Data collection followed a mixed method [13, 14] approach using a survey in the form of course evaluation, and also in-depth interviews. The survey also contained open-ended questions for comments. Information collected included demographic data on profession and cancer-related practice. We also collected data on knowledge gained during the course, intention to apply the knowledge, potential barriers to such application, and overall course evaluation. Answers to likert-like questions were summed to give scores on domains such as knowledge and attitude. The leadership of Medical Women's Association of Nigeria (Akwa Ibom State Branch) gave approval for use of the findings from this course. The University of Saskatchewan – Canada gave ethics approval for the study on cancer-related experiences and expectations of participants (BEH# 16-44), while the Ethics Committee at Akwa Ibom State Ministry of Health also approved the study. Quantitative data was analyzed using descriptive statistics, while an inductive thematic analysis was adopted in analyzing qualitative data, using computer-assisted qualitative data analysis software (Nvivo 11, QSR International, Cambridge MA). Common themes from responses to questions were coded by 2 researchers.

3. Findings and Discussion

A total of 114 course evaluation forms were completed, out of 124 unique participants, giving a response rate of 91.9% (114/124). The majority of participants (51%, 58/114) were general nurses from Akwa Ibom State, especially those working in Primary Health Care facilities across the 31 Local Government Areas in the state. The average number of years in practice was 20 (± 12.3) years. Table 1 shows the baseline characteristics of course participants. This description of the study participants (more nurses and individuals with >21 years in practice) is similar to what was reported by Nwogu et al, after conducting a similar workshop in Lagos, Nigeria. [10]

Table 1. Baseline characteristics of course participants

Attribute	Number (%)
Profession	
General physician	28 (24.6)
General nurse	58 (50.9)
Specialist physician	10 (8.8)
Specialist nurse	12 (10.5)
Others	6 (5.3)
Years in practice	
≤5 years	22 (19.3)
6-10 years	15 (13.2)
11-20 years	13 (11.4)
≥ 21 years	64 (56.1)
Practice setting (n=108)	
Public institutions	83 (80.6)
Private institutions	18 (17.5)
Both	2 (1.9)
Proportion of cancer-related practice (n=75)	
0%	22 (29.3)
1-25%	41 (54.7)
26-50%	5 (6.7)
>51%	7 (9.3)

Table 2. Descriptive Statistics of Self-Reported Knowledge Assessment Scores

	N	Minimum	Maximum	Median	Mean	Std. Dev.
Understand risk factors	111	0	4	4	3.69	.54
Understand genetics	111	0	4	4	3.63	.52
Ability to communicate	112	0	4	4	3.67	.54
Understand supportive care	113	0	4	4	3.46	.60
Ability to help survivors	108	0	4	4	3.45	.73

3.1. Evaluation of Knowledge

Five Likert-like questions about knowledge gained from the course were used to compute a knowledge assessment, with maximum score of 25. The competencies tested in the questions include cancer risk factors, cancer genetics, supportive care, communication and inter-professional collaboration. Table 2 shows the descriptive statistics of the individual components of the knowledge assessment scores, which include ‘understand risk factors’; ‘understand genetics’; ‘ability to communicate’; ‘understand supportive care’; and, ‘ability to help survivors’. The median knowledge score for our participants was 21 points (IQR=19-24). On the 5-point Likert-scale, this means that the average person *strongly agreed* that they learned something important.

In addition, participants were asked if they learned new skills on early detection of certain types of cancer. Ninety-eight 98% (100/102) and 99% (101/102) of participants agreed that they had gained new skills on breast and cervical cancers, respectively. Emergent themes from inductive analysis of open-ended comments regarding the most important things participants learned were coded under three major headings; ‘cancer management [skills]’, ‘[inter-professional] collaboration’ and ‘hope for cancer’. Some of the comments on cancer management skills include:

“I have been able to hear about cancer in a more

detailed way for the first time” (#7); “Cancers are on the increase and there is a need to reposition myself in the fight against cancers” (#14) as well as “The importance of creating awareness about cancers to the masses, including preventive care, predisposing causes and major management of cancer client” (#2).

Other questions focused on their attitude towards the knowledge they gained and their intent to apply them. Ninety-seven percent (111/114) of respondents said they planned to do make changes to their practice patterns as a result of attending the course (Figure 1).

Figure 1. Self-reported intention to make changes to practice

References made by participants about specific areas where they would make specific areas changes showed the following trends: improved cancer management practices, including prevention early and detection (59); improved public awareness and education (46); inter-professional collaboration (17); improved patient navigation, including prompt referral (17)

"I intend to sensitize my other colleagues who are not hear and plan for community sensitization and screening" (#12); "Intensify health education of people (men and women) on cancer prevention and control at the facility level and in the communities" (#26); "Since a cancer patient cannot be managed singlehandedly I am now ready to play my part as a nurse and refer to other sectors" (#50); and "I have to follow up any case I refer to a secondary/tertiary center. I have to be a navigator to my patients." (#73)

It is important to highlight that a significant number of participants emphasized inter-professional collaboration as a key factor for moving cancer control forward in Akwa Ibom State. This perspective comes against a background of inter-professional conflicts which have characterized the relationships among Nigerian health professions in recent times.[15] It is possible that this new perspective of collaboration stemmed from the various workshop sessions/speakers who emphasized the concept. Figure 2 shows the emergent themes from the question focusing on areas of intended change.

Figure 2. Emergent themes from 'areas of intended change'

Sixty-percent (68/114) identified potential barriers to implementing the knowledge gained. Such potential barriers include lack of support from administration (47); lack of staff (35); lack of support from colleagues (26); lack of time (15); Participants were also asked to rate a variety of statements related to their workshop experience. Almost every respondent (99%, [110/111]) said they learned what they had expected to learn at the course; 89% (97/109) thought that sufficient time was allowed for interactive dialogue with faculty; while 85% (93/110) agreed that

sufficient time was allowed for networking with other participants.

The course evaluations also highlighted areas for enhancement for future courses. The most frequently cited suggestion was to include other healthcare professionals in the courses (15); two of these specifically suggested including family planning supervisors and adolescent health focal persons. In addition, respondents suggested: holding courses more frequently (12); holding a longer course (for up to 5 days) (10); increasing the time for practical training (7); and providing handouts (5). Very few respondents said that anything remained unclear after the course. Of those who did, two said genetics and the genetic aspect of cancer development remained unclear. In addition, one respondent each said that taking samples remained unclear, and that affordability/availability of acetic acid for VIA was not clear.

We compared the outcome of the CCPC course in Uyo with previous editions of the course in other parts of the world, in terms of course objectives. The objectives were:

- Better Understand Cancer Risk Factors
- Communicate with Patients about Reducing Risk of Cancer
- Provide Supportive Care to Patients Receiving Cancer Treatment
- Refer Patients as Needed to Specialists
- Provide Care to Cancer Survivors (unique to CCPC – Uyo)

Figure 3 shows the results of the comparison on all objectives. The course in Uyo had ratings which were similar to those of previous courses. We performed lower in the aspect of supportive care, but did well in the aspect of referral. Evaluation of understanding regarding the care of survivors is a metric that is unique to CCPC-Uyo.

Figure 2. Comparison of CCPC-Uyo with previous CCPC events

3.2. Study Limitations

One of the limitations of this study is that we did not conduct an in-depth a pre/post training knowledge assessment. This makes it difficult to measure actual knowledge change with greater accuracy. The findings reported reflect the self-reported perception of competence

by participants based on what they learned.

4. Conclusions

Cancers continue to cause significant burden in the Nigerian society. The low cancer-related awareness among healthcare providers contributes to poorer patient outcome, in combination with other challenges. Continuing medical education interventions, like the CCPC, provide a good starting point to improve cancer control in Nigeria and other resource-limited settings. Our findings show that this course achieved its objectives, while improving the self-reported knowledge assessment of participants regarding cancer management. It was a very cost-effective method of delivering cancer education and led to the building of important networks among clinicians and policy makers across Akwa Ibom State. We were also able to identify local priorities for cancer control. Findings from this workshop can be useful in planning future cancer education events in Akwa Ibom State and other resource-limited settings. Details about how this course was organized to become successful have been published elsewhere [12], and could be useful for other people who might want to adopt this approach in cancer education.

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The authors declare that they have no potential conflict of interest which might bias the outcome of the study.

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