ORIGINAL ARTICLE

Community Pharmacy Practice Towards Cancer Health and the Need for Continuous Cancer Education: Ghana Situation

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ABSTRACT

Traditionally, cancer patients are managed mostly within the secondary healthcare system. As the burden of the disease increases, secondary care has to work with the primary care to provide good support for healthy population, the patients, etc. The community pharmacists are one of the primary care providers because they are the most accessible healthcare providers in the community. For this group to meet these demands of an evolving new role and improve the health outcomes, continuous professional development (CPD) is essential. This study was set to gather information about the professional practice of Ghanaian community pharmacists on cancer health, their interest and importance in receiving continuous education on cancer.

Methods: A cross-sectional study was conducted using electronic questionnaires.

Key Findings: Majority (67.1%) spent less than or ten minutes of their time interacting with patients and 70.8% referred patients who consistently request for medication to a hospital. Majority of participants (43.4%) have never attended cancer continuous education and 67.6% indicated their interest in receiving cancer continuous education in the future. There was statistically significant difference between the educational level and professional interaction with cancer patients (p=0.004). Provision of cancer printed materials (p=0.00) and interest in attending cancer continuous education in the future (p=0.007) were also significantly affected by educational level. 'Handout/booklet with self- test' was the preferred mode of delivery for cancer education. **Conclusion:** community pharmacists strongly play a significant role in cancer health through their professional practice. The challenges observed can be overcome through a well-organized cancer continuous education using participants preferred medium of delivery.

Key words: Cancer, professional practice, continuous professional development, cancer education, cancer health, community pharmacists, Ghana

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INTRODUCTION

Cancers are one of the major causes of death globally with an estimated 8 million deaths per annum. According to the cancer factsheet of the World Health Organization, the burden of disease has more than doubled in the last three decennium (The World Health Organization, 2015). The burden of disease in Ghana has not been statics. Cancer Incidence and Mortality Worldwide, estimates that 12,700 cancer deaths occurred in 2008, with 5,800 deaths in men and 6,900 deaths in women. Traditionally, cancer patients are managed mostly within the secondary care (a second tier of health system, in which patients from primary health care are referred to specialists in higher hospitals for treatment). As the burden of the disease increases, secondary care has to work with the primary care (the first level of contact between patients and families with the health system) to provide good support for healthy population, the patients, their caregivers and families. The community pharmacy is one of the primary care sites that can provide such support. This is due to their traditional characteristics, which include their presence in communities of different sizes and locations, their extended working hours and provision of free consultations. These characteristics have made them the most accessible health care providers. Cancer care mostly requires the technical expertise, ability and skills of specialty physicians such as medical oncologists, surgeons, and radiation oncologists. However, community pharmacists may play an important role because in the community, they are often the first point of contact for healthy populations and patients in obtaining health information, screening, screening information, reporting and evaluation of their symptoms, etc. They may make referrals, coordinate care, and manage symptoms or comorbid conditions. For community pharmacists to meet these demands of an evolving new role and improve the health outcomes of patients, continuous professional development (CPD) is essential. Contextualized CPD in cancer education for community pharmacists will improve their knowledge, skills, changes practice, enhances professional development, attitudes, behaviors, and patient outcomes. To our knowledge, there are no published literature or reports examining the practices of community pharmacists towards cancer health and their needs for continuous cancer education in Ghana. We aim at gathering information about the professional practice of Ghanaian community pharmacists on cancer health, their interest and importance in receiving continuous education on cancer.

METHODS

Research design

The aims of the study were addressed in a descriptive cross-sectional electronic survey. Approval of the study was granted by the Committee on Human Research, Publication and Ethics, Kwame Nkrumah University of Science and Technology, Ghana (Ref: CHRPE/AP/229/17) and Biomedical Research Ethics Committee, University of KwaZulu-Natal, South Africa (Ref No: BE437/17).

Study population

The study population consisted of registered practicing community pharmacists from the ten regions of Ghana (Northern, Upper East, Upper West, Brong-Ahafo, Eastern, Western, Greater Accra, Ashanti, Central and Volta).

Sample size

A calculated sample size of 435 with 95% confidence interval and a marginal error of 5% was ideal. All community pharmacists who took part in the survey were registered and in good standing with the Pharmacy Council of Ghana at the time of the study.

Survey questionnaire

The investigators of the study could not find any published instruments

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examining the practices of community pharmacists towards cancer health and the need for continuous cancer education in Ghana. The investigators designed a questionnaire to gather the necessary data on community pharmacists in Ghana. The study questionnaire was disseminated to health personnel working in the field of oncology (medical oncologist-1, radiation oncologist-1, clinical pharmacist-2, oncology nurse-1) to assess its content validity and readability. Minor changes were made based on the feedback received. Preliminary test was conducted on 10 community pharmacists following which some questions were modified to improve clarity. This group of participants were excluded from the study. Finally, a 14-item electronic administered questionnaire was developed. The first section of the questionnaire determined community pharmacists' sociodemographic (age, gender, religion), educational level and years of practice [Table 1]. The second section of the questionnaire contained questions to determine community pharmacist professional practice and interaction with patients [Table 2]. The final section contained questions to determine their interest and importance in receiving cancer continuous education [Table 3].

Data collection

A web link to the internet-based questionnaire and summary of participants information was posted on social media platforms of the various regional pharmaceutical society of Ghana, Lady Pharmacist Association of Ghana and various pharmacy groups in the country. This was followed by weekly telephone reminders to the regional representatives of the society for reposting of the questionnaire on their regional platforms. The questionnaire contained 14 questions written in Active Server Page and used JavaScript to verify the authenticity of responses. To complete the survey, community pharmacist's login with their registration number as pharmacist in Ghana. Participants answer questions by clicking in specific buttons that represented points on a Likert scale and enter free text in specific boxes. Participants scrolled down the entire questionnaire and finally clicked on the 'submit' button when the survey is completed.

Data analysis

Data analysis was performed using Statistical Package for Social Sciences (SPSS) version 22.0 for windows (SPSS Inc., Chicago, Illinois). Simple descriptive analysis was used to describe how community pharmacists collectively responds to individual questions. Chi-square test was used to determine the association between the sociodemographic characteristics of community pharmacists and the various variables.

RESULTS

Over a 3-month period (from July to September 2018), we collected 510 surveys from the survey web page. A total of 435 were eligible for analysis. Seventy-five (n=75) were excluded from the analysis because they were incomplete. The sociodemographic characteristics of participants are summarized in Table 1. Majority (43.0%) of the participating pharmacists who took part in this study falls within 31-40 years age category with 58.6% males and 41.4% females respectively. All of them are religious with Christianity (87.8%) being the dominant type. Majority holds Bachelor Certificates in Pharmacy (61.1%) and 47.6% of the participants had less than six years of practice at the time of this study was being conducted.

Professional practice

Table 2 presents the participant's professional practice and interaction with cancer patients. It was observed that majority (67.1%) spent less than or ten minutes of their time on interacting with patients. Most patients or clients (42.8%) do not seek advice from community pharmacists on cancer symptoms. Community pharmacists (47.8%) who took part in the survey never provided printed cancer materials to their clients. Only 30.6% provided them upon request by clients. Majority of participants (70.8%) referred patients who consistently request for one medication or class of medication for the treatment of a recurrent condition to a hospital or medical center.

Information on cancer continuous education

Table 3 provides information on community pharmacists participation, interest and importance in receiving cancer continuous education. Majority of participants (43.4%) have never attended cancer continuous education. Some of the participants (21.8%) who took part in the survey, have received university education training on cancer. Most participants (55.2%) rated cancer continuous education as important and 67.6% of the participants who took part in the survey indicated their interest in receiving cancer continuous education in the future.

Preference for cancer education

Table 4 indicates community pharmacist's preference in receiving cancer continuous education. Ranking from 1 to 5, most community pharmacists (n=280) ranked 'Handout/booklet with self- test' as the highest rank.

Relationship of demographics and professional practice and importance of continuous education of community pharmacists

Bivariate correlation analysis of continuous variables, Table 5 showed that there is a significant positive association between participants age and provision of cancer printed materials to cancer patients or clients (p=0.004). Table shows that there is a statistically significant difference between the educational level and time community pharmacists spent on professional interaction with cancer patients (p=0.004). Provision of cancer printed materials (p=0.00) and interest of community pharmacists in attending cancer continuous education in the future (p=0.007) were significantly affected by their educational

Table 1: Demographic characters

Parameter	Frequency	Percent
Total	435	100.0
Age		
20-30	120	27.6
31-40	187	43.0
41-50	90	20.7
Above 50	38	8.7
Gender		
Male	255	58.6
Female	180	41.4
Religion		
Christian	382	87.8
Moslem	51	11.7
Traditional	2	.5
Level of Education		
B. Pharm	266	61.1
PharmD	13	3.0
Masters	119	27.4
PhD	37	8.5
Years of Practice		
≥5	207	47.6
6-10	97	22.3
11-15	59	13.6
16-20	31	7.1
>20	38	8.7
Missing	3	0.7

Table 2: Professional practice and interaction with patients

Parameter	Frequency	Percent (%)
Total	435	100.0
Time on professional interaction with cancer patients		
≤ 10	292	67.1
11-25	84	19.3
26-50	32	7.4
51-75	18	4.1
76-100	9	2.1
No. of patients per month who seek advice on Cancer symptoms		
None	186	42.8
1-2	172	39.5
3-5	48	11.0
6-8	15	3.4
>8	14	3.2
Do you provide cancer related printed material for patients?		
Never	208	47.8
Only on request	133	30.6
Occasionally	70	16.1
Frequency	19	4.4
Always	5	1.1
Have you ever referred any patient who consistently request for one medication/ class of medication for the treatment of a recurrent condition?		
Yes	308	70.8
No	89	20.5
Not Sure	35	8.0

Table 3: Cancer continuing education

Parameter	Frequency	Percent (%)
Total	435	100.0
Have you ever attended any continuous education training on cancer?		
Yes	151	34.7
No	189	43.4
Not Sure	67	15.4
Missing	28	6.4
Where did you receive the training?		
CPD	66	15.2
In-Service Training	74	17.0
Online Training	37	8.5
University Training	95	21.8
Missing	163	37.5
How will you rate the importance of continuous education in cancer symptomatology and detection?		
Very Important	240	55.2
Important	84	19.3
Slightly Important	60	13.8
Not Important	22	5.1
Missing	29	6.7
Are you interested in attending continuing education courses on cancer in the future?		
Yes	294	67.6
No	56	12.9
Not Sure	59	13.6
Missing	26	6.0

level. A positive association was established between the number of years of work experience and provision of cancer printed materials by community pharmacists to cancer patients or clients, p=0.002.

DISCUSSION

Patients diagnosed with cancer look towards their healthcare providers to meet several of their information and support needs.[1]

Table 4: Educational Approaches by Preference/Priority

	RANK 1	RANK 2	RANK 3	RANK 4	RANK 5
Handout/booklet with self-test	280	-	-	-	-
Continuing education journals	-	246	-	-	-
Audiovisual slide or videotape series	-	-	137	-	-
Lecturer	-	-	-	133	-
Clinical demonstration course	-	-	-	-	128
Study clubs	-	-	-	-	-
Computer- based programs	-	-	-	-	-
Conference call with expert in the field	-	-	-	-	-
Online	-	-	-	-	-
Others: specify	-	-	-	-	-

Table 5: Distribution of Parameters by Age

Parameter	Age Category					P-Value
	Total	20-30	31-40	41-50	Above 50	
Total	435(100.0%)	120(27.6%)	187(43.0%)	90(20.7%)	38(8.7%)	
Provision of cancer printed materials						
Never	208(47.8%)	67(55.8%)	87(46.5%)	33(36.7%)	21(55.3%)	0.004
Only on request	133(30.6%)	35(29.2%)	64(34.2%)	28(31.1%)	6(15.8%)	
Occasionally	70(16.1%)	16(13.3%)	29(15.5%)	18(20.0%)	7(18.4%)	
Frequency	19(4.4%)	2(1.7%)	6(3.2%)	7(7.8%)	4(10.5%)	
Always	5(1.1%)	0(0.0%)	1(0.5%)	4(4.4%)	0(0.0%)	
Referral of patients						
Yes	308(70.8%)	82(68.3%)	129(69.0%)	64(71.1%)	33(86.8%)	0.570
No	89(20.5%)	27(22.5%)	41(21.9%)	19(21.1%)	2(5.3%)	
Not Sure	35(8.0%)	10(8.3%)	15(8.0%)	7(7.8%)	3(7.9%)	
Missing	3(0.7%)	1(0.8%)	2(1.1%)	0(0.0%)	0(0.0%)	
Attendance to any continuous education on cancer						
Yes	151(34.7%)	45(37.5%)	66(35.3%)	28(31.1%)	12(31.6%)	0.827
No	189(43.4%)	47(39.2%)	86(46.0%)	40(44.4%)	16(42.1%)	
Not Sure	67(15.4%)	18(15.0%)	26(13.9%)	17(18.9%)	6(15.8%)	
Missing	28(6.4%)	10(8.3%)	9(4.8%)	5(5.6%)	4(10.5%)	
Interest in attending cancer continuous education in future						
Yes	294(67.6%)	84(70.0%)	131(70.1%)	57(63.3%)	22(57.9%)	0.726
No	56(12.9%)	13(10.8%)	26(13.9%)	11(12.2%)	6(15.8%)	
Not Sure	59(13.6%)	14(11.7%)	22(11.8%)	16(17.8%)	7(18.4%)	
Missing	26(6.0%)	9(7.5%)	8(4.3%)	6(6.7%)	3(7.9%)	

It is also important to note that, patients' perceptions of the quality of the healthcare they received is dependent on the quality of their interactions with their healthcare provider.[2] Results from the study indicates that majority of community pharmacists spend less than or 10 minutes of their time on professional interactions with cancer patients or clients. Generally, all community pharmacists surveyed, spent time on professional interaction with cancer patients. This will promote patients' expectations and satisfaction in areas directly related to cancer care. Also, the level of education of community pharmacists positively influences their professional interaction with cancer patients. A diagnosis of cancer may bring uncertainty, fear, and loss that can be relieved by information.[3] Study has shown that majority of cancer patients seek information because they want to be well informed about their illness.[4] Most community pharmacists who took part in the study reported that no patient or client had visited the pharmacy to seek information cancer, possible signs and symptoms on cancer, etc. This may indicate lack of client or patient's knowledge on the type of information and services that community pharmacists can provide. Also, insufficient knowledge on cancer as recorded in our earlier studies might have contributed to patients' unwillingness to seek information on cancer from their community pharmacists. There is also the possibility of patients accessing such information from other sources such as family members, non-orthodox practitioners, etc. However, in 1980, Ingelfinger, an oncologist and editor of the New England Journal of Medicine, reported that when he was diagnosed of cancer, he did not want all available information or have to deal with the doubt of the different treatment choices offered. This suggest the complexity of information seeking behavior of certain patients or cancer patients. Hence seeking information may be disregarded by certain patients. A review by Davis *et al.* established that one of the most effective means of providing education to patients or clients is the provision of printed materials.[5] The supply of cancer education materials is also known to be the best component of patient-centered cancer care.[6] Majority of participants never supply educational materials on cancer. This was followed by provision of these materials to client upon request. In Ghana, literacy rate among adults (aged ≥ 15 years)

is 76.60%.[7] The remaining adult population has low literacy skills or are illiterate. This indicates that many individuals cannot understand cancer health information and therefore cannot act upon them. Also, studies have indicated that reading ability is often not consistent with education level or the literacy level and is often several grades. [8] This might also explain why community pharmacists only provide cancer materials upon request. Additionally, the number of years of experience, educational level and age of community pharmacist has an influence on the behavior of community pharmacists towards provision of cancer printed materials. As these parameters increases, participants gain enough knowledge and information about the people in the community, hence the importance of providing these materials. The cost of production of these materials can also affect the business aspect of the practice, hence affect provision of these materials to clients. Nevertheless, a study done in Canada suggested multi-language cancer education materials as a way of improving patients or clients need for caner educational materials. It however emphasizes the need to consider alternative methods to improve receipt and understanding of printed cancer education materials for diverse audiences.[9-15] Community pharmacists have a range of options in response to client's healthcare needs. These include advice on disease management, discussion of important health promotion activities, sales of suitable medications, recommend assistance of another healthcare professional, etc. Most participants agreed to referring patients with recurrent symptoms to a hospital or medical center. This might depend on a range of factors, including nature of symptoms presented and knowledge about symptoms. Community pharmacists' knowledge, confidence and competence in assessing the potential seriousness of cancer symptoms might be low due to knowledge deficit. Hence client's concerns and expectations from participants might have contributed to the results obtained. In Ghana, the pharmacy regulatory authority (Pharmacy Council) require a set number of continuing education credits per year as a requirement of licensure renewal.[16-22] Majority of community pharmacists have never attended cancer continuous education before. This might be related to reasons such as lack of interest in the field of cancer, infrequent organization of continuous education on cancer, lack of motivation on cancer continuing education, individual inabilities to participate, etc. Nevertheless, community pharmacists who have received continuous education on cancer was by university training. With advances in cancer management and care, there is obsolescence of knowledge and professional skills in a very short period of time. Hence basic university training or education is no longer sufficient for a whole life of practice. Also, with emerging trend of evidence-based practice, community pharmacists need to constantly update their knowledge and professional abilities. Therefore, continuing education other than university training in cancer is essential to guarantee high quality community pharmacy practice in the area of cancer care. Majority of participants rated the importance and interest in cancer continuous education very high. This shows that community pharmacists recognize the need for regular education on cancer. This is important because they are the biggest health profession who are in frequent contact with the public. Hence the need for regular education on symptoms, diagnosis and treatment of cancer, with particular emphasis on the importance of early diagnosis of cancer. Several continuous professional development formats are available today but the approach or format chosen by most community pharmacists in order of preference or priority was 'handout/booklet with self-test'. This approach or learning method will allow community pharmacists to learn at their own pace and provides the most up-to-date information to their client.

CONCLUSION

This research represents the first attempt to collect information about the professional practice of Ghanaian community pharmacists on cancer health. It can be concluded that community pharmacists strongly play a significant role in cancer health through their professional practice. The challenges observed can be overcome through a well-organized cancer continuous education using participants preferred medium of delivery.

Study strengths and limitations

Strengths of this study include its high response rate and nationally representative sample. Some of the limitations are, the variables are based on community pharmacist self-report, which may be influenced by inclination to provide socially desirable responses, acquiescence (tendency to agree) and extremity (tendency to use extreme ratings). Also, the findings cannot be generalized beyond our sample. limited internet access might have excluded certain community pharmacists from participation because it was an electronic survey.

DECLARATIONS

Conflict of interest

The authors declare that they have no conflicts of interest to disclose.

Availability of data and materials

The datasets generated during the study are available in figshare repository which can be accessed from: https://figshare.com/s/e1942f14eee092240c6b

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Ethical approval

The study was approved by both Committee on Human Research, Publication and Ethics, Kwame Nkrumah University of Science and Technology, Ghana (Ref: CHRPE/AP/229/17) and Biomedical Research Ethics Committee, University of KwaZulu-Natal, South Africa (Ref No: BE437/17).

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Authors' contributions

All authors (KM, FO and VB) have contributed significantly to the intellectual content of this study. KM, FO and VB have substantially contributed to the conception of the research idea; design of the study; collection, analyses, and interpretation of data; and writing and/or revising the manuscript. All authors read and approved the final manuscript.

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