

Cancer health promotion in Ghana: A survey of community pharmacists' perception and barriers

J Oncol Pharm Practice
2020, Vol. 26(6) 1361–1368
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DOI: 10.1177/1078155219893742
journals.sagepub.com/home/opp


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Abstract

Available data indicate that cancer has emerged as an important cause of morbidity and mortality in Ghana. Globally, one of the interventions aimed at disease prevention is through health promotion. To our knowledge, there are no published reports examining the practices of community pharmacists towards cancer health promotion in Ghana. This study was set to examine the perception and perceived barriers of community pharmacists in the provision of cancer health promotion services in Ghana.

Methods: A cross-sectional study was conducted using electronic questionnaire to assess the perception and perceived barriers of Ghanaian community pharmacists towards provision of cancer health promotion.

Key findings: The majority of community pharmacists (77.30%) believe that cancer health promotion is an important part of their daily practice. The survey participants were more likely to have a positive perception of the role of the pharmacist if they were older, male, Christian, or had completed the PharmD program ($p < 0.05$ for all parameters). Lack of cancer educational materials (69%) was the major perceived barrier in providing cancer health promotion services.

Conclusion: Ghanaian community pharmacists recognise to play an important role in the provision of cancer health promotion service.

Keywords

Cancer, perception, barriers, health promotion, community pharmacists, Ghana

Date received: 19 October 2018; revised: 4 November 2019; accepted: 18 November 2019

Introduction

Globally, non-communicable diseases are responsible for most deaths and cancer is expected to rank as the major cause of death and the single very important barrier to increasing life expectancy in every country of the world in the 21st century.¹ It was responsible for 8.93 million deaths in 2016.² Approximately 70% of deaths from cancer occur in low- and middle-income countries (LMIC), thus making it a major public health challenge that undermines social and economic development throughout the developing world.³

According to GLOBOCAN, an estimated 16,000 cases of cancer occur annually in Ghana, which is classified as LMIC.⁴ These cancer statistics are obtained from institutional reports or modelled data. Unfortunately, due to methodological gaps in data collection and uncertainties in modelling, statistical

estimates are likely an under-estimate of the true cancer incidence. Regardless, it is well recognized that cancer is an important cause of morbidity and mortality in Ghana.⁵

A greater focus on global oncology by the international health community, has been spurred by the increasing burden of the disease in LMICs.^{6–8} This is observed in the third sustainable development goal

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(SDG), a United Nations initiative which aims to “by 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.”⁹

One of the interventions aimed at disease prevention (e.g. smoking cessation, vaccination) or identifying ill individuals (e.g. screening and case finding) or maintaining health of those with non-communicable diseases (e.g. cancer, diabetes, and hypertension) is through health promotion.^{10,11}

Over the years, there has been a shift in the function of community pharmacists from product-oriented dispensing towards playing a greater role in public health.^{12,13} The benefits of pharmacy services on a wide range of important public-health issues have been shown in many studies.^{10,14,15} The American Society of Health-System Pharmacists (ASHP) recommend that all practicing pharmacists participate in global, national, regional, and institutional efforts to promote public health.¹⁶ The World Health Organization (WHO) also advocates the participation of pharmacists in health promotion campaigns to raise awareness on health issues and disease prevention.¹⁷

Community pharmacies are considered as a favourable place for reliable disease prevention for a large proportion of the population because pharmacists are easily accessible, have frequent contact with the public, have extended opening hours, provision of free consultation, and are widely distributed geographically.^{18–20}

The role of the pharmacists’ in cancer care has increased¹⁹ with opportunities available to promote, facilitate and provide cancer-related health promotion activities.¹² Community pharmacist can create awareness by promoting screening activities or providing cancer screening, displaying posters, provision of individualized counselling, referring patients to special cancer centres, organization of community-based educational programs,¹⁹ etc. To our knowledge, there are no published reports examining the practices of community pharmacists towards cancer health promotion in Ghana. Moreover, information regarding their perception and barriers towards cancer health promotion is lacking.

Therefore, this study was set to examine the perception and perceived barriers of community pharmacists in the provision of cancer health promotion services in Ghana.

Methods

Study design

The present study was a cross-sectional survey using calculated sampling method to assess Ghanaian pharmacists’ perception and perceived barriers to providing

cancer health promotion service in the community pharmacies. The study was approved 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 tool

The investigators of the study reviewed literatures and could not find any known and validated survey tool that can particularly determine the perception of community pharmacists towards cancer health promotion in Ghana. Nonetheless, a questionnaire was developed by the investigators based on the available studies^{18,19,21} and expert opinions on perception, barriers, and demographics. It consisted of three parts: Part 1: five questions related to socio-demographics which were open-ended questions; Part 2: eight items to evaluate community pharmacists’ perception about their professional role in providing cancer health promotion services with 3 point Likert scale responses (1 = agree, 2 = disagree, 3 = don’t know); Part 3: nine perceived barriers limiting involvement in cancer health promotion services with 3 point Likert scale responses (1 = yes, 2 = no, 3 = not sure). An open-ended question was designed to capture any perceived barriers not stated in the Likert items. Content validity and readability of the questionnaire were evaluated by health personnel’s working in the field of oncology (medical oncologist = 1, radiation oncologist = 1, clinical pharmacist = 2, oncology nurse = 1). Minor modifications were made based on the responses received. Ten community pharmacists were selected purposively to fill out the questionnaire and provide their comments on each item. This was also useful to determine if participants’ level of understanding is the same for each questionnaire. Also, to determine how easily the questionnaire can be understood (Cognitive debriefing). The questionnaire items were modified based on the comments. This pre-test group were excluded from the main study.

Sample size

Sample size was calculated using a 95% confidence interval and a marginal error of 5%, using a standard formula for known population size for a cross-sectional study.²² A sample size of 400 was calculated; however, because convenience sampling was used to recruit participants, the sample size was increased by 10% to increase the statistical power. Hence, the total participants calculated for the study was 440 participants. Accordingly, 436 community pharmacists in good

standing with the Pharmacy Council of Ghana took part in the study.

Participants

The survey was advertised to all pharmacists registered with the Pharmacy Council of Ghana as community pharmacists via posts on social media platforms of the various regional Pharmaceutical Society of Ghana. This was followed by weekly telephone reminders to the regional representatives of the society for reposting of the questionnaire on their regional platforms. Community pharmacists were requested to complete the survey via an electronic link to the web host. Based on the recruiting method and to enable the sample size to be achieved, the survey was open for three months between July and September 2018.

Data analysis

Descriptive statistics and Chi-squared tests were used to analyse data (p value < 0.05 was considered as significant). Statistical Package for Social Sciences (SPSS) version 22.0 for windows (SPSS Inc., Chicago, Illinois) was used in data analysis. Perception of pharmacists towards cancer health promotion was measured by an 8-item Likert type perception scale with three-point responses ranging from agree to I don't know. The total perception score ranged from 0 to 16 points, where higher values suggest more favourable perception among participants. The reliability assessment of the different section of the questionnaire following data collection revealed a Cronbach's alpha value of 0.74 for the perception scale (8 items). Data on sociodemographic, perception, and barriers to cancer health promotion activities were analysed and the results were described in terms of frequencies, percentages, and means. Pearson's Chi-square test of independence was employed to analyse group differences (based on socio-demographic factors) on perception and barriers towards cancer health promotion.

Results

Participants

A total of 510 questionnaires were saved and submitted electronically on the survey web page. A total of 436 were eligible for analysis. The remaining ($n = 74$) were excluded from the analysis because only the demographic section of the questionnaire was complete. Table 1 summarizes the sociodemographic characteristics of the participants. Overall, the study population represented a wide variety of community pharmacists according to age, gender, religion and years of community pharmacy practice. The mean age was

Table 1. Demographic characteristics of participant.

	N (%)
Age	–
Age categories	
20–30	111 (25.5)
31–40	173 (39.7)
41–50	80 (18.3)
51–60	28 (6.4)
61–70	6 (1.4)
Missing	38 (8.7)
Gender of participants	
Male	254 (58.3)
Female	181 (41.5)
Missing	1 (0.2)
Religion of participants	
Christian	385 (88.3)
Muslim	49 (11.2)
Traditionalist	1 (0.2)
Missing	1 (0.2)
Highest level of education	
B. Pharm	265 (60.8)
PharmD	14 (3.2)
Masters	120 (27.5)
PhD	37 (8.5)
Years of practice	
<6	192 (44.0)
6–10	87 (20)
11–15	64 (14.7)
16–20	29 (6.7)
21–25	14 (3.2)
>25	22 (5.0)
Missing	28 (6.4)

42.58 ± 20.08 . The largest age grouping was the 31–40-year age range (39.7%). The male gender constitutes 58.30% of the total participants. Additional majority of the study participants (88.3%) were Christians. The highest educational level of most of the participants (60.80%) was a Bachelor of Pharmacy degree. Lastly, 44% of the participants have had less than six years of experience in community pharmacy-practice.

Perception

Pharmacists' perception towards cancer health promotion was generally positive on all items. The mean score for participants perception was 6.10 (± 1.52) out of a maximum score of 8 points classifying the overall perception as favourable. Majority (77.3%) perceived integrating cancer health promotion into their daily practice is important for them as community pharmacists. The highest disagreement statement (26.4%) was on participants inviting other healthcare professional

Table 2. Perception of participants regarding cancer health promotion.

Statement	Agree N (%)	Disagree N (%)	Don't know N (%)	Missing N (%)
Pharmacists should be involved in cancer health promotion.	335 (76.8)	57 (13.1)	20 (4.6)	24 (5.5)
Integrating cancer health promotion into daily practice is important	337 (77.3)	50 (11.5)	25 (5.7)	24 (5.5)
It is pharmacist's responsibility to provide cancer counselling and this can improve my professional status.	328 (75.2)	59 (13.5)	25 (5.7)	24 (5.5)
Distributing cancer education materials is important in pharmacy.	327 (75.0)	59 (13.5)	26 (6.0)	24 (5.5)
Pharmacist can influence patients to adopt cancer screening and detection practices.	325 (74.5)	59 (13.5)	26 (6.0)	26 (6.0)
Pharmacists should invite other healthcare professionals to provide cancer education in the pharmacy.	257 (58.9)	115 (26.4)	39 (8.9)	25 (5.7)
Patient demand to get counselling on cancer screening and early detection from the pharmacist.	266 (61.0)	93 (21.3)	45 (10.3)	32 (7.3)
Patient appreciate pharmacist's effort to counsel them about cancer.	312 (71.6)	49 (11.2)	47 (10.8)	28 (6.4)

to provide cancer education in the pharmacy. The rest of the response is represented in Table 2.

Summary from Table 3 indicates that age (0.026), gender (0.006), religion (0.001) and educational level (0.03) significantly affected the perception of participants on cancer health promotion. The number of years of practice as a community pharmacist did not have any effect on participants' perception.

Perceived barriers

Several barriers were identified by study participants. Lack of cancer educational materials (69%) was the major barrier in providing cancer health promotion services. In addition, lack of adequate knowledge, training and personnel were also reported to be the most identified barriers (>50% rated). Other perceived barriers such as lack of interest in oncology, motivation, incentives, time and gender were recognised by less than 50% of the participants as barriers to cancer health promotion. These are presented in Table 4.

Discussion

Recently, there has been a change in the traditional role of community pharmacist from product-oriented services towards playing a greater role in public health.¹⁸ Globally, community pharmacists are now engaged in the provision of several health promotion activities such as medication therapy management; cardiovascular risk screening and diabetes screening.^{23,24} Studies have suggested, community pharmacists and the

general public would welcome much involvement of community pharmacies in health-promotion and preventive services.^{25,26}

As shown by the findings of the study, majority of community pharmacists in Ghana are willing to provide cancer health promotion services to the public. The findings demonstrate that the majority agree they should be involved by providing cancer counselling, distributing cancer education materials and inviting other healthcare professional to provide cancer education at the pharmacies.

Nowadays, pharmacists in Ghana are more involve in medical outreach programmes where they provide certain services like screening for diabetes, hypertension, deworming, etc. to the communities. Their perception about providing cancer counselling might be due to their changing role of dispensing to now creating awareness about non-communicable diseases like cancer, eradication of myths and misconceptions.

Patients often have difficult time understanding and interpreting cancer-related health information. Several studies have confirmed that patients have challenges in understanding medical information especially on cancer.²⁷⁻³⁰ One of the important roles of community pharmacists in Ghana is to provide drug information and disease information services to the community since they are the most easily accessible healthcare providers in the community. To enhance this service and improve patient understanding and recall of information, educational materials may be a useful and low burden method to convey cancer information.

Table 3. Association between demographic factors and community pharmacists perception on cancer health promotion.

Parameter	Perception of pharmacists			p-value
	Good	Poor	Total	
Total	357 (82.1%)	78 (17.9%)	435 (100.0%)	
Age				
20 to 30	96 (80.0%)	24 (20.0%)	120 (27.6%)	<0.05
31 to 40	156 (83.4%)	31 (16.6%)	187 (43.0%)	
41 to 50	68 (75.6%)	22 (24.4%)	90 (20.7%)	
Above 50	37 (97.4%)	1 (2.6%)	38 (8.7%)	
Gender				
Female	137 (76.1%)	43 (23.9%)	180 (41.4%)	<0.05
Male	220 (86.3%)	35 (13.7%)	255 (58.6%)	
Religion				
Christian	323 (84.6%)	59 (15.4%)	382 (87.8%)	<0.05
Muslim	33 (64.7%)	18 (35.3%)	51 (11.7%)	
Traditionalist	1 (50.0%)	1 (50.0%)	2 (0.5%)	
Highest level of education				
B.Pharm	218 (82.0%)	48 (18.0%)	266 (61.1%)	<0.05
Masters	101 (84.9%)	18 (15.1%)	119 (27.4%)	
PharmD	13 (100.0%)	0 (0.0%)	13 (3.0%)	
PhD	25 (67.6%)	12 (32.4%)	37 (8.5%)	
Years of practice				
11 to 15	51 (85.0%)	9 (15.0%)	60 (13.8%)	<0.05
16 to 20	27 (87.1%)	4 (12.9%)	31 (7.1%)	
5 and below	169 (80.5%)	41 (19.5%)	210 (48.3%)	
6 to 10	78 (80.4%)	19 (19.6%)	97 (22.3%)	
Above 20	32 (86.5%)	5 (13.5%)	37 (8.5%)	

Table 4. Barriers to cancer detection and prevention by community pharmacists.

Statement	Yes N (%)	No N (%)	Not sure N (%)	Missing N (%)
Lack of cancer education materials	301 (69.0)	61 (14.0)	39 (8.9)	35 (8.0)
Lack of interest in oncology	216 (49.5)	110 (25.2)	72 (16.5)	38 (8.7)
Lack of adequate knowledge	297 (68.1)	55 (12.6)	48 (11.0)	36 (8.3)
Lack of motivation	202 (46.3)	109 (25.0)	84 (19.3)	41 (9.4)
Lack of incentives (consulting fees)	174 (39.9)	138 (31.7)	88 (20.2)	36 (8.3)
Lack of personnel	233 (53.4)	99 (22.7)	68 (15.6)	36 (8.3)
Lack of time	151 (34.6)	162 (37.2)	84 (19.3)	39 (8.9)
Gender barrier	130 (29.8)	188 (43.1)	81 (18.6)	37 (8.5)
Lack of training	281 (64.4)	61 (14.0)	54 (12.4)	40 (9.2)

This might be one of the several reasons participants might be willing to distribute cancer educational materials.

Different health professionals have different expertise in the provision of cancer health promotion service. These expert skills when offered in the community pharmacies will increase patients and client's confidence, improve satisfaction and improve adherence to cancer screening recommendations, etc. Though substantial proportion of participants agreed to invitation of other health professionals to community pharmacies to provide cancer education, this service will have to be

well incorporated into the community care system and supported by clinical tools, such as collective prescriptions, provision of some cancer testing kits such as faecal occult blood test kit (for colorectal cancer screening), etc. to optimize the contribution of pharmacists.

Community pharmacists in Ghana are the first point of contact, and hence play an important role in care delivery, educating people in the community to maintain health and improve their health, safety and well-being. This was reflected by acceptance of majority viewing cancer health promotion as their responsibility.

Also promoting this service can be as important as actually doing the services, and hence also perceived by majority of community pharmacists as a means of improving their professional outlook.

Most community pharmacists agreed that there is also the importance to incorporate cancer health promotion activities into their daily practice. In the United Kingdom, people visit community pharmacies 14 times per year for any reason and 11 times per year for health-related reasons. This offers much contact time and ample opportunities for the community pharmacist to practice preventive medicine in his daily practice. In Ghana, data on the number of people who visit the community pharmacies for various reasons are lacking but from the author's experience as a pharmacist in Ghana, there is greater contact time between community pharmacists and their clients, and hence might explain the positive perception of the majority of community pharmacists.

It is observed that age, gender, religion and level of education significantly influence the trend of opinion among community pharmacists, whereas there was no significant difference among them irrespective of years of experience in practice. Traditionally in Ghana, women often become the family health managers, encouraging male partners and family members to go for health checks. Also, there is a lot of advocacy about breast cancer hence female community pharmacists might be aware of preventive measures such as mammogram. All these might have influenced the trend of opinion.

Evidence suggests that individuals who achieve a higher level of education are more likely to engage in healthy behaviours and less likely to adopt unhealthy habits.³¹ This can have an effect on participants' perception about health promotion. There is also evidence to suggest that those with higher education have higher participation rates in prevention programmes such as cancer screening.^{32,33} This may partly explain the positive response of participants to cancer health promotion.

For many religions, one of the important doctrines includes a person taking care of his or her health.³⁴ A review of literature analysing health practice of individuals and their level of religiosity indicate that as the level of religiosity of individuals increases, healthier behaviours are exhibited, such as a decrease in smoking, an increase in physical activity, and an improvement in diet.³⁴ Even though the participants were community pharmacists, this can influence their choice of answer on perception.

A review by Eades et al., on 'public health in community pharmacy: a systematic review of pharmacist and consumer views' revealed that most pharmacists notice public-health services as an important part of

their role. Nevertheless, several barriers might limit their contributions including counselling space, lack of time, lack of demand and expectation of negative reaction from customers.²⁶ Community pharmacists in our study recognized lack of cancer education materials, knowledge, training and personnel as their perceived major barriers to providing cancer health promotion. It is important to systematically address these barriers to cancer health promotion, which may include educational interventions, provision of education or training materials, or improved staffing approaches.

Conclusion

Integrating primary-care pharmacists into cancer health promotion programs should be considered a valuable option for optimizing population health. Ghanaian community pharmacists recognise to play an important role in the provision of cancer health promotion service. It is therefore important to understand the barriers, how to overcome these barriers and facilitators for greater involvement of these pharmacists in cancer health promotion activities.

Recommendations

Our view is that short-term cancer continuous education activities might be required to assure appropriate competencies for cancer health promotion activities. A randomized controlled study has proven this to be an effective means of improving pharmacists' competencies in service provision.³⁵ Moreover, pharmacy technicians need to be hired to overcome the barrier of inadequate personnel. This will require engagement by all pharmacy stakeholders in addition to financial investments.

Facilitators for greater involvement of community pharmacists in health promotion activities or practice change have been identified by other studies.³⁶⁻³⁸ These factors include government policy; remuneration for service delivery; communication and teamwork; leadership; task delegation; external support or assistance; reorganization of the structure and function of the pharmacy; professional satisfaction or competitiveness; communication and collaboration with physicians; and patient expectations regarding the services to be offered. These factors will have to be considered to facilitate provision of cancer health promotion by community pharmacists. Moreover, community pharmacy-based cancer health promotion service model should be developed by health authorities to address regulation, reimbursement for service and promotion of such service. Though the study provided preliminary insight to community pharmacist perception and perceived

barriers towards cancer health promotion, future studies have to be carried out to get a deeper understanding of community pharmacists' perception.

Limitations

Our study has its limitations. The study variables were assessed by self-report, which may be biased by the tendency to provide socially desirable responses and acquiescence (tendency to agree). This was also a quantitative study and hence did not provide deeper understanding of participants' perceptions. Once again, the participants in this study were community pharmacists in Ghana, so the results cannot be generalized to other countries. Finally, accessibility of the questionnaire was through internet access, hence limited access might have excluded certain community pharmacists from participation.

Acknowledgements

The authors thank the community pharmacists who participated and filled the questionnaire for this study.

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.

Availability of data and materials

The datasets generated during the study are available in the fig share repository, <https://figshare.com/s/41fc0d28f60fd0a4f579>

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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).

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Research reported in this publication was supported by the Fogarty International Centre (FIC), National

Institutes of Health Common Fund, Office of Strategic Coordination, Office of the Director (NIH CF/OSC/OD), Office of AIDS Research, Office of the Director (OAR/OD/NIH), National Institute of Mental Health of the NIH (NIMH/NIH) under Award Number D43TW010131. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

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