Assessment of the Role of Community Pharmacists in Promoting Cancer Awareness among Under 50 Populations in Amuwo-Odofin LGA, Lagos State

***Onwuka Flora, Mohammed Elijah**

Department of Public Health, Ballsbridge University, Roseau, Commonwealth of Dominica, West Indies, Nigeria

***Corresponding Authour**

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ABSTRACT

Background: Cancer is a major public health challenge in both developing and developed countries, with an increasing incidence among people under-50 years old. The shortage of trained healthcare workers is a major public health challenge faced by developing countries such as Nigeria. This has taken a toll on the provision of the country's healthcare services to the populace. However, community pharmacists (CPs) whose services are readily accessible to the public, can help reduce cancer incidence in the country by raising public awareness.

Objective: This study assessed the role of community pharmacists in promoting cancer awareness among the under-50 population in Amuwo-Odofin Local Government Area (LGA) of Lagos State, Nigeria

Methodology: Two sets of self-administered questionnaires were used to collect data in a cross- sectional survey. The sample size was 385, 371 responses were received and the data were analysed using a python analysis programmme with descriptive statistics.

Result: The CPs had a good knowledge of certain cancer topics, a positive attitude towards promoting cancer awareness, and have been involved in related activities. However, there was a knowledge gap regarding screening guidelines and common cancers among young people. Their activities generally targeted "all age groups" and mainly involved verbal counselling during medication dispensing. The under-50 population generally held a positive view of the CPs' activities, although only 40.8% had received health education or information about cancer from them. Barriers reported by the CPs include a lack of training, resource materials and poor interest among young people.

Conclusion: The study revealed high level of knowledge among CPs on several cancer topics, with a gap in screening guidelines and in awareness of common cancers among young people. They were involved in cancer awareness promotion to some extent, as most of them believe they play a role in it. It is recommended that CPs be trained and provided with resource materials to enhance awareness promotion activities among the under-50 population in Amuwo-Odofin LGA, Lagos State.

Key words: Cancer, Cancer awareness, Community pharmacists, Healthcare professionals, Health promotion.

INTRODUCTION

Cancer is a major public health issues and a leading cause of death worldwide [1]. The International Agency for Research on Cancer [IARC] released estimates of the global burden of cancer in 2022, indicating a growing global cancer burden, according to the World Health Organization [WHO] report [2]. The study also reported estimated 20 million new cases of cancer and 9.7 million deaths, with about 1 in 5 people developing cancer in their lifetime, and about 1 in 9 men and 1 in 12 women dying from the disease. Another study found increased

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cancer incidence among people aged 15 to 49 years old over the past decade, with 1.8 million cases and about 400,000 deaths from cancer among young adults worldwide [3].

The WHO reported that about one-third of cancer diagnoses are linked to modifiable lifestyle behaviours such as smoking, alcohol consumption, low physical activity, poor diets, and excessive exposure to sunlight [4]. Another report by the World Health Organization also stated that 'about 30% to 50% of cancers are preventable by avoiding risk factors and implementing evidence-based preventive strategies' [5]. Awareness of cancer is crucial for identifying its risk factors, early detection, and prevention, thereby reducing morbidity and mortality. However, evidence from the literature indicates a knowledge gap among young people, and research on this demographic remains limited [6]. Addressing this knowledge gap will empower young people to make healthy choices by avoiding cancer risk factors and adopting preventive measures, which can, in turn, lead to reduced delayed diagnosis, morbidity, and mortality [7].

This knowledge gap can be addressed through health promotion strategies such as education and information, which enable people to build the skills needed to make healthier choices [8]. Healthcare professionals are a major source of reliable health information for patients and the public in general, especially community pharmacists [9]. Community pharmacists are easily accessible, as they are strategically located within the community, making them the usual first point of call for the health-seeking public and potentially vital in educating young people to raise cancer awareness.

Statement of the Problem

Reports from literature show that insufficiently trained healthcare workers to manage the many public health challenges in Nigeria is a problem, as the nurse, midwife and doctor density of 1.95 per 1000, does not meet WHO's recommended standard for "successful basic health delivery services" [10]. The World Health Organization [WHO] recommends a threshold density of 4.5 per 1000 [physicians, nurses and midwives] to "deliver essential services for universal health coverage" [11,12]. Increasing the number of health workers, including other healthcare professionals such as pharmacists [community pharmacists], community health workers, laboratory personnel, and others, is essential to address the growing public health challenges [10,12]. Community pharmacists (CPs) are healthcare professionals whose accessibility and availability can be utilised to expand the health workforce, especially in health promotion, such as cancer awareness. They are usually the "first point of contact with the health-seeking public as well as trusted health professionals" [13, 9]. However, there is limited empirical evidence regarding the extent to which CPs engage in cancer-promoting activities particularly in Lagos State.

Knowledge of cancer risk factors, its prevention, early signs and symptoms is important for individuals to recognise it and adopt the right behaviours and attitudes towards it. However, literature revealed a knowledge gap about cancer and its awareness among the younger population, which causes them to engage in risky behaviours, present late with cancer and exhibit delay help-seeking behaviours [4, 14, 7]. This knowledge gap ultimately results in an increase in mortality and morbidity [9]. To reverse this trend, it is important to raise awareness among this demographic about different aspects of cancer through education, which is one of the strategies for implementing health promotion [15, 13].

This study assessed the role of CPs in promoting cancer awareness among the under-50 (15 to 49) population in Amuwo-Odofin Local Government Area [LGA], Lagos State. This demographic includes adolescents and young adults who are at a higher risk of engaging in risky behaviours but can make healthier choices when equipped with proper knowledge [7]. Additionally, promoting cancer awareness among this group is crucial, as literature shows that cancer survival rates tend to be lower among younger people compared to older individuals, especially in cases of breast cancer [13]. The findings from this study will guide the development of interventions and strategic programmes that could empower CPs to participate actively in cancer awareness activities targeted at the youth and adults under 50 years of age, thereby strengthening the healthcare workforce and ultimately reducing cancer-related morbidity and mortality. Raising awareness within this demographic can help decrease health disparities [16]. The absence of such information could lead to missed opportunities to expand the health workforce' contributions to raising cancer awareness among this group through health promotion, ultimately reducing morbidity and mortality.

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Research Questions

1. What is the level of cancer knowledge among community pharmacists in Amuwo-Odofin LGA of Lagos State?

2. Are community pharmacists involved in promoting cancer awareness among youth and adults under 50 years in Amuwo-Odofin LGA of Lagos State?

3. What is the perception of youths and adults under 50 years in Amuwo-Odofin LGA of Lagos State regarding CPs' promotion of cancer awareness activities?

4. What are the barriers faced by community pharmacists in promoting cancer awareness among youths and adults under 50 years in Amuwo-Odofin LGA of Lagos State?

Objectives

1. To evaluate the level of cancer knowledge among community pharmacists in Amuwo-Odofin Local Government Area of Lagos State.

2. To evaluate the involvement of community pharmacists in promoting cancer awareness among youths and adults under 50 years in Amuwo-Odofin LGA of Lagos State.

3. To evaluate the perception of youths and adults under 50 years in Amuwo-Odofin LGA, Lagos State, regarding CPs' promotion of cancer awareness activities.

4. To identify barriers to promoting cancer awareness among youths and adults under 50 years in Amuwo-Odofin LGA of Lagos State by community pharmacists.

Scope of the study

The study evaluated the level of cancer knowledge among CPs and their involvement in promoting cancer awareness among the under-50 population in Amuwo-Odofin LGA of Lagos State, and assessed the demographic's perceptions of CPs' activities in promoting cancer awareness. It also identified the barriers to promoting cancer awareness among this demographic in Amuwo-Odofin LGA as identified by CPs. The CPs who qualified as participants were only those practicing in Amuwo-Odofin LGA of Lagos State, while those outside this area were excluded from the study. Individuals aged 15 to 49 years living in the same LGA were eligible for the young people's survey, excluding those outside this age range and those living outside Amuwo-Odofin LGA of Lagos State.

Lagos State, a commercial centre and densely populated is expected to provide valuable insight into this demographic, which constitutes the country's active, productive population. Amuwo-Odofin LGA comprises a mix of rural and urban settings, as well as different grades of community pharmacies; thus, it was used as a case study.

LITERATURE REVIEW

Cancer

Non-communicable diseases [NCDS] have been reported to be increasing in both developing and developed countries, accounting for about three in five deaths globally, with cancer being one of these NCDS [17, 18]. Cancers, also known as malignant tumours or neoplasms, are a group of diseases that can originate from any organ or tissue of the body when abnormal cells grow uncontrollably and beyond their usual boundaries, invading nearby tissues and spreading to other organs [5]. This process is known as metastasis, a major cause of death from cancer. Several types of cancer have been reported in literature, and the top ten most common cancers include: "lung, female breast cancer, colorectal, prostate, stomach, liver, thyroid, cervix uteri, bladder and non-Hodgkin lymphoma" [18]. However, another study listed the most common cancers among the

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younger population as: “brain with other tumours of the central nervous system, breast, cervical, colorectal, leukemia, lymphoma, melanoma, sarcoma, testicular and thyroid cancers” [19]. Others include ovarian cancers [20, 7].

Cancer risk factors: Anything that increases the likelihood of developing cancer is known as a cancer risk factor. According to American Cancer Society [ACS], these risk factors vary for each type of cancer [20]. Generally, cancer risk factors include modifiable lifestyle factors such as tobacco use, excessive alcohol consumption, low physical activity, and unhealthy diets (including low fruit and vegetable intake and high saturated fat intake) [21]. Other factors include obesity and overweight, environmental pollution, radiation (ultraviolet and sunlight), occupational carcinogens like asbestos, and infections such as human papillomavirus [HPV], hepatitis B virus [HBV], and Helicobacter pylori [H. pylori] [2]. Some studies noted that, male uncircumcision, early sexual activity, a weakened immune system, and genetic predisposition are also risk factors for cervical cancer [22], along with having multiple sexual partners [23]. Gene changes that can be inherited or acquired are also risk factors for some types of cancer, such as breast cancer [20].

General common signs and symptoms of cancer: Most specific signs and symptoms vary depending on the cancer types, but the list below is a general overview for all cancers according to ACS [20]: “Unusual lump or swelling mostly in the neck, breast, stomach, or testicle, unexplained tiredness and loss of energy, easy bruising, abnormal bleeding, ongoing pain in one part of the body, unexplained fever or illness that is persistent, recurrent headaches occasionally combined with vomiting, sudden eye or vision changes, anorexia or unexplained weight loss, a new mole or spot on the skin or one which changes in colour, shape or size”.

Preventive strategies: The literature reports that about 30% to 50% of cancers can be prevented by avoiding or reducing risk factors and implementing evidence-based prevention strategies [5]. Several approaches for cancer prevention include lifestyle modifications such as avoiding or reducing risk factors like smoking, alcohol consumption, overweight, excessive sun exposure, and radiation; as well as eating healthy diets [5]. Raising awareness through education, providing information to enable informed decisions and healthy lifestyles, and cancer screening and vaccination, are also key strategies [24, 5].

Cancer screening: Cancer screening involves checking for cancer in individuals before any symptoms appear, [20]. According to the WHO, screening is effective for some types of cancer, but it does not apply to everyone; it depends on risk factors and age [5]. Some individuals, such as those with a genetic or family history of cancer, face a higher risk and may require closer examination and earlier screening than the usual recommended age [20]. Effective screening is available for certain cancer types, including breast, cervical, colorectal, melanoma [skin cancer], and thyroid cancers, as per ACS [20]. The usual recommendation for women is between the ages of 25 and 40 for cervical and breast cancers. For men at higher risk of prostate cancer, age 40 is advised, but generally, screening begins at age 50 [25].

Treatment: The treatment of cancer largely depends on its stage and type, with a combination of treatments often employed. Such treatments include surgery for early-stage cancers, radiotherapy, and chemotherapy, mainly for cancers that have spread to other organs; hormone therapy, immunotherapy, and stem cell or bone marrow transplants are also used [20, 5].

Health promotion

Health promotion, as defined by the WHO, “is the process of enabling people to increase control over, and to improve their health” [26], while health “is the state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” [27]. Health promotion, which encompasses health education, health prevention, and health protection, can be implemented at the individual level but, for greater impact, should involve communities, other professionals, the government, and groups, through various interventions [8]. According to a study, “health promotion intervention encompasses clinical care, incorporating healthy lifestyle behaviour, disease prevention, and the promotion of well-being through education, community engagement, policy advocacy, and structural change” [27]. One method for promoting health and preventing disease is health education [28]. This utilises various means, including posters, radio, mass media, newspapers,

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community groups, community-based campaigns, mass communication, television, social media, seminars, and lectures, to disseminate information to the target audience [23, 8].

Levels of Health Promotion: Some researchers in their study, identified three levels of health promotion: primary, secondary, and tertiary [26]. Primary health promotion [primary prevention] involves educating people to adopt lifestyle changes such as avoiding alcohol consumption, physical inactivity, excessive sun exposure, maintaining a healthy weight, not smoking, and in the case of cancer, eating healthily. These measures are effective before the onset of disease and include immunisation [26, 29]. Secondary health promotion [secondary prevention] encompasses teaching individuals to recognise signs and symptoms of diseases and to seek early assistance, and to visit health professionals for unusual or abnormal findings, thereby enabling early diagnosis and prompt treatment to reduce disabilities and more serious health complications [26, 29]. Tertiary health promotion (tertiary prevention) concentrates on education and counselling regarding medication therapy and adherence [26].

Community pharmacists

Amid the growing burden of non-communicable diseases [NCDs)] in developing countries, including Nigeria, researchers worldwide have advocated for the involvement of pharmacists, especially community pharmacists, in public health activities [30, 10]. CPs are often the first point of contact with the health-seeking public and are recognised in the literature as "the most accessible healthcare provider involved in promoting health, wellness, and disease prevention" [31, 9]. Evidence from the literature shows CPs' involvement in cancer education, which helps adolescents overcome barriers to help-seeking behaviour [HSB], such as fear of cancer diagnosis and embarrassment over procedures [16]. Other cancer awareness initiatives undertaken by CPs, as reported in the literature, include education on lifestyle modifications, dispelling myths and false beliefs about breast cancer, promoting cancer screening, providing breast self-examination guides, and making referrals, among many others.

Theoretical Review

Knowledge, Attitudes and Practices [KAP] Model. This model, also known as the Rational Model [32], was proposed by Mayo in the 1960s and provides insight into how individuals' attitudes and knowledge influence healthy choices [33]. It is commonly used in educational activities targeting individuals and groups to help them shift from negative to positive health behaviour. This is achieved by disseminating accurate information through appropriate channels and language to the target audience [32]. It suggests that ignorance is the only barrier to reasonable and responsible behaviour; therefore, closing the knowledge gap will lead to healthier choices.

Health Belief Model (HBM). This research was based on the Health Belief Model, a widely used theoretical framework in studies for identifying factors that influence preventive health behaviours such as cancer risk reduction [6]. It was developed in the 1950s by Rosenstock, I.M., Hockbaum, G. M., Kegels, S. S., and Leventhal, H., a group of public health workers [34]. The model provides a strong foundation for public health intervention programmes and can both initiate and sustain changes in health behaviour, which is why it is frequently employed in health behaviour research, [6]. It explains that people's willingness to adopt preventive behaviour and take the appropriate action depends on their beliefs about the disease, which are based on: perceived susceptibility [what is the level of risk associated with the health threat?], perceived severity [how serious or harmful is it?], perceived benefits [what advantages will result from its effectiveness?], perceived barriers [what are the costs of taking action?], cues to action [what motivates them to act?], and self-efficacy [do they have confidence to act?], [8]. Based on the HBM framework, if CPs in Amuwo-Odofin LGA, Lagos State, are well-informed about various aspects of cancer, including the benefits of raising awareness among the under-50 population, they could be motivated and confident to participate in awareness-raising efforts. This would help people develop accurate perceptions of thee activities and make them receptive to the services, ultimately leading to healthier behaviour choices that could reduce the burden of cancer, along with related deaths, morbidity, and mortality.

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Empirical Review

A study was conducted on the "Community Pharmacists' Role in Prevention of Breast Cancer- Is

It Possible?" [13]. It was a review of studies on promotional activities aimed at increasing breast cancer awareness, either being implemented or already carried out in pharmacies across many countries. Specifically, "the study covered strategies employed by community pharmacists [CPs] to educate patients and recruit them to participate in breast cancer screening tests for prevention [13]. Findings from this study showed that community pharmacists delivered pharmaceutical counselling using posters or leaflets to reach patients, ensuring the provision of both medication and healthy behaviour advice. The study identified several roles played by community pharmacists. These include referral, 'provision of a guide for patients to carry out breast self-examination [BSE]', dissemination of information, and enlightening the public about myths and false beliefs regarding breast cancer [13]. Thus, the community pharmacists were actively involved in health promotion, they further stated. Among the barriers faced by the CPs were inadequate pharmacy space, insufficient training for the CPs, and staff shortages. They concluded that community pharmacists play several vital roles in promoting and conducting educational activities that increase breast cancer awareness and prevention, address other cancer-related issues; collaboration between healthcare professionals is key to this [13].

Another study was carried out on the "Role of Community Pharmacists in Skin Cancer Screening: A Descriptive Study of Skin Cancer Risk Factors Prevalence and Photoprotection Habits in Barcelona, Catalonia, Spain" [35]" The study aimed to evaluate "the prevalence of cancer risk factors and the photoprotection habits with a questionnaire in community pharmacy users." It was conducted as a collaborative project between community pharmacists from the "professional registration body for pharmacists in Barcelona" ["Barcelona Pharmacists' Association"] and physicians [dermatologists] from one of Spain's major tertiary hospitals, Hospital Clinic de Barcelona. The study reported that pharmacists' role primarily focused on primary prevention in the past; however, in countries such as Australia, Norway, and the United Kingdom, screening for skin cancer is now carried conducted in community pharmacies [35]. Findings showed that community pharmacists are willing to participate in skin cancer screening among pharmacy users and often act as referrers. Sunscreen use increased compared with earlier studies; however, relative to data from other regions, such as Spain, it remained lower. Therefore, for early detection, individuals with skin cancer risk factors can be screened by community pharmacists, with referrals made when necessary.

Also, another study examined the "Public Health Activities: Evaluation of community pharmacists' Attitudes, Practices and Barriers in a Nigerian Southwestern State" [10]. The study aimed to assess the 'attitudes, practices and barriers' to providing public health services by community pharmacists in a Southwestern State in Nigeria. The report indicated that inadequate trained healthcare workers are among Nigeria's numerous public health challenges, with a low nurse, midwife, and doctor density of 95 per 1000, compared to the WHO threshold of 4.45 per 1000. This highlights the need for collaboration among healthcare workers for effective health delivery. The study found that CPs displayed positive attitudes towards public health activities and participated in health promotion, health protection, and disease prevention at primary, secondary, and tertiary levels. Such activities included providing education on healthy lifestyle choices and modifications, such as abstaining from drinking alcohol and smoking, to reduce cancer risk factors and prevent cancer. The study identified barriers including lack of time, limited funds, and insufficient training for CPs to carry out these activities.

Shawahna and Awawdeh [36] worked on "Pharmacists' Knowledge, Attitudes, Beliefs and Barriers towards Breast Cancer Health Promotion: A Cross-Sectional Study in the Palestinian Territories". The aim of the study was "to assess the knowledge, attitudes, beliefs and barriers towards breast cancer health promotion among community pharmacists in Palestinian territories" They noted that in low and middle-income countries worldwide, the most common cancer and a leading cause of cancer-related deaths among women was breast cancer. According to their report, low screening rates could be attributed to costs, lack of awareness and access, and cultural factors and personal beliefs. They further stated that screening, early diagnosis, and treatment could lead to improved outcomes, hence the need for increased awareness programmes. The findings indicated that CPs had a positive attitude towards cancer promotion, and most [67.7%] had good knowledge of

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breast cancer. Barriers identified included, among others, insufficient time, space, and personnel, fear of offending clients and lack of financial reimbursement.

Most of the reviewed literature assessed the activities of the CPs but little is known about the activities of Lagos State or about studies that combined both public perception. This study in addition to assessing the CPs activities, provides an insight into the perception of target population regarding such activities.

METHODOLOGY

Study design: The study was a cross-sectional survey conducted in Amuwo-Odofin LGA of Lagos State.

For professionals, the inclusion criteria were being a CP and practicing in Amuwo-Odofin LGA of Lagos State. At the same time, individuals aged between 15 and 49 years, residing in Amuwo-Odofin LGA of Lagos State, qualified as participants among young people. CPs who were not practicing in Amuwo-Odofin LGA of Lagos State, as well as all other pharmacists, along with individuals outside that age range and not residing in Amuwo-Odofin LGA of Lagos State, were excluded from the study.

Sample size: Convenience sampling was used. The total sample size was 385, calculated for an unknown population size using Cochran's online calculator. For the CPs, the sample size was determined using the total number of members of the Association of Community Pharmacists of Nigeria [ACPN] in Amuwo-Odofin Local Government Area, Lagos State, which was 170 pharmacists. From this, a sample of 120 was obtained at a 95% confidence level, with a 5% margin of error and a 50% estimated proportion. The sample size for individuals aged 15 to 49 years was 265, derived by subtracting the CPs sample size [120] from the total [385].

Data collection: The data collection instrument consisted of two sets of structured, self-administered questionnaires: One for CPs [Questionnaire I] and the other for individuals aged 15 to 49 years [Questionnaire II]. The CPs' questionnaire was divided into four parts: Section A gathered demographic information, including age, gender, years of experience as a CP, highest level of education or professional qualification, and ownership or position. Section B focused on self-assessment of their knowledge of various topics and whether they had received any cancer training. Section C covered the CPs' cancer awareness activities, while Section D addressed barriers to the promoting cancer awareness among CPs and provided recommendations for improvement.

Questionnaire II consisted of two sections: Section A covered socio-demographic characteristics of study population, including age, gender, educational level, and employment status, while Section B focused on their perception of CPs' cancer. awareness activities. Questions were adapted from previous studies in the literature that have been conducted on similar public health topics [37]. 108 and 263 questionnaires were returned from the targeted 120 and 265 for the CPs and individuals aged 15 to 49 years respectively.

Data analysis: Python programming was used for data analysis. Demographic characteristics were summarized using descriptive statistics, from which frequencies and percentages were generated, Associations between demographics and variables were determined using a chi square test.

Ethical consideration: The study objective was stated in the questionnaire with an explanation provided on giving of consent. Participation was voluntary, posed no risks to participants and participants were free to withdraw at any time. Personal identifiers such as email. phone numbers or address were not required. Personal and sensitive questions were avoided, data were treated with strict confidentiality and used only for research purposes. Permission was obtained from appropriate authorities where required before distributing questionnaires.

RESULTS

From the targeted sample size of 385, 371 responses [96.7%] were received; 108 [90%] for the CPs and 263 [99.2%] for individuals aged 15 to 49 years.

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Table 1: Socio-Demographic Characteristics [Community Pharmacists] n= 108

Variable	**Frequency**	**%**
Age		
Under 30	29	26.9
30- 39	35	32.4
40- 49	15	13.9
50 and above	29	26.9
Gender		
Male	56	51.9
Female	52	48.1
Highest Educational/Professional Qualification		
B. Pharm	90	83.3
Pharm. D	4	3.7
FPCPharm.	2	1.9
Postgraduate	8	7.4
Others specify	4	3.7
Years of Experience as a Community Pharmacist		
0- 5	41	38.0
6- 10	23	21.3
11- 15	12	11.1
Over 15	31	28.7
No Response	1	0.9
Ownership/Position		
Pharmacy Owner	53	49.1
Superintendent Pharmacist	24	22.2
Staff Pharmacist	17	15.7
Intern/Corper Pharmacist	12	11.1
No Response	2	1.9

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Table 2: Cancer Knowledge

[2a]. How would you rate your knowledge of the following cancer-related topics?						
	Very good Fg [%]	**Good Fq [%].**	**Fair Fq [%]**	**Poor Fq [%]**	**No Knowledge Fq [%].**	**No R Fq[%]**
Cancer risk factors	15 [13.9]	64 [59.3]	25 [23.1]	2 [1.9]	1[0.9]	1 [0.9]
Early warning signs	13 [12.0]	50 [46.3]	34 [31.5]	8 [7.4]	1 [0.9]	2 [1.9]
Screening guidelines	6 [5.6]	38 [35.2]	46 [42.6]	14 [13.0]	2 [1.9]	2 [1.9]
Prevention strategies	15 [13.9]	49 [45.4]	34 [31.5]	4 [3.7]	2 [1.9]	4 [3.7]
Common cancers in young People	9 [8.3]	36 [33.3]	41 [38.0]	12 [11.1]	5 [4.6]	5 [4.6]

Fq= frequency, No R= No response

[2b] Have you ever received any training or attended a seminar/workshop on cancer awareness or education?

Response	**Frequency**	**%**
Yes	37	34.3
No	70	64.8
No response	1	0.9

Table 3: Cancer Awareness Activities in Practice n= 108

Variable	**Frequency**	**%**
Do you believe pharmacists have a role in promoting cancer awareness among young people?		
Yes	103	95.4
No	-	-
Not sure	2	1.9
No response	3	2.8
Have you ever provided cancer awareness information to young clients [ages 15–49]?		
Yes	80	74.1
No	26	24.1
No response	2	1.9

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If yes, how frequently do you engage in such awareness efforts?		
Regularly [weekly or more]	15	18.8
Occasionally [monthly or less]	36	45.0
Rarely	18	22.5
Only when asked	8	10.0
No response	3	3.8
Which methods have you used to promote cancer awareness? [Tick all that apply]		
Verbal counselling during drug dispensing	81	86.2
Display of posters/leaflets in pharmacy	9	9.6
Community outreach/school visits	16	17.0
Social- media or online platforms	12	12.8
Health talks/events organized by pharmacy	20	21.3
Other [please, specify].	3	3.8
Which topics do you usually cover when providing cancer awareness? (Tick all that apply)		
Causes and risk factors	66	70.2
Early symptoms/signs	57	60.6
Prevention and lifestyle changes	58	61.7
Screening and referral	29	30.9
Myths and misconception	13	13.8
Others	-	-
What age group do you mostly target with your cancer awareness activities?	15	13.9
15–30 [youths]	13	12.0
31- 49	9	8.3
50 and above	54	50.0
All age groups	17	15.7
No response		

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Table 4: Barriers and Recommendations n= 108

Variable	Frequency	%
What are the major challenges you face in delivering cancer awareness to young people? [Tick all that apply].		
Lack of time	36	36.0
Lack of training or materials	60	60.0
Poor interest or awareness among youths	51	51.0
Lack of support from government or professional bodies	28	28.0
Financial constraints	15	15.0
Others	2	2.0
In your opinion what level can you place the cancer awareness activities of Community Pharmacists in Amuwo- Odofin LGA of Lagos State?		
30% or less	69	63.9
40%	13	12.0
50%	12	11.1
60%	4	13.7
70% and above	2	1.9
No response	8	7.4
Would you be interested in participating in training programmes on cancer awareness with a focus on young people targeted cancer awareness?		
Yes	96	88.9
No	9	8.3
No response	3	2.8

In your opinion, how can the role of community pharmacists in cancer awareness be strengthened?

Responses emphasized training such as: “Training and seminars at the zones”, “by proper training on the subject”, “workshops”, organising cancer awareness programmes”**.**

What suggestions do you have to enhance the role of community pharmacists in cancer awareness promotion among young people?

Responses centred on themes which include: “Training”, “more awareness programmes”, taking it into social media”, “liaising with schools and churches to conduct health education and screening”, “display of cancer information on posters and flyers to reach more people”, “awareness promotion activities, the government should give pharmacists incentives to encourage them”, training, providing educational materials and providing financial support”. Others were “bridging the gap and improving the relationship between physicians

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and other healthcare workers", "bimonthly training of CPs which could be virtual for easy accessibility", "external help from government and NGOs", "organised outreaches centred on young people with the aim of sensitising them on cancer risks factors and lifestyle management".

Table 5: Socio-Demographic Characteristics [Youths and Adults Under 50 Years] n= 263

Variable	**Frequency**	**%**
Age		
15- 20	70	26.6
21- 30	122	46.4
31- 49	68	25.9
No response	3	1.1
Gender		
Male	110	41.8
Female	144	54.8
No response	9	3.4
Educational Level		
Primary	4	1.5
Secondary	119	45.2
Tertiary	109	41.4
Others	18	6.8
No response	13	4.9
Employment Status		
Employed	70	26.6
Unemployed	26	9.9
Student	69	26.2
Self-employed	90	34.2
No Response	8	3.0

Table 6: The Demographic's Perception of Community Pharmacists' Cancer Awareness Activities n-263

Variable	**Frequency**	**%**
Do you usually visit Community Pharmacies?		

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Yes	187	71.9
No	72	27.4
No response	4	1.5
When you visit pharmacies what do you do? [i] To buy medicines [ii] To obtain information on health matters [iii] To buy other items		
[a]i only	138	52.5
[b] i and ii only	60	22.8
[c] all of the above	44	16.7
No response	21	1.9
When you walk into a pharmacy, do you always ask for the pharmacists?		
Yes	167	63.5
No	92	35.0
No response	4	1.5
Have you ever received health education or information about cancer from a community pharmacist?		
Yes	106	40.3
No	154	58.6
No response	3	1.1
Do you believe community pharmacists play a vital role in educating young people [age 15 to 49] about cancer?		
Yes	120	45.6
No	37	14.1
Can't say	103	39.2
No response	3	1.1
If the answer to [6] above is yes, does the role of the Pharmacist influence your behavior and health?		
Yes	157	59.7
No	56	21.3
No response	50	19.0
Are Community Pharmacists knowledgeable about cancer awareness in your own opinion?		

Yes		
No	161	61.2
No response	95	36.1
In your opinion, how would you rate the level of cancer awareness activities carried out by Community Pharmacists in Amuwo- Odofin LGA of Lagos State?	7	2.7
Excellent	38	14.4
Very good	14	5.3
Good	50	19.0
Fair	82	31.2
Poor	57	21.7
No response	22	8.4

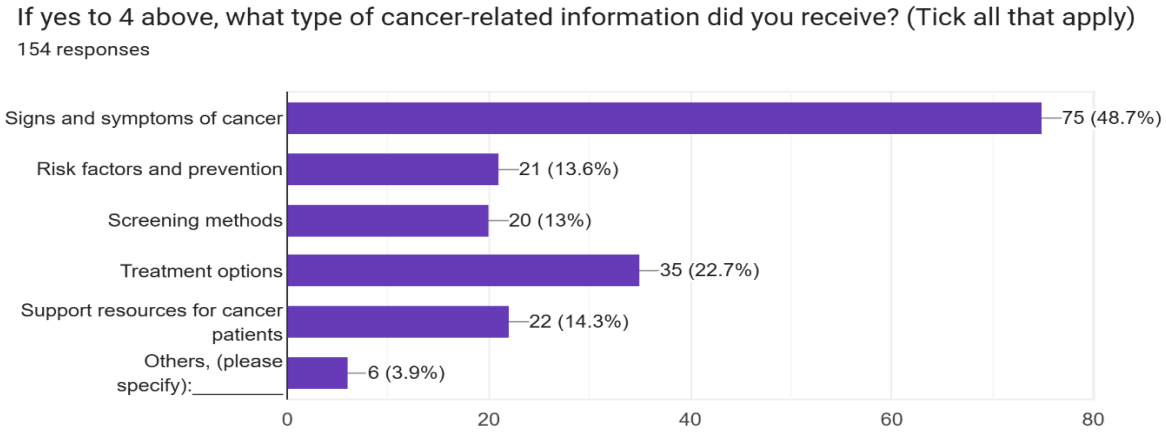

Figure1: Shows the types of cancer information provided by CPs to the studied demographic [individuals aged between 15 to 49 years]. There was no response from 109 respondents

What do you think can be done to improve cancer awareness among young people in your Amuwo-Odofin LGA of Lagos State?

Some of the recurring responses include: “Awareness campaign”, “cancer awareness programmes”, “internet/online education”, “handbills”, “social media”, “community outreaches”, “cancer awareness talks to schools and churches”, “street to street awareness”, “train more pharmacists”, “radio promotions and seminars”.

Table 7: Association between Ownership/Position and CPs’ Involvement in Cancer Awareness Activities

Cross- tabulation [Counts]				Cross- tabulation [Row %]	
Ownership/Position	No	Yes	Total	No	Yes
Intern/Corper Pharmacist	3	9	12	25.0	75.0

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Pharmacy Owner	13	40	53	24.5	75.5
Staff Pharmacist	5	12	17	29.4	70.6
Superintendent Pharmacist	3	19	22	13.6	86.4
Total	24	80	104		

Chi-Square Test Results: χ^2 [df =3, N=104] = 1.577, p value = 0.665

There is no significant relationship at the 0.05 level [$p \geq 0.05$] from the table above, indicating no association between ownership/position and CPs' involvement in cancer awareness activities.

Table 8: Association between the Years of Experience of the CPs and their Involvement in Cancer Awareness Activities

Cross- tabulation [Counts]				Cross- tabulation [Row %]	
Years of Experience	No	Yes	Total	No	Yes
0- 5	10	30	40	25.0	75.0
11- 15	4	8	12	33.3	66.7
6- 10	5	17	22	22.7	77.3
Over 15	6	25	31	19.4	80.6
Total	25	80	105		

Chi-Square Test Results: χ^2 [df= 3, N=105] = 0.985, p value = 0.805

No significant relationship is found at the 0.05 level [$p \geq 0.05$] from the table above indicating no association between CPs' years of experience and their involvement in cancer awareness activities.

DISCUSSION

The study's findings showed that most community pharmacists had good knowledge [73.2%] of cancer risks factors [very good/good], 58.3% had good knowledge of early warnings signs. This is contrary to the findings of a similar study by Mensah et al., [9] which reported poor knowledge of risks factors, warning signs and symptoms among CPs, while another study on breast cancer, reported high knowledge of warning signs and symptoms of breast cancer [38]. Only 40.8% had good knowledge of screening guidelines and 41.6% of common cancers among young people, indicating a knowledge gap, as most of the CPs reported not having received any training on cancer [64.8%]. The knowledge gap in screening guidelines finding aligns with the report of a similar study [13]. Almost all respondents [95.4%] believe that pharmacists have a role to play in promoting cancer awareness which is consistent with reports from similar studies, 93.4% and [31, 39], while 74.1% provided cancer information to the studied demographic. These findings indicate a positive attitude consistent with reports from other studies [10, 36, 38]. This study found that only 18.8% of the CPs regularly provided cancer information. Among those who provided cancer information at any level, 86.2% used verbal counselling during drug dispensing suggesting the need for more regular activities and exploring other methods, especially social media. The main areas covered in the information provided by the CPs were causes/risks factors [70.2%], prevention/lifestyle changes [61.7%] and early warning signs [60.6%], reflecting areas of high knowledge level. In comparison, screening/referral [30.9%] and myth/misconceptions [13.8%] were less covered, also corroborating the revealed knowledge gap. The most commonly reported age group for direction of awareness activities was "All age groups" [50.0%]; the studied demographic [15 to 49] accounted

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for just 25.9%. These findings are consistent with the low self-ratings of the CPs' cancer awareness promotion activities among the demographic, group [30% or less]. This suggests the need for targeted training intervention progammes for the CPs that could increase awareness promotion among the concerned demographic. Among the barriers reported by the CPs from the study were lack of training or materials [60.0%], poor interest or awareness among youths [51%] and lack of time [36%]. These findings are consistent with reports by authors of similar studies from the literature [10, 13, 31, 38]; however, another study reported lack of time as a major barrier [69.0%] [39]. Additionally, 63.9% of the CPs respondents rated their cancer awareness activities as low, [30% or less] which was reflected in their response regarding the frequency of providing cancer information. The highest proportion, 46.3% indicated this as well as the method of information delivery, primarily verbal during medication counseling. Other strategies such as social media 12%, posters/leaflets [9.6%] and health talks/events organised by pharmacies [20.2%], were less common. It was reported that several of these strategies were used by CPs for promotion, including campaigns, workshops and collaboration with other healthcare professionals [13]. However, 88.9% expressed willingness to participate in cancer awareness training programmes targeted at individuals aged 15 to 49 years, which aligns with most CPs' suggestions for improve their cancer awareness activities. These include more training of the CPs on cancer, organizing outreaches and events in churches and schools, the use of social media, and the provision of materials, posters, and flyers for display. There was no significant association between ownership/position and CPs' activities of the CPs or between years of experience and activities.

The study revealed that the majority [71.9%] of the demographic under study namely, young people and those under 50 years, visit pharmacies, more than half of them [52.5%] do so only to buy medicines. 63.5% always asked for the pharmacist when they visited; however, only 40.3% reported ever receiving health education or information about cancer from the CPs and only 45.6% believed that CPs play a vital role in educating them about cancer. Most respondents [59.7%] agreed that the role of CPs positively influenced their behaviour and health, 38.7% rated the activities of the CPs highly [excellent, 14.4%; very good, 5.3%; good, 19.0%] while 31.2% rated them as fair. These findings show that the public may perceive the CPs' cancer awareness promotion activities positively; however, only 40.3% had received health education or information from CPs, suggesting a gap in their awareness promotion efforts. This aligns with the CPs' low self- rated activity level of 30% or less, which may be due to reported barriers such as lack of training or materials, among others, despite their positive attitude and willingness to participate in training. Therefore, it is necessary to implement intervention strategies that empower the CPs to become more involved in cancer promotion activities within this demographic, such as providing training and targeted materials for this group. The demographic also reported receiving information from the CPs mostly about signs and symptoms of cancer [48.7%] and least about screening methods [13.0%], again highlighting the knowledge gap among the CPs. It is worth noting that the suggestions for improving cancer awareness promotion by the CPs within the demographic focused on similar recuring themes as those of the CPs themselves. These include "Awareness campaign programmes", "social media, internet/online education", "radio/television programmes", "community outreaches/cancer awareness talks/events to schools and churches", "train more pharmacists". The identification of training need and suggestion is consistent with reports from similar studies [10, 13].

Limitations

The limitations include the use of a single local government area [LGA] in the state for the studies and the use of convenience sampling which limits the generalization of the study results.

Possibility of self- reporting bias by community pharmacists especially regarding their assessment of cancer knowledge and promotion activities. However, the assessment of the CPs knowledge and activities by the under-50 population as well as the qualitative questions, mitigated both the CPs self-reporting bias and the convenience sampling limitation; deeper insight was gained from the suggestions. Also, a high response rate was achieved, indicating a good representation of the population under study.

CONCLUSION

The study revealed a high knowledge level among CPs on several cancer topics, with knowledge gap on screening guidelines and common cancers among young people. Almost all the CPs [95.4%] believe they play

a role in promoting cancer awareness. Most CPs were involved in cancer awareness promotion, though only 32.2% targeted individuals aged 15 and 49 years. Their main activities involved verbal counselling to clients when dispensing medicines, primarily on causes/cancer risk factors, prevention/lifestyle changes and warning signs but less on screening guidelines/referrals and myths/misconceptions. These individuals aged between 15 to 49 years perceived CPs as knowledgeable about cancer, although only 40.8% reported receiving health education or information about cancer from CPs. Among the barriers reported by the CPs were lack of training, resource materials and a poor interest or awareness among youths. The study recommends among other things, providing training and resource materials targeted at the [15 to 49 years] demographic for CPs to enhance their cancer awareness promotion activities.

RECOMMENDATIONS

There is a need for continuous training of community pharmacists to equip them and update their knowledge on different aspects of cancer especially screening guidelines, myths/misconception which can be organised by professional pharmacy bodies through seminars, lectures, workshops online/in-person sessions. The Pharmacy Council of Nigeria [PCN], the regulatory body of the profession should incorporate cancer education into the already existing mandatory continuous professional development [MCPD]. Collaboration between healthcare professionals, NGOs and educators is necessary to develop and provide cancer resource materials such as posters, handbills and other items, with clear messages/language targeted at this group of individuals. CPs should organize cancer awareness outreaches, talks and other events in worship centres, schools and market places and use social media and other channels to reach their target audience.

Suggestions for further studies.

It is recommended that similar studies be conducted in other local areas of Lagos State, as this study focused on only one. Additionally, the impact of training on community pharmacists' activities aimed at promoting cancer awareness should be examined.

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