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Assessment to Identify the Role of Community Pharmacy Practices in Major Cities in Delta State, Nigeria

***[1]OSARENMWINDA, MI; [2]ARUTE, JE**

**[1]Department of Clinical Pharmacy, Faculty of Pharmacy, University of Benin, Benin City, Nigeria*

[2]Department of Clinical Pharmacy and Pharmacy Administration, Faculty of Pharmacy, Delta State University, Abraka, Delta State, Nigeria

**Corresponding Author Email: ikponmwosa.osarenmwinda@uniben.edu; ikmond@yahoo.com*
**ORCID: https://orcid.org/0000-0002-6515-9552*
Tel: +2348033925071

Co-Author Email: arute4john@yahoo.com

ABSTRACT: Globally, millions of people seek their healthcare needs from community pharmacists because they are the most accessible health professionals. Therefore, the objective of this paper is to identify the role of community pharmacist practices in major cities in Delta State, Nigeria. Data were collected using a standard self-structured, pre-tested questionnaire in a cross-sectional survey on the opinions of the activities of 145 pharmacists across community pharmacies in Delta State, Nigeria. Data analysis was carried out using descriptive statistics. All (100%) of the respondents checked for blood pressure. The majority (83.5%) offered routine activities (consultation services and counseling) to doctors and patients. Most (82.1%) assessed patients with diabetes; this was significantly influenced by gender ($\chi2 = 4.63$; $p = 0.044$), ownership ($\chi2 = 50.669$; $p = 0.000$), position ($\chi2 = 18.598$; $p = 0.000$), and proximity to a private hospital ($\chi2 = 12.616$; $p = 0.000$). A lot (73.1%) dressed wound of accident/surgery victims and was significantly associated with gender ($\chi2 = 20.30$; $p = 0.000$), age ($\chi2 = 11.77$; $p = 0.008$), marital status ($\chi2 = 47.126$; $p = 0.000$) and ownership status ($\chi2 = 7.375$; $p = 0.025$). Awareness of routine activities performed by community pharmacists was associated with gender ($\chi2 = 10.337$; $p = 0.006$) and qualification ($\chi2 = 11.678$; $p = 0.009$). Services rendered by community pharmacies in major cities in Delta State are diverse and range from consultation with doctors to patient assessment and counseling services.

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Community pharmacists often treat the sick, the healthy, and the seemingly well in the communities, making them perfect for health education, sickness prevention, and proactive case finding. The most accessible medical professionals are community pharmacists, who are typically found in the middle of towns close to places for shopping, dining, and leisure (FIP, 2015). Due to numerous over-the-counter (OTC) and non-prescription products on the market, many individuals turn to community pharmacies as their first point of contact for healthcare (Azmi *et al*., 2012; WHO, 2011). Community pharmacists are strategically placed as patient advocates within the healthcare system to lessen the impact of self-medicating and the adverse effects of medications. To enhance the practice of community pharmacists, they are required to have certain knowledge, attitudes, skills, and behaviors (Azmi *et al*., 2012; WHO, 1997). The practice of pharmacy in the healthcare system, and pharmacy education have thus been the subject of

**Corresponding Author Email: ikponmwosa.osarenmwinda@uniben.edu; ikmond@yahoo.com*
**ORCID: https://orcid.org/0000-0002-6515-9552*
Tel: +2348033925071

numerous researchers (Kibichio and Owozarzak, 2012).

Several studies have demonstrated the beneficial effects of community pharmacists in healthcare delivery (Anderson, 2002; Verma *et al*., 2012; Chumney and Robinson, 2006; Williams *et al*., 2011).

In Nigeria however, the operations of community pharmacies, are not well documented. Previous studies in Benin City, and Lagos, Nigeria, reported that community pharmacists offer pharmaceutical care without due recognition (Oparah and Arigbe-Osula, 2002; Eniojukan and Adeninyi, 1997). Thus, the objectives of this study were to identify the routine activities performed by community pharmacists in major cities in Delta State, Nigeria.

MATERIALS AND METHODS

Study Design: This is a descriptive cross-sectional survey of all community pharmacies in major cities in Delta State, Nigeria.

Study areas: Delta State, which has Asaba as its capital is located in South-South geopolitical zone in Nigeria. It has three senatorial districts; the North, South, and Central, With an 18,050 km 2 (6,970 sq mi) total area, and a land mass of more than 60%. Major cities include Ughelli, Sapele, Warri, Agbor, and Asaba. Mainly dominated by Urhobo, Enuani, Isoko, Uvwie, Okpe, Ijaw, Ukwuani, Ika, Itsekiri, and Olukumi. It has a single tertiary hospital located in Ethiope West Oghara, several secondary and primary health facilities dispersed throughout the state's three senatorial districts, and a large number of community pharmacies in the state's capital towns. It is one of the main oil-producing states in Nigeria. The majority of people living there are farmers, fishermen, and hunters. Christians make up the majority of the population, with few traditional worshipers.

Collection of samples: The study was carried out between May to September 2022, among pharmacists in registered retail community pharmacies in Ughelli, Sapele, Warri, Agbor, and Asaba metropolis all in the South-South region of the state. The sample population comprises registered pharmacists and pharmacist interns working in the pharmacies. A random selection of pharmacists and pharmacy interns from the total number of registered community pharmacies as of December 2021. Pharmacists with registered retail community pharmacies, who consented to the study were included, while those who were not available at the pharmacies at the time of the study were excluded.

Data Collection: Data was collected from registered community pharmacies using a self-administered, pre-tested questionnaire. The questionnaire is divided into four sections (Sections A – D). Section A comprises of demographic of participants, section B examines awareness of the routine activities performed by the community pharmacists, section C explores questions on clinical screening provided by the community pharmacist, and section D which is the last section comprises interaction between patients and community pharmacists. The questionnaires were distributed to the respondents in person by the researcher, filled out, and immediately retrieved upon completion. The instrument was validated using content or face validity and, thereafter was pre-tested on a sample of 20 community pharmacists to whom the purpose of the study was explained. The results of the pilot study were correlated with the sample response using Spearman's rank difference method.

Data Analysis: Data collected were transferred to Statistical Package for Social Sciences (SPSS) version 25 for descriptive analysis. The association of level awareness on the routine activities carried out by community pharmacists was determined by Pearson chi-square analysis. High and low awareness level was determined by anybody who correctly answered 7 of the routine activities by the pharmacists. Also, relative to the clinical screening done by pharmacists, an association of demographic variables with diabetes screening, dressing injuries, and administration of nebulizers was carried out. Results were considered significant at $p < 0.05$.

Ethics consideration: Ethical approval for the study was obtained from the Delta State, Ministry of Health ethics committee, with protocol number AZ 653/196. Inform consent was sought from the participants of the study, with the utmost confidentiality of information provided guaranteed.

Outcome measures: The following outcomes were measured; awareness of routine activities, clinical screening and activities carried out by the community pharmacists, factors associated with awareness and screening activities done by the community pharmacists, as well as community pharmacists' consultation with the patients.

RESULTS AND DISCUSSION

Of the 161 registered retailed community pharmacies in the state, a total of one hundred and forty-five (145) pharmacists and pharmacy interns participated in the study, making a response rate of 90%. Table 1 presents the socio-demographic profiles of respondents. The majority (82.8%) of respondents were males. Also, the

highest (51.7%) were within 41-50 years age range. Also, very many (70.3%) of the participants were married. In addition, 71% had a B.Sc/PharmD as their major qualification. The ownership status of the community pharmacies indicates that 80.9% of them were owned by pharmacists. Also, a good number (84.5%) indicates being a Superintendent Pharmacist. Proximity to government and private hospitals was 36.6% and 57.2% respectively.

Table 1: Socio-demographics of Pharmacists in Community Pharmacies N=145

Variables		**Frequency**	**Percentage**
Gender	Females	25	17.2
	Males	120	82.8
Age (years)	30-40	40	27.6
	41-50	75	51.7
	51-60	23	15.9
	Above 60	7	4.8
Marital Status	Single	38	26.2
	Married	*102*	70.3
	Divorced	5	3.5
Qualification	B.Sc./PharmD	103	71
	M.Pharm.	27	18.6
	FPCPharm	10	7
	Others	5	3.5
Ownership	Pharmacist	117	80.9
	Non-Pharmacist	28	19.3
Position	Superintendent Pharmacist	123	84.5
	Pharmacy Intern	22	15.2
Proximity to Govt. Hospital	Near	53	36.6
	Far	92	63.4
Proximity to Private Hospital	Near	83	57.2
	Far	62	42.7

All (100%) respondents agreed that they consult and inform doctors and other health personnel. They also agreed that they take patients' drug histories in the pharmacy and counsel them about drug interactions. A majority (83.5%) of the respondents agreed to explain test results to patients. Also, 67.6% of respondents agreed on the consultation on OTC drugs while giving narcotics and sedatives without a prescription to patients, over half (58.6%) of respondents agreed, and 61.4% of respondents agreed to administer antibiotics to patients without a prescription. Furthermore, it was observed that a large proportion (68.9%) of respondents agreed to be informed about health risks, while very many (71%) of them agreed to counsel about social education themes. More than half (67.5%) also agreed that reporting adverse drug reactions was a routine activity performed by a pharmacist (Table 2).

Table 2: Pharmacists' Awareness of Routine Activities Performed by Community Pharmacists

Variables	**Responses N=145**		
		Frequency	**%**
Consultation and Informing doctors and other health personnel	Yes	145	100
	NO	0	0
Taking the drug history of patients in the pharmacy	Yes	145	100
	NO	0	0
Explaining test results to patients	Yes	121	83.5
	NO	24	16.6
Consultation on OTC drugs	Yes	98	67.6
	NO	47	32.4
Counseling about drug interactions	Yes	145	100
	NO	0	0
Giving narcotics and sedatives without a prescription	Yes	85	58.6
	NO	60	41.4
Giving antibiotics without a prescription	Yes	89	61.4
	NO	56	39.6
Being informed about health risks	Yes	100	68.9
	NO	45	31
Counselling about social education themes	Yes	103	71
	NO	42	29
Reporting adverse drug reactions	Yes	98	67.6
	NO	47	32.4

Table 3: Association of Demographic Variables Awareness of Routine Activities Performed by Community Pharmacist

Variables		High	Low	χ2	p-value
Gender	Females	11	6	10.337	0.006*
	Males	117	11		
Age (years)	30-40	36	5		
	41-50	65	10	1.406	0.704
	51-60	22	2		
	Above 60	7	0		
Marital Status	Single	36	2	2.003	0.367
	Married	*89*	13		
	Divorced	4	1		
Qualification	B.Sc./PharmD	93	10	11.678	0.009*
	M.Pharm.	24	3		
	FPCPharm	8	2		
	Others	2	3		
Ownership	Pharmacist	104	13	0.639	0.423
	Non-Pharmacist	24	4		
Position	Pharmacist	111	12	4.899	0.086
	Pharmacy Intern	17	5		

** p <0.05 is statistically significant*

Association of Demographic variables with awareness of routine activities performed by community pharmacists revealed that gender and qualification were significantly associated ($p<0.05$), (Table 3). The clinical screenings carried out by community pharmacists are provided in Figure 1. All (100%) of the respondents agreed to check patients' blood pressure while the majority (82.1%) agreed to assess patients with diabetes. Quite a number (73.1%) affirmed that they carry out wound dressing for accident/surgery victims. Amongst the respondents, only 19.3% agreed to administering nebulizers to patients. There was a significant association between gender, ownership, position, and proximity to a private hospital with diabetes assessment by community pharmacists. Similarly, gender, Age, marital status, and ownership status with the choice of dressing injuries for accidents and surgeries were significantly associated (Table 4). Responses to community pharmacists' discussions with patients are presented in Figure 2. Many (74.3%) of the respondents strongly agreed that the name of drugs and the direction of usage with common side effects were discussed with patients. Also, 86.2% strongly agreed that information on the current treatment regime was discussed. However, over half (67.6%) completely disagree with the suggestion of physicians visit for their ailments. Furthermore, 60.7% of the participants strongly agreed to counseling on general health issues and diagnosis. The key findings of this study revealed that the majority of the participants give clinical support to patients and healthcare professionals. Gender and qualification were found to be significantly associated with community pharmacists' awareness in carrying out activities. Almost all of the respondents were involved in clinical routine screening and patient assessment. The clinical activities provided depended on proximity to position in the pharmacies, ownership, and private clinic. Medication counseling was mostly communicated by all of the participants. Most of the respondents fall between the age group of 41 -50, this is particularly so because they are the determinants of the labor force in the nation. The older age group is predominantly responsible for managerial activities. This is similar to previous studies in the United States and Kuwait (Awad and Abahussain, 2010; Kotechi *et al*., 2000).

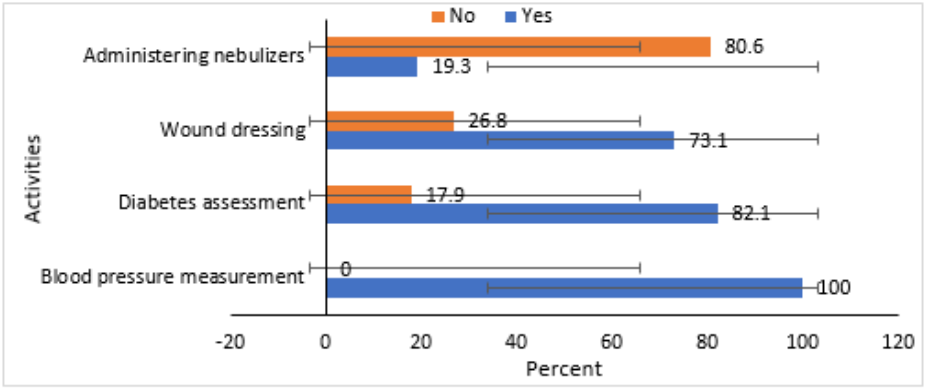

Fig 1: Clinical screening provided by the Community Pharmacist's

Table 4: Association of Demographic Variables with ac Community Pharmacists

Characteristics		Diabetes assessment				Attending to accidents injuries and surgery			
		Yes	No	$\chi 2$	p-value	Yes	No	$\chi 2$	p-value
Gender	Male	17	8	4.63	0.044*	13	12	20.30	0.000*
	Female	102	18			107	13		
Age (years)	30 – 40	34	6	2.0	0.533	36	6	11.77	0.008*
	41 – 50	60	18			56	19		
	51 – 60	19	4			11	12		
	Above 60	3	2			4	3		
Marital status	Single	32	6	0.11	0.994	26	12	9.18	0.001*
	Married	87	19			80	22		
	Divorced	4	1			1	4		
Qualification	B.Sc/PharmD	88	15	7.17	0.067	79	24	2.56	0.462
	M.Pharm	21	6			17	10		
	FPCPharm	8	2			7	3		
	Others	2	3			3	2		
Ownership	Pharmacist	108	8	50.67	0.000*	100	17	47.13	0.000*
	Non-Pharmacist	10	18			6	22		
Position	Pharmacist	107	16	18.60	0.000*	95	28	7.38	0.025*
	Intern-Pharm	12	10			11	11		
Proximity to Govt. hospital	Far	45	8	0.46	0.459	41	12	0.77	0.380
	Near	74	18			65	27	0.25	
Proximity to private hospital	Far	60	23	12.62	0.000*	62	21		0.616
	Near	59	3			44	18		

**p <0.05 is statistically significant*

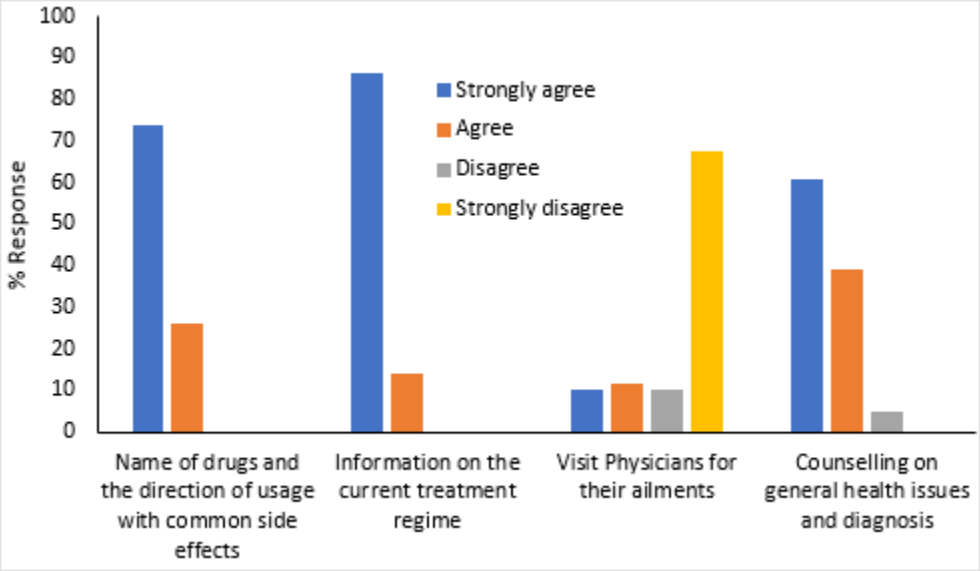

Fig 2: Community Pharmacists' discussion with patients'

Most of the general clinical support provided ranged from consultation with doctors, taking patients' drug histories granting counseling services about drug reactions, and explaining test results. These findings are consistent with earlier reports by the WHO on the pharmacist's involvement in health care delivery services (WHO, 1997). Also consistent with previous studies, community pharmacists had a positive disposition of offering several health promotion services such as counseling on health behaviors, offering consultations on OTC drugs and antibiotics as well as informing them on potential clinical risks (Stowaser *et al*., 2004).

Studies have shown that gender plays a big role in moral decision-making since males tend to be task-oriented, while women tend to be relation-oriented (Dawson, 1995). As observed in this study, the male folds are likely to be more aware and involved in the provision of clinical activities, since they are more engaged in community practice. Community pharmacists' level of awareness in routine activities

performed was significantly impacted by their qualifications, this is because only a few of the studied participants had additional qualifications experience, other than their first degree. The public health curriculum in Nigeria rarely includes public health activities, therefore the necessary competence may not be present (Oparah and Arigbe-Osula, 2002). One potential solution to this obstacle could be for community pharmacists to participate in continuing education courses to increase their expertise and understanding of public health concerns.

On the type of clinical screening performed by community pharmacists, it was observed that all respondents agreed to screen for blood pressure while 82.1% were involved in screening for diabetes mellitus. This is consistent with other findings in Benin and Ghana, which also reported the involvement of community pharmacists in different levels of blood pressure monitoring through constant blood pressure checks in their patients (Oparah and Eferakeya, 2005; Marfo and Owusu-Daaku, 2017). Similar studies also reported community pharmacists' involvement in diabetes care by helping patients constantly monitor their sugar levels, especially in cases of already-diagnosed diabetes patients (Hughes *et al*., 2017; Erku *et al*., 2017).

Their involvement in dressing from accident/surgery is consistent with earlier submissions that community pharmacists have long been involved in wound care such as cuts and grazes arising from accidents, sporting injuries, and the like (Oparah and Arigbe-Osula, 2002).

Position, ownership, and proximity to private hospitals were also found to be associated with clinical screening activities carried out at the pharmacies. A community pharmacy manager should anticipate that nonprofessional goods and services will account for a sizable amount of the pharmacy's revenue, and a pharmacist in a managerial role should anticipate taking on sizable nonprofessional responsibilities. Physical closeness has been demonstrated to improve general health outcomes and access to healthcare providers (Veillard *et al*., 2017).

Relative to what was discussed with community pharmacists, this study observed that all respondents agreed to discuss issues related to drug names and their direction of usage, information on the current treatment regime, and counseling on general health issues and diagnosis while only a handful (22%) agreed on discussing issues related to the suggestion of physicians to visit for their ailments. These observations are consistent with the submission of the WHO on the changing role of a pharmacist as a drug therapy manager thus their services must be more patient-centered in their practice (WHO and FIP, 2006). There is no doubt that patient's willingness to discuss the highlighted issues as observed in this study is in line with previous submissions that the new approach to practicing the pharmacist profession is a major transformation in the social responsibility of pharmacists as they focus on the social needs of the patients in their community hence the increased openness of their patients to them (Varela *et al*., 2011).

The study is however not without limitations; The study was carried out only in one state (Delta) out of the 36 states in Nigeria, as such, findings from this study cannot be generalized. Only the view of the community pharmacists was explored in this study, end users' views about the activities of the community pharmacists were not evaluated. The information provided by the participants was self-reporting, and may not be free from recall bias.

The routine activities performed by community pharmacists in major cities in Delta State are diverse. These services range from consultation with doctors and patients and offering counseling services as it relates to OTC drugs, antibiotics and health risks, and adverse drug reactions. The clinical screenings rendered include assessing for blood pressure, screening for diabetes mellitus, and dressing injuries from accidents and surgeries.

Conflicts of interest: There are no conflicts of interest whatsoever in the course of the study

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