AN EVALUATION OF COMMUNITY PHARMACISTS' INVOLVEMENT IN THE DELIVERY OF PUBLIC HEALTH SERVICES

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Abstract

Introduction: Public health aims at assuring conditions in which people can be healthy. The relationship between public health and pharmacy, at the provider or "micro" level of practice, creates direct patient specific interventions for improving community health status. This study evaluated the public health activities carried out in community pharmacies located in four local government areas of Lagos State, Nigeria.

Method: This study was a cross- sectional and prospective survey of 100 community pharmacies conveniently selected in four Local Government Areas of Lagos State. Pretested and validated questionnaires were distributed to the pharmacists. The questionnaires addressed 8 pharmaceutical public health roles identified for pharmacists. Data collected were analysed using SPSS statistical package, version 17.0. Frequencies, percentages, medians and standard deviations were determined. Inferential statistics was carried out using Mann-Whitney U test.

Results: About a half (53.3%) of the respondents were males; majority (92.2%) had only the B. Pharm degree qualification. Data showed that, in both high and medium brow areas, an average of 70% of respondents provided the public health services. Respectively, 86.7% and 97.7% provided self-care services in medium and highbrow areas, representing the most prevalent activity; this is closely followed by counselling on how medicines work – medium brow (84.4%) and high-brow (88.6%); >60% provided leaflets on hypertension, diabetes and sexually transmitted infections. Regarding quality of care, general lifestyle advice, hypertension, asthma, and STIs scored highest. Majority (74%) of the pharmacists always referred the patient to the doctor when presenting with symptoms beyond their control.

Conclusion: The study revealed a significant involvement of community pharmacists in the provision of public health services in Lagos State, Nigeria.

Key Words: Public health, Community; Pharmacy; Practices

INTRODUCTION

Pharmacy practice in Nigeria has evolved over the years with the advent of pharmaceutical care, patient oriented care and public health pharmacy. Community pharmacies now provide public health services which include patient education, patient counselling, referral and preventive services delivery, for example, screening programs to increase early therapeutic interventions in numerous chronic disease states such as diabetes, hyperlipidaemia, obesity and hypertension[1,2,3,4,5.]. Community pharmacists are 'public health practitioners' when they advise the public on safe use of medicines, the treatment of minor ailments and on healthy lifestyle choices. They may also provide specific public health interventions as part of a broader specific service, for example, weight-loss clinics, specialist smoking cessation advice or drug misuse services [6, 7, 8].

Community pharmacists have been recognized to be the health professionals most accessible to the public as well as being the first point of contact for the patient as they are well situated in the neighbourhood [6, 9]. Pharmacists are well placed to make important contributions to improving public health[10] by providing patients ready access to an increasing range of health care services. They are also valuable resources for improving health and reducing health inequalities, especially for vulnerable and deprived populations who cannot afford continuous hospital care[11, 12].

Public health services provided by pharmacists are individually based; some provide it while others don't. Not everyone sees the primary need for these services more so as there is no remuneration.

It has however, become necessary for pharmacists to key into the move of public health, thereby making themselves relevant to individuals and the society as a whole in the role of health prevention and promotion.

The objective of this study was to document the public health activities carried out in community pharmacies in Lagos State, Nigeria, to see if they partake in the responsibility of public health.

METHOD

Study design and Sampling

A cross- sectional study was carried out. Pretested and validated questionnaires were distributed by convenient sampling to pharmacies in four Local Government areas: Ikeja, Eti-Osa, Suru-Lere and Amuwo-Odofin. These areas were chosen to represent highbrow (Ikeja and Eti-Osa) and medium brow (Suru-Lere and Amuwo-Odofin) areas in Metropolitan Lagos State. High and medium brow were taken

to reflect the population density in Lagos State. The Twenty –five questionnaires were distributed to the pharmacies in each of the four local government areas, giving a total of one hundred questionnaires. The questionnaires were dropped for the pharmacists not present in their pharmacies and later went back for collection. For the pharmacists present, the questionnaires were filled immediately and collected.

Instrument

Eight pharmaceutical public health roles identified for pharmacists were used as indicators in this study[11, 13]. The choice of indicators was based on experience in community pharmacy and interaction with other community pharmacists. The questionnaire was divided into two. First, it asked which type of service was provided in the community pharmacy. Secondly, these services were broken down into stems to assess the quality of service. In the assessment of the type of information given to customers, each item dealt with an aspect of public health and the more the number of items, the higher the reliability of the measurement. (Cronbach Alpha for the various scales were: smoking -0.545; alcohol abuse- 0.734; chronic disease- 0.876; lifestyle- 0.724; cancer awareness- 0.670; STI awareness-0.824; family planning-0.830; young mother's advice-0.783; refferals-0.562)

Data Analysis

The data collected was analysed using the SPSS statistical package, version 17.0. Frequencies, percentages, medians and standard deviations were determined. On a three point scale, 'always' represented a score of 2, 'sometimes', a score of 1 and 'never' a score of 0. The scores were taken to correlate with the level of involvement of community pharmacists in public health, thus scores above 1 were taken to be positive, implying high involvement of the pharmacy. The closer the score to 2, the higher the involvement of the pharmacy. Cross tabulations and the Mann-Whitney U test were carried out to find out any differences between the high and medium brow areas. $P<0.05$ was considered significant.

RESULTS

One hundred questionnaires were given out to pharmacists from whom 90 were retrieved, one questionnaire could however not be used.

Demographic Characteristics of pharmacies and pharmacists can be found in Table 1

There were significant differences between the two areas in the type of qualification and number of pharmacists employed $(P<0.05)$.

Data showed that, in both high and medium brow areas, an average of 70% of respondents provided the public health services. Providing advice on smoking cessation was significantly different $(p=0.026)$

respectively in medium and high-brow areas but not for other services (Table 2). Services were mainly offered to every new customer in both areas.

Hypertensions, Diabetes, Asthma, were the predominant disease states that received attention and had leaflets available (Table 3).

Results of median scores are provided in Tables 4A to 4C. Data revealed that in both Medium and High - brow areas, better services (Median value 2) were provided in relation to General lifestyle advice, Hypertension, Asthma, STIs and to a lesser degree, advice to young mothers and referral services. Moderate services (Median value 1) were provided in the area of Diabetes, Family Planning and Cancer awareness. However, for all the services provided, there was statistical difference between the two areas only in the provision of general lifestyle advice on nutrition and other habits to either add or lose weight (p=0.037)

Table 1: Demography of pharmacists

Item	Characteristics	Medium Brow (%)	High Brow (%)	P value$^{\alpha}$
Sex	Male Female	28 (62.2) 17 (37.8)	20 (45.5) 24 (54.5)	0.085
Number of years of graduation as pharmacist	Less than 5 years 5-10 Years Greater than 10 years	14 (31.1) 11 (24.4) 20 (44.4)	24 (54.5) 8 (18.2) 12 (27.3)	0.085
Number of years in community practice	Less than 5 years 5-10 Years Greater than 10 years	22 (48.9) 11 (24.4) 12 (26.7)	30 (68.2) 10 (22.7) 4 (9.1)	0.074
Qualification	B. Pharm Masters Fellowship	45 (100) 0 (0.0) 0 (0.0)	37 (84.1) 5 (11.4) 2 (4.5)	0.006*
Are you owner or employee	Owner Employee	17 (37.8) 28 (62.2)	21 (47.7) 23 (52.3)	0.395
Number of pharmacists working in the pharmacy	1 Pharmacist only 2-3 Pharmacists More than 3	21 (46.7) 16 (35.6) 8 (17.8)	6 (13.6) 28 (63.6) 10 (22.7)	0.002*
Number of support staff employed	1-3 4-6 More than 6 persons	19 (42.2) 15 (33.3) 11 (24.4)	18 (40.9) 13 (29.5) 13 (29.5)	0.895
Opening hours	Less than 12 hours 12 hours More than 12 hours	4 (8.9) 24 (53.3) 17 (37.8)	3 (6.8) 19 (43.2) 22 (50)	0.588

Number of patients seen for pharmacy-related services	Less than 19	7 (15.6)	2 (4.5)	0.261
	20 - 29	11 (24.4)	7 (15.9)	
	30 - 39	13 (28.9)	19 (43.2)	
	40 - 49	7 (15.6)	6 (13.6)	
	Greater than 50	7 (15.6)	10 (22.7)	
Total (n)		45	44	

Table 2: Services Offered in the Pharmacy

		Medium Brow		High Brow		Fischer's test
Item		Frequency	%	Frequency	%	p
Provide health advice on self-care	Not Provided	6	13.3	1	2.3	0.062
	Provided	39	86.7	43	97.7	
Provide health advice to young mothers	Not Provided	17	37.8	16	36.4	0.532
	Provided	28	62.2	28	63.6	
Provide advice on smoking cessation	Not Provided	13	28.9	23	52.3	0.021*
	Provided	32	71.1	21	47.7	
Improve AIDS Awareness	Not Provided	15	33.3	15	34.1	0.559
	Provided	30	66.7	29	65.9	
Provide sexual health support	Not Provided	14	31.1	11	25	0.343
	Provided	31	68.9	33	75	
Advice patients with chronic illness	Not Provided	23	51.1	20	45.5	0.374
	Provided	22	48.9	24	54.5	
Provide advice on how medicines work	Not Provided	7	15.6	5	11.4	0.395
	Provided	38	84.4	39	88.6	
Advice on complementary medicines	Not Provided	13	28.9	11	25	0.431
	Provided	32	71.1	33	75	

Table 3: Provision of Disease information leaflet

		Medium Brow		High Brow		Fischer's Exact test, d.f-1
Item		Frequency	%	Frequency	%	
Hypertension	Yes	32	71.1	37	84.1	0.112
	No	13	28.9	7	15.9	
Diabetes	Yes	34	75.6	32	72.7	0.425
	No	11	24.4	12	27.3	
Obesity	Yes	17	37.8	18	40.9	0.466
	No	28	62.2	26	59.1	
Family planning	Yes	17	37.8	22	50	0.172
	No	28	62.2	22	50	

Asthma	Yes	25	55.6	27	61.4	0.367
	No	20	44.4	17	38.6	
Smoking	Yes	13	28.9	17	38.6	0.227
	No	32	71.1	27	61.4	
Accidents in the home	Yes	6	13.3	7	15.9	0.482
	No	39	86.7	37	84.1	
Sexually Transmitted Infections	Yes	27	60	27	61.4	0.534
	No	18	40	17	38.6	
HIV/AIDS	Yes	24	53.3	26	59.1	0.369
		21	46.7	18	40.9	

Table 4A: Median score on the type of information given to customers

Item	Question	Medium		High		p
		Median	standard deviation	Median	standard deviation	
Smoking	i) enquiry from customers about their smoking status	1	0.548	1	0.371	0.103
	ii) advice to smokers	1	0.609	1	0.650	0.322
	iii) smoking cessation programs, such as sale of nicorette patches/gum or anything to do with smoking cessation	1	0.802	0	0.821	0.107
	iv) person or a place of referral for someone who want to stop smoking	0	0.659	0	0.543	0.006*
General lifestyle advice	i) advice customers on healthy eating patterns	1	0.941	0.5	0.930	0.565
	ii) avoid too much salt	2	0.447	2	0.451	0.949
	iii) drink sufficient amounts of water daily	2	0.468	2	0.488	0.418
	iii) eat lots of fruits	2	0.506	2	0.613	0.676
	iv) avoid too much fatty foods	2	0.514	2	0.499	0.690
	v) do not eat late at night	2	0.546	2	0.627	0.497
	vi) checking and monitoring the weight of your "regular" customers	1	0.645	1	0.651	0.431
	vii) advice on nutrition and others habits to either add or lose weight	2	0.549	1	0.579	0.037*
	viii) advice your customers on regular exercise	2	0.624	1	0.632	0.810
	ix) advice on use and effect of alcohol	1	0.673	1	0.695	0.853
General	Have you ever encountered/treated cases of accidental poisoning	0	0.458	0	0.476	0.399
Referrals	i) Referrals of customers to a hospital with conditions beyond your control	2	0.457	2	0.615	0.940
	ii) Refer to another pharmacy for medication you don't have?	2	0.539	2	0.726	0.557

Table 4B: Median score on the type of information given to customers

Item	Question	Medium		High		p
		Median	standard deviation	Median	standard deviation	
Chronic disease: Asthma	i)general advice on prevention and control of asthma attacks	2	0.458	2	0.534	0.440
	ii) Education on proper use of inhalers	2	0.435	2	0.627	0.112
Chronic diseases: Diabetes	i) screening of customers for diabetes by carrying out simple tests	1	0.796	0	0.693	0.028*
	ii) ensuring that "regular diabetic customers" have a continuous supply of their medication	2	0.723	2	0.759	0.946
	iii) test these patients regularly to ensure that the sugar level is being maintained within the expected range?	1	0.915	0	0.784	0.018*
	iv) advice to reduce their sugar, alcohol and carbohydrate intake	2	0.603	2	0.642	0.417
Chronic diseases: Hypertension	i) do you regularly screen customer for hypertension by checking their blood pressure ?	2	0.557	2	0.476	0.474
	ii) do you ensure that your "regular hypertensive customers" have a continuous supply of their medication	2	0.457	2	0.553	0.678
	iii) do your check their BP regularly to ensure that it is being maintained within the expected range?	2	0.654	2	0.585	0.272
Cancer awareness	i) advice/show female customers to feel their breasts regularly for presence of lumps	1	0.583	1	0.526	0.259
	ii) advice to customers to watch out for presence of protrusions or lesions on parts of their body	1	0.647	1	0.608	0.608
	iii) advice to see a physician immediately they observe such occurrences	2	0.773	2	0.627	0.282

Table 4C: Median score on the type of information given to customers

Item	Question	Medium		High		p
		Median	standard deviation	Median	standard deviation	
Family planning	i) educate customers on family planning issues	1	0.599	1	0.587	0.218
	ii) counselling on the importance of child spacing	1	0.6091	1	0.701	0.862
	iii) advice customers on the importance of contraception, and on the various contraception option	1	0.688	1	0.676	0.213
Young mothers:	i) advice to young mothers on breastfeeding issues	1	0.684	1	0.774	0.383
	ii) advice on how to ensure the general well-being of their children	2	0.626	2	0.663	0.853
	iii) advice to report immediately any unusual conditions observed in their children (which could be signs of disease)	2	0.589	2	0.698	0.978
	iv)Educate parents on the importance of immunization	1	0.712	1	0.765	0.663
STIs	i) Information on HIV/AIDS	2	0.548	2	0.658	0.377
	ii) counselling on how to cope with the stigmatization/discrimination which they may face in the society	1	0.707	1	0.762	0.880
	iii)) advice patients on condom use	2	0.499	2	0.561	0.202
	iv) advice patients to abstain from sex with multiple partners	2	0.539	2	0.601	0.281
	v) education on the signs and symptoms of STDs, which should be reported	1	0.650	2	0.622	0.086
	vi) information on the possible side effects which should be no cause for alarm	1	0.645	2	0.664	0.312

Discussion

This study assessed public health practices in community pharmacies in two areas, medium and highbrow, in Lagos state.

There were more males pharmacists in the medium brow and more females in the highbrow area but these differences were not significant. Literature lacked any comparison.

All respondents had the B Pharm degree which is the basic qualification for registration as a Pharmacist in Nigeria but only pharmacists in the high-brow area had additional qualifications.

About a third of the respondents had graduated as pharmacists less than five years ago and about half had worked in community practice for up to 5 years in medium brow area. The high brow area had more number of pharmacists working in the pharmacy than the medium brow area and this showed a significant difference. This is expected because the level of activities in the high-brow is normally higher than medium-brow areas. However, there is no significant difference in the length of opening hours for the two areas. Also, there was no significant difference in the number of patients seen for pharmacy-related services in the two areas.

In terms of services rendered or offered in the pharmacy, it was noted that majority (70%) of the respondents provided each of the public health services in both areas. This is higher than the report of an earlier study by Eniojukan *et al*., in 1997[14], but less than that quoted by Oparah *et al.*, in 2005[15]. The studies were however carried out in different parts of Nigeria. Similar findings of positive attitude of community pharmacists towards practice of public health have been reported in other developing country and developed countries [20, 22, 23].

It would therefore appear that there has been an improvement in the provision of public health services since the study by Eniojukan *et al*., in 1997[14] to date. This may be as a direct result of the introduction of public health pharmacy into the undergraduate curriculum, the launching of public health courses at various postgraduate levels and the Mandatory Continuing Professional Development programmes for pharmacists in Nigeria that have focused significantly on public health pharmacy. There are still visible gaps which call for further sensitization of community pharmacists to utilize their knowledge and skills to provide primary care. Pharmacists can improve in areas of smoking cessation, family planning advice, advice to young mothers, cancer awareness and STI awareness.

The revised pharmacy curriculum ensures that pharmacists have the requisite training to provide diverse services that promote the primary health of the people they serve in their various communities. The WHO Revised Drug Strategy Resolution WHA 47.12 recognizes the key role of pharmacists in public health, emphasizing their responsibility to actively participate in illness prevention and health promotion[16].

One of the key pharmaceutical function and activity is Patient Education and Counselling and the counselling process is often strengthened by take home leaflets [17, 18, 19]. The Community pharmacists provided leaflets mainly on hypertension and diabetes. Patient information leaflets are often overlooked as potential patient education tools and the willingness of the pharmacist to offer such aid is said to be dependent on his/her perception of its relevance [20, 21].

Hypertension and diabetes screening as well as healthy lifestyle maintenance were the main public health activities that the pharmacists were engaged in. This is similar to other studies both in Nigeria and abroad [22, 23]. This may be explained by relative knowledge, importance and costs involved as pharmacists are usually expected to provide such services as complimentary without reimbursement; The running cost for diabetes screening is usually much higher than hypertension screening while it actual costs nothing to provide guidance on healthy lifestyle. Hypertension and Diabetes are also two highly prevalent morbidities in Nigeria which have closely related modifiable factors that are linked to lifestyle [24, 25]. In the United States, the most frequently performed disease preventing and health promoting activities by community pharmacist were found to be hypertension screening and counselling, nutrition, weight control, allergies, proper use of prescribed and OTC medications, referring patients to their health care providers, and taking drug and medical problem histories [6, 26].

Tobacco smoking is another very serious public health hazard globally, being responsible for millions of death annually [27]. In this study, community pharmacists have not joined in the battle against tobacco smoking; they rarely enquired from customers about their smoking status, rarely gave advice to smokers and virtually never referred smokers who intended to quit to appropriate places. This is in spite of the fact that some of them put on sale aids used for smoking cessation such as Nicorette Patches / Gums. There is a lot that the community pharmacist can contribute to the effective management of asthma in the community through patient education and counselling. Pharmacists in this study were found to be highly involved in Asthma management through provision of general advice on prevention and control, and educating patients on the proper use of inhalers. Community pharmacists in both areas were also found to be significantly involved in STIs (including HIV/AIDS) awareness and control. This needs to be further strengthened bearing in mind the significant place of prevention in the overall control of HIV/AIDS[28].

Community pharmacists should be made aware of their usefulness in closing gaps such as screening and detection of other disease states, education and information in asthma management, cancer awareness, STI's, family planning etc. Studies have reported increased regular breast self -examination rates after being counselled by pharmacists [29].

Patient referral is an important concept in Patient Care. This is most critical at the community pharmacy level when pharmacists respond to symptoms. It is expected that appropriate referrals be made without

delay when cases beyond their knowledge and skills are encountered. By so doing, it enhances the confidence of customers in the pharmacist's capability to appropriate counsel and guidance. In this study, majority of pharmacists were found to always make appropriate referrals.

The concept of pharmacists being used as a referral agent has been noted in several pharmacy studies [30]. Pharmacy customers sometimes use pharmacists as a 'stepping stone' to general practice, taking their advice about the necessity of a visit to the doctor.

When comparing the two study areas, there were statistically significant differences in only some aspects of Diabetes care, nutritional services and tobacco control; it would therefore appear that employing more pharmacists and acquisition of additional qualifications had no bearing on the quality and level of services provided by the pharmacists. Surprisingly, none of the respondents had ever encountered cases of accidental poisoning in either the medium or highbrow areas. It may be that the level of effective management of accidental poisoning at home is high in those communities or they go to the hospital or may have put in place preventative measures to ensure non-occurrence in the first place.

CONCLUSION

There is a high level of involvement of community pharmacists in providing some aspects of public health services in Lagos State. Studies have shown that pharmacists are still the biggest untapped resource for health improvement in the community. More effort is needed in engaging pharmacists so as to utilise the potential knowledge on public health activities. Providing incentives for services rendered could also increase community pharmacists' engagement in public health activities.

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