Evaluation of the Role of Nigerian Pharmacists in Promoting Lifestyle Modification in Prevention and Control of Hypertension

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Abstract

Background: Hypertension is one of the most prevalent non-communicable conditions worldwide and currently a global medical and public health issue. A public health approach to the prevention and control of hypertension needs to be adopted, one that promotes healthy dietary habits, a tobacco-free lifestyle, regular physical activity and a supportive psychosocial environment. Pharmacists and other health care professionals will play a vital role in the promotion and success of this approach, because they interact on a regular basis with a large proportion of the population and are well placed to counsel individual patients. The objective of this study was to document the role of Nigerian pharmacists in promoting lifestyle modification in the prevention and control hypertension.

Methods: A descriptive cross sectional study conducted during the Annual National Conference of Pharmaceutical Society of Nigeria (2013) in Ilorin, Kwara State, Nigeria. Data was collected using semi-structured questionnaires administered to 370 Community and Hospital Pharmacists. Descriptive data was presented in the form of frequency and percentages. Statistical analysis was carried out using Chi square test and a p value of < 0.05 was considered statistically significant.

Results: Three hundred and fifty questionnaires were completed giving a response rate of 94.6%. The respondents (60.3 %) performed blood pressure screening and monitoring in their practice setting while 52.9 % educate and counsel patients on life style modification. There was a significant association between Pharmacist's educational qualifications and the provision of blood pressure screening and

monitoring services (P=0.000) but none with patients education about life style modification (P=0.272). The Pharmacist's area of practice was found to be significantly associated with the provision of patients education and counseling (P=0.000).

Conclusion: Nigerian Pharmacists educate and counsel their patients on healthy dietary habits, dietary salt restriction, healthy body weight, regular physical activity and reduction in alcohol consumption. They also provide blood pressure screening and monitoring services to their patients.

Keywords: Hypertension, pharmacist, counseling, education, healthy lifestyle

Introduction

Hypertension affects about 1 billion people worldwide and is a major risk factor for stroke, myocardial infarction, vascular disease, and chronic kidney disease[1]. The prevalence rate in sub-Saharan African particularly in urban societies seems to be as high as those seen in developed countries[2]. Prevalence of hypertension among Nigerians is high[3] and has been put at 38.6 % and 41.2 % respectively for adult males and females aged ≥25 years[4] .Managing this chronic condition and its resultant complications constitutes a great financial burden on individual patient and the health system of many countries[5].

It is an important risk factor for cardiovascular complications including; stroke, congestive heart failure, myocardial infarction, pulmonary embolism, cerebral aneurysm, kidney failure[6]. Cardiovascular diseases can be prevented by altering diet and lifestyle and by reducing risk factors such as hypertension[7]. Abnormally high blood pressure is generally divided into two main categories: essential hypertension and secondary hypertension. Primary or essential hypertension

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accounts for 90-95 % of adult cases, while secondary hypertension accounts for 2-10 % of cases[8, 9]. The etiology of essential hypertension is unknown and its pathophysiology is assumed to be multifactorial. Many causal factors have been linked to essential hypertension including a sedentary lifestyle, tobacco smoking, excessive stress, visceral obesity, hypokalemia, high sodium intake and other poor dietary habits, sodium sensitivity, alcohol consumption and vitamin D deficiency [10-12].

Lifestyle modification is a non drug measure employed in the prevention and management of hypertension. This involves increased physical activity, weight loss in overweight patients, diet low in sodium and high in potassium, consumption of fruits, vegetables, and low-fat dairy product, stress and weight reduction, smoking cessation and limitation of alcohol consumption[13]. The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7) recommended lifestyle modification as the first step in managing hypertension[13]. It has also been reported to enhance treatment outcomes in patients living with high blood pressure and decreases the progression to hypertension in patients with pre hypertension BP values[14, 15].

Pharmacists are easily accessible health care professional in any community and as such, they are in a position to provide early detection of chronic diseases and to identify unhealthy life styles[16]. The ability of pharmacists to assume a major role in detection, management, and control of hypertension depends on the system of care and the degree of integration of pharmacists into the health care team particularly in settings with limited resources[17].

This study was designed to document the role of Nigerian pharmacists in promoting lifestyle modification in the prevention and control of hypertension.

Methods

Setting

The study was carried out during the Annual National Conference of Pharmaceutical Society of Nigeria (2013) in Ilorin, Kwara State Nigeria. Over 5000 pharmacists registered for the conference but 2000 were in attendance from all practice setting viz: industrial, administrative, community, academic, hospital, journalism. The target population for the study were community and hospital pharmacists who constitute the highest number in practice and most suitable for the study objectives.

Sample size determination

The required sample size for the study was determined using $n = N/1+N (e)^2$ for calculating sample size[18].

Where n = sample size, N = population size and e = precision level (0.05% significance level).

$$n = \frac{2000}{1+2000(0.05)^2}$$

n   =   333.3

With 5 % attrition rate a sample size of 349.6 was obtained. Hence, a total of 350 participants were used in the study.

Method of data collection

A 17- item questionnaire was developed to collect specific information on demographic and practice related items on life style modification in management of

hypertension. Purposive sampling was used to distribute three hundred and seventy (370) questionnaires to pharmacists in community and hospital settings by research assistants and closely supervised by the researchers to ensure that only those meeting the inclusion criteria were given. The conference hall was divided into nine sections and a research assistant was assigned to each section. Each pharmacist was asked his or her area of practice before they were given questionnaires to fill. Pretesting of the questionnaire was done with thirty (30) questionnaires which were distributed to pharmacists in the community and hospital practice in the state prior to the conference period. These participants were exempted from the study by indicating on the questionnaires that those who filled questionnaires during the pretesting should not fill during the conference.

The questionnaires were coded and entered into Statistical Package for Social Science (SPSS) version 20. Descriptive statistics in the form of frequencies and percentages were used. Inferential Statistical analysis was carried out using Chi square test and level of significance was set at $p < 0.05$.

Results

A total of 370 questionnaires was administered to community and hospital pharmacists, only 350 (94.6%) were found to be adequately filled, returned and evaluated. The demographic characteristics of respondents are shown in Table 1. A total of 239 (68.3%) of the respondents were males while 111 (31.7%) were females. The mean age of the respondents was 43.61±11.58. The mean duration of pharmacy practice among the respondents was 16.53±10.97 years. Notable

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additional qualifications obtained were Fellow of West Africa Postgraduate College

of Pharmacist (FPCPharm), Master of Business Administration (MBA), Law (LLB),

Master of Public Health (MPH), and Master of Public Administration (MPA) with

18.9 %, 7.4 %, 0.6 %, 3.1 % and 1.1 % respectively.

Table 1: **Demographic Characteristics of Respondents (n=350)**

Demographic variables	Options	Frequency (%)
Gender	Male	239 (68.3)
	Female	111 (31.7)
Age (in years)	< 49	235 (67.1)
	50-59	89 (25.4)
	60-69	18 (5.1)
	˃ 70	8 (2.3)
Years of experience	<10	111(31.7)
	11-20	98 (28)
	21-30	110 (31.4)
	31-40	27 (7.7)
Highest Academic degree	B.Pharm	292 (83.4)
	Pharm D	22(6.3)
	MPharm/MSc/FPCPharm	36(10.3)
Area of Practice	Community Pharmacy	187 (53.4)
	Hospital Pharmacy	163 (46.6)
Ownership of Practice area	Pharmacist	135 (72.2)
	Non-Pharmacist	52 (27.8)

B.Pharm; bachelor of pharmacy; Pharm D, doctor of pharmacy; MPharm, Master of pharmacy; MSc; FPCPharm; Fellow, West African Postgraduate College of Pharmacists

Majority of the respondents 332 (94.9 %) educated and counseled their patients on

healthy lifestyle habits (Table 2). About half of the respondents 175 (52.3 %)

performed blood pressure screening and monitoring in their practice site. Those

that did not attributed this to role restriction 34 (70 %), time constraints 12 (25 %),

lack of adequate facility 8 (16.7 %) and lack of willingness/cooperation from

patients 8 (16.7 %).

Table 2: Blood Pressure Monitoring, Education and Counseling in Patients

n=350

Variables	Options	Total (%)
Frequency of patient visit for blood	Always	155(44.3)
pressure screening and monitoring	Often	20 (8.0)
	Rarely	10 (2.9)
	Never	165 (47.1)
Frequency of Education and Counseling	Always	185(52.9)
on lifestyle modification	Often	147(42.0)
	Rarely	16(4.6)
	Never	2(0.6)
Type of Education and Counseling	Dietary	274 (78.3)
given to patients	Exercise	277 (79.1)
	Reduction in smoking/alcohol	244 (69.7)
	Salt restriction	272 (77.7)
	Stress reduction	244 (69.7)
	Weight reduction in overweight	280 (80.0)
	Adherence to medication	12 (3.4)
	Regular check-up	4 (1.1)
	BP monitoring at home	3 (0.9)

Screening and monitoring of patients in order to maintain optimal blood pressure was carried out using more than one method by the respondents: direct interview 171 (48.9 %), blood pressure measurement 255 (72.9 %), medication review 12 (3.4 %) and Body Mass Index 2 (0.6 %) as shown in Table 3.

Table 3: Methods Employed in Screening and Monitoring of Blood Pressure

n=350

Method	Total (%)
Direct interview	171 (48.9)
Blood pressure measurement	255 (72.9)
Medication review	12 (3.4)
Body mass index	2 (0.6)

Among the pharmacists in community practice, 155(44.3 %) constituting about 83 % of community pharmacists that took part in the study, always provided blood pressure screening and monitoring services while all the hospital pharmacists never did (Table 4).

Table 4: Area of practice versus provision of blood pressure screening and monitoring services

		Always	Often	Rarely	Never
Area of Practice	Community	155 (44.3 %)	20 (8.0 %)	10 (2.9 %)	-
	Hospital	-	-	-	163(46.6 %)

There was no significant (P=0.272) association between educational qualification of the respondents and patient education on healthy lifestyle (Table 5). The Pharmacist's area of practice was found to be significantly (P=0.000) associated with the providing patient education and counseling (Table 6).

Table 5: Association between Educational Qualification and Patient Education on Life Style Modification in the Prevention and Control of Hypertension

		Frequency of counseling and patient education on life style modification			
		Always	**Often**	**Rarely**	**Never**
Educational qualification	B. Pharm	157 (53.8%)	117 (40.1%)	16 (5.5%)	2 (0.7%)
	Pharm.D	8 (36.4%)	14 (63.6%)	0	0
	MPharm/MSc	20 (55.6%)	16 (44.4%)	0	0

Chi square= 7.6   P = 0.272

Table 6: Association between Area of Practice and How Often Pharmacists Counsel and Educate Patients on the Prevention and Control of Hypertension

		Frequency of counseling and education of patients on lifestyle modification			
		Always	**Often**	**Rarely**	**Never**
Area of practice	**Community**	119 (63.6%)	60 (32.1%)	6 (3.2%)	2 (1.1%)
	Hospital	66 (40.5%)	87 (53.4%)	10 (6.1%)	0

Chi square= 21.6   P= 0.000

Discussion

In the demographic characteristics of the pharmacists more than two third of the respondents (68.3 %) were males. Majority of the pharmacist had more than 10 years of practice experience while about 10 % had post graduate qualification. More than half of the pharmacist (53.4 %) indicated that they practice in community setting with majority of the outlets (72.2 %) owned by registered pharmacists. This finding was similar to that obtained from a study in Delta State, located in Southern Nigeria, in which 84.2 % of pharmacies were owned by pharmacists[19].

This study revealed majority of the pharmacists in community practice provided blood pressure screening and monitoring services. The pharmacist's role has expanded beyond the traditional product-oriented functions of dispensing and distributing medicines and health supplies. In recent times, the pharmacist's services include more patient-oriented, administrative and public health functions[20]. Pharmacists offer an accessibility that is rare among health care professionals and have a wealth of health knowledge. They are often uniquely suited in the community to provide public health services and in some cases 24 hours per day [20]. Respondents that did not carry out screening and monitoring of optimal blood pressure in their practice site attributed this to role restriction, time constraints and lack of adequate facility. In the present study, there was no significant association between additional educational qualification and frequency of provision of education and counseling to the patients but a statistically significant association was found to exist between area of practice and how often pharmacists provide education and counseling on lifestyle modification in the prevention and control of hypertension.
 Pharmacists in community practice were more engaged in patient education and counseling services compared with those in the hospital due to more contact time with the patients in their premises. Studies have shown that pharmacists involved in

health screenings, counseling and health education services have lowered total costs and improved quality of care outcomes achieved by health care systems, particularly related to chronic conditions like hypertension[21]. Some factors were identified as barriers to carrying out effective education and counseling on lifestyle modification to patients. A restricted role for pharmacists to operate fully is more important amongst those practicing in hospitals, where assess to direct patient care is lacking or inadequate. Lack of adequate facility also limit pharmacist's involvement in patient care as observed in a study where lay-out and design of pharmacies were unsuitable for effective dispensing thus constituting barriers to patient counseling[22]. In addition, time constraint is more important among pharmacists in the hospital where there is limited manpower and high patient patronage compared to community pharmacy setting.

Lifestyle modification is primary therapy for patients with mild hypertension and an adjunct to pharmacologic therapy. It also reduces the cost of health care by decreasing the use of pharmacologic and invasive cardiovascular treatments[21]. Furthermore, lifestyle modification may prevent increases in blood pressure and the development of hypertension in people at risk. These lifestyle changes may be applicable to population-based interventions[7].

In the present study, majority of the respondents promote lifestyle modification in the prevention and control of hypertension by educating and counseling patients on healthy dietary habits, weight reduction in overweight, moderate regular exercise, salt restriction and stress reduction. There was less emphasis on drug use with few respondents 12 (3.4 %) counseling on adherence to medications. A study reported that pharmacists have asserted themselves and established a functional capacity in public health[21]. There is a changing focus from the main duties of dispensing

medications to health promotion and disease prevention, although ability to carry out public health activity is particularly challenging within the confines of the traditional fee-for-product system[23].

 Effective communication and pre-education of patients on the benefits of life style modification could ease the task of educational intervention. Pharmacists play an important role in patient education and counseling on lifestyle changes which has decreased risk factors for cardiovascular disease[24]. Effective education provides the patient with information that helps in complying with required life-style changes that will enhance treatment outcome[25].

International Pharmaceutical Federation (FIP) recognizes pharmacist play an important role in patient education and counseling on lifestyle changes that can prevent and or improve the outcome of therapy throughout the course of chronic disease management [25]. To be able to effectively carry out this role, additional training for pharmacists has been identified as basic requirement[26].

Conclusion

Pharmacists in Nigeria promote lifestyle modification in the prevention and control of hypertension. They educate and counsel their patients on healthy dietary habits, dietary salt restriction, regular physical activity and reduction in alcohol consumption. In addition, they screen and monitor blood pressure of their patients. Additional academic qualification appeared useful in providing blood pressure screening and monitoring services.

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