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## COMMUNITY PHARMACISTS' PERCEPTIONS AND KNOWLEDGE OF COMPLEMENTARY AND ALTERNATIVE MEDICINES (CAM) IN KADUNA, NIGERIA

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### ABSTRACT

*Herbal supplements or "botanicals," are a type of complementary and alternative medicine (CAM) made from one or more plants, and are thought to be useful in treating diseases or maintaining health. These supplements are usually found in pharmacies, and continue to gain popularity among consumers today. The aim of this study was to assess the perceptions and knowledge of community pharmacists practicing in Zaria & Kaduna metropolis on herbal supplements. A cross-sectional survey was carried out from July to October 2016 on pharmacists working in 82 randomly selected community pharmacies. A structured questionnaire containing four sections and 45 questions was used to collect data from respondents on their demographic characteristics, personal experiences with herbal supplements, knowledge of selected herbal supplements and general perceptions of herbal supplements. Data collected was coded and analyzed using SPSS version 20, and descriptive statistics used to report results. While 120 questionnaires were distributed, only 99 were eventually retrieved. Majority of the respondents were male (80%), and had BPharm as their highest educational qualification (97%). Most of the respondents reported having used herbal supplements before (92%) and up to 71% had used these supplements within the last 12 months. Many of the respondents (70%) had poor knowledge regarding the indications, safety and interactions associated with the use of selected herbal supplements. Over 90% of them agreed that herbal supplements are beneficial, and should be integrated into conventional clinical care, however less than half of them believed that these supplements were safe and had fewer side effects than conventional medicines. Community pharmacists in Kaduna have poor knowledge but largely positive perceptions of herbal supplements.*

**Keywords:** CAM, Knowledge, Perceptions, Community Pharmacists, Herbal Supplements, Nigeria

### INTRODUCTION

Complementary and alternative medicines (CAMs) are substances or procedures that are believed to have some therapeutic benefits. They encompass herbal medicines, vitamin and mineral supplements, other nutritional supplements, traditional medicines such as Ayurvedic medicines and traditional Chinese medicines (TCM), homeopathic medicines and aromatherapy oils' (Bushett *et al.*, 2011) Herbal medicinal products or supplements also called "botanicals", are a type of CAM. They are made from one or more plants, and are thought to be useful in treating or managing disease conditions or maintaining health (Terrie, 2012). The use of these supplements has increased tremendously over the past three decades, and it is estimated that around 50 - 80% of people worldwide use them regularly (Ekor, 2013; Wegener, 2017). Although the efficacy of some

of these herbal supplements have been clearly established, many of them remain untested (Ekor, 2013). In addition, they are generally not subjected (by national or international drug regulatory bodies) to the same scientific scrutiny and strict regulation as conventional medications. Consequently, safety continues to be an important issue with the use of these medicines (Ekor, 2013). Majority of herbal supplements sold worldwide are purchased at community pharmacies and other drug retailing outlets as non-prescription medication (Oshikoya *et al.*, 2013; Ogbogu and Necyk, 2016). Thus, pharmacists are the "front-line" health professionals involved in ensuring the safe and rational use of these agents (Ogbogu and Necyk, 2016). It is therefore important to study pharmacist knowledge of, attitudes towards use and perceptions of these supplements, in order to optimize their safe use.

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In addition, while a few studies within the country have studied community pharmacists' knowledge and recommendation patterns of these agents (Oshikoya *et al.*, 2013; Amorha *et al.*, 2017) these studies have all been carried out within the Southern part of the country (Lagos in particular). Therefore, the aim of this study was to assess the perceptions and knowledge of herbal supplements in community pharmacists practicing within Kaduna state

## METHODS

### Study site

The study was carried out in Kaduna state-the fourth largest state-by land mass- in Nigeria. Kaduna state contains three major urban areas: Kaduna metropolis, Kafanchan and Zaria. Because majority of all the registered pharmacies in the state are located within two of these areas- Kaduna metropolis and Zaria (Auwal *et al.*, 2019) this study was carried out in those areas.

### Study design and Data Collection Instrument

A cross-sectional survey of 82 randomly selected community pharmacies located within Kaduna Metropolis and Zaria town was carried out from July to October, 2016. All pharmacists working in these pharmacies were eligible to participate if they were willing. A questionnaire was used to collect data. This questionnaire-which was adapted from an earlier study (Amorha *et al.*, 2017), was structured into four sections and contained 45 questions. The first section containing seven items collected information on the socio-demographic characteristics of respondents. The second section explored their use of herbal supplements (5 questions). Section three with 21 questions assessed their knowledge of selected popular herbal supplements (Echinacea, Gingko biloba, Garlic, Ginseng, Valerian and St John's Wort) in terms of indication, dosage, side effects and interaction with other drugs. These questions were in multiple choice format with only one correct answer among the four options provided,

one option of which was always "I don't know'. Finally, the last section collected data on their perceptions towards herbal supplements use using a five-point Likert scale, as well as their sources of information on these agents.

### Data Collection

The randomly selected pharmacies were visited and the pharmacist(s) in each premise approached and informed about the objectives of the study. Afterwards, their consent was sought, and those who agreed to participate were given the questionnaire to fill. The researcher allowed a period of five days to elapse before returning to the pharmacies to collect completed questionnaires.

### Data Analysis

Data collected was coded and analyzed using SPSS version 20 software and descriptive statistics (frequencies and percentages) used to report the data obtained.

To assess knowledge, each correctly answered question was scored one mark, while wrong answers and "I don't know" responses were scored zero points. A total score (out of the maximum achievable 21 points) was calculated for each respondent. If a respondent's score fell within the range of 0-7, he/she was rated as having poor knowledge. If the score fell within the 8-14 range, he/she was rated as having fair knowledge. Any score higher than the 0-14 range, was rated as good knowledge.

## RESULTS

While 120 questionnaires were distributed to pharmacists working in the visited community pharmacies, only 99 were retrieved producing an 82.5% response rate.

### Socio-demographic Characteristics of Study Respondents

Majority of respondents were male (80%), and aged between 20-40 years (82%). In addition, most of them (97%) had the Bachelor of Pharmacy Degree (BPharm) as their highest educational qualification (Table 1).

**Table 1: Socio-Demographic Characteristics of Respondents (n=99)**

Characteristic	n	Percentage (%)
<b>Gender</b>	Male	79
	Female	20
<b>Age (years)</b>	20-30	57
	31-40	24
	41-50	11
	>50	7
<b>Years of practice experience</b>	Less than 5	71
	5-10	15
	11-20	8
	Over 20	5
<b>Highest Educational Qualification</b>	BPharm	96
	Postgraduate qualification	3

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*Personal use of herbal supplements*

Most of the respondents reported using some type of herbal supplement within the last 12 months (71%) and many of them (90%), had

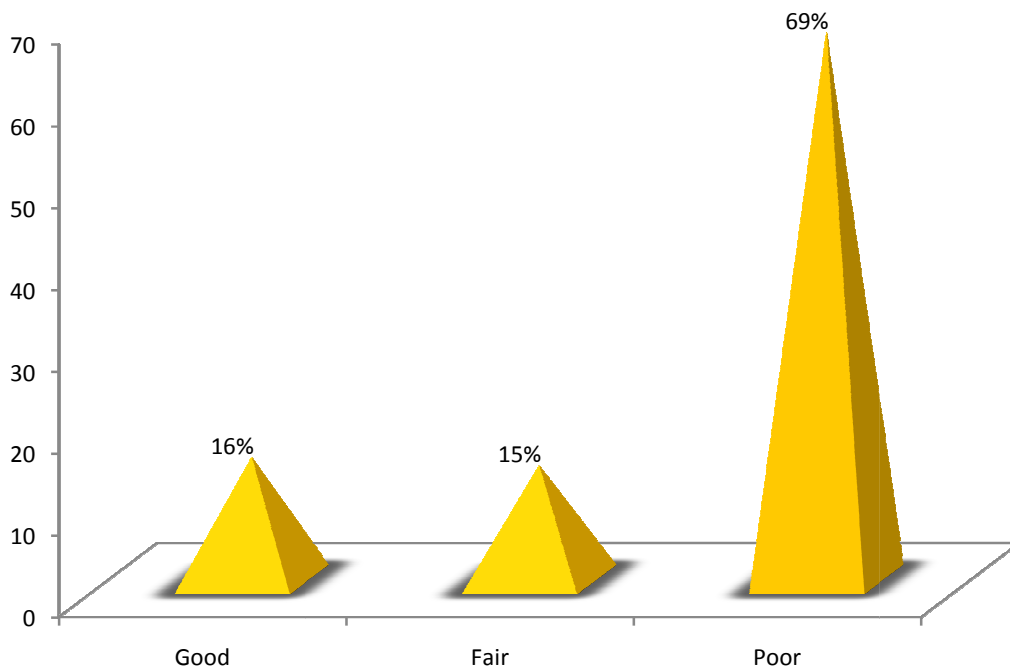
family members that had ever used these agents too. Herbal supplements were also available in most 86% of the pharmacies where respondents worked (Table 2).

**Table 2: Respondents Usage of Herbal Supplements (n=99)**

Questions	Response n (%)	
	Yes	No
*Have you ever used herbal supplements before?	90 (93%)	7 (7%)
*Have you taken any herbal supplements within the past 12 months?	70 (71%)	28(29%)
*Have any of your immediate family members (e.g. partner, parents, and siblings) used herbal supplements before?	85 (90%)	9 (10%)
*Do you stock herbal supplements in your pharmacy?	83 (86%)	13 (14%)

\* Values do not sum up to the total because of missing values

*Knowledge of Selected Herbal Supplements*



**Figure 1: Respondent Knowledge of Indications, Dosing, Side effects & Drug Interactions of Some Herbal Supplements**

69% of respondents had poor knowledge regarding the indications, side effects and drug interactions associated with the use of the selected herbal supplements they were examined on (Figure 1).

*Respondents Perceptions of Herbal Supplements and Sources of Information on Herbal Supplements*

96% of respondents agreed that herbal supplements are beneficial, and should be integrated into conventional clinical care, however less than half of them believed that these supplements were safe and had fewer side effects than conventional medicines (Table 3). More than half (54%) of respondents also reported that the internet was their major source of information on herbal supplements followed by product leaflets.

**Table 3: Respondents Perceptions of Herbal Supplements (n=99)**

Statement	Response				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
*Clinical care should integrate herbal supplements	58 (62%)	28 (30%)	8 (8%)	0	0
*Herbal supplements have beneficial effects	42 (45%)	47 (51%)	4 (4%)	0	0
*Herbal supplements are safe	8 (9%)	30 (32%)	41 (44%)	14 (15%)	1 (1%)
*Herbal supplements have less side effects than conventional medicines	13 (14%)	29 (32%)	24 (26%)	20 (22%)	5 (6%)
*A number of herbal supplements hold promise for the treatment of symptoms, conditions, and/or diseases	25 (27%)	51 (55%)	16 (17%)	1 (1%)	0
*Patients should inform their pharmacists about their use of herbal supplements	65 (69%)	27 (29%)	2 (2%)	0	0
*Knowledge about herbal supplements is important to me as a practicing pharmacist	72 (77%)	17 (18%)	4 (4%)	1 (1%)	0
*It is important to have herbal supplements available for sale in my pharmacy	34 (36%)	42 (45%)	17 (18%)	1 (1%)	0
*Herbal supplements have significant interactions with conventional medicines	22 (23%)	39 (42%)	27 (29%)	5 (5%)	1 (1%)

\* Values do not sum up to the total because of missing values

## DISCUSSION

The aim of this study was to describe the perceptions and knowledge of herbal supplements in community pharmacists practicing within Kaduna state. From our results, majority of our respondents had poor knowledge about the herbal supplements they were asked about, and almost all of them agreed that herbal supplements were beneficial, however less than half of them believed that these supplements are safe and have fewer side effects than conventional medicines.

Most of the respondents in this study were males, aged younger than 40 years and had the Bachelor of Pharmacy degree as their highest educational qualification. This is similar to the findings from similar studies conducted both within and outside the country (Oshikoya *et al.*, 2013; Amorha *et al.*, 2017; Alsayari *et al.*, 2018). Some studies (Bushett *et al.*, 2011; Amorha *et al.*, 2017; have reported fairly high rates (over 70%) of herbal supplements usage by community pharmacists and their family members, and this was also seen in this study. This is to be expected, because of the easy accessibility/availability of these agents in community pharmacies.

Poor knowledge of the selected herbal supplements among respondents was observed in this study. This is also in line with findings from earlier studies. Several studies carried out within the country have reported that generally pharmacists have less than optimum knowledge about these agents, especially with respect to dosing, side effects and drug interactions (Adisa

and Fakeye, 2006; Amorha *et al.*, 2017; Jimam *et al.*, 2017). Although, studies carried out in other parts of the world (Shraim *et al.*, 2017; Alsayari *et al.*, 2018) have reported that pharmacists are fairly knowledgeable about these agents.

This study, like several others (Amorha *et al.*, 2017; Jimam *et al.*, 2017; Alsayari *et al.*, 2018) established that pharmacists generally perceive herbal supplements as being efficacious or beneficial, with many pharmacists believing that these agents should be incorporated into regular medical care. Similarly, the pharmacists in this study did not believe that these supplements were totally harmless as evidenced by their responses to the three statements on the safety, side effects profile and drug interaction potential of these agents which is consistent with other studies (Oshikoya *et al.*, 2013; Amorha *et al.*, 2017; Jimam *et al.*, 2017; Shraim *et al.*, 2017) have also reported that pharmacists perceive that these supplements may not be completely safe.

The most common sources of information on herbal supplements used by the pharmacists in this study were the internet and drug information leaflets. This is similar to findings by Bushett *et al.* (2011), Oshikoya *et al.* (2013) and Amorha *et al.* (2017), all of whom have reported that the internet is a popular source of herbal supplement information. However, Oshikoya *et al.* (2013) and Amorha *et al.* (2017) also reported that product inserts/leaflets were popularly used by their respondents as sources of information on these supplements.

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In conclusion, it may be inferred that community Pharmacists in Kaduna have inadequate knowledge of selected herbal supplements, but hold generally positive perceptions towards their

use. There is an urgent need for interventions aimed at improving knowledge of these agents among pharmacists practicing in Kaduna State.

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