



## **Pharmacists' Perspectives on Self-medication by Patrons of Community Pharmacies in Jos, Nigeria**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author MLPD conceptualized and designed the study, wrote the protocol, performed the statistical analyses and contributed in developing the first draft manuscript. Author BNJ reviewed the literature and wrote part of the first draft of the manuscript. Author ACP collected the data and managed the literature searches. Author NNW participated in conceptualizing the study and reviewed the draft manuscript. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2017/34945

Editor(s):

(1) Syed A. A. Rizvi, Department of Pharmaceutical Sciences, College of Pharmacy, Nova Southeastern University, USA.

Reviewers:

(1) Shakeel Ahmad Mir, Sher-I-Kashmir Institute of Medical Sciences, India.

(2) Kumud Kumar Kafle, Tribhuvan University, Nepal.

Complete Peer review History: <http://www.sciencedomain.org/review-history/20534>

**Original Research Article**

**Received 20<sup>th</sup> June 2017**  
**Accepted 1<sup>st</sup> August 2017**  
**Published 17<sup>th</sup> August 2017**

### **ABSTRACT**

Self-medication with prescription-only-medicine is an important driver of non-rational use of medicines which is highly prevalent in Nigeria, with implications on patients' health outcomes. Although high accessibility to community pharmacies gives strategic advantage to the Pharmacists to promote responsible self-medication and rational use of medicines, there is a paucity of reported studies on perceptions of community pharmacists regarding self-medication with Prescription-only-Medicines (POMs) among their clients. This study investigated views, attitudes and experiences of community pharmacists regarding self-medication with POMs. It sought to identify attitudes and experiences of community pharmacists on the subject. A cross-sectional design was explored using semi-structured pre-tested questionnaires administered to respondents. Eighty four registered pharmacists in the study area returned completed questionnaires. Data was managed

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using SPSS version 17. Descriptive statistics were used to analyse demographic characteristics and attitudes of respondents. Kruskal Wallis test was used to compare respondents' views in terms of the volume of POMs dispensed without prescription,  $p$ -value  $\leq 0.05$  was considered statistically significant for association. Most Respondents (99%) reported receiving requests for POMs without prescription, some as high as 150 requests in the week preceding data collection. Although 77% of respondents declined to supply POMs requested without prescriptions, 58% of them were of the view that they had the competence to dispense some POMs with proven efficacy and safety stable patients on long term therapy. This study highlighted the respondents' views and attitudes towards strict control of POMs supply to optimize patients' drug therapy needs.

*Keywords: Views; attitudes; experiences; self-medication pharmacist; prescription-only-medicines.*

## 1. INTRODUCTION

The selection and use of medicines by individuals to treat self-recognized illnesses or symptoms termed self-medication [1], is an essential component of self-care. Responsible self-medication has the potential to empower individuals to participate and take control of their healthcare. However, the practice has been viewed by some critics, as a way of shifting cost of healthcare to consumers [2]. Moreover, the consumption of prescription-only-medicines (POMs) without professional supervision regarding indication, dosage, and duration of treatment may result in considerable harm to individuals and add to the high cost of health care. In Nigeria, despite appropriate regulations guiding the supply and use of POMs, this category of medicines are often available to members of the public to purchase even without prescription. Consequently, prevalence of self-medication is high [3,4,5] and has been estimated at 7.5% among hospitalised patients [6].

Pharmacists, by their training possess the requisite qualification, skills and expertise to facilitate rational use of medicines [7,8]. Yet these roles are poorly understood and explored for the benefits of the patient. Although, evidence abound supporting the effectiveness of pharmacist-led approach to self-care, studies have shown that where cost is covered by insurance, patients seldom visited community pharmacies for services other than dispensing [9]. Notwithstanding, studies have identified community pharmacists as effective medication therapy management experts and patient confidantes. In addition, community pharmacies by their strategic location offer high accessibility to the public. This supports the role of pharmacists as members of the Primary Healthcare team. Moreover, collaboration with physicians ensures that community pharmacists reinforce and explain physicians'

recommendations, negotiate medication changes and refill requests [10]. Similarly, a cross-sectional prospective study in Nigeria assessed the impact of rural community pharmacists' intervention on self-medication. Findings revealed statistically significant improvements in clinical outcome in the group of hypertensive patients studied [11]. Thus, community pharmacists' roles and interventions have the potential to mitigate harmful self-medication practices and to promote adherence among their clients. Despite these positive potentials, little appears to have been published in relation to the views, attitudes and experiences of pharmacists as critical stakeholders in promoting rational self-use of medicines.

Therefore, this study investigated views and experiences and sought to identify attitudes and practices of pharmacists regarding self-medication with Prescription-only-Medicines among their clients in the community practice setting.

## 2. METHODS

### 2.1 Study Design

The study was a cross-sectional questionnaire survey of pharmacists who practised in the community setting, whether as registered owners, superintendents, or locums. In this study a registered owner is a pharmacist that owned the business premises, in contrast to a superintendent pharmacists who is an employee or owner responsible for the day-to-day running of the pharmacy. While a locum is a pharmacist who is primarily employed somewhere else, but covers some shifts in the pharmacy at the time of the research. This was conducted in Jos-North and Jos-South Local Government Areas, of Plateau State in North-Central Nigeria. According to the 2006 Census [12], the two Local Government Areas have a combined population of 748,609. This population was served by 105

community Pharmacies registered with the Pharmacists Council of Nigeria (PCN), in 2014. The study population comprised of pharmacists working in community pharmacies whether as registered owners, superintendents, or locum pharmacists

The protocol for this research was approved by the Ethics and Research Committee of the Faculty of Pharmaceutical Sciences, University of Jos, Nigeria.

## 2.2 Questionnaire Development and Data Collection

The questionnaire was developed through an iterative process involving several revisions of the draft by members of the research team. This was pretested in a pilot sample of ten community pharmacists in August, 2014. After pilot study, minor revisions were made in the questionnaire. The final data collection instrument had a total of 35 items grouped into four sections: demographic characteristics, views, attitudes and experiences of respondents with self-medication.

One hundred and twenty (120) questionnaires were distributed to all registered pharmacists in all 105 community pharmacies in the study area, between October, 2014 and January 2015. One member of the research team (PA) personally retrieved completed questionnaires from pharmacies one week after administration. Repeat visits were made fortnightly, up to a maximum of three visits to any particular pharmacy. Research participants were also reminded to complete the questionnaire in January 2015, during the monthly meeting of the Association of Community Pharmacists of Nigeria (ACPN), Jos branch.

## 2.3 Data Analysis

Data was coded and entered into the Statistical Package for Social Sciences (SPSS) version 17 for analysis. Frequencies and percentages were used to describe respondents' demographic characteristics. Similar statistical procedure was adopted to analyse Likert type scale comprising items graded as 1 strongly disagree, 3 neither agree nor disagree and five strongly agree was used to characterise the attitudes of community pharmacist regarding self-medication. Experience of community pharmacists with self-medication was rated as low medium or high depending on the volume of POM requested without prescription. Kruskal Wallis test was used

to compare respondents' views in terms of demographic characteristics and respondents' disposition to dispensing of POMs without prescription,  $p$ -value  $\leq 0.05$  was considered statistically significant for association.

## 3. RESULTS

Eighty four (84) completed questionnaires were retrieved out of 120, giving a response rate of 70%. Majority of respondents 72 (85.7%) practiced exclusively as community pharmacists, 36.9% of them owned their premises. A high concentration of the community pharmacies surveyed (65.5%) were located less than one kilometre from a Government Hospital or private clinic. Other demographic characteristics are described in Table 1.

Almost all respondents (98.8%) had encountered clients who requested POMs without prescription, some of whom reported up to 150 POMs requests per day in the week prior to completion of the questionnaire (Fig. 1).

### 3.1 Respondents' Views on Supply of POMs without Prescription

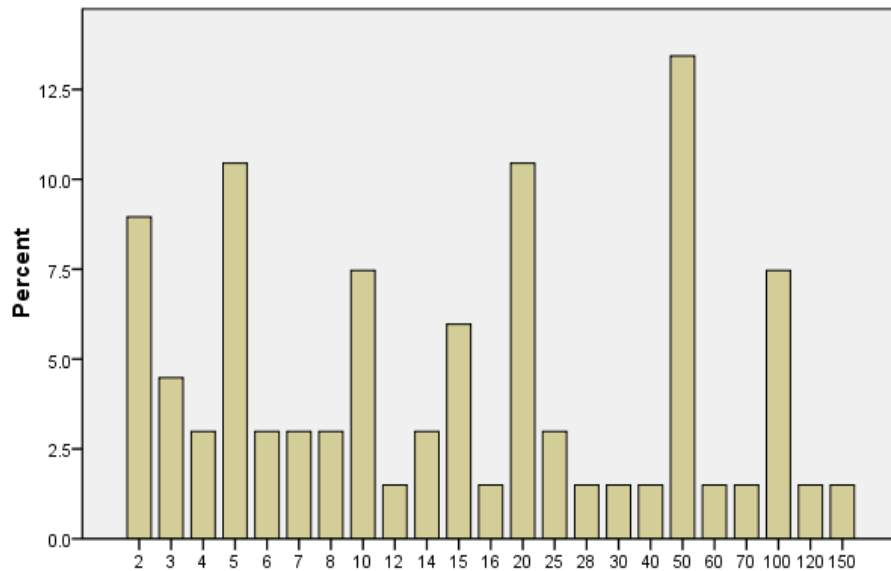
Whereas majority of respondents (77.4%) did not support the supply of POMs to clients without prescription, more than half of them (58%) felt they could recommend or dispense such POMs to clients without doctor's prescription. Respondents who believed self-medication should be encouraged because the practice reduces treatment costs showed moderate likelihood (mean ranking: 37.89%) to dispense POMs without prescription ( $p$ -value = 0.049). In contrast, 82% of respondents did not support dispensing of POMs in private hospitals without pharmacists' intervention; they were of the opinion that the practice encouraged unwarranted self-medication.

Kruskal-Wallis Test showed a statistically significant association between respondents' views regarding the re-classification of POMs with proven safety profiles and supply of POMs without prescription. Respondents who favoured re-classification supplied the least number of POMs without prescription (chi-square = 10.966,  $p$ -value = 0.004 at 2 degrees of freedom). Similarly, respondents who thought pharmacists should discourage clients from practicing self-medication (73%) were associated with the least supply of POMs without prescription (mean ranking: 40.06) (chi-square 6.842,  $p$ -value = 0.033 at 2 degrees of freedom). Respondents

who were of the opinion that clients on POMs were less likely (mean ranking: 41.60%) to should be monitored to minimize adverse effects dispense POMs (*p-value* = 0.024).

**Table 1. Demographic characteristics of respondents (n= 84)**

Characteristic	Frequency (n)	Percentage (%)
<b>Number of years in community pharmacy practice</b>		
0-5	58	69.0
6-10	9	10.7
11-15	4	4.8
16-20	2	2.4
>20	8	9.5
<b>Age group of respondent</b>		
20-29	33	39.3
30-39	26	31.0
40-49	14	16.7
50-59	9	10.7
>60	1	1.2
<b>Sex of respondent</b>		
Male	53	63.1
Female	31	36.9
<b>Position of respondent in the pharmacy</b>		
Owner	31	36.9
Locum	24	28.6
Superintendent Pharmacist	22	26.2
Others	7	8.3
<b>Main pharmacy practice area of respondents</b>		
Community pharmacist	72	85.7
Hospital pharmacist	9	10.7
Academic pharmacist	1	1.2
others	2	2.4
<b>Distance of pharmacy from the nearest hospital</b>		
Less than 1 km	55	65.5
≥ 1 km	29	34.5



**Fig. 1. Approximate number of POMs requested without prescriptions in the previous one week**

### 3.2 Attitudes of Community Pharmacists on Self-medication with POMs

Almost all respondents (92%) agreed that self-medication with POMs compromised patients' safety despite nearly half of the respondents (46%) agreeing that self-medication increased access to medicines and healthcare services. Similarly, majority of respondents (77%) felt that POMs with proven safety profile could be reclassified for pharmacists to recommend without doctors prescriptions. However, half of them affirmed that self-medication with POMs should not replace the process of getting prescription. Other attitudes are summarised in Table 2. Superintendent pharmacists in

community pharmacies were more likely to believe that self-medication reduced treatment costs and should be encouraged ( $p$ -value = 0.030). Meanwhile, 69% of respondents affirmed that self-medication with POMs was not part of self-care and must be discouraged.

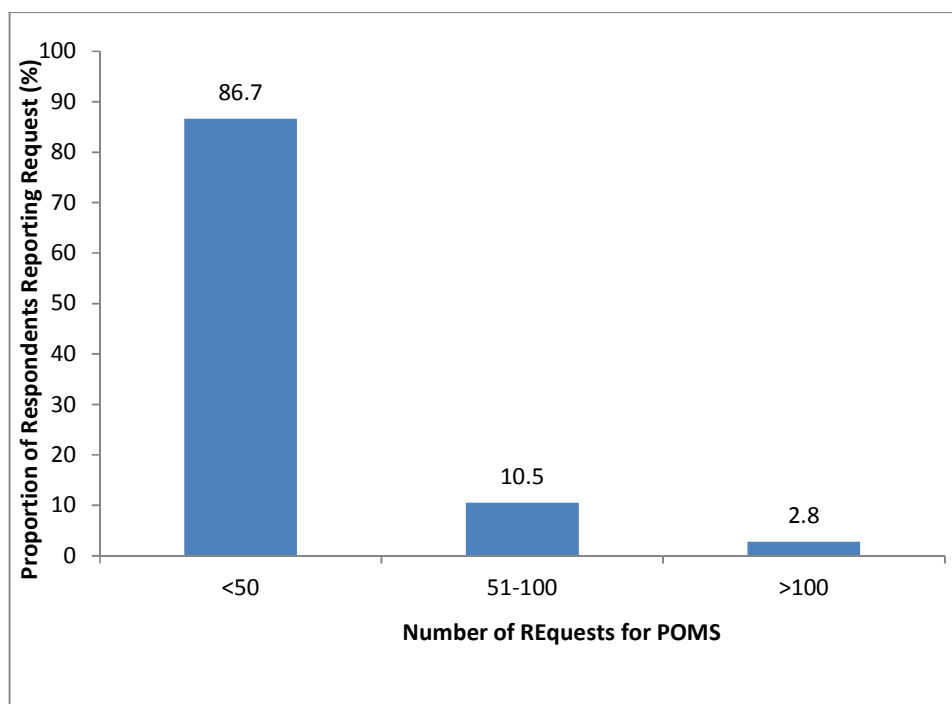
### 3.3 Experience of Respondents with Self-medication

Nearly all respondents (99%) had dealt with POM requests without prescription. The highest requests (61%) were for cardiovascular drugs followed by analgesics (54%). These experiences are captured in Figs. 2 and 3.

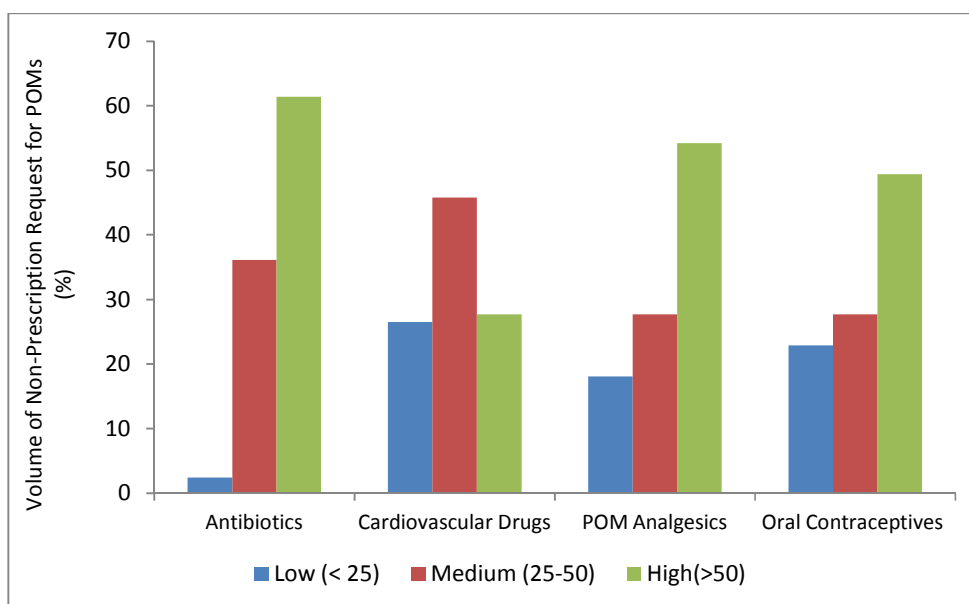
**Table 2. Respondents' attitudes to self-medication with POMs by patrons of community pharmacies**

S/N	Attitudinal item	Response (%)		
		SA/A	N	DA/SD
1.	Self-medication is part of self-care and should be encouraged by pharmacist	20.5	9.6	69.9
2.	Advertisement of OTCs on the mass media may lead clients to use POMs in self-mediation	54.8	8.3	36.9
3.	Self-medication with POMs compromise patients' safety and should be actively discouraged	91.6	1.2	7.2
4.	Information provided in drug leaflets and inserts are adequate to support proper self-medication	14.3	14.3	88.1
5.	Pharmacists encourage self-medication by supplying POMs without prescription	47.6	10.7	41.7
6.	The practice of self-medication reduces treatment cost and should be encouraged	17.8	9.5	72.6
7.	Some POMs with proven safety profiles should be re-classified for pharmacist to recommend without doctors' prescription	76.5	9.9	13.6
8.	Patients on long term treatment for chronic conditions should be educated to use self-medication	54.2	6.0	39.8
9.	Pharmacists should completely discourage their clients from practicing self-medication	72.6	2.4	25.0
10.	Pharmacists should monitor clients who are on self-medication to minimize adverse effects	78.5	10.7	10.8
11.	Dispensing of POMs in private hospitals without pharmacists' intervention encourages self-Medication	82.1	9.5	8.4
12.	Pharmacists should not recommend or sell POMs without doctors prescriptions	22.6	19.0	58.3
13.	Reducing the cost of consulting professionals will minimize the practice of self-medication	69.9	14.5	15.7
14.	Self-medication increase the access of patients to medicines and health services	46.4	17.9	35.7
15.	It is more convenient for my clients to use self-medication than go through the process of getting prescriptions	37.0	11.1	51.9

Key (SA: Strongly Agree; A: Agree; N: Neutral; DA: Disagree; SD: Strongly Disagree)



**Fig. 2. Approximate number of non-prescription requests for POMs in one week**



**Fig. 3. Non-prescription request for POMs reported by drug classes**

#### 4. DISCUSSION

This study recorded very high requests for POMs without prescription. This could be due to perceived appropriateness and possibility of obtaining prescription-only-medicines

without prescriptions. In Nigeria, pharmacists often have the prerogative and discretion to dispense prescription-only-medicines to clients without prescriptions. This is consistent with reports on self-medication in other studies [13-18].

Slightly more than half (58%) of respondents believed they can recommend and dispense prescription-only-medicines without doctors' prescriptions. This was re-echoed by the view of respondents regarding re-classification of POMs with proven safety. Majority of community pharmacists in this study recommended the re-classification of POMs with proven safety to allow over-the-counter (OTC) sale in pharmacies. In some western countries, critiques argued that re-classification of POMs to non-prescription medicine (OTC) or Pharmacy only (P) medicine is fuelled by government, who see self-medication as a way of shifting some of the cost of healthcare to the consumer [2]. Re-classification of POMs to OTC empowers the consumer to participate and take responsibility in their own health care management process. Even without re-classification, the concept of task shifting has inadvertently empowered community health workers to prescribe prescription-only-medicines as a strategy to improve universal access to antiretroviral medicines in low and middle income countries [19]. The impacts of task shifting on self-medication with POMs among patients deserve critical attention. This study revealed that proponents of deregulation of certain POMs to non-prescription medicines were more likely to discourage consumers from self-medication with POMs ( $p = 0.004$ ). Consequently, task shifting or reclassification could be exploited to strengthen the capacity of pharmacists to strategically support rational use of medicines by the general public through patronage of community pharmacies. This is consistent with a recent study in two states of South-Western Nigeria. The study assessed the attitude and opinion of community pharmacists on self-medication. Findings revealed that community pharmacists with over thirty-year experience disagreed with the conventional definition of self-medication as an act of buying any medicine without a physician's written order [7]. Pharmacists provide patient-centred practice and the practitioner takes responsibility for optimizing all of a patient's drug therapy needs and is held accountable for this commitment [20]. This commitment includes rational dispensing, counselling and education. Grigoryan et al. [14] found that dispensing exact number of tablets based on patient's drug needs was associated with decreased risk of self-medication. Despite concerted restriction on acquisition of POMs in the developed countries, drug left-over from previous prescriptions were the major sources for medications self-administered [14,15].

Respondents' believed that patients with stable clinical outcomes on long term therapy for chronic diseases could be educated and monitored on self-medication with prescription-only-medicines. This finding corroborates that of Fakeye et al. [7]. These authors had explored attitudes and opinions of community pharmacists in South-Western Nigeria in relation to self-medication. They found support among community pharmacists for the supply of POMs without prescription in stable patients, who were previously managed for chronic diseases [7]. Similarly, findings in this study agree with those of Bello and Bello [11], who demonstrated favourable outcomes in blood pressure levels with remarkable attitudinal change as a result of community pharmacists' intervention in the aspect of self-medication among hypertensive patients. Thus, it is imperative to design and implement a sensible intervention in self-medication and reclassification of some POMs to improve the quality and outcome of pharmacotherapy. In Hong Kong, the general public supported patients on long term diseases to practice self-medication with non-prescription medicines [9].

In most developing countries, prescription-only-medicines are available without a written order from the physician except for narcotics, major tranquilizers and abortifacient drugs [21,7]. The National Drug Policy exists but the regulatory framework and control mechanisms are conspicuously poor [22,18]. This drawback highlighted the role of pharmacists, to whom the public is increasingly looking forward for advice, independent and impartial judgement concerning medication use [2]. The study recorded an overwhelming request for POMs from clients, many of such requests were however, turn-down by the pharmacists (77%). While our study relied on subjective statement of Community pharmacists regarding their attitudes and practices, Llor and Cots [23] conducted a prospective observational study where trained personnel presented three simulated disease conditions before community pharmacists in Catalonia, Spain. Their findings revealed that although, pharmacists ensured that patients were acquainted with the antibiotics supplied to them, the sale of antibiotics without prescription was high.

Appropriate self-medication eliminates the direct and indirect costs associated with the process of obtaining a prescription for medicines [24]. This revelation supports the opinion of our

respondents who believed that self-medication reduces treatment costs. Proponents of this assertion were more likely to engage in moderate supply of POMs without written orders. Conversely, respondents who discouraged the supply of POMs were less likely to supply POMs.

Our study relied on self-reports by respondents and are liable to recall bias, especially since they did not keep written records of their transactions with clients. Moreover, restricting our study to Jos metropolis limits our ability to generalized findings beyond the study area. This notwithstanding our study had a number of strengths, studying the perspectives of pharmacists as critical stakeholders in the medicine use process is important as a first step in addressing the challenge of self-medication with POMs. In this regard, we made attempts to include all pharmacists within the study area and with a response rate above 70%, we are sure to have captured a fairly representative perspective of pharmacists on the subject. This study provides adequate information to design and implement a patient centred study on the subject of self-medication with POMs.

This study has implication on the safety of patients with medicines. While some of these medicines may have debilitating effects on the patients, others are capable of spurring resistant strain of organisms. The study has also exposed the inherent weaknesses associated with medicine policies, legislation, control and the distribution system in Nigeria. We suggest that a prospective simulated observational study should be carried out among community pharmacies, patent medicine vendors and drug hawkers to further assess the extent to which self-medication with POMs is practiced in Jos, Nigeria.

## 5. CONCLUSION

Respondents in this study reported a high self-demand for prescription-only-medicines from their clients. Although, as community pharmacists the respondents had the competence to assess recommend and dispense patients' medicines needs, majority of them opposed the supply of POMs without prescription. However, they believed that patients with stable outcomes, on treatment for chronic diseases could be educated to self-medicate with POMs.

## CONSENT

Patient consent is not applicable.

## ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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