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**A Rural-Urban Comparison of Client-Provider Interactions  
in Patent Medicine Shops in South West Nigeria**

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**A RURAL-URBAN COMPARISON OF  
CLIENT-PROVIDER INTERACTIONS IN PATENT  
MEDICINE SHOPS IN SOUTH WEST NIGERIA\***

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**ABSTRACT**

The increasing prominence of patent medicine vendors (PMVs) in healthcare provision makes information about how they operate of interest. This study assessed consumers' behavior and PMVs' performance in the treatment of childhood illnesses in rural and urban communities in South West Nigeria. Non-participatory observations were carried out in 163 licensed patent medicine stores in Oyo State, Nigeria. Many PMV shops (70.6% rural and 61.9% urban;  $p = 0.141$ ); stocked non proprietary drugs. Clients often requested for drugs by name (75.4% urban versus 62.2% rural;  $p = 0.002$ ) and PMVs mostly sold drugs as requested without questions (65.3% urban 57.8% rural;  $p = 0.07$ ). Inappropriate treatment practices and invasive procedures were observed more often in urban PMVs shops ( $p < 0.001$ ). PMVs functioned mostly as sales persons supplying clients' drug requests. Strategies to improve PMV treatment practices should include caregiver education to be effective.

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## INTRODUCTION

Many health systems have become increasingly pluralistic with a myriad of health providers and drug sellers. The barriers between formal and informal health providers have thus become increasingly less distinct [1]. In many sub-Saharan (SSA) countries, patent medicine vendors (PMVs) who have no formal training supply most of the medication needs of the community. Literature from SSA have demonstrated that between 15% and 82% of the population choose to first consult private drug shops for advice about and assistance with treatment of childhood illnesses [2-11]. In Nigeria, PMVs are usually the first choice in health care and are a recognized primary source of orthodox drugs for both rural and urban populations [12, 13]. In addition to selling drugs, they are also a major source of advice about illness and drug therapy [14]. As in much of SSA, many Nigerian caregivers also first seek treatment for childhood illnesses from PMVs [15].

By law PMVs are limited to selling proprietary drugs in pre-packaged forms; however quite often the customers' needs and demands dictates the services provided [16]. Practices beyond the scope of specified limits therefore continue to thrive in the unregulated drug market and unregulated private sector health service provision in Nigeria. As such, the formal health establishment often views the activities of PMVs with alarm, with concerns about the appropriateness of drugs and information provided to clients [17]. The potential role of drug-vendors in primary healthcare provision has thus remained controversial. Since PMVs have become a ubiquitous feature of the informal health sector in Nigeria, there has been increasing interest in improving the services provided by PMVs. As critical stakeholders in primary healthcare especially for children [12], efforts to improve PMV services requires a comprehensive situation analysis of the legal and market environment in which PMVs operate. Despite their prominence in healthcare provision, relatively little is known about how PMVs operate. This study aims to assess the consumers' behavior and the providers' performance with regard to the treatment of common childhood illnesses in rural and urban communities in South West Nigeria.

## METHODS

A comparative assessment of PMVs in selected rural and urban areas of Oyo State South West Nigeria was conducted using a cross sectional design. The patent medicine vendor is defined as a person without formal pharmacy training, who sells orthodox pharmaceutical products on a retail basis for profit. PMVs in Nigeria operate under an umbrella body called the NAPPMED (National Association of Patent and Proprietary Medicine Sellers) which coordinates the activities of PMVs. Patent medicine licenses are, however, issued by the State ministries of health although PMVs are obliged to register with NAPPMED. The licensing authority regulates the scope of medicine that PMVs are authorized to sell and this is limited to patent or proprietary medicines. Prescription drugs are under the full

control of pharmacists. Selling medicine in contravention of the provisions contained in the pharmacy law is a punishable offense by Law. The Pharmacy Law of Nigeria also specifies that PMVs should be at least 21 years of age and submit the names of two referees [18]. PMVs selected for this study were those holding a patent and proprietary medicine vendors license.

An urban local government area Ibadan Southwest (LGA) and two rural ones (Ido and Afijio) in Oyo State were selected using a stratified sampling technique. Ibadan Southwest LGA with a population of about 253,000 has seven primary healthcare centers. Afijio LGA (population 132,000) has four primary healthcare facilities and Ido LGA (population 70,000) is served by three primary health care facilities. All 163 registered PMVs in the selected LGAs were surveyed. Consent was obtained from the executive officers of the NAPPMED in the state and local government areas to conduct the study. The researchers worked through the associations to gain the cooperation of the PMVs. The leaders of each association introduced the researchers to the members at a regular meeting where the nature and purpose of the study was explained. Data were collected using observational check list of client-provider interaction in the patent medicine shops. A minimum of three observations of childhood illnesses presented were carried out in each PMV shop visited. There were a total of 603 observations. All 245 PMVs, either shop owners or assistants, present in selected shops were also interviewed to obtain socio-demographic characteristics. Observations were made by some members of the research team and by trained research assistants who were young high school graduates. After permission to observe was obtained, the observer positioned him/herself as unobtrusively as possible for the duration of observation.

### DATA MANAGEMENT

The proportions of PMVs who stock approved drugs, ask about the age and condition of the child, and advised caregivers about referral were determined. The client behaviors of interest included request for specific drugs and presentation of prescription with or without request for advice. Proportions were compared for rural and urban areas using a Chi square test.

### RESULTS

From the 163 shops visited, 245 PMVs were interviewed, 118 (48.2%) from the rural and 127 (51.8%) from the urban area. Table 1 shows the socio-demographic characteristics of the PMVs in the rural and urban areas studied. In both locations, the majority of the PMVs were between 20-40 years. There were more female PMVs and a majority had at least secondary level education. More of the rural PMVs were also currently employed in a formal healthcare facility as auxiliary staff compared with the PMVs in the urban area 31 (26.3%) versus 17 (13.4%) respectively.

Table 1. Socio-demographic Characteristics of PMVs

Variables	Rural ( <i>n</i> = 118)	Urban ( <i>n</i> = 127)
Age group		
≤ 19 years	4 (3.4)	6 (4.7)
20-40	93 (78.8)	106 (83.5)
≥ 40	21 (17.6)	15 (11.8)
Sex		
Male	46 (39.0)	44 (34.6)
Female	72 (61.0)	83 (65.4)
Education		
Primary	4 (3.4)	5 (3.9)
Secondary	87 (73.7)	85 (66.9)
Tertiary	27 (22.9)	37 (29.1)
Second medical affiliation		
Yes*	31 (26.3)	17 (13.4)
No	87 (73.7)	110 (86.6)
Ownership status		
Owner	104 (88.1)	104 (81.9)
Assistant	14 (11.9)	23 (18.1)

**Note:** \*Healthcare attendants, auxiliary nurses, community health extension workers.

### Awareness of the Pharmacy Law

A significantly higher proportion of the rural PMVs reported being aware of the pharmacy law regarding the restriction of sale of prescription drugs 91 (79.1%) versus 59 (62.1%)  $p = 0.005$ .

### Comparison of the Drugs Stocked by PMVs

The comparison of drugs stocked by PMVs is shown in Table 2. In all, 70.6% of rural shops reported stocking non proprietary drugs while 61.9% of urban PMVs did ( $p = 0.141$ ).

### Client Behavior

A total of 603 observations were made in 163 shops, with 228 (37.8%) of the observations made in rural areas. In most of the observations (88.1% and 81.9% in rural and urban areas respectively) the owner of the shop was the salesperson. Many clients requested for a drug by name; a greater proportion—283 (75.4%)—did so in the urban shops compared to 142 (62.2%) in the rural shops. It was only in the rural shops that

Table 2. Comparison of Drugs Stocked by PMVs by Study Location

Type of drug stocked	Rural = 118 (n = %)	Urban = 127 (n = %)
Over the counter drugs		
Analgesics	113 (95.8)	115 (90.6)
Antipyretics	117 (99.2)	106 (83.5)
Vitamins	117 (99.2)	116 (91.3)
Prescription drugs		
Antibiotics	90 (76.3)	79 (62.2)
Sedatives/tranquilizer	76 (64.9)	65 (61.5)

Table 3. Comparison of Clients' Actions by Location

Customers Action	Rural	Urban	$\chi^2$	p-value
	n = 228 (%)	n = 375 (%)		
Requested drug by name	145 (63.5)	283 (75.4)	9.73	0.002
Presented a symptom for treatment	56 (24.5)	77 (20.5)		
Asked treatment for specified disease	11 (4.8)	12 (3.2)		
Presented a prescription	16 (6.9)	0 (0)		

clients 16 (6.0%) presented a prescription. These differences in client behavior in the urban and rural areas were statistically significant ( $p = 0.002$ ). See Table 3.

### PMVs' Behavior

The actions of the drug sellers in response to clients' requests are shown in Table 4. In 245 (65.3%) of the urban cases, drugs were sold as requested without questions in comparison to 132 (57.8%) in the rural shops ( $p = 0.07$ ).

### Treatment Practices

In those instances when the PMVs asked for clarification, the subsequent treatment provided by the PMVs are shown in Table 5. Treatment practices were generally better in the rural compared to the urban shops. More rural PMVs referred clients to a clinic than did the urban PMVs (27 (28.1%) versus 13 (9.6%) respectively). In addition, the rural PMVs more often asked the history of illness and examined children before treating, and very few rural PMVs carried out

Table 4. PMV Response to Client Request by Location

Drug Sellers Action	Rural	Urban	$\chi^2$	p-value
	n = 228 (%)	n = 375 (%)		
Sell drugs as requested without questions	132 (58.9)	245 (65.4)	3.31	0.07
Ask for clarification and sell as requested	79 (34.6)	103 (27.5)		
Ask for clarification and sell other than requested	17 (7.5)	27 (7.2)		

Table 5. Treatment Practices by Location

Treatment Practices*	Rural	Urban	$\chi^2$	p-value
	n = 96 (%)	n = 130 (%)		
Clarify age of child before treatment	43 (44.8)	53 (40.9)	0.34	0.56
Refer customer to clinic	27 (28.1)	13 (9.6)	13.12	<0.001
Take history, examine and treat	39 (40.6)	14 (10.5)	28.01	<0.001
Perform minor procedures e.g. I & D	3 (3.1)	34 (26.5)	21.9	<0.001
Suggest non drug treatment option	1 (1.0)	20 (15.6)	13.8	<0.001
Intramuscular injections	0 (0)	9 (7.2)	7.21	0.007

invasive procedures such as incision and drainage or gave intramuscular injections when compared to PMVs in the urban area ( $p < 0.001$ ).

## DISCUSSION

This study provides insight into client provider interactions within PMVs shops in selected urban and rural areas of Nigeria. As documented in previous reports [15, 19], these PMV shops though licensed, still stocked drugs outside the scope of their licenses in direct contravention of the pharmacy law. Prescription drugs, such as antibiotics and sedatives were present in most shops in both rural and urban areas. This was in spite of the awareness of the pharmacy law prohibiting the sale of non-proprietary drugs. Interestingly, rural PMVs were more often guilty of this



practice even though a significantly higher proportion of these PMVs reported being aware of the law. Few, however, were younger than the specified 21 years of age in both study locations.

The majority of customers requested drugs by name indicating that clients had pre-conceived ideas of the treatment they required. This implies that clients more often than not are the drivers of client-provider interactions. PMVs thus behaved primarily as commercial salesmen who simply sell what the clients request. There were fewer instances in which the customers requested advice or treatment of presented symptoms. In these circumstances, actions to clarify age, symptoms, and signs were observed in less than half of such interactions. These findings confirm those of another study which reported that only about a quarter of customers see the PMV as a source of advice and information about their illness, with the majority simply requesting items for purchase [16].

Prescriptions were presented only in the rural area and this occurred in less than 10% of cases. This is an indication that very few of the clients had seen a formal healthcare provider prior to the PMV visit. A similar finding has been documented in other studies in which PMVs were found to be the healthcare provider of first instance in the majority of respondents [15, 20].

Rural PMVs had significantly better practices, which is in consonance with another study which employed a rural-urban comparative design [16]. PMVs however seldom referred their clients, particularly in urban settings where many PMVs were also observed to be carrying out invasive procedures clearly beyond their stated duties. Some studies which have also demonstrated sub-standard practices [19] have attributed such practices to the confidence of PMVs in their ability to handle various health problems of the community members [21]. This echoes the reasons for the concerns that the drug seller's own needs for profit may cause difficulty in achieving rational prescribing practices [22].

## CONCLUSION

PMVs represent an enormous potential asset if the advice and treatments they dispense are consistent with government guidelines and best treatment practices. In reality, however, clients seem to know what products they want to purchase in advance which may be outside the scope of the PMV's license. There were fewer occasions in which the PMV becomes a healthcare provider. This study highlights several points at which the quality of the interaction might be improved. The innovation that could emerge from this understanding is the changing of key players and dynamics of behavioral change strategies. Although there are no easy answers, some studies have provided strong evidence to support the use of participatory education to improve PMV performance [23]. Engaging and educating the community and empowering caregivers to demand improved treatment may yield better health dividends than aiming to improve PMV treatment practices in isolation.

### ACKNOWLEDGMENTS

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