
African Journal of Pharmaceutical Research and Development

Available online at <https://ajopred.com>

Vol. 18 No.1; pp. 540-548 (2026)



Original Research Article

PERCEPTIONS, PRACTICES AND BARRIERS ASSOCIATED WITH EXPANDED COMMUNITY PHARMACY SERVICES IN A SOUTHERN NIGERIAN STATE

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ABSTRACT

A paradigm shift in pharmacy practice include the provision of Expanded Community Pharmacy services which extend beyond the traditional dispensing. Community pharmacies indisputably offer a wide range of care and constitute an integral part of the healthcare system in Nigeria by offering some of these services. This study was aimed at providing insights into the perceptions, extent and barriers to the provision of ECPS by community pharmacists in Delta State, Nigeria. It was cross sectional with the aid of a self-administered questionnaire in two towns each from the three senatorial districts of the state. One hundred and ninety six community Pharmacists were included in the study, 107(54.6%) were males and 133(67.8%) were between ages 31 and 60, 113 (57.7%) 'strongly agreed' and 72(36.7%) "agreed" to having good knowledge of ECPS and 148 (75.5%) 'strongly agreed' that ECPS can improve patient outcomes. Provision of patient education and counseling elicited 150 (76.5%) and 39(19.9%) responses of being "very involved" and "involved" which was closely followed by Point-of-care monitoring, 151(77%) and 29(19.9%) "very involved" and "involved" respectively whereas smoking cessation program had 11((5.6%) and 26(13.3%) respondents being very involved and involved. Lack of remuneration for ECPS was the highest rated most likely (27, 13.8%) barrier to the provision of ECPS, others were lack of patients' knowledge of benefits (24, 2.2%), lack of pharmacist-client interaction (22, 11.2%) and more advanced training required (22, 11.2%). Harnessing the benefits of ECPS in Nigeria would require that Pharmacy stakeholders work out modalities to enlighten the public on the availability of such services, and an appropriate channel for remuneration of pharmacists who provide these services be created.

ARTICLE INFO

Received 17 February, 2026

Accepted 27 April, 2026

Published 30 April, 2026

KEYWORDS

Community Pharmacies,
Expanded Pharmacy Services,
Perceptions,
Practices,
Nigeria

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INTRODUCTION

Expanded Community Pharmacy Services (ECPS) extend beyond the traditional dispensing role of pharmacists and represent a paradigm shift in pharmacy practice. These services, also referred to as extended, enhanced community pharmacy services or advanced clinical services, have become necessary due to the increasing complexities of medication, the rising prevalence of chronic diseases, and the demand for improved healthcare outcomes [1]. Community

pharmacies are ideally suited for providing these services because of their accessibility to patients and clients. Expanded community services practiced in various countries include Medication Therapy Management (MTM), wound management, weight management, smoking cessation programs, osteoporosis care, specialized compounding, diabetes care, counseling on physical services, immunization programs, and lifestyle modification [2].

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<https://doi.org/10.59493/ajopred/2026.1.15>

ISSN: 0794-800X (print); 1596-2431 (online)

The extent to which these services are provided varies across countries, with some only beginning to adopt this practice. For example, less than half of Australian pharmacists involved in a cross-sectional study provided extended pharmacy services, most commonly flu vaccinations and medication utilization reviews [3]. A study in the Northern United Arab Emirates found that about 90% of community pharmacists agreed that extended community pharmacy services should be provided by pharmacists, with 71.8% “strongly agreeing” and 19% “agreeing” [4]. In the United States, the expanded roles of community pharmacists are well recognized as demonstrated by their active participation as care providers during the COVID-19 pandemic.

Although the practice of advanced clinical services in pharmacy has been increasing in the United Kingdom and some European countries, Greece and Cyprus are relatively new to patient-centered services despite having the highest pharmacy density ratio in the European Union [5].

Pharmacy practice in Nigeria has incorporated the pharmaceutical care model, which is a major driver for the provision of expanded services by pharmacists. A previous publication had reported that the attitude of community pharmacists towards pharmaceutical care was positive however not commensurate with their level of practice [6]. A study that demonstrated the participation of community pharmacists in primary healthcare also featured extended pharmacy services such as blood glucose monitoring and vaccination [7]. Another study reported 33.9% (n = 411) of surveyed community pharmacists provided vaccination services, with over half actually administering vaccines [8], while training for pharmacists to improve their ability to administer injections for HIV was recommended in another study [9].

Despite their non-inclusion as part of the national healthcare referral team, community pharmacies indisputably offer a wide range of care and constitute an integral part of the healthcare system in Nigeria. Populations in developing countries benefit from the provision of these services, as some individuals cannot afford formal healthcare, making community pharmacies essential for delivering such care. Pharmacists’ positive perceptions regarding the provision of these services can improve access and enhance the quality of care provided. However, barriers such as resource limitations, lack of remuneration, insufficient public awareness and acceptability, lack of counseling space and consultation rooms which

have been reported in previous studies[2][10] [11] negatively affect the health outcomes that could be achieved through these services.

Gaining insight into the perceptions, extent and barriers related to ECPS in Delta State, Nigeria, is crucial for identifying practical strategies that can enhance the contribution of community pharmacists to healthcare services. By tackling these issues, we can improve access to high-quality care, minimize healthcare inequalities, and utilize the complete capabilities of community pharmacies as primary healthcare providers. This study was aimed to address this gap in knowledge, offering information that can guide policy-making, training efforts, and resource distribution to bolster the implementation of ECPS and ultimately enhance health outcomes for the population.

METHODS

This cross-sectional study was conducted among community pharmacists in Delta State, Nigeria, between June and August 2023.

Two towns from each of the three senatorial districts were selected for the study, and all willing community pharmacists within these towns participated. Although a sample size of 180 was calculated, 196 participants were recruited to account for potential attrition.

The questionnaire adapted from previous studies [12] [13] and modified to suit study objectives. It was pre-tested on ten community pharmacists who were not included in the study. It comprised four sections: demographics (including age and years of practice), perceptions of community pharmacists towards providing expanded pharmacy services, the extent of provision of expanded community pharmacy services, and barriers to the provision of these services. The questionnaire was self-administered on the community pharmacists

Ethical Consideration

Ethical approval was obtained from the Delta State Ministry of Health Ethical Committee with reference number HM/596/T2/102. Community pharmacists, who showed willingness to participate in the study, completed an informed consent form before inclusion in the study.

Statistical Analysis

Data obtained were analyzed with the aid of the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics such as frequency distribution and counts were done. Demographic variables were presented as proportions and percentages. Likert responses on perceptions,

practices, and barriers related to Expanded Community Pharmacy Services (ECPS) were also reported as proportions.

RESULTS

Details of the demographic information are shown in Table 1.

Table 1. Social Demographics (n = 196)

Variables	Frequencies (%)
Age Range(Years)	
Below 30	61 (31.10)
31 - 60	133 (67.8)
Above 60	2 (1.0)
Gender	
Male	107 (54.60)
Female	89 (45.40)
Employment status	
Employee	127 (64.8)
Owner	69 (35.2)
Pharmacy degree	
Bachelor of Pharmacy (B.Pharm)	160 (81.6)
Doctor of Pharmacy (PharmD)	18 (9.2)
BPharm and Pharm D	18 (9.2)
Additional Qualifications	
Pharmacy-related Qualifications	24(12.2)
No additional qualification/ Non-pharmacy related	172(87.8)
Prior Provision of Expanded Community Pharmacy services (ECPS)	
Yes	184(93.5)
No	1(1.0)
Undecided	10(5.1)

One hundred and ninety-six community pharmacists participated in the study; 107(54.6%) were males and 133(67.8%) were between ages 31 and 60. One hundred and eighty-four (93.9%) reported regular provision of ECPS to their clients and/or patients.

Of the respondents, 113 (57.7%) 'strongly agreed' and 72(36.7%) "agreed" to having good knowledge of ECPS and 148 (75.5%) 'strongly agreed' that ECPS can improve patient outcomes. One hundred and ninety (96.9%) either strongly agreed or agreed that ECPS will enhance the public's perception of the pharmacist as a health professional. Details are shown of respondents' perception towards ECPS are shown in table 2.

Provision of Patient education and counseling elicited 150 (76.5%) 'very involved' and 39(19.9%) 'involved' which was closely followed by Point-of-

care monitoring where 151(77%) and 29(19.9%) "very involved" and "involved" respectively. Smoking cessation program had 11((5.6%) and 26(13.3%) respondents being very involved and involved in the practice and immunization/ vaccination services where 12(6.1%) and 27(13.8%) were very involved and involved respectively. Further details of the respondents' involvement in different ECPS are shown in Table 3

Table 2. Community Pharmacists' Perception of ECPS

Items	Strongly disagree n(%)	Disagree n (%)	Undecided n(%)	Agree n(%)	Strongly agree n(%)
I have a good knowledge of ECPS	4(2.0)	3(1.5)	4(2.0)	72(36.7)	113(57.7)
ECPS are important for the community	3(1.5)	2(1.0)	0(0.0)	52(26.5)	139(70.9)
ECPS can improve patient outcomes	5(2.6)	0(0.0)	0(0.0)	43(21.9)	148(75.5)
ECPS can increase income for pharmacist	2(1.0)	1(0.5)	8(4.1)	48(24.5)	137(69.9)
ECPS gives Job satisfaction to the pharmacist	5(2.6)	1(0.5)	3(1.5)	41(20.9)	146(74.5)
ECPS will enhance the public's perception of the pharmacist as a health professional	3(1.5)	0(0.0)	3(1.5)	40(20.4)	150(76.5)
Current layout of my pharmacy makes for the provision of ECPS	4(2.0)	10(5.1)	11(5.6)	56(28.6)	115(58.7)
Community pharmacists must be involved in ECPS	1(0.5)	7(3.6)	4(2.0)	52(26.5)	132(67.3)
ECPS will distinguish community pharmacists from patent medicine vendors	4(2.0)	1(0.5)	2(1.0)	31(15.8)	158(80.6)

Table 3. Community Pharmacists involvement in different ECPS

Items	Not involved n (%)	Slightly Involved n (%)	Neutral n(%)	Involved n (%)	Very Involved n (%)
Medication Therapy Management	1(0.5)	3(1.5)	5(2.6)	71(36.2)	116(59.2)
Point –of- care(Blood Pressure, Blood glucose check)	1(0.5)	2(1.0)	0 (0.0)	42(21.4)	151(77.0)
Smoking cessation program	43(21.9)	28(14.3)	88(44.9)	26(13.3)	11(5.6)
Immunization/ vaccination	60(30.6)	29(14.8)	68(34.7)	27(13.8)	12(6.1)
Family planning services	43(21.9)	33(16.8)	72(36.7)	31(15.8)	17(8.7)
Patient education and counseling sessions	0(0.0)	4(2.0)	3(1.5)	39(19.9)	150(76.5)
Weight Management	4(2.0)	13(6.6)	12(6.1)	56(28.6)	111(56.6)
Patient follow-up using technology	10(5.1)	21(10.7)	19(9.7)	43(21.9)	103(52.6)
Diet/ Nutritional Advice	4(2.0)	9(4.6)	14(7.1)	57(29.1)	112(57.1)

Lack of remuneration for ECPS was the highest rated most likely (27, 13.8%) barrier to the provision of ECPS, others were lack of patients knowledge of benefits (24, 2.2%), lack of pharmacist-client

interaction (22, 11.2%) and more advanced training required (22, 11.2%). Details on responses to barriers associated with the provision of ECPS are shown in table 4.

Table 4. Barriers to the Provision ECPS

Items	Very unlikely n (%)	Unlikely n (%)	Neutral n (%)	Likely n (%)	Very likely n (%)
Lack of pharmacist-client interaction	106(54.1)	33(16.8)	6(3.1)	29(14.8)	22(11.2)
Patients do not like to be "criticized" about their lifestyle	95(48.5)	43(21.9)	16(8.2)	34(17.3)	8(4.1)
Not part of the pharmacist's job	120(61.2)	51(26.0)	12(6.1)	7(3.6)	6(3.1)
Patients are not regular clients	82(41.8)	59(30.1)	14(7.1)	36(18.4)	5(2.6)
Lack of time	81(41.3)	46(23.5)	14(7.1)	43(21.9)	12(6.1)
Lack of interest by pharmacy owners	93(47.4)	42(21.4)	16(8.2)	33(16.8)	12(6.1)
Lack of patient knowledge about the benefits of expanded services	84(42.9)	36(18.4)	14(7.1)	38(19.4)	24(12.2)
Pharmacists are overworked	78(39.8)	53(27.0)	24(12.2)	23(11.7)	18(9.2)
Lack of remuneration for such services	80(46.8)	36(18.4)	17(8.4)	36(18.4)	27(13.8)
More training required to carry out such services	89(45.4)	33(16.8)	21(10.7)	31(15.8)	22(11.2)
Pharmacy lay-out not suitable for the provision of ECPS	88(44.9)	53(27.0)	14(7.1)	23(11.7)	18(9.2)

DISCUSSION

This study evaluated the perception and barriers to the practices of expanded services by community pharmacists in Delta State, Nigeria. The majority of community pharmacists in this study reported having previously provided ECPS to their clients or patients which contrasts a report of 58% of participating rural or remote pharmacists in Australia actually provided ECPS [14] and respondents reported to have below 58.7% and 59.4% for ECPS attitude and willingness scores respectively in a United Emirate study [11]. The provision of ECPS by community pharmacists in Nigeria is largely driven by their accessibility and the convenience they offer to the public. In Nigeria, where most individuals finance healthcare services out-of-pocket, community pharmacies serve as a critical point of contact for healthcare provision. Pharmacists deliver many of these services as part of their primary healthcare roles or as public health interventions, underscoring the importance of

community pharmacy in healthcare delivery [7] [15] [16]

Moreover, the majority of community pharmacists in Nigeria demonstrated sound knowledge of ECPS, which may be attributed to the inclusion of ECPS modules in the Mandatory Continuing Professional Development (MCPD) programs required of practicing pharmacists. These programs, administered periodically by the Pharmacy Council of Nigeria (PCN), aim to keep pharmacists updated on current trends and best practices in the profession. The positive perception of community pharmacists towards ECPS provision may also be influenced by their generally favorable attitude towards pharmaceutical care, which emphasizes patient-centered service and holistic medication management [6]. Patient education and counseling have become the hallmark services within community pharmacies, with 89% of community pharmacists in Lagos state reporting active engagement in these activities [17]. However,

despite these efforts, public awareness of pharmacists as providers of such services remains relatively low, as evidenced by a Saudi Arabian study where only 38% of the public recognized community pharmacists as sources of education and counseling [18]. This gap between pharmacist activity and public perception indicates a necessity for enhanced public health campaigns and awareness efforts to educate the community about the expanded roles of pharmacists.

Point-of-care-testing (POCT) represents another significant service provided by community pharmacies in Delta state, Nigeria. This study corroborates previous findings where 95.4% of community pharmacies in Delta State reported participation in POCT [19]. The high level of involvement indicates a strong integration of POCT within pharmacy practice in this region, which enhances early disease detection and management at the community level. Conversely, a prior study in Osun State, Nigeria, reported moderate practice and positive attitudes towards POCT among pharmacists (Iheronkonye et al., 2023), while a study conducted in Enugu State revealed poor practice of POCT among community pharmacists and pharmacy technicians, with blood pressure and blood glucose monitoring being the most frequently conducted tests [20]. These disparities may have stemmed from differences in training, highlighting the need for standardized protocols and capacity-building initiatives to ensure consistent quality of POCT services nationwide.

Participation in smoking cessation programs among community pharmacists was low, consistent with findings from a study in Ibadan, Nigeria, where only 12.5% of pharmacists were involved in smoking cessation efforts [21]. The overall mean score for smoking cessation practice in Northern Jordan was 2.01 [22] indicating limited engagement, although 79.9% of pharmacists in community pharmacies in Al Karak governorate (Western-Central Jordan) reported they always or usually advised patients on smoking cessation [23]. In Lagos, Nigeria involvement was higher than observed in this study, with 49.1% of pharmacists offering some form of smoking cessation services [24]. These varied involvements are likely due to differing exposures to trainings on the provision of such services. Enhancing training opportunities either in the undergraduate curricula or continuing professional development modules could improve pharmacists' contributions to tobacco control efforts.

Involvement in immunization by community pharmacists was low and this aligns with previous studies, where 74.9% of pharmacists did not administer vaccines [25] and of 31% of community pharmacists which provided vaccination services only 55.8% actually administered vaccines [8]. These findings suggest that immunization services by community pharmacists in Nigeria are emerging [26]. Improving pharmacists' preparedness and willingness to undertake immunization roles is essential to the critical role pharmacists can play in increasing vaccine coverage [27].

The study also examined pharmacists' participation in weight management and nutritional advice activities with findings consistent with a previous study where 76%–90% of pharmacists performed various roles in weight management [28]. These roles included advising patients to consume low-calorie products, increase physical activity, and enhance intake of soluble fibers [29], suggesting the recognized accessibility of community pharmacists as healthcare professionals capable of contributing to lifestyle modification and chronic disease prevention through counseling and education.

Lack of remuneration, rated as the most likely barrier was also a finding in the majority of studies included in previous systematic reviews on pharmacists expanded services implementation barriers [30][31]. The implementation of workable reimbursement systems in community pharmacies would motivate pharmacists to provide ECPS. Additionally, lack of patient knowledge about the benefits of ECPS was also identified as a major barrier, underscoring the importance of public education campaigns to raise awareness and demand for these services. Policymakers, professional bodies, and community pharmacists should work together to develop sustainable models that recognize and reward the expanded roles of pharmacists while simultaneously educating the public on the value of ECPS.

Limitations and Strengths of the study

This study though was able to give the landscape ECPS in Delta State, Nigeria was limited by some overlap in the delivery of ECPS provided by community pharmacists which could have affected the responses. However, the study was representative of most of the community

pharmacists in Delta State as the three senatorial districts of the state were captured in the study.

Conclusion

The majority of community pharmacists in Delta State, Nigeria had positive perceptions of expanded community services and provided such services. Patient education and point-of-care testing were the most practiced services while smoking cessation and immunization services were low. Inadequate remuneration and lack of knowledge about the services by the patients were the major barriers. Some measures should be taken to enlighten the public on the availability of these services in community pharmacies and an appropriate channel should be provided for remuneration for community pharmacists who provide such services.

ACKNOWLEDGMENTS

The authors wish to thank all community Pharmacists who gave their time to participate in the study.

AUTHORS CONTRIBUTION

USA: Conceptualization, project supervision, writing final draft and editing. OCA: Writing final draft, editing and validation; ONO: project administration, writing initial draft

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

FUNDING

This research received no external funding.

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