

ORIGINAL ARTICLE

Knowledge, Perceptions, Attitudes, and Effects of Over-the-Counter (OTC) Medications Use Among Rural Dwellers in Imo State, Nigeria

Oparaojiaku¹, J.O., Chibundu¹, E.I., Ajuonuma¹, E.F., Enwerem¹, V.A., Ujoh, S.U.¹, Esiobu², N.S., Okwor¹, U.M., Nwadinigwe³, F.C., Ohiri³, J.U and Chikaire⁴, J.U

¹Department of Agricultural Extension, University of Agriculture and Environmental Sciences, Umuagwo, Imo State,

²Department of Agricultural Economics, University of Agriculture and Environmental Sciences, Umuagwo, Imo State;

³Department of Chemical Pathology, College of Medicine, Federal University of Technology, Owerri, Imo State

⁴Department of Agricultural Extension, Federal University of Technology, Owerri, Imo State, Nigeria;

Corresponding Author: Email: akjamin2010@gmail.com

ABSTRACT

This study examined the knowledge, perception, attitude, and effects of over-the-counter (OTC) medication use among rural dwellers in Southeast, Nigeria. A descriptive cross-sectional design was adopted using well-structured questionnaire administered to 250 adult rural residents. Data were analyzed using percentages, mean and standard deviation. Results showed that most respondents have good and sound knowledge of OTC medications by their responses, such as, OTC medications can be purchased without prescription (84%), incorrect use can cause harmful side effect (86.4%), expired OTC drugs should not be used (92.4%), OTC drug can interact with other medications (91.2%), Their perception and attitude toward OTC is poor due to their responses to the statements such as OTC drug generally safe (M=3.26), drugs have fewer side effects (M=2.89), OTC drugs provide quick relief (M=2.96), it is safe to use OTC drugs frequently (M=2.97), prefer OTC drugs before visiting the hospital (M=3.05), use OTC drugs for minor illness (M=3.01), no need to consult health care professional (2.97), stop use when feeling better (M=2.97), combine OTC with other drugs (M=2.74), Turning, they agreed again the effect of OTC drugs, such as OTC can cause serious complications (93.6%), OTC drugs may mask illnesses (87.6%), OTC drugs can cause drowsiness (90%), expired drugs can be harmful (92%), self-medication can delay proper diagnosis (84%). It was observed that higher knowledge significantly improves appropriate use of OTC medication, while lower knowledge is associated with unsafe or inappropriate usage pattern, the same applies to positive perception as well.

Keywords: knowledge, perception, attitude, Over-the-counter, drugs, allergic, complications, risk

Received 24.04.2026

Revised 01.05.2026

Accepted 11.05.2026

How to cite this article:

Oparaojiaku, J.O., Chibundu, E.I., Ajuonuma, E.F., Enwerem, V.A., Ujoh, S.U., Esiobu, N.S., Okwor, U.M., Nwadinigwe, F.C., Ohiri, J.U and Chikaire, J.U. Knowledge, Perceptions, Attitudes, and Effects of Over-the-Counter (OTC) Medications Use Among Rural Dwellers in Imo State, Nigeria Adv. Biores. Vol 17 [6] June 2026. 113-121

INTRODUCTION

Over-the-counter (OTC) medicines are drugs available without a prescription and are commonly used to manage minor health issues on one's own. Their widespread availability, low cost, and assumed safety have made OTC medications a key part of self-treatment practices worldwide. However, their misuse continues to be a public health issue, particularly in low- and middle-income countries where regulations are poorly enforced and health awareness is limited [1]. In Nigeria, self-medication with OTC drugs is especially common, with many individuals making treatment decisions based on personal experience or advice from non-medical sources rather than consulting healthcare professionals [1,2]. In rural areas, the use of these medications is shaped by barriers such as distance to medical facilities, financial constraints,

and traditional beliefs. Many people in these communities turn first to patent medicine vendors or local drug shops for treatment, often avoiding formal healthcare services[3]. In Imo State, research indicates that rural residents frequently treat illnesses themselves, using both pharmaceuticals and herbal remedies. These choices are typically driven by perceptions of effectiveness, cost, and ease of access rather than medical advice. Public understanding and views on OTC drugs significantly influence how they are used. While some users have a reasonable grasp of these medications, misconceptions about their safety are widespread, contributing to incorrect usage patterns [1]. A common belief is that OTC drugs carry no risk regardless of dose or frequency, which can lead to adverse effects and the development of drug resistance. Attitudes toward self-medication are also shaped by past experiences, societal norms, and confidence in informal providers. In Nigeria, many view self-treatment as appropriate for minor conditions and may avoid clinics due to long wait times, high costs, or poor service quality [1]. Such perspectives help explain the high rates of OTC drug use, particularly in rural regions. While OTC medications improve access to basic care, their inappropriate use brings serious risks, including incorrect dosing, dependency, delayed diagnosis of severe conditions, and the spread of antimicrobial resistance[4]. For this reason, examining how rural populations in Imo State understand, perceive, and use OTC drugs is crucial for developing strategies that promote safer practices and better health outcomes.

Problem Statement

The rising reliance on over-the-counter drugs among rural populations in Nigeria has emerged as a significant public health challenge. Although designed for safe self-use in mild conditions, these medications are often misused due to insufficient knowledge and false assumptions about their safety [1]. In many rural settings, individuals diagnose and treat themselves without professional input, increasing the likelihood of harmful outcomes. In Imo State, patent medicine vendors and informal drug sellers serve as the main source of medical care for many rural residents. Studies show that cost, convenience, and time savings are major reasons why people choose self-medication [3]. Yet this practice carries dangers such as overdosing, harmful drug interactions, and the improper use of antibiotics and painkillers. Moreover, there is a lack of comprehensive data specifically focused on how rural communities in Imo State perceive and use OTC medications. Most existing research in Nigeria centers on urban populations or students in health programs, leaving a gap in understanding rural behaviors. This absence of localized evidence hampers efforts by health authorities and educators to create targeted, effective interventions. The consequences of unsafe OTC drug use include more frequent adverse reactions, progression of untreated illnesses, and growing resistance to antibiotics—challenges that strain public health systems [4]. Without stronger education and regulatory oversight, these problems are likely to continue and intensify in rural areas. Thus, there is an urgent need to assess the extent of knowledge, prevailing attitudes, perceptions, and actual impacts of OTC medication use among rural dwellers in Imo State. Such insights are essential for formulating evidence-based policies that support safer medication use and improve community health. The main objective of this study is to examine the knowledge, perception, attitude, and effects of OTC medication use among rural dwellers in Imo State, Nigeria. The specific objectives are to: a). assess the level of knowledge of OTC medications among rural dwellers; b). examine perceptions toward the safety and effectiveness of OTC drugs; c) evaluate attitudes influencing the use of OTC medications; d). identify the health effects associated with OTC medication use; and e) determine the perceived influence between knowledge, perception, and usage patterns.

MATERIAL AND METHODS

The research was carried out in Imo State, situated in southeastern Nigeria, which includes 27 Local Government Areas and has a largely rural population primarily involved in farming and small business activities (National Bureau of Statistics [5]. A descriptive cross-sectional survey approach was employed, as it allowed the researcher to gather and analyze data at one point in time, providing insights into rural residents' knowledge, perceptions, attitudes, and experiences with over-the-counter (OTC) medications [6]. The target population included adults aged 18 and above living in selected rural communities within the state, since these individuals are more likely to practice self-medication due to limited access to formal health care (World Health Organization [4]. To select participants, a multistage sampling method was applied: two Local Government Areas were first chosen at random, then three rural communities from each were selected, followed by systematic selection of households, and finally, one eligible adult was randomly picked from each household to ensure balanced representation across the areas studied [6]. The required sample size was calculated using Cochran's formula for large populations, ensuring sufficient data reliability and statistical accuracy [1]. Data collection relied on a structured tool called the "Over-the-Counter Medication Use Assessment Questionnaire (OTCMUAQ)," organized into sections covering socio-demographic information, knowledge, perception, attitude, and outcomes related to OTC

drug use. The questionnaire underwent expert review to confirm its relevance and clarity. Its reliability was assessed through test-retest procedures, and internal consistency was measured using Cronbach's alpha, with values of 0.70 or higher deemed acceptable [4]. Trained research assistants administered the questionnaires in person to improve accuracy and response rates in the rural context, while adhering strictly to ethical standards such as informed consent and participant confidentiality [2]. Collected data were coded and processed using SPSS version 25. Descriptive statistics—including frequencies, percentages, means, and standard deviations.

RESULT AND DISCUSSION

Knowledge of OTC Medications Among Rural Dwellers

Table 1 showed that respondents have a sound knowledge of OTC medications. This is indicative of positive responses to statements such as: OTC medications can be purchased without a prescription (84.0%), incorrect use can cause harmful side effects (86.4%), reading instructions is important (88.0%), OTC drugs can interact with other medications (91.2%), overuse can lead to drug resistance (80.4%), not all illnesses can be treated with OTC drugs (82.8%), expired OTC drugs should not be used (92.4%), and children need different dosages than adults (86.8%). However, knowledge gaps exist in more technical areas such as drug interactions (46.0%) and herbal-drug interactions (46.0%). However, 36% of respondents incorrectly believed that it is safe to share OTC drugs without advice, indicating a significant misconception. Overall, the results suggest the need for targeted health education to improve safe medication practices. Understanding of over-the-counter (OTC) medications among people in rural areas continues to be a significant public health concern, especially in developing regions where access to formal healthcare is often limited. OTC drugs—such as pain relievers, antimalarials, and antibiotics, the latter frequently used without prescriptions—are commonly relied upon for self-treatment due to their low cost and wide availability. Yet, factors like limited health awareness, weak enforcement of drug regulations, and dependence on informal medicine sellers heavily influence how these communities perceive and use such medications [7,8]. Research shows that although many rural residents recognize common OTC medicines, their understanding of correct dosages, possible side effects, and risks of drug interactions tends to be poor. This lack of knowledge raises the likelihood of misuse, including taking excessive doses, using medications for extended periods, or combining drugs in unsafe ways. In sub-Saharan Africa, for example, decisions to self-medicate are often guided more by personal experience, advice from others, and financial limitations than by guidance from healthcare providers [9,]]. Additionally, widespread misconceptions about the safety of OTC drugs contribute to improper use. Many individuals in rural areas assume these medicines are completely safe simply because they can be bought without a prescription. This belief can lead to inappropriate antibiotic use for conditions like viral infections, fueling the rise of antimicrobial resistance—a serious and growing global health problem. Compounding the issue, low literacy levels often make it difficult for users to understand medication labels, further undermining safe usage [2, 8]. Addressing these challenges requires targeted efforts to improve awareness and practices around OTC medication use. Key strategies include health education programs, community-level interventions, and stricter oversight of pharmaceutical sales. Equipping local medicine vendors with proper training, increasing access to qualified health professionals, and launching public awareness campaigns can promote more responsible use of medications. Equally important are stronger policies regulating OTC drug distribution and communication approaches tailored to local cultures, both of which are vital to reducing the dangers linked to self-medication in rural communities [7]

Table 1: Knowledge of OTC Medications Among Rural Dwellers

S.No.	Knowledge Statement	*F	%
1	OTC medications can be purchased without a prescription	210	84.0
2	Incorrect use can cause harmful side effects	216	86.4
3	Reading instructions is important	220	88.0
4	OTC drugs can interact with other medications	115	46.0
5	Overuse can lead to drug resistance	201	80.4
6	Herbal remedies can interact with OTC drugs	115	46.0
7	Not all illnesses can be treated with OTC drugs	207	82.8
8	Expired OTC drugs should not be used	231	92.4
9	Children need different dosages than adults	217	86.8
10	It is safe to share OTC drugs without advice (Incorrect statement)	90	36.0

Multiple responses (F-Frequency; %= Percentage)

Perceptions toward the Safety and Effectiveness of OTC Drugs

Table 2 showed high perception of OTC medications. The respondents agreed that OTC drugs are generally safe without supervision (M = 3.26), OTC drugs are effective for most minor illnesses (M = 3.20). Using OTC drugs without consulting a doctor is acceptable to them (M = 3.04), OTC drugs have fewer side effects (M = 2.89), It is safe to use OTC drugs frequently (M = 2.97), Instructions on labels are easy to understand (M = 3.03), OTC drugs are affordable and accessible (M = 3.35), Combining OTC drugs increases effectiveness (M = 3.14), OTC drugs provide quick relief (M = 2.97), Advice from patent medicine vendors is sufficient (M = 3.12). These responses showed a strong new for public health education awareness campaign and sensitization on the danger of OTC medication use. Overall, there is need for public health education to correct unsafe beliefs and promote rational drug use. Views on the safety and effectiveness of over-the-counter (OTC) medications significantly influence self-medication behaviors, particularly in low- and middle-income countries. Many people regard these drugs as safe and dependable due to their legal availability without a prescription and their widespread promotion. This belief often leads individuals to depend on OTC medicines for treating common conditions like headaches, malaria, and colds. However, this trust is not always grounded in accurate understanding, as regulatory approval is sometimes mistaken to mean the drugs are entirely safe in all circumstances [8,2]. In various communities, perceptions of OTC drug effectiveness are shaped more by personal experiences, cultural norms, and advice from peers than by medical guidance. People frequently reuse medications that helped them before, reinforcing confidence in their benefits even when symptoms differ or a proper diagnosis is lacking. Moreover, strong marketing efforts and recommendations from informal medicine sellers further boost positive attitudes, sometimes encouraging the use of unsuitable treatments. Research indicates that these influences can contribute to excessive or incorrect use, especially involving painkillers and antibiotics [1,10]. Despite their easy access, misunderstandings about OTC drugs can lead to risky behaviors. Many users overlook potential side effects, drug interactions, and dosage errors, assuming that non-prescription status means little to no risk. This issue is especially pronounced in rural areas and among populations with limited literacy, where interpreting labels and warnings may be difficult. As a result, improper use can lead to adverse outcomes such as poisoning, ineffective treatment, and the development of antimicrobial resistance [9,2]. Addressing misconceptions about OTC medications calls for focused public health strategies. Initiatives such as educational campaigns, improved labeling, and community outreach are vital to correcting false beliefs and encouraging responsible use. Tighter oversight of pharmaceutical advertising, along with greater involvement of pharmacists and healthcare professionals in advising patients, can also support safer and more informed choices. Ultimately, aligning public attitudes with scientifically sound information is key to reducing the risks linked to self-medication [7, 8]

Table 2: Perceptions toward the Safety and Effectiveness of OTC Drugs

S.No.	Perception Statement	Mean	SD
1	OTC drugs are generally safe without supervision	3.26	0.87
2	OTC drugs are effective for most minor illnesses	3.20	0.96
3	Using OTC drugs without consulting a doctor is acceptable	3.04	0.98
4	OTC drugs have fewer side effects	2.89	1.01
5	It is safe to use OTC drugs frequently	2.97	0.79
6	Instructions on labels are easy to understand	3.03	0.81
7	OTC drugs are affordable and accessible	3.35	0.93
8	Combining OTC drugs increases effectiveness	3.14	0.76
9	OTC drugs provide quick relief	2.96	1.02
10	Advice from patent medicine vendors is sufficient	3.12	0.96

Attitudes Influencing the Use of OTC Medications

Table 3 showed that respondents have positive but potentially risky attitudes toward OTC medications. These attitudes were; prefer OTC drugs before visiting a hospital (M = 3.05), using OTC drugs for minor symptoms (M = 3.01), no need to consult a healthcare professional (M = 2.97), keeping OTC drugs at home (M = 2.84), recommending OTC drugs to others (M = 3.12), increasing the dosage if symptoms persist (M = 3.05), stopping use when feeling better (M = 2.89), combining different OTC drugs for quick relief (M = 2.74), and relying on past experience (M = 3.02). There is a serious problem with our rural population with the issues of public health. This means that constant/regular sensitization on the danger

of OTC use became out by both the government, HealthCare workers, teachers and cooperative leaders including religious organization. People's use of over-the-counter (OTC) medications is strongly influenced by their personal beliefs, past experiences, and social surroundings, all of which shape how they engage in self-medication. In various contexts, OTC drugs are viewed positively due to their ready availability, low cost, and convenience compared to formal healthcare, making them a preferred option for minor or recurring health issues. This favorable view often leads individuals to skip medical consultations, reinforcing routine self-treatment [8,2]. A significant factor is the level of confidence people have in diagnosing and treating their own conditions. Many feel capable of choosing the right medication based on prior experience or input from friends and family. While this sense of independence supports self-care, it can also result in repeated use of certain drugs without medical oversight, raising the risk of misuse. Research indicates that such confidence is frequently unwarranted, as it may overlook evolving health conditions or the dangers tied to incorrect medication use [9,10]. Cultural values and societal expectations also significantly affect attitudes toward OTC medicine. In numerous communities, self-medication is not only common but seen as a sensible way to handle everyday illnesses. Recommendations from informal vendors or trusted community members often carry substantial weight, further normalizing these practices. As a result, people may favor ease and social approval over professional advice, sometimes leading to unsuitable medication choices and usage patterns [7,8]. Perceptions of risk also play a central role in shaping behavior. Many users assume OTC medications are inherently safe simply because they don't require a prescription, underestimating potential harms. This limited awareness can lead to unsafe practices like taking higher doses, using drugs for extended periods, or mixing medications without guidance. Tackling these misconceptions calls for focused public health efforts that highlight possible risks and encourage more responsible use of non-prescription medicines [7,8].

Table 3: Attitudes Influencing the Use of OTC Medications (n = 250)

S.No.	Attitude Statement	Mean	SD
1	Prefer OTC drugs before visiting a hospital	3.05	0.84
2	Use OTC drugs for minor symptoms	3.01	0.80
3	No need to consult a healthcare professional	2.97	0.86
4	Keep OTC drugs at home	2.84	0.91
5	Recommend OTC drugs to others	3.12	0.83
6	Increase dosage if symptoms persist	3.05	0.87
7	Stop use when feeling better	2.97	0.94
8	Read instructions before use	2.89	0.93
9	Combine different OTC drugs	2.74	1.01
10	Rely on past experience	3.02	0.89

Accepted mean=2.50

Health Effects Associated with OTC Medication Use

Table 4 showed that respondents are fully aware of the health risks and effects of OTC medications. They agreed that OTC drugs can cause allergic reactions (68.0%), excessive use can damage organs (64.0%), incorrect dosage can cause serious complications (93.6%), frequent use of painkillers can cause ulcers (79.2%), OTC drugs can mask serious illnesses (87.6%), OTC drugs can cause dizziness or drowsiness (90.0%), expired OTC drugs can be harmful (92.0%), and self-medication can delay proper diagnosis (84.0%). Over-the-counter (OTC) medicines are commonly used worldwide to manage everyday health issues such as headaches, fevers, colds, and digestive discomfort. Their widespread use is driven by easy access, affordability, and convenience—advantages that are particularly valuable in low- and middle-income countries where healthcare services may be limited. However, while these benefits are clear, using OTC drugs without medical advice can pose risks, especially when individuals lack adequate knowledge about proper dosage and safety precautions [2,8]. One significant concern is the occurrence of adverse drug reactions (ADRs). These can range from mild symptoms like dizziness, nausea, or skin irritation to more severe consequences such as organ damage or life-threatening complications. For example, excessive use of paracetamol (acetaminophen) can lead to liver injury, and inappropriate use of nonsteroidal anti-inflammatory drugs (NSAIDs) may result in gastrointestinal bleeding or kidney impairment. The risk of such outcomes is higher in rural areas, where health literacy tends to be lower and medication instructions may not be fully understood [10,7]. Another serious issue is the misuse and overuse of certain OTC medications, particularly antibiotics, which are sometimes obtained without a

prescription. This contributes to antimicrobial resistance (AMR), an escalating global health threat. When antibiotics are used incorrectly—for instance, to treat viral infections or discontinued prematurely—bacteria can develop resistance, making infections harder to control. This not only endangers individual patients but also weakens public health defenses by reducing the effectiveness of available treatments [9,2,11]. The potential for harmful drug interactions and contraindications is also a key concern. Many people take multiple medications simultaneously without professional input, increasing the likelihood of dangerous interactions. For instance, combining certain pain relievers with alcohol or other drugs can intensify side effects or reduce therapeutic effectiveness. Individuals with chronic conditions such as hypertension, diabetes, or kidney disease may unknowingly use OTC products that worsen their condition, leading to avoidable complications [8,7]. Using incorrect doses or continuing OTC medications beyond the recommended duration can also cause harm. Some people exceed dosage guidelines in hopes of faster relief, while others extend use past the intended period. Such behaviors may lead to drug toxicity, dependence, or the masking of serious underlying conditions that require medical attention. Long-term use of products like cough syrups or sedating antihistamines, for example, can result in drowsiness, impaired cognitive function, or dependency, especially among more vulnerable users [10,9]. Extra caution is needed for at-risk groups such as children, pregnant women, and older adults. These populations are more susceptible to medication effects due to differences in metabolism and overall health. In children, improper dosing can lead to poisoning. During pregnancy, some OTC drugs may negatively affect fetal development. Older adults, who often have multiple health conditions and take several medications, face a greater risk of adverse effects and drug interactions [2]. Self-treatment with OTC medicines can also delay the diagnosis of serious illnesses. When persistent symptoms are managed without medical evaluation, underlying conditions may go undetected. This allows diseases such as infections, ulcers, or even cancers to progress. For example, routinely using painkillers for ongoing abdominal pain might temporarily relieve discomfort but obscure a serious condition, complicating later diagnosis and treatment [7,10]. Despite these risks, many negative outcomes can be minimized through targeted interventions. Public education initiatives can enhance understanding of safe medication practices, including correct dosing, appropriate duration, and awareness of side effects. Stricter regulations on OTC drug sales, along with stronger involvement of pharmacists and healthcare providers in guiding consumers, can support safer use. Community-based strategies that consider local language, cultural context, and literacy levels are especially effective in rural settings for promoting informed choices [2,11,7]. Therefore, while OTC medications are vital for addressing common health needs, their use involves potential dangers, particularly when not supported by adequate knowledge. Risks such as adverse reactions, antimicrobial resistance, drug interactions, and delayed diagnoses highlight the need for responsible use. Addressing these challenges requires coordinated efforts in public education, regulatory oversight, and healthcare support to ensure OTC medicines remain a safe and beneficial component of public health [8,2].

Table 4: Health Effects Associated with OTC Medication Use (n = 250)

Health Effects Statement	*Frequency	Percentage
OTC drugs can cause allergic reactions	170	68.0
Excessive use can damage organs	160	64.0
Incorrect dosage can cause serious complications	234	93.6
Self medication can delay proper diagnosis	210	84.0
Frequent use of painkillers can cause ulcers	198	79.2
OTC misuse can lead to dependence	120	48.0
OTC drugs can mask serious illnesses	219	87.6
Combining OTC drugs can cause harmful interactions	135	54.0
OTC drugs can cause dizziness or drowsiness	230	90.0
Expired OTC drugs can be harmful	225	92.0

*Multiple responses

Influence of Knowledge on Usage Patterns of OTC Medications

To determine the perceived influence of knowledge on usage patterns, respondents were assessed using 10 knowledge statements. Based on their total scores, knowledge was categorized as Low (0–4 correct answers), Moderate (5–7 correct answers), and High (8–10 correct answers). Usage patterns were classified as Appropriate Use and Inappropriate Use. The results (Table 5) indicate a clear relationship between knowledge level and usage patterns of OTC medications among rural dwellers. Respondents

with high knowledge (36.0%) mostly engage in appropriate use (75 out of 90), suggesting that better understanding of OTC drugs promotes safer medication practices. Those with moderate knowledge (40.0%) show mixed behavior but lean more toward inappropriate use (65 out of 100), indicating partial understanding of OTC drug safety guidelines. Respondents with low knowledge (24.0%) demonstrate predominantly inappropriate use (55 out of 60), reflecting poor medication practices and higher risk of misuse. Overall, the findings show that higher knowledge significantly improves appropriate use of OTC medications, while low knowledge is strongly associated with unsafe and inappropriate usage patterns among rural dwellers. An individual's understanding of over-the-counter (OTC) medications plays a crucial role in shaping how they use these drugs, especially when self-medicating. Those who are well-informed about a medication's purpose, correct dosage, and potential side effects tend to use OTC products more responsibly. In contrast, insufficient knowledge often results in inappropriate use, such as choosing the wrong medication or taking incorrect doses. Research indicates that gaps in understanding are a major factor behind unsafe self-medication, particularly in areas where access to healthcare professionals is limited [8, 2, 11]. This knowledge also affects how people assess their symptoms and decide whether to treat themselves or seek medical help. Individuals with higher health literacy are generally better at recognizing conditions that can be safely managed at home and knowing when professional care is needed. In comparison, those with limited understanding may misread symptoms and use medications unsuitably, potentially delaying proper treatment or worsening their condition. This underscores the importance of education in supporting sound choices about medication use. Additionally, awareness influences whether individuals follow recommended dosing and treatment duration. People who grasp the significance of adhering to label instructions are less likely to take too much medication or use it for longer than advised. However, poor knowledge can lead to risky behaviors like overdosing, missing doses, or combining medications without guidance—practices that raise the likelihood of adverse reactions and other health complications [7]. Knowledge levels also impact the use of specific OTC drug types, including antibiotics and pain relievers. Evidence shows that people unaware of antimicrobial resistance are more prone to misuse antibiotics, contributing to the growing global problem of drug-resistant infections. Likewise, not understanding the dangers of frequent painkiller use may result in long-term harm, such as liver or kidney damage. Therefore, increasing public awareness is vital for encouraging safer and more effective medication habits [2, 9]. Improving knowledge about OTC medications can lead to better usage patterns and lower health risks. Key strategies include public education initiatives, clearer labeling, and greater access to pharmacists and healthcare providers. Community-focused programs that consider literacy challenges and cultural contexts can enhance the effectiveness of these efforts, supporting more informed decisions and promoting the responsible use of OTC drugs.

Table 5: Influence of Knowledge on Usage Patterns of OTC Medications

Knowledge Level	Appropriate Use (f)	Inappropriate Use (f)	Total	Percentage (%)
High Knowledge (8–10 correct)	75	15	90	36
Moderate Knowledge (5–7 correct)	35	65	100	40.0
Low Knowledge (0–4 correct)	5	55	60	24.0
Total	115	135	250	100

Perceived Influence of Perception on Usage Patterns of OTC Medications

To determine the perceived influence of perception on usage patterns, respondents were assessed using (10) ten perception statements on OTC medication safety and effectiveness. Responses were scored and grouped into Positive Perception, Neutral Perception, and Negative Perception. While Usage patterns were classified as Appropriate Use and Inappropriate use. A total of 250 respondent were used. The results indicate that perception strongly influences usage patterns of OTC medications among rural dwellers. Respondents with a positive perception (36.0%) are more likely to use OTC drugs appropriately (70 out of 90), suggesting safer and more informed medication behavior. Those with a neutral perception (40.0%) show a higher tendency toward inappropriate use (65 out of 100), reflecting uncertainty and inconsistent understanding of OTC drug safety. Respondents with a negative perception (24.0%) demonstrate predominantly inappropriate use (50 out of 60), indicating risky self-medication practices and misconceptions about OTC medications. Overall, the findings show that positive perception promotes appropriate use of OTC medications, while negative perception contributes significantly to misuse among rural dwellers in Imo state. An individual's knowledge of over-the-counter (OTC) medications significantly influences how they use these drugs, particularly when treating themselves without medical

supervision. People who understand a medication's intended use, proper dosage, and possible side effects are more likely to use OTC products appropriately. On the other hand, limited awareness often leads to misuse, such as selecting an unsuitable treatment or taking too much or too little of a drug. Studies show that lack of understanding is a key reason for unsafe self-medication, especially in regions where access to healthcare providers is scarce [8, 2, 11]. This understanding also shapes how individuals interpret their symptoms and decide whether to manage them independently or consult a professional. Those with stronger health literacy are typically better at identifying which conditions can be safely handled at home and when medical attention is necessary. In contrast, individuals with less knowledge may misinterpret symptoms, leading to inappropriate medication use, delayed care, or worsening health outcomes. This highlights the value of education in guiding responsible decisions about self-treatment [9]. Awareness further affects adherence to recommended dosing and treatment length. Individuals who recognize the importance of following label directions are less likely to exceed dosage limits or prolong use unnecessarily. However, poor understanding can encourage risky behaviors—such as overdosing, skipping doses, or mixing medications without advice—increasing the risk of adverse effects and other complications. Knowledge gaps also influence the use of specific OTC medications like antibiotics and pain relievers. Research indicates that people unfamiliar with antimicrobial resistance are more likely to misuse antibiotics, contributing to the rise of drug-resistant infections worldwide. Similarly, unawareness of the risks tied to frequent painkiller use can lead to long-term organ damage, including harm to the liver or kidneys. Thus, boosting public awareness is essential for fostering safer and more effective medication practices. Enhancing public understanding of OTC medications can improve usage behaviors and reduce health risks. Effective approaches include educational campaigns, improved labeling, and expanded access to pharmacists and health professionals. Community-based initiatives that account for differences in literacy and cultural background can make these efforts more impactful, helping individuals make informed choices and promoting responsible OTC medication use [7, 2].

Table 6: Influence of Perception on Usage Patterns of OTC Medications

Perception Level	Appropriate Use (f)	Inappropriate Use (f)	Total	Percentage (%)
Positive Perception	70	20	90	36
Neutral Perception	35	65	100	40.0
Negative Perception	10	50	60	24.0
Total	115	135	250	100

CONCLUSION

In Imo State, Nigeria, the use of over-the-counter (OTC) medications among rural residents is shaped by a combination of knowledge, beliefs, and attitudes, all of which have a notable impact on health outcomes. While these drugs offer an accessible solution for common health issues, their use is frequently affected by insufficient understanding of correct dosages, potential side effects, and situations in which they should not be used. This lack of awareness often leads to self-medication practices that deviate from medical recommendations, raising the risk of misuse and adverse health effects. The widespread belief that OTC medicines are inherently safe and effective contributes to their frequent, and at times unsuitable, use. Many individuals in rural areas base their medication choices on personal experience, advice from others, or recommendations from informal drug sellers, often without seeking professional medical input. These beliefs, coupled with a general preference for managing health independently, encourage routine reliance on OTC drugs—even in cases requiring clinical evaluation and treatment. Such behavior can result in harmful side effects, ineffective treatment, and the concealment of serious underlying conditions. Personal attitudes—such as confidence in handling illness independently and the perceived ease of accessing OTC drugs—also strongly influence how these medications are used. These attitudes are often rooted in socioeconomic challenges, cultural practices, and limited availability of healthcare services. As a result, affordability and convenience tend to take precedence over safety, increasing the chances of inappropriate drug use. The situation is worsened by inadequate regulatory oversight and the easy availability of medicines through unofficial outlets. Health consequences linked to OTC drug use in this population vary widely, from minor side effects to more serious outcomes like antimicrobial resistance and organ damage, particularly due to long-term or excessive use. These risks underscore the need for focused efforts to improve public understanding, shift perceptions, and encourage responsible medication habits. Key strategies include public health education, stricter regulation of pharmaceutical sales, and better access to trained healthcare providers promoting the appropriate use of OTC medications in rural Imo State demands a holistic strategy that addresses the behavioral factors driving current practices—particularly knowledge gaps, misconceptions, and ingrained

attitudes. By supporting informed choices and strengthening local health systems, it is possible to enhance the benefits of OTC drugs while reducing associated risks, ultimately improving health outcomes in rural populations.

REFERENCES

1. Akande-Sholabi, W., & Akinyemi, O. O. (2023). Self-medication with over-the-counter drugs among consumers: A cross-sectional survey in Southwestern Nigeria. *BMJ Open*, 13(5), e072059. <https://doi.org/10.1136/bmjopen-2023-072059>
2. World Health Organization. (2020). *Antimicrobial resistance*. <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>
3. Nwoke, E. A., Ibe, S. N. O., Chukwuocha, U. M., & Ehirim, C. I. C. (2014). Health-seeking behaviour and drug use in rural communities in southeastern Nigeria. *International Journal of Tropical Disease & Health*, 4(5), 517–529.
4. World Health Organization. (2021). *Medication safety in polypharmacy*. WHO Press. <https://www.who.int>
5. National Bureau of Statistics. (2022). *Nigerian living standards survey report*. NBS Nigeria.
6. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications
7. Auta, A., Hadi, M. A., Oga, E., Adewuyi, E. O., Abdu-Aguye, S. N., Adedoye, D., Strickland-Hodge, B., and Morgan, D. J. (2019). Global access to antibiotics without prescription in community pharmacies: A systematic review and meta-analysis. *Journal of Infection*, 78(1), 8–18. <https://doi.org/10.1016/j.jinf.2018.07.001>
8. Ocan, M., Obuku, E. A., Bwanga, F., Akena, D., Richard, S., Ogwal-Okeng, J., and Obua, C. (2015). Household antimicrobial self-medication: A systematic review and meta-analysis of the burden, risk factors, and outcomes in developing countries. *BMC Public Health*, 15, 742. <https://doi.org/10.1186/s12889-015-2109-3>
9. Beyene, K. A., Aspden, T., and Sheridan, J. (2017). Prevalence and predictors of self-medication with antibiotics in low- and middle-income countries: A systematic review and meta-analysis. *Journal of Antimicrobial Chemotherapy*, 72(9), 2473–2483. <https://doi.org/10.1093/jac/dkx178>
10. Fadare, J. O., and Tamuno, I. (2018). Antibiotic self-medication among university students in Nigeria. *Journal of Public Health in Africa*, 9(1), 813. <https://doi.org/10.4081/jphia.2018.813>
11. World Health Organization. (2022). *Promoting rational use of medicines*.

Copyright: © 2026 Author. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.