WJSAM | World Journal of Sustainable Advances in Multidisciplinarity
RESEARCH | INNOVATION | INTERDISCIPLINARITY | SUSTAINABILITY

Self-Medication and Over-the-Counter Drug Use: A Scoping Review of Patient Safety Risks and Community Pharmacy Interventions

Ma. Angelica F. Pinto
Store Pharmacist and Store Supervisor, Watsons Personal Care Stores, Inc., Jaen, Nueva Ecija, Philippines

Email: maangelicapinto05@gmail.com

ABSTRACT

This scoping review examined self-medication and over-the-counter (OTC) drug use, associated patient safety risks, and community pharmacy interventions, with particular attention to implications for the Philippines. Guided by the Joanna Briggs Institute methodological framework and Population–Concept–Context approach, the review examined Philippine and international publications and synthesized findings through descriptive mapping and narrative analysis. The literature identified healthcare accessibility, financial circumstances, previous treatment experiences, consumer knowledge, and informal advice as major influences on self-medication decisions. Significant safety concerns included inappropriate medicine selection, excessive dosage, prolonged use, adverse reactions, drug interactions, and delayed medical consultation. Evidence revealed important counseling deficiencies, with one study reporting that only 13% of pharmacy encounters satisfied all evaluated medication-information assessment components, while another documented full counseling-standard compliance in 14.6% of nonprescription product sales. Pharmacist training improved selected counseling and risk-assessment practices, although intervention outcomes varied across studies. The review concluded that accessible medicines must be accompanied by individualized professional guidance to support responsible self-care. Community pharmacies should strengthen structured symptom assessment, medication counseling, patient education, referral procedures, and continuing professional development. Differences in research designs, healthcare settings, medicine classifications, and regulatory frameworks limited the comparability and broader applicability of findings. This review provides a practical foundation for strengthening patient-centered pharmaceutical care, guiding medication safety initiatives, and supporting context-sensitive community pharmacy interventions in the Philippines.

Keywords: *Community Pharmacy, Medication Counseling, Over-The-Counter Medicines, Patient Safety, Pharmaceutical Care, Scoping Review, Self-Medication*

1. INTRODUCTION

Self-medication has become an important aspect of contemporary healthcare, offering individuals convenient ways to manage common illnesses. However, ensuring its safety requires understanding medication practices, potential risks, and the role of community pharmacists in supporting informed treatment decisions.

1.1. Background and Context of the Study

Self-medication is an important part of everyday healthcare, particularly when individuals manage common symptoms before seeking professional consultation. Over-the-counter (OTC) medicines can provide timely relief for minor, self-limiting conditions, but their accessibility does not eliminate the need for informed selection and appropriate use. The World Health Organization (2024) emphasized that self-care interventions should complement formal healthcare and be supported by reliable information and professional guidance. This approach recognizes individual autonomy while maintaining safeguards against avoidable harm. Self-medication and OTC medicine use are related but distinct. Self-medication concerns decisions to select and use medicines independently, whereas OTC classification determines which products may legally be supplied without a prescription. Self-medication can also involve previously prescribed medicines or prescription-only products obtained without authorization. Baracaldo-Santamaría et al. (2022) highlighted differences in how self-medication is defined and studied, making careful attention to medicine sources, purposes, and use essential. In a European population study, Yeamans et al. (2024) linked self-medication patterns with demographic and healthcare-access factors, illustrating that treatment decisions are shaped by both individual circumstances and health-system conditions. Potential risks include incorrect dosing, therapeutic duplication, drug interactions, prolonged treatment, and delayed medical evaluation. Algarni et al. (2021) documented misuse, abuse, and dependence involving several OTC medicine categories, showing that nonprescription availability does not guarantee safe use. In the Philippines, Loreche et al. (2023) described varied self-care practices for acute conditions, involving medicines, traditional approaches, and informal advice. Together, these findings underscore the importance of examining medication decisions alongside patient safety and the guidance available through community pharmacies, where consumers may seek practical assistance with minor health concerns.

1.2. Research Problem

The central concern is not whether individuals should manage minor symptoms independently, but whether their medication decisions are sufficiently informed to prevent avoidable harm. Consumers may select medicines based on past experience, household advice, perceived affordability, or convenience without adequately considering contraindications, concurrent treatment, appropriate duration, or symptoms requiring referral. Such circumstances create opportunities for inappropriate medicine use even when a product is available without a prescription. In the Philippine context, Loreche et al. (2023) identified both beneficial and potentially harmful self-care practices, while Sarte et al. (2024) documented experiences involving independent treatment decisions, herbal remedies, and antibiotic misuse in an urban poor community in Davao City. Community pharmacists can respond through symptom assessment, medication review, counseling, patient education, and referral. However, these activities do not occur under uniform conditions. Lelie-van der Zande et al. (2023) identified challenges related to professional knowledge, communication, privacy, workload, and coordination with other healthcare providers when delivering self-care advice. These findings indicate that patient safety depends partly on how effectively counseling opportunities are translated into practice. An unresolved concern is how evidence on consumer behavior, medication-related risks, and pharmacy-based responses can be considered together to inform responsible self-medication, particularly within Philippine community healthcare settings.

1.3. Research Gap

Existing research has examined aspects of self-medication, but differences in emphasis complicate an integrated understanding of patient safety and community pharmacy practice. Algarni et al. (2021) synthesized evidence of problematic OTC medicine use and associated harms, while Lelie-van der Zande et al. (2023) investigated barriers to providing self-care advice. Amador-Fernandez et al. (2024) discussed how community pharmacy self-care services are organized and recognized internationally. Although these contributions clarify dimensions of the subject, they do not organize the connections among medicine-selection behavior, medication-related risks, and the range of pharmacist interventions. The gap addressed by this review is one of evidence integration and practical interpretation, not an assertion that these subjects have received little scholarly attention. Mapping research across populations, settings, and methods may clarify which safety concerns and interventions have been examined, where their emphases differ, and how their implications relate to Philippine pharmaceutical care. The review addresses this need by considering consumer behavior, medicine safety, and pharmacy support together.

1.4. Purpose and Objectives of the Study

This scoping review aims to examine published evidence on self-medication and OTC drug use, with particular attention to patient safety risks and community pharmacy interventions. Specifically, it seeks to characterize reported self-medication practices and factors influencing medicine selection; identify safety concerns associated with inappropriate or prolonged use; and map pharmacy-based activities, including symptom assessment, counseling, patient education, and referral. It also considers how the available evidence may inform pharmaceutical care in the Philippines. Guided by these objectives, the review asks what existing literature reveals about the relationship among independent medicine use, medication-related harm, and pharmacists' contributions to responsible self-treatment. Its focus is the breadth and implications of evidence, not the estimation of a single intervention effect.

1.5. Significance and Practical Contribution of the Study

The study offers an organized account of how consumer decisions, medication-related risks, and professional pharmacy services intersect. For community pharmacists and pharmacy personnel, the synthesis may help identify counseling priorities, situations warranting medical referral, and service conditions that support safer self-care. For pharmacy educators and professional organizations, the mapped evidence may inform discussions of communication skills, medicine-safety education, and practice development. Its Philippine relevance lies in interpreting international and local findings alongside established patterns of household self-care and access to medicines. The review does not test an intervention or establish its effectiveness; rather, it provides an evidence-based foundation for identifying practical considerations and questions for subsequent research and service improvement.

1.6. Sustainable Development Goals (SDG) Alignment

The review aligns most directly with Sustainable Development Goal (SDG) 3: Good Health and Well-Being, whose official aim is to ensure healthy lives and promote well-being for all at all ages (United Nations, 2015). Its attention to safer medicine selection, recognition of harmful medication practices, and timely professional referral relates particularly to SDG Target 3.8 on access to quality health services and safe, effective, affordable essential medicines. By mapping how community pharmacists support informed self-care, the review contributes knowledge relevant to patient safety and accessible primary healthcare. Its contribution is interpretive rather than a demonstrated improvement in health outcomes, and it does not claim to measure national progress toward SDG targets.

2. METHODOLOGY

2.1. Research Design

This study uses a scoping review design to map published evidence on self-medication, over-the-counter (OTC) medicine use, patient safety risks, and community pharmacy interventions. Informed by Joanna Briggs Institute guidance (Peters et al., 2021), the approach accommodates quantitative, qualitative, mixed-methods, and review literature addressing related questions. PRISMA-ScR (Tricco et al., 2018) provides the reporting framework. The purpose is to identify the range and characteristics of available evidence rather than estimate a pooled intervention effect or examine newly recruited participants.

2.2. Research Locale, Population, and Participants or Respondents

The review considers literature from the Philippines and international settings, emphasizing findings relevant to Philippine community pharmacy practice. Under the Population–Concept–Context framework (Peters et al., 2022), the population encompasses individuals using medicines independently and patients seeking nonprescription treatment advice; studies of community pharmacists and pharmacy personnel are also relevant. The context includes community pharmacies, retail medicine outlets, and community healthcare settings. Publications, rather than individual people, constitute the units of evidence. Consequently, there is no single recruitment location or primary respondent population.

2.3. Sampling Technique and Sample Determination

Publications are selected through eligibility-based screening guided by the review questions and Population–Concept–Context framework. The specified publication window runs from January 2021 to the final search date in 2026, with relevant older methodological and official sources considered separately. Eligible materials include quantitative, qualitative, mixed-methods, intervention, and relevant synthesis studies, as well as official healthcare publications in English or Filipino. Inpatient-only, laboratory, manufacturing, and unrelated marketing studies are excluded. No sample-size formula or final number of included publications is specified in the available methodological documentation.

2.4. Research Instrument and Validation

A standardized data-charting framework serves as the instrument for extracting information from eligible publications, following Pollock et al. (2023). Charted fields include authorship, publication year, country, objectives, research design, participant characteristics, healthcare setting, medicine categories, self-medication factors, safety concerns, pharmacist interventions, and principal findings. The framework structures evidence consistently across diverse studies; it is not a participant questionnaire or psychometric scale. Formal instrument validation, pilot testing, inter-rater agreement, and reliability coefficients are not reported in the methodological documentation.

2.5. Data Gathering Procedure

The specified information sources are PubMed/MEDLINE, Scopus, Web of Science, and HERDIN, supplemented by Google Scholar and reference-list checks. Search vocabulary combines terms for self-medication and OTC medicines with patient safety, medication errors, drug interactions, community pharmacies, and counseling using AND and OR. The described selection workflow involves duplicate removal, title-and-abstract screening, full-text eligibility assessment, and recording exclusion reasons. Exact search dates, database-specific search strings, retrieval totals, and final screening counts are not specified in the available documentation and therefore cannot be reported as completed procedures.

2.6. Data Analysis and Statistical Treatment

The review uses descriptive evidence mapping and narrative synthesis, consistent with Pollock et al. (2023). Publications are organized by study characteristics, medication practices, factors influencing self-treatment, patient safety concerns, and pharmacy-based responses, including counseling, symptom assessment, education, monitoring, and referral. Findings are considered in their original population and healthcare contexts, with differences across settings and study designs retained. International evidence is interpreted alongside Philippine research. No meta-analysis or inferential statistical testing is proposed, and critical appraisal is not an eligibility requirement.

2.7. Ethical Considerations

The review is based on published research and official literature and does not involve direct recruitment, experimental treatment, or collection of new personal information. Accordingly, individual participant consent and withdrawal procedures do not form part of its design. Responsible handling of evidence involves accurate attribution, retaining the context of reported findings, and distinguishing original studies from overlapping evidence syntheses. The methodological documentation does not identify an ethics committee approval or exemption, and none is asserted here.

3. RESULTS AND DISCUSSION

3.1. Characteristics and Scope of the Reviewed Literature

The literature examined in relation to self-medication and over-the-counter (OTC) drug use covered several interconnected areas, including consumer medication practices, factors influencing independent treatment decisions, medication-related safety risks, and community pharmacy interventions. The publications represented different geographical settings and employed quantitative, qualitative, mixed-methods, observational, and evidence-synthesis approaches. These methodological differences provided complementary perspectives on medicine selection, consumer knowledge, treatment behavior, and the professional responsibilities of pharmacists. The available publications were therefore considered according to their individual objectives, populations, methods, and reported findings rather than treated as a uniform body of clinical evidence. Philippine studies provided important insights into the social and economic circumstances surrounding independent medicine use. Loreche et al. (2023) examined self-care practices for common acute conditions and identified approaches involving pharmaceutical products, traditional remedies, and informal sources of health advice. Sarte et al. (2024) explored self-medication experiences in an urban poor community in Davao City and documented treatment decisions influenced by financial circumstances, personal beliefs, and familiar healthcare practices. Similarly, Berces et al. (2023) investigated knowledge, perceptions, and OTC medicine use among 371 university students in Manila. Their findings indicated generally favorable knowledge and perceptions alongside frequent self-reported medicine use. These studies demonstrated that self-medication occurs across different population groups and that medicine-related knowledge must be considered alongside the circumstances influencing actual treatment decisions. International publications expanded the discussion by examining specific medicine categories, medication-related harms, and pharmaceutical care practices. Kim et al. (2022) reviewed factors influencing the selection of oral OTC analgesics, while Algarni et al. (2021) synthesized evidence concerning the misuse, abuse, and dependence associated with nonprescription medicines. Other investigations addressed the quality of community pharmacy services. Loh et al. (2023) assessed pharmaceutical care during simulated consultations for cough management in Malaysia, whereas Gombos et al. (2025) observed nonprescription product counseling in Norwegian community pharmacies. These investigations provided evidence concerning the relationship

between consumer treatment decisions and the professional assistance available during medicine selection. Studies examining professional interventions contributed another dimension. Showande and Akinbode (2024) evaluated educational training intended to improve pharmacists' counseling and risk assessment concerning nonsteroidal anti-inflammatory drugs (NSAIDs). Lambert et al. (2022) synthesized research on pharmacist-led interventions designed to optimize antibiotic use. Although their research designs and outcome measures differed, these publications demonstrated the relevance of professional education, structured assessment, and responsible dispensing to medication safety. An important consideration in interpreting this evidence was the distinction between original investigations and systematic reviews. Findings from evidence syntheses represented previously published research and were not treated as additional independent participant observations. Similarly, reported prevalence estimates and counseling outcomes reflected the specific populations, settings, and methods of their respective studies. The literature consequently provided a basis for examining recurring patterns without assuming that findings from individual countries or populations represented the experiences of all medicine users.

3.2. Patterns of Self-Medication and Over-the-Counter Medicine Use

The reviewed literature described self-medication as a common approach to managing symptoms perceived as minor, familiar, or manageable without immediate medical consultation. Individuals used medicines for headaches, fever, cough, colds, musculoskeletal discomfort, and other everyday health concerns. These practices reflected the convenience of obtaining symptom relief and the desire to maintain personal control over healthcare decisions. However, the appropriateness of self-treatment depended on the condition being addressed, the medicine selected, the dosage followed, and the individual's ability to recognize symptoms requiring professional evaluation. Within the Philippine context, Loreche et al. (2023) identified self-care practices involving prescription and nonprescription medicines, traditional remedies, and advice from family members or healthcare providers. These findings indicated that pharmaceutical treatment formed part of a broader pattern of household healthcare decisions. Sarte et al. (2024) similarly documented self-medication experiences among residents of an urban poor community in Davao City, where financial considerations, familiar treatment practices, and established beliefs influenced medicine-related decisions. The findings suggested that independent medication use was closely connected to healthcare accessibility and household circumstances rather than being explained solely by individual preference. Berces et al. (2023) contributed evidence from university students in Manila. Their investigation involving 371 respondents found generally favorable knowledge and perceptions concerning OTC medicines before and during the COVID-19 pandemic, alongside frequent engagement in self-medication. This pattern highlighted an important distinction between possessing general medication knowledge and consistently making appropriate treatment decisions. Familiarity with a medicine's purpose does not necessarily establish an individual's understanding of contraindications, possible interactions, recommended treatment duration, or circumstances requiring medical consultation. Analgesics emerged as an important medicine category in the reviewed literature. Kim et al. (2022) examined factors influencing adult consumers' selection of oral OTC analgesics, including acetaminophen, aspirin, ibuprofen, and naproxen sodium. Their systematic review identified previous treatment experiences, beliefs about effectiveness, and perceptions of safety as influences on medicine selection. Consumers also demonstrated varying awareness of medication-related risks, while individuals experiencing severe or recurrent pain were more likely to exceed recommended doses. These findings illustrated how familiarity

with commonly available products could encourage independent treatment without consistently ensuring safe medication practices. The reviewed evidence also distinguished legitimate OTC medicine use from self-medication involving prescription-only products. Baracaldo-Santamaría et al. (2022) emphasized the conceptual differences surrounding self-medication, including variations in medicine selection, acquisition, and treatment purposes. This distinction was particularly important in research involving antibiotics, which should not be classified as OTC medicines merely because they were obtained without prescriptions in some settings. Li et al. (2023) synthesized 162 studies from 52 countries and reported a pooled prevalence of 63.4% for nonprescription antibiotic dispensing in the community pharmacy settings examined. This estimate represented the studies included in their systematic review and should not be interpreted as the prevalence of self-medication or OTC medicine use in the Philippines. Nevertheless, the finding demonstrated the importance of distinguishing medicine accessibility from appropriate pharmaceutical supply and regulatory compliance. Collectively, the literature demonstrated that self-medication encompasses both responsible short-term symptom management and potentially inappropriate medication practices. The distinction depends on the suitability of the selected treatment, the accuracy of dosing, the duration of medicine use, and the recognition of circumstances requiring professional assistance. These findings support an approach to consumer education that emphasizes informed decision-making rather than treating all independent medicine use as inherently unsafe.

3.3. Factors Influencing Independent Medication Decisions

The literature identified several interacting factors influencing self-medication, particularly healthcare accessibility, financial circumstances, previous treatment experiences, medication knowledge, personal beliefs, and advice obtained from informal sources. These factors operated within different social and healthcare environments and influenced how individuals interpreted symptoms, selected pharmaceutical products, and decided whether professional consultation was necessary. Self-medication was therefore characterized as a healthcare behavior shaped by both individual judgment and the practical conditions affecting access to treatment. Financial considerations were particularly evident in studies involving economically disadvantaged populations. Sarte et al. (2024) documented self-medication experiences in an urban poor community where healthcare costs and available household resources influenced treatment decisions. Their findings illustrated how individuals sometimes relied on familiar medicines or independently selected treatments when professional healthcare services presented financial challenges. In a broader international context, Yeamans et al. (2024) identified associations between self-medication practices, healthcare affordability, demographic characteristics, and unmet healthcare needs. Although the populations differed, both studies highlighted the relationship between economic circumstances and independent treatment decisions. Previous medication experiences also influenced consumer behavior. Individuals who obtained relief from a particular medicine could become more confident in using the same product when similar symptoms occurred. Kim et al. (2022) identified perceived effectiveness and previous treatment experiences among factors influencing OTC analgesic selection. While familiarity may support appropriate self-care for recognizable minor conditions, reliance on previous experiences alone may overlook changes in health status, differences in underlying causes, concurrent medicine use, or newly developed contraindications. Social influences represented another important dimension. Family recommendations, advice from acquaintances, advertising, and other informal information sources could shape perceptions of medicine effectiveness and safety. Baracaldo-Santamaría et al. (2022) described the different circumstances associated with

independent medication decisions, while Algarni et al. (2022) examined community pharmacists' experiences concerning OTC medicine misuse and abuse in Saudi Arabia. Their qualitative findings identified informal advice, commercial promotion, and limited awareness of medicine-related risks as contributing influences. These observations suggested that consumers may receive information emphasizing symptom relief without sufficient attention to appropriate dosage, precautions, or treatment duration. Community pharmacy accessibility also influenced medication decisions. Pharmacies provide convenient access to nonprescription products, but their role extends beyond supplying requested medicines. Li et al. (2023) identified consumer demand, healthcare costs, pharmacy-related considerations, and regulatory conditions among factors associated with nonprescription antibiotic dispensing. Their findings demonstrated that medicine acquisition and dispensing practices could be influenced by both consumer circumstances and the organization of healthcare services. Knowledge and treatment behavior did not always show a straightforward relationship. Berces et al. (2023) reported favorable knowledge and perceptions among university students alongside frequent OTC medicine use. Although frequent medicine use does not independently establish inappropriate behavior, the finding reinforces the importance of examining how consumers apply medication information during actual treatment decisions. Education must therefore address more than product recognition and general indications. It should also strengthen understanding of dosage limits, possible adverse reactions, drug interactions, treatment duration, and warning signs requiring professional assessment. Taken together, these findings indicated that self-medication resulted from combinations of personal experience, economic circumstances, social influences, and healthcare accessibility. Consequently, efforts to promote safer medication practices should consider the conditions under which consumers make treatment decisions. Accessible counseling, understandable medicine information, and appropriate referral may complement educational interventions by addressing both individual knowledge and practical barriers to professional healthcare.

3.4. Patient Safety Risks Associated with Self-Medication and OTC Drug Use

Patient safety emerged as a central concern across the reviewed literature. Reported risks included inappropriate medicine selection, incorrect dosage, prolonged treatment, therapeutic duplication, adverse drug reactions, drug interactions, and continued self-treatment despite symptoms requiring medical evaluation. Although OTC medicines are intended for use without prescriptions under specified conditions, their availability does not eliminate the possibility of medication-related harm. Safe use remains dependent on appropriate symptom assessment, adherence to instructions, consideration of individual risk factors, and timely professional consultation. Kim et al. (2022) identified important safety concerns involving commonly used oral analgesics. Their systematic review found that consumer awareness of liver toxicity associated with excessive acetaminophen intake and gastrointestinal bleeding or kidney-related complications associated with NSAIDs was frequently inadequate. Individuals experiencing severe or recurrent pain were also more likely to exceed recommended doses. These findings indicated that familiarity with nonprescription analgesics did not consistently translate into adequate understanding of their potential adverse effects. The implications were particularly important for individuals taking multiple medicines or living with conditions that could influence treatment suitability. NSAID use may require additional caution among individuals with gastrointestinal disorders, kidney disease, cardiovascular conditions, or concurrent treatments that increase bleeding risk. Likewise, acetaminophen requires attention to total daily intake, particularly when consumers combine pain relievers with cough, cold, or flu preparations

containing the same active ingredient. The findings of Kim et al. (2022) therefore supported medication counseling that emphasizes active ingredients, recommended dosage limits, contraindications, and appropriate treatment duration. Beyond unintentional errors, the literature examined problematic patterns of repeated or excessive nonprescription medicine use. Algarni et al. (2021) systematically reviewed the misuse, abuse, and dependence associated with OTC medicines among adults. Their findings identified analgesics, sedating antihistamines, and certain cough preparations among medicine categories associated with problematic use. Reported consequences included physical, psychological, social, and financial harm, with serious health outcomes documented in some studies. These findings demonstrated that medicines intended for short-term symptom management could create substantial risks when used excessively, repeatedly, or for purposes inconsistent with recommended indications. Algarni et al. (2022) provided further insights through qualitative interviews with community pharmacists in Saudi Arabia. Participants described encounters involving the misuse of sedating antihistamines, cough preparations containing dextromethorphan, and analgesic products. They identified unusual purchase requests, repeated medicine acquisition, and patterns of excessive consumption as situations requiring professional attention. Pharmacists reported responding through patient questioning, counseling, safer treatment alternatives, and refusal of inappropriate medicine requests. These findings illustrated the importance of professional judgment during routine pharmacy interactions. However, medicine classifications and supply regulations differ between countries. Consequently, products described as nonprescription medicines in one setting should not automatically be assumed to have the same legal classification in the Philippines. Delayed professional consultation represented another medication-related concern. Continued use of symptomatic treatments may temporarily relieve discomfort without addressing the underlying cause of persistent or worsening symptoms. This concern extends the meaning of patient safety beyond adverse drug reactions or incorrect dosing. A medicine may be used according to its instructions while remaining unsuitable for an individual whose condition requires diagnostic assessment or a different form of treatment. Effective self-medication therefore requires recognizing both the appropriate uses and limitations of symptomatic medicines. Inappropriate antibiotic acquisition presented an additional concern related to unsupervised medication decisions. Li et al. (2023) reported a pooled prevalence of 63.4% for nonprescription antibiotic dispensing across the studies examined in their international systematic review. Their findings identified consumer demand, healthcare accessibility, pharmacy practices, and regulatory conditions among contributing factors. Although antibiotics requiring prescriptions are distinct from legitimate OTC products, their inappropriate acquisition remains relevant to the wider discussion of self-medication and patient safety. Improper antibiotic selection, dosage, or treatment duration may expose consumers to adverse reactions and contribute to antimicrobial resistance. These findings collectively demonstrated that medication safety cannot be determined solely by whether a product requires a prescription. Treatment appropriateness also depends on individual health circumstances, medicine selection, dosage accuracy, symptom progression, and access to professional guidance. Community pharmacists consequently have an important role in identifying potentially harmful medication practices, communicating relevant precautions, and referring consumers for medical evaluation when necessary.

3.5. Community Pharmacy Interventions for Safer Medication Use

Community pharmacy interventions were consistently described as important components of responsible self-medication. The reviewed studies examined professional activities involving

symptom assessment, medication history review, identification of contraindications, patient counseling, medicine-use education, treatment monitoring, and referral. These interventions were intended to support appropriate medicine selection and help consumers recognize circumstances in which independent treatment may be unsafe. However, the literature also demonstrated differences in the completeness and quality of professional services delivered across pharmacy settings. Loh et al. (2023) investigated pharmaceutical care during simulated consultations for cough management across 100 community pharmacies in Malaysia. Although 98 pharmacists recommended treatment, only 13% fulfilled all evaluated components of medication information assessment, while 15% fulfilled those concerning treatment planning. None provided every counseling element assessed in the simulated scenario. These findings revealed a distinction between recommending pharmaceutical products and delivering comprehensive patient-centered pharmaceutical care. The results suggested that treatment recommendations could occur without sufficient assessment of the consumer's medication needs or comprehensive communication of relevant safety information. From a patient safety perspective, this limitation is important because appropriate medicine selection requires consideration of symptom characteristics, previous treatments, existing conditions, concurrent medicines, and circumstances requiring referral. The investigation therefore demonstrated that the availability of pharmacists during medicine purchase does not independently guarantee comprehensive counseling. Gombos et al. (2025) reported comparable concerns in an observational investigation conducted in seven Norwegian community pharmacies. Their study involved 275 nonprescription product encounters, and full compliance with the applicable counseling standard was observed in 14.6% of assessed product sales. Counseling frequently emphasized practical instructions, particularly medicine administration and dosage, while contraindications, interactions, and adverse reactions received less attention. Pharmacists were also more likely than pharmacy technicians to provide information about OTC medicines. These findings complemented those of Loh et al. (2023) by demonstrating gaps in counseling across different healthcare settings. Although the two investigations employed different methods and assessed different aspects of pharmaceutical care, both indicated that essential patient-specific information was not consistently addressed during nonprescription medicine encounters. Their findings suggested that strengthening counseling requires attention to the completeness of the consultation rather than simply increasing the frequency of medicine-related advice. Lelie-van der Zande et al. (2023) investigated barriers and facilitators influencing self-care advice in community pharmacies. Their qualitative findings identified professional knowledge, communication skills, privacy, workload, patient expectations, and collaboration with other healthcare professionals as important considerations. These factors highlighted the influence of the working environment on counseling quality. Even when pharmacists possess appropriate technical knowledge, limited consultation time, insufficient privacy, or competing professional responsibilities may affect the delivery of individualized advice. Professional education represented another intervention examined in the literature. Showande and Akinbode (2024) evaluated short online modular training intended to strengthen community pharmacists' questioning, counseling, and risk assessment related to NSAID use in Nigeria. Their findings demonstrated improvements in the types and quality of questions asked, the identification of medication-related risk factors, and counseling following training. However, some evaluated aspects of professional performance remained relatively low, suggesting that educational interventions may require continued reinforcement and practical application. The findings supported professional development approaches that emphasize applied communication and clinical decision-making rather than knowledge acquisition alone. Training focused on symptom

assessment, drug interactions, contraindications, treatment suitability, and referral may assist pharmacists in responding to everyday self-medication requests. Simulated consultations and case-based exercises may also provide opportunities to strengthen the practical application of professional knowledge, although the effectiveness of such approaches in Philippine settings requires context-specific evaluation. Pharmacist-led interventions addressing antibiotic use provided further evidence concerning professional practice improvement. Lambert et al. (2022) synthesized 17 studies involving 3,822 patients and examined interventions designed to optimize antibiotic use in community pharmacy settings. Some studies reported improvements in dispensing quality, more comprehensive symptom assessment, and reductions in inappropriate nonprescription antibiotic supply. However, effects on medication adherence and other patient-centered outcomes varied across the interventions examined. These findings indicated that improvements in professional activities should not automatically be interpreted as improvements in clinical outcomes. More comprehensive counseling and improved dispensing practices may strengthen the conditions necessary for safer medication use, but their effects on patient behavior and health outcomes must be evaluated separately. Differences in intervention design, implementation conditions, and participant characteristics also affect how findings are interpreted across healthcare settings. Algarni et al. (2022) further demonstrated that community pharmacists contributed to medication safety through professional judgment when responding to suspected OTC medicine misuse. Reported actions included questioning customers about medicine use, explaining potential risks, suggesting appropriate alternatives, and declining requests considered unsafe or inappropriate. These activities highlighted the pharmacist's role in preventing potentially harmful medicine acquisition rather than functioning solely as a supplier of pharmaceutical products. Amador-Fernandez et al. (2024) extended this discussion by examining the international provision of community pharmacy self-care services. Their analysis identified professional recognition, service organization, training, policy considerations, and integration with other healthcare providers as relevant to strengthening pharmacy-based self-care. These findings suggested that improvements in counseling quality depend on both individual professional competence and supportive healthcare arrangements. Overall, the reviewed evidence supported a patient-centered approach to community pharmacy interventions. This approach involves understanding the consumer's symptoms, relevant medical history, concurrent medicine use, and previous treatment attempts before recommending appropriate treatment. It also requires communicating dosage instructions, precautions, treatment duration, and situations requiring medical evaluation. The literature suggested that standardized assessment procedures, professional education, and supportive pharmacy environments may strengthen service consistency, while further evaluation remains necessary to establish their effects on patient outcomes.

3.6. Implications for Philippine Community Pharmacy Practice

The reviewed literature provided several implications for Philippine community pharmacy practice, particularly concerning medication counseling, consumer education, responsible dispensing, symptom assessment, and coordination with other healthcare providers. Although international investigations were conducted within different healthcare systems and regulatory environments, their findings identified professional activities that may be relevant to Philippine pharmaceutical care. Local research provided important contextual information for interpreting these practices in relation to household healthcare decisions, medicine accessibility, and affordability. Loreche et al. (2023) and Sarte et al. (2024) demonstrated that self-medication among Filipino consumers was influenced by personal experience, treatment costs, established

beliefs, and informal sources of healthcare advice. These findings suggested that counseling should address the practical circumstances influencing medication decisions rather than focus exclusively on correcting inappropriate behavior. Pharmacists may provide more relevant guidance by considering the consumer's symptoms, financial concerns, previous treatment practices, and access to professional healthcare services. Consumer education represents an important area for pharmacy practice development. Kim et al. (2022) identified gaps in awareness of potential harms associated with commonly used OTC analgesics, particularly excessive acetaminophen intake and inappropriate NSAID use. In Philippine community pharmacies, these findings support emphasizing dosage limits, active ingredients, therapeutic duplication, possible adverse reactions, and appropriate treatment duration. Education should also help consumers recognize warning signs that require medical consultation and distinguish legally available OTC products from medicines requiring prescriptions. The findings of Berces et al. (2023) further highlighted the importance of connecting medicine-related knowledge with actual treatment decisions. Although the university students examined demonstrated favorable knowledge and perceptions of OTC products, frequent self-medication remained evident. For pharmaceutical care, this suggests that education should extend beyond explaining medicine indications to developing practical decision-making skills. Consumers may benefit from guidance concerning treatment suitability, dosing frequency, possible interactions, and the circumstances under which continued self-treatment becomes inappropriate. Structured patient assessment represents another practical consideration. Loh et al. (2023) and Gombos et al. (2025) documented incomplete counseling and limited attention to patient-specific safety concerns during community pharmacy encounters. Their findings support consideration of consistent assessment procedures covering symptom characteristics, illness duration, allergies, existing medical conditions, current medicines, and previous treatment attempts. Such procedures may help pharmacists identify contraindications, recommend appropriate treatment, and recognize situations requiring referral. Professional development is also relevant to strengthening community pharmacy services. Showande and Akinbode (2024) reported improvements in aspects of pharmacists' counseling and risk assessment following modular educational training concerning NSAID use. Their findings support consideration of continuing education activities addressing medicine safety, symptom evaluation, patient communication, and treatment selection. Case-based learning and simulated patient encounters may provide practical opportunities to apply these competencies during routine pharmacy consultations. The organization of pharmacy services also requires attention. Lelie-van der Zande et al. (2023) identified workload, privacy, professional knowledge, and collaboration as factors influencing self-care counseling. Within Philippine community pharmacies, supportive arrangements for consultations and clearer referral pathways may strengthen professional assistance for consumers whose symptoms persist, worsen, or require medical evaluation. Coordination with primary healthcare facilities may also help maintain appropriate distinctions between pharmaceutical counseling and medical diagnosis. Responsible dispensing remains especially important when consumers request medicines requiring prescriptions. Li et al. (2023) demonstrated that inappropriate antibiotic dispensing was associated with consumer demand, healthcare accessibility, pharmacy practices, and regulatory conditions. These findings reinforce the importance of maintaining applicable medicine classifications, explaining the risks of inappropriate antibiotic use, and directing consumers toward suitable medical services. Community pharmacists can support safer medication practices by balancing medicine accessibility with professional responsibility. At the institutional and professional levels, the discussion by Amador-Fernandez et al. (2024) highlighted the relevance of service organization,

professional recognition, and healthcare integration in strengthening pharmacy-based self-care. These considerations support continued attention to counseling procedures, professional development, and collaboration within the Philippine healthcare system. However, international intervention findings should be adapted cautiously because differences in service organization, regulation, workforce capacity, and consumer circumstances may influence their applicability. Taken together, the reviewed literature demonstrated that responsible self-medication requires a balance among individual autonomy, healthcare accessibility, and patient safety. Consumer decisions were influenced by economic circumstances, previous treatment experiences, medicine knowledge, and informal advice, while medication-related risks included inappropriate selection, excessive dosing, prolonged treatment, potential interactions, and delayed medical evaluation. Community pharmacy interventions offered opportunities to address these concerns through structured assessment, individualized counseling, responsible dispensing, and referral. Strengthening these professional functions represents a practical direction for improving medication-safety practices in Philippine community healthcare, although their effectiveness in local settings requires appropriate empirical evaluation.

4. CONCLUSIONS AND RECOMMENDATIONS

The scoping review demonstrated that self-medication and over-the-counter (OTC) medicine use were influenced by healthcare accessibility, financial circumstances, previous treatment experiences, medication knowledge, and advice obtained from informal sources. Although nonprescription medicines offered convenient options for managing minor health conditions, the reviewed studies identified important safety concerns involving inappropriate medicine selection, excessive dosage, prolonged treatment, drug interactions, and delayed medical consultation. Evidence concerning community pharmacy services highlighted the importance of structured symptom assessment, medication counseling, patient education, responsible dispensing, and appropriate referral in promoting safer medication practices. However, variations in counseling quality and professional service delivery indicated that medicine accessibility did not necessarily ensure comprehensive pharmaceutical care. Within the Philippine healthcare context, the findings emphasized the need to consider consumers' economic circumstances, treatment preferences, and access to professional guidance. Overall, the review demonstrated that responsible self-medication requires informed decision-making supported by accessible, patient-centered pharmaceutical services that recognize individual medication needs and potential safety risks.

Community pharmacies in the Philippines should strengthen patient-centered pharmaceutical care by implementing consistent procedures for symptom assessment, medication counseling, and responsible dispensing. Pharmacists should routinely assess relevant symptoms, medication histories, existing health conditions, and previous treatment attempts before recommending OTC medicines. Counseling should clearly explain appropriate medicine selection, dosage limits, treatment duration, possible adverse reactions, drug interactions, and warning signs requiring medical consultation. Continuing professional development programs should prioritize clinical assessment, communication skills, identification of inappropriate medication practices, and effective referral procedures. Professional pharmacy organizations and relevant healthcare authorities should encourage consistent counseling standards and stronger coordination between community pharmacies and primary healthcare providers. Consumer education initiatives should emphasize safe self-medication practices while considering the financial and healthcare accessibility concerns influencing treatment decisions. Future Philippine-based research should evaluate the implementation, consistency, and patient-centered outcomes of community pharmacy interventions to identify practical

approaches for strengthening medication safety and improving pharmaceutical care within local healthcare settings.

The principal limitations of this scoping review involved variations in research designs, populations, healthcare settings, medication classifications, and methods used to evaluate self-medication practices and pharmacy interventions. Differences in national regulatory frameworks and professional pharmacy services also limited the direct applicability of international findings to Philippine settings. The review's emphasis on publications from 2021 to 2026 and its inclusion of English- and Filipino-language literature may have excluded relevant evidence outside these boundaries. Furthermore, its descriptive approach did not establish causal relationships or pooled intervention effects. Future Philippine-based investigations may provide more context-specific evidence regarding the implementation and patient-centered outcomes of community pharmacy interventions.

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