Annals of
Clinical Case Studies and Medical Images

Public Health | ACCSMI-1008 | Opinion

Re-Evaluating Polypharmacy Beyond Numerical Definitions: A Risk-Centered Approach to Hidden Drug Interactions in Tanzanian Primary Care

Khani KK* and Kazula SF

Department of Public Health, St. Francis University College of Health and Allied Sciences (SFUCHAS), Morogoro, Tanzania

***Corresponding author:** *Khani KK, Department of Public Health, St. Francis University College of Health and Allied Sciences (SFUCHAS), P.O. Box 75, Ifakara, Tanzania; Tel: +255 618 838 191; Email: Kuwaitikarim060@gmail.com*

Received Date : *21 May, 2026*
Accepted Date : *06 June,, 2026*
Published Date : *08 June, 2026*

Copyright: © 2026 *Karim Khani, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.*

Citation: *Khani KK, Kazula SF. Re-Evaluating Polypharmacy Beyond Numerical Definitions: A Risk-Centered Approach to Hidden Drug Interactions in Tanzanian Primary Care. Ann Clin Case Stud Med Images. 2026; 1(2): 1008.*

Opinion

Polypharmacy is increasingly recognized as a growing challenge in Tanzania's evolving landscape of chronic disease management. Traditionally defined by the number of medications a patient uses, polypharmacy has often been approached as a simple numerical phenomenon [1]. However, this perspective underestimates the complex and often hidden risks associated with inappropriate drug combinations, self-medication, and fragmented care. In daily practice, primary care clinicians frequently encounter patients presenting with nonspecific symptoms such as dizziness, fatigue, palpitations, edema, or poor glycemic control symptoms that may be mistakenly attributed to disease progression rather than early manifestations of drug-related harm. This opinion article argues that polypharmacy should be reframed not as a matter of "how many drugs," but as a dynamic, risk-laden process shaped by uncoordinated prescribing, widespread over-the-counter medication use, and limited pharmacovigilance.

Tanzania's health system is undergoing rapid epidemiological transition, with rising burdens of hypertension, diabetes, HIV, tuberculosis, cancer, and chronic pain [2,3]. As a result, patients often receive multiple medications from different providers, including hospitals, private clinics, pharmacies, and Accredited Drug Dispensing Outlets (ADDOs). Many also use herbal remedies, supplements, and antibiotics obtained without prescription. This creates a unique environment where drug–drug interactions, therapeutic duplications, and cumulative toxicity are common yet under-recognized. In such settings, polypharmacy becomes a silent driver of morbidity, worsening renal function, destabilizing blood pressure, impairing glycemic control, and contributing to avoidable hospitalizations.

The traditional numerical definition of polypharmacy fails to capture these realities. A patient taking three medications may be at far greater risk than one taking seven, depending on the combinations involved. For example, the widely used "triple whammy" combination an ACE inhibitor or ARB, a diuretic, and a nonsteroidal anti-inflammatory drug (NSAID) is frequently encountered in Tanzanian primary care and is strongly associated with acute kidney injury [4]. Similarly, the interaction between rifampicin and oral hypoglycemic agents can lead to uncontrolled diabetes, while concurrent use of herbal preparations with antiretroviral therapy may reduce drug efficacy or increase toxicity. These risks are often hidden beneath the surface of routine care, emerging only when patients are present with vague, nonspecific symptoms.

Primary care settings offer a unique opportunity for early detection and prevention of polypharmacy-related harm. Family physicians and frontline clinicians maintain longitudinal relationships with patients, enabling them to identify subtle changes in clinical status that may signal drug interactions or cumulative burden. Medication reconciliation still underutilized in many Tanzanian facilities can reveal duplicate therapies, unnecessary medications, or dangerous combinations. Moreover, primary care providers are well positioned to initiate deprescribing, a proactive and evidence-based approach to reducing medication burden while maintaining or improving clinical outcomes.

A symptom-aware approach is essential. In Tanzania, where patients frequently self-medicate with NSAIDs, antibiotics, and herbal remedies, nonspecific symptoms should prompt clinicians to consider medication-related causes early in the diagnostic process. Dizziness may reflect antihypertensive overuse; fatigue may signal drug-induced anemia; edema may be linked to calcium channel blockers; and resistant hypertension may result from NSAID use. Recognizing these patterns requires a shift from disease-centered to medication-centered clinical reasoning.

A risk-based framework for polypharmacy is therefore urgently needed. Such a framework would prioritize the identification of high-risk combinations, vulnerable populations (such as older adults, patients with renal impairment, and those with multiple chronic conditions), and early warning symptoms. It would also emphasize patient education, empowering individuals to understand the dangers of mixing prescribed drugs with OTC medications or herbal products. Strengthening regulatory oversight of drug dispensing outlets and improving access to clinical pharmacists would further enhance safety.

Conclusion

Polypharmacy in Tanzania should not be viewed merely as the use of multiple medications but as a complex, evolving process with significant potential for harm. Hidden drug interactions and inappropriate combinations often manifest long before overt toxicity becomes apparent. A primary care-centered, risk-informed, and symptom-aware approach can transform clinicians into proactive medication-risk managers, improving patient safety and reducing preventable complications. As Tanzania continues to expand its capacity for chronic disease management, rethinking polypharmacy through this lens is both timely and essential.

References

1. Masnoon N, Shakib S, Kalisch-Ellett L, et al. What is polypharmacy? A systematic review of definitions. BMC Geriatr. 2017; 17: 230.
2. Njiro BJ, Ngowi JE, Ndumwa HP, et al. Non-communicable Diseases Week: Best Practices in Addressing the NCDs Burden from Tanzania. Ann Glob Health. 2023; 89: 89.
3. Mashauri HL, Angolile CM, Muro FJ. Knowledge, Attitude, Practice, and Determinants of Community Health Workers' Involvement Toward NCD Prevention and Control in Northern Tanzania: A Cross-Sectional Study. Health Sci Rep. 2025; 8: e70978.
4. Harężlak T, Religioni U, Szymański FM, et al. Drug Interactions Affecting Kidney Function: Beware of Health Threats from Triple Whammy. Adv Ther. 2022; 39: 140–147.