Medication-related problems among elderly in Malaysia: A narrative review of epidemiology, risk factors, and mitigation strategies

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ABSTRACT

Introduction: Malaysia's ageing population, projected to reach 14.5% by 2040, faces an increasing burden of chronic non-communicable diseases that demand complex and prolonged medication regimens. Combined with age-related physiological changes, this has amplified the risk of medication-related problems (MRPs), defined as drug therapy events that interfere with intended health outcomes and are linked to preventable hospitalisations, functional decline, mortality, and substantial healthcare costs. Although MRPs are well studied in high-income countries, Malaysian data remain fragmented. This review aimed to synthesise recent evidence on the prevalence, risk factors, and outcomes of MRPs among the elderly, examine current mitigation strategies, and propose directions for future improvement. **Materials and Methods:** A narrative review was conducted of studies published between January 2020 and June 2025 using PubMed, Scopus, and Malaysian academic databases. Eligible studies included participants aged ≥60 years and reported prevalence, risk factors, outcomes, or interventions for MRPs. **Results:** The prevalence of MRPs in Malaysian studies ranged from 37% to 65% across healthcare settings. Wide variation reflected heterogeneous criteria and study populations, highlighting the need for standardised definitions and assessment methods. Frequently reported MRPs included polypharmacy, potentially inappropriate medications (PIMs), non-adherence, and medication-related falls. MRPs were frequently associated with advanced age, multimorbidity with complex regimens, and low health literacy. PIMs were common, particularly involving diuretics, beta-blockers, proton pump inhibitors, and NSAIDs. Clinical consequences of MRPs included adverse drug reactions, falls, and increased morbidity, although associations with hospital readmissions were inconsistent. Self-medication and the use of alternative medicine were widespread, though their effect on adherence was inconclusive. Economic evaluations indicated significant healthcare costs attributable to MRPs, while pharmacist-led interventions demonstrated both cost savings and improved medication appropriateness. Over the past five years, pharmacists have played an increasingly central role through medication reconciliation and deprescribing in hospital and primary care. Locally adapted screening tools, such as MALPIP, have improved the detection of MRPs and facilitated stronger pharmacist–physician collaboration. Advances in digital health, including telemedicine and smart adherence applications, show promise in enhancing medication optimisation, especially in home and community care. Caregivers also play a critical role, underscoring the importance of caregiver support and structured training. Community-based strategies, including home medication reviews and nurse-led interventions, appear effective in reducing hospital admissions and improving quality of life. **Conclusion:** MRPs remain a major challenge in Malaysia's aging population, with high prevalence and significant clinical and economic consequences. Although efforts have been conducted to mitigate the problem, current evidence is limited by small, single-centre studies, heterogeneous criteria, and inconsistent outcome reporting. These gaps constrain accurate assessment of the national burden and limit the generalisability of interventions. Future works should establish national MRPs surveillance, using standard validated tools, and incorporating cost-effectiveness analyses. Greater attention is also needed to educate and train the patient as well as the caregiver and integrate related community-based programs into national health strategies. These strategies are essential to optimise medication use, reduce preventable harm, and improve the quality of life of elderly population whilst at the same time ensuring sustainable economic growth.

Keywords: Medication-related problems, elderly, Malaysia, geriatric