Polypharmacy and Medication Management in Older Adults

Jennifer Kim, DNP, GNP-BC, FNAP*,
Abby Luck Parish, DNP, ANP-BC, GNP-BC, FNAP

KEYWORDS

• Polypharmacy • Elderly • Adverse drug event • Potentially inappropriate medication

KEY POINTS

- Polypharmacy is a common clinical issue in older adults; approximately 30% of senior citizens take at least 5 or more medications.
- The normal changes of aging and physical changes associated with disease predispose older adults to an increased sensitivity to prescription and over-the-counter medications.
- Nurses should refer to the Beers Criteria and screening tool of older people's prescriptions (STOPP) criteria when questioning the appropriateness of an elderly patient's medications.
- In lieu of pharmacologic measures, nurses should use patient-centered, evidence-based nonpharmacologic strategies to treat common symptoms.

THE PROBLEM OF POLYPHARMACY IN OLDER ADULTS

Background and Significance

Although prescribed and over-the-counter medications may improve a wide range of health problems, they also may cause or contribute to harm, especially in older adults. Current-day medication regimens for chronic health conditions are often complex, and such complexity has the potential for negative consequences. Older adults are disproportionately affected, as they typically have more disease conditions for which medication regimens are prescribed. Polypharmacy in older adults is a global problem that has recently worsened. Approximately 30% of adults age 65 and older in developed countries take 5 or more medications.[1] Although older adults make up approximately 14.5% of the US population, elderly individuals purchase 33% of all prescription drugs, and this proportion is expected to increase to 50% by the year 2040.[2,3] Prevention and management of medical conditions typically requires the

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Vanderbilt University School of Nursing, 461 21st Avenue South, Nashville, TN 37240, USA
* Corresponding author.
E-mail address: jennifer.kim@vanderbilt.edu

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use of medications, and medical management regimens have become increasingly complex. Polypharmacy may be the unintended consequence of the increasing use of clinical practice guidelines.

Polypharmacy is a common clinical issue in older adults. It not only includes prescribed medications but also over-the-counter and herbal preparations. Polypharmacy is most commonly defined in the health care literature as taking 5 or more medications. Hyperpolypharmacy has been described as taking 10 or more medications.[4] Polypharmacy in the older adult population is not surprising, as this population has a high prevalence of medical comorbidities. Nurses who work in all health care settings (hospital, ambulatory care, nursing home) are regularly confronted with the problems associated with polypharmacy. Nursing home residents typically take the highest number of medications, with an average of 7 to 8 different medications per month.[5,6] Forty percent of residents take more than 9 medications.[6]

The clinical consequences of polypharmacy in older adults have been well documented. Polypharmacy is associated with the development and worsening of geriatric syndromes, including cognitive impairment, delirium, falls, frailty, urinary incontinence, and weight loss.[7] Polypharmacy in older adults also increases the risk of adverse drug events (ADEs) and avoidable hospitalizations. Polypharmacy also has financial consequences, as it results in increased health care costs for the patient and for the health care system. Treatment for medication errors and ADEs in the older adult population is estimated to cost more than 880 million dollars per year.[8] In 2012, inappropriate polypharmacy cost 1.3 billion dollars in avoidable health care costs.[9]

Causes of Polypharmacy

Although the etiology of polypharmacy may be either unknown or multifactorial, it is sometimes considered a proxy indicator for inappropriate medication use.[10] Prescribing medications for frail older adults can be challenging, given their many medical, social, and cognitive complexities. Although polypharmacy may be unavoidable in older adults who are being appropriately treated for multiple medical problems, it may also be inappropriate, with numerous risk factors placing older adults at high risk for its occurrence, including prescribing cascades and uncoordinated care.

Prescribing cascade

A prescribing cascade begins when a side effect or adverse drug reaction of a medication is misinterpreted as a new health condition, thus resulting in the prescription of a new medication.[11] This new medication may lead to further side effects and subsequent medications and therapies to treat them. For example, an older adult taking a nonsteroidal anti-inflammatory drug (NSAID) for arthritic pain may develop hypertension, for which an antihypertensive medication is prescribed. An antihypertensive medication may cause dizziness, for which an antiemetic is prescribed. See **Table 1** for examples of common prescribing cascades.

Prescribing cascades are preventable causes of polypharmacy. Medications should be started at low doses, and the nurse should monitor patients for adverse reactions. The nurse should also promote the use of nonpharmacologic interventions to mitigate side effects. Finally, the nurse should assist the health care team by doing a thorough assessment of a patient's medication regimen, including start dates of all medications.

Uncoordinated care

Half of all people age 65 and older have at least 3 medical diagnoses, and one-fifth have 5 or more medical conditions.[16] It is not uncommon for older adults with multiple medical problems to be treated by different medical specialists. It is also not