

Polypharmacy and Aging: Is There Cause for Concern?

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Should We Be Concerned?

What is *polypharmacy*? The best definition is “taking multiple unnecessary medications.” What is the prevalence of polypharmacy? According to Randall and Bruno (2006), elderly adults account for 34% of prescription medications and 40% of over-the-counter (OTC) medications used in the United States. Twenty-eight percent of hospitalizations in the United States were related to medication “mishaps” and two-thirds of those could have been prevented (Conry, 2000). In addition, a study conducted by Steinman and colleagues (2006) that focused on patients 65 years and older at a veterans administration medical center found that in more than 40% of the patients in the study there was evidence of inappropriate medication use and underuse for those taking more than five medications.

It is generally well accepted that elderly adults take more medications than younger people. As elderly adults take more medications, the risk for error increases. Also, as the body ages, it processes medications differently. Shepler and colleagues (2006) describe the four processes most affected by medication use in aging bodies: medications remain in the system longer than they should because absorption rates are slower; medications are highly concentrated in discrete parts of the body because of poor circulation; the liver shrinks and there is decreased cardiac output, which affects metabolism; and, finally, decreased renal function affects how the drug is excreted. Another concern for the elderly population is adverse drug reactions. Oftentimes adverse drug reactions are mistaken for “normal” signs of aging such as loss of appetite, unsteadiness, falls, confusion, and urinary incontinence. However, we should be vigilant that these symptoms are not solely connected to aging. The combination of age, multiple medications, and adverse drug reactions is cause for concern.

What Are the Reasons or Causes of Polypharmacy?

Some of the documented reasons for polypharmacy include

- an aging population with comorbidities requiring several different medications and an increased availability of newer medications
- patients self-medicating with OTC medications and herbal preparations without a clear understanding of the adverse reactions and interactive effects
- a prescribing cascade, which occurs when patients take a medication and exhibit side effects that are misinterpreted by the healthcare practitioner as symptoms of a disease and requiring additional medication
- the patient sees several physicians and fills prescriptions at different pharmacies, but there is a failure to keep all parties informed about each other's actions
- ineffective communication and coordination between healthcare practitioners results in redundancy.

What Challenges Does Polypharmacy Present for Nurses?

The most critical challenge for nurses is identifying the potential medication culprits in their older patient population. This may be difficult because often the patient is not the best informant and may not be able to provide a rationale for their current course of medications. The typical patient admitted into rehabilitation units and home health or skilled nursing facilities arrive with multiple comorbidities such as diabetes, congestive heart failure, hypertension, and arthritis, among others. This circumstance provides a perfect opportunity for polypharmacy and its associated problems to occur.

The following are recommendations for dealing with these challenges:

- Encourage better communication between the physician, nurse, and pharmacist—everyone should play a role in the process and has a responsibility to prevent potential problems.
- Know which drugs are potentially inappropriate or cause the most adverse drug events for the elderly (the Beers criteria [Beers, 1999; Fick et al., 2003] are a good resource). Although not all inclusive, **Table 1** lists some likely causes for adverse effects.
- Keep a detailed medication history and drug reconciliation that includes all medications, including OTC medications, and their original packages for accuracy (Shepler et al., 2006).
- Look for duplicate medications or medications that do not seem to have any therapeutic benefit (Wooten & Galavis, 2005). Patients often take medications for years simply because no one has told them to discontinue their use.
- Simplify the patient's medication regimen by looking at the timing and schedule of treatment. Can medications be taken less frequently or at times when patients are engaged in an activity that will trigger them to take their medications?
- Patients should be encouraged to use one pharmacy and coordinate their medications with one physician. Also, remind patients that OTC medications and herbal preparations are just as important to keep track of as prescription medications.

By taking a closer look at patients and their medications, nurses have the ability to prevent serious complications, avoid needless hospitalizations, and provide patients with an easier and safer medication regimen. As people live longer and develop more chronic diseases, more medications will become available. Let's try to do our part and make sure patients are on the right medications for the right reasons. 

Table 1. Potential Adverse Effects of Selected Medications

Drug	Cautions
Anticoagulants (warfarin)	<ul style="list-style-type: none"> • May interfere with other medications • Other medications may potentiate the anticoagulation effects • Certain foods interfere (those high in Vit. K)
Cardiac glycosides	<ul style="list-style-type: none"> • Increases risk for digoxin toxicity when mixed with: <ul style="list-style-type: none"> –verapamil, quinidine, and diuretics –certain antibiotics
Antihypertensives	<ul style="list-style-type: none"> • Can cause hypokalemia, hyperglycemia, hyperuricemia
Antipsychotics, anxiolytics, antidepressants, and sedatives	<ul style="list-style-type: none"> • Can increase fall risk • Can cause over sedation
Antimicrobials	<ul style="list-style-type: none"> • Those excreted by the kidneys have a longer half life
Over-the-counter medications	<ul style="list-style-type: none"> • Nonopioid analgesics: risk for salicylate toxicity (nausea/vomiting, seizures, delirium, coma, death) • Antacids: can interfere with other medications • Laxatives: overuse can cause hypokalemia and affect their nutritional status; bulk laxatives without enough fluids can cause obstruction

Note. Adapted from Shepler et al., 2006.