Medication Adherence In the Elderly

Medication Problems & Aging
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Disclosure Statement

I do not have a vested interest in or affiliation with any corporate organization offering financial support or grant money for this continuing education program, or any affiliation with an organization whose philosophy could potentially bias my presentation.
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Upon completion of this CE activity, the pharmacist should be able to:

Communicate drug and adherence information to older patients, their care partners and the interprofessional team;

Recognize the prevalence of limited health literacy in the older adult population;

Demonstrate proficiency to interview and counsel older adults with varying degrees of health literacy, cognitive function, and communication abilities;

Recognize barriers to effective communication (e.g., cognitive, sensory, cultural, and language) and

Discuss the physiologic changes of aging and how they impact the pharmacokinetic, pharmacodynamic and therapeutic use of medications.
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Medication Adherence

Pharmaceutical advances have resulted in greater potential for improved health outcomes...

but there are limits to scientific, technological advances.
In 2016, there were approximately 4.45 billion prescriptions issued all over the United States. This was an increase from 3.99 billion prescriptions dispensed six years earlier.

What is the average percentage of filled prescriptions that are not used as prescribed?

10%
50%
90%
General Barriers to Adherence

System Factors
Patient Factors
Provider Factors
Recognize the prevalence of limited health literacy in the older adult population
Health literacy is the degree to which individuals have the capacity to obtain, process and understand basic health information needed to make appropriate health decisions.
2003 National Assessment of Adult Literacy included the first-ever national assessment of health literacy

<table>
<thead>
<tr>
<th>Health Literacy Level</th>
<th>Task Examples</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Proficient</td>
<td>Using a table, calculate an employee's share of health insurance costs for a year.</td>
<td>12%</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Read instructions on a prescription label, and determine what time a person can take the medication.</td>
<td>53%</td>
</tr>
<tr>
<td>Basic</td>
<td>Read a pamphlet, and give two reasons a person with no symptoms should be tested for a disease.</td>
<td>21%</td>
</tr>
<tr>
<td>Below Basic</td>
<td>Read a set of short instructions, and identify what is permissible to drink before a medical test.</td>
<td>14%</td>
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Health Literacy in Older Adults

The study found that adults age 65 and older have lower health literacy scores than all other age groups surveyed.
What was the percentage of the older adults who were surveyed measured as proficient?

3%
15%
50%
Low health literacy is more prevalent among:

- Older adults
- Minority populations
- Those who have low socioeconomic status
- Medically underserved people
Health Literacy goes beyond a narrow concept of health education and individual behavior-oriented communication, and addresses the environmental, political and social factors that determine health.
Social outcomes
measures include: quality of life, functional independence, equity

Health outcomes
measures include: reduced morbidity, disability, avoidable mortality

Intermediate health outcomes (modifiable determinants of health)

Healthy lifestyles
measures include: tobacco use, food choices, physical activity, alcohol and illicit drug use

Effective health services
measures include: provision of preventive services, access to and appropriateness of health services

Healthy environments
measures include: safe physical environment, supportive economic and social conditions, good food supply, restricted access to tobacco, alcohol

Health promotion outcomes (intervention impact measures)

Health literacy
measures include: health-related, knowledge attitudes, motivation, behavioural intentions, personal skills, self-efficacy

Social action and influence
measures include: community participation, community empowerment, social norms, public opinion

Healthy public policy and organizational practice
measures include: policy statements, legislation, regulation, resource allocation, organizational practices
Recognize barriers to effective communication (e.g., cognitive, sensory, cultural, and language)
Older Adults have Special Communication Needs

Visual Impairment

Cognitive Problems

Hearing Impairment
Communicate drug and adherence information to older patients, and their care partners
Communicating Adherence

Understand the difference between compliance and adherence

Understand patient perspectives on the purpose, timing, instructions, side effects, duration of medication.
Public health nurse: “Jill, I see you are taking birth control pills. Tell me how you are taking them.”

Jill: “Well, some days I take three; some days I don't take any. On weekends I usually take more.”

Public health nurse: “How did your doctor tell you to take them?”

Jill: “He said these pills were to keep me from getting pregnant when I have sex, so I take them anytime I have sex.”

This story is true. Jill is a single woman, age 21 years, who works as a house cleaner. She reads at about the second-grade level.
Discuss the physiologic changes of aging and how they impact the pharmacokinetic, pharmacodynamic and therapeutic use of medications.
Impact

• Changes occur throughout the body as we age affecting all body systems.

• Gradual changes occur over a long period of time.

• Organs may become overworked and function inadequately resulting in organ failure.
Medication Adherence

Medication adherence is defined as the extent to which a person’s behavior agrees with the agreed medication regimen from a health care provider.

What Affects Medication Adherence?

Individual patient beliefs
Socioeconomic factors
Health Literacy
Culture
Language Barrier
Health Care Provider
Polypharmacy

HC/HIT-1.2 Increase the proportion of persons who report their health care provider always asked them to describe how they will follow the instructions
Barriers to Medication Adherence

• Mental State
• Physical Health
• Behavior/attitudes/habits
• Demographics
• Past Medical History
• Knowledge/beliefs
• Other
• Drug
• Drug Handling
• Drug Regimen
• Health Care System Factors
• Socioeconomic Factors

Significance of Medication Adherence

The elderly are prone to multiple comorbidities, they are at higher risk of polypharmacy and therefore may present with higher risk of nonadherence to medications compared to the younger population.

Effects of Aging

The following produce extra organ workload:

• Illness
• Medication
• Significant life changes
• Increased physical demands on the body
Pharmocokinetics and Pharmocodynamics: Effects on the Elderly

Pharmocokinetics is the study of the way in which the drugs move through the body during absorption, distribution, metabolism and excretion.

Absorption

The aging process results in several changes in gastrointestinal physiology including slowing of gastric emptying and reduced parietal cell function.

Brody et al. 1998
Metabolism

Hepatic blood flow reduces with advancing age, partly as a result of reduced cardiac output. *(Brody et al. 1998)*

Liver function test do not accurately assess the effectiveness of drug metabolism in the elderly. *(Brody et al. 1998)*
Distribution

1. A relative reduction in total body water results in a smaller volume of distribution. Results in a higher concentration of water-soluble drugs, e.g., Ethanol & Digoxin. *(Brody et al. 1998)*

2. An increase in the body fat percentage results in a larger volume of distribution of lipophilic drugs such as Diazepam. May result in an increased elimination half-life *(Beers et al. 2009)*

3. A reduction in albumin levels may result in an increase in unbound concentrations of certain drugs such as Warfarin and Phentoin *(Beers et al. 2009; Brody et al. 1998; Holbeach and Yates, 2010)*
Elimination

Renal elimination of drugs reducing with age, resulting in a prolonged half-life and higher concentrations of drugs or metabolites (Beers et al. 2009; Brody et al. 1998)

The calculated estimated glomerular filtration rate (eGFR) is used to assess drug handling in patients with renal impairment. The eGFR is derived from the modification of diet in renal disease formula. (Levey et al. 2006)

Standards vary.
Pharmocodynamics

Pharmocodynamics is the study of the effect that drugs have on the body.

Multidisciplinary Team Approach

-Multiple practitioners compose the multidisciplinary team necessary to safely and comprehensively care for patients of any age. Due to significant changes and risks factors, the elderly population is considered vulnerable and requires creative and evidence-based practices to ensure prudent continuity of care.

-In order to achieve this goal, patients, nurses, nurse practitioners, physicians, pharmacists, pharmacy technicians, social workers, and health educators play integral roles in on-going treatments and plan of care.

-Treatment(s) must be patient-centered.
Demonstrate proficiency to interview and counsel older adults with varying degrees of health literacy, cognitive function, and communication abilities

Practice Scenario and Examples
<table>
<thead>
<tr>
<th>What You Can Do</th>
<th>Starter Tips</th>
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| Repeat essential information. | • Repeating information several times may help people with memory problems.  
• When writing, be specific and repeat your points. Use pronouns such as "it," "this," and "that" sparingly because they are indefinite in meaning. |
| Focus on important details.   | • When communicating, stay focused on important details. Personalize information when possible and minimize distractions.  
• Be sure details such as timing and the order of health-related actions are understood. |
| Emphasize desired actions.    | • Communicate directions and advice that older adults need to follow, not actions they should avoid. This helps boost memory for appropriate action and reduces confusion. Be aware that familiarity may be interpreted as truthfulness.  
• Avoid using a "myth vs. fact" format. |
| Use plain language.           | • Writing and speaking in plain language boosts understanding for people with health literacy problems. |
References


References Cont’d

