Testing the Effects of Nursing Education on Pharmacodynamics in the Elderly: The Impact on Fall Rates

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How Does Your Facility Rank?

- Fall Rates
- Polypharmacy
- High Risk Fall Drugs
Polypharmacy

- The practice of administering multiple medications concurrently

Salam, Mandal, Kumar, & Alumar (2008)
Fall

- “Any event which results in a person coming to rest inadvertently on the ground or floor or lower level”

Study Purpose

- Evaluate changes to knowledge acquisition pre and post education intervention
- Evaluate fall rates & medication histories to determine relationships between falls and consumption of high risk medications
Methods

› Invitations: 28 RNs & LPNs
› Acceptance rate: 93% = 26 participants
› Intervention: *Minimize Drug Interactions*
› Pre Posttests
› Retrospective & prospective fall data
› Retrospective & prospective medication histories
Classifications

› Antihypertensives
  › Angiotensin-converting enzyme (ACE) inhibitors
  › Beta Blockers
  › Antiarrhythmics
  › Digoxin
  › Anticonvulsants
Classifications

› Antipsychotics
› Benzodiazepines
› Antidepressants
› Diuretics
› Non-steroidal anti-inflammatory agents (NSAIDS)
Classifications

› Anticoagulants
› Proton Pump inhibitors
Demographics

- 23 (88.5%) participants worked full-time
- 3 (11.5%) participants worked part time
- 6 (23.1%) participants had less than 1 year of nursing experience
- 18 (69.3%) participants had less than 3 year of nursing experience
- 4 (15.4%) participants had up to 7 years of nursing experience
- 5 (19.2%) participants had professional degrees
Results

• 14% improvement in post test scores
• Decrease of 44.7% in fall incidence
• Decrease of 30.7% in the number of persons falling
• The number of high risk drug categories prescribed for fall victims peaked at 3, 4, and 5 (63.6%)
• Fall victims consuming 6 or 7 different high risk drug classifications (21.2%)
Commonalities Drug Interaction Tool

Benzodiazepines

Antidepressants

Anticonvulsants

Digoxin

Beta Blockers

Drug Interaction Tool

- Postural hypotension
- Confusion
- Falls

Antidepressant/Benzodiazepine
Anticonvulsants
Beta Blockers
Digoxin
Commonalities Drug Interaction Tool

**Benzodiazepines**
- Antidepressants
- Antipsychotics

74% of patients who fell were on antidepressants

**Beta Blockers**

37% of patients who fell were on beta blockers
<table>
<thead>
<tr>
<th>Drug Category</th>
<th>Percentage of Residents Who Fell</th>
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</thead>
<tbody>
<tr>
<td>Diuretics</td>
<td>59%</td>
</tr>
<tr>
<td>Non-steroidal inflammatory agents (NSAIDS)</td>
<td>41%</td>
</tr>
<tr>
<td>Anti-arrhythmics</td>
<td>48%</td>
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</tbody>
</table>
Linking Results to Clinical Practice

› Quality and Safety Education for Nurses (QSEN)
Quality and Safety Education for Nurses (QSEN)

- Institute of Medicine competencies, QSEN faculty and National Advisory board
- Patient-Centered Care
- Teamwork and Collaboration
- Evidence-Based Practice (EBP)
- Quality Improvement
- Safety
- Informatics
The Perfect Storm: A fall risk assessment guide

› CSI investigation:
› Medical Diagnosis
› Physiological Characteristics
› Environmental Barriers (Physical or Cultural)
› Medications

› 1 + 2+ 3+ 4 = The Perfect Storm
Integrating QSEN in the Clinical Setting: The Perfect Storm

› Patient Centered Care
› Evidence-Based practice
› Teamwork and Collaboration
› Quality Improvement
› Safety
› Technology


› Medical Diagnosis
› Physiological Characteristics
› Environmental Factors (cultural and physical factors)
› Medications

› 1 + 2 + 3 + 4 = The Perfect Storm
CSI Investigative Report

› Each student does a full assessment
› Am care/Pm care
› Each student describes their patient in each category of the CSI report
› Each student relates their patient and their care to each category of the QSEN core competencies.
› Post conference discussion
Thank you

› For further correspondence:
› References available upon request

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