

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"

- World Health Organization (2014). Falls. Retrieved from http://www.who.int/mediacentre/factsheets/fs344/en/



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



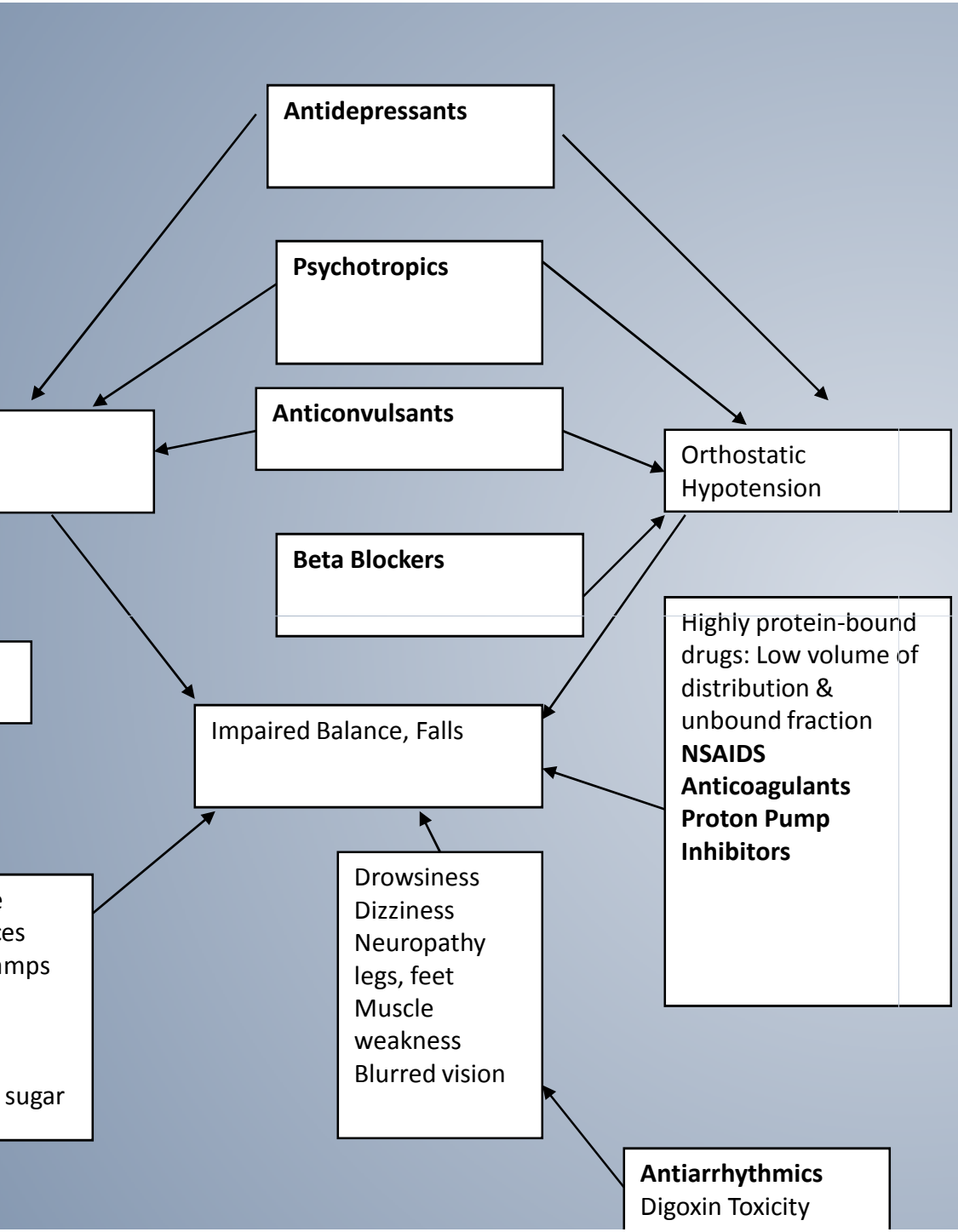
Classifications

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



Classifications

- Anticoagulants
- Proton Pump inhibitors



Zanetos, J. M., Lux, K. M., & Richardson, L
(2014, May/June). Testing the effects of a
pharmaceutical program on fall rates in old
adults. *Journal of Nurses in Professional Development, 30*(3), 143 -148.
doi:10.1097/NND.0000000000000061.



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%)



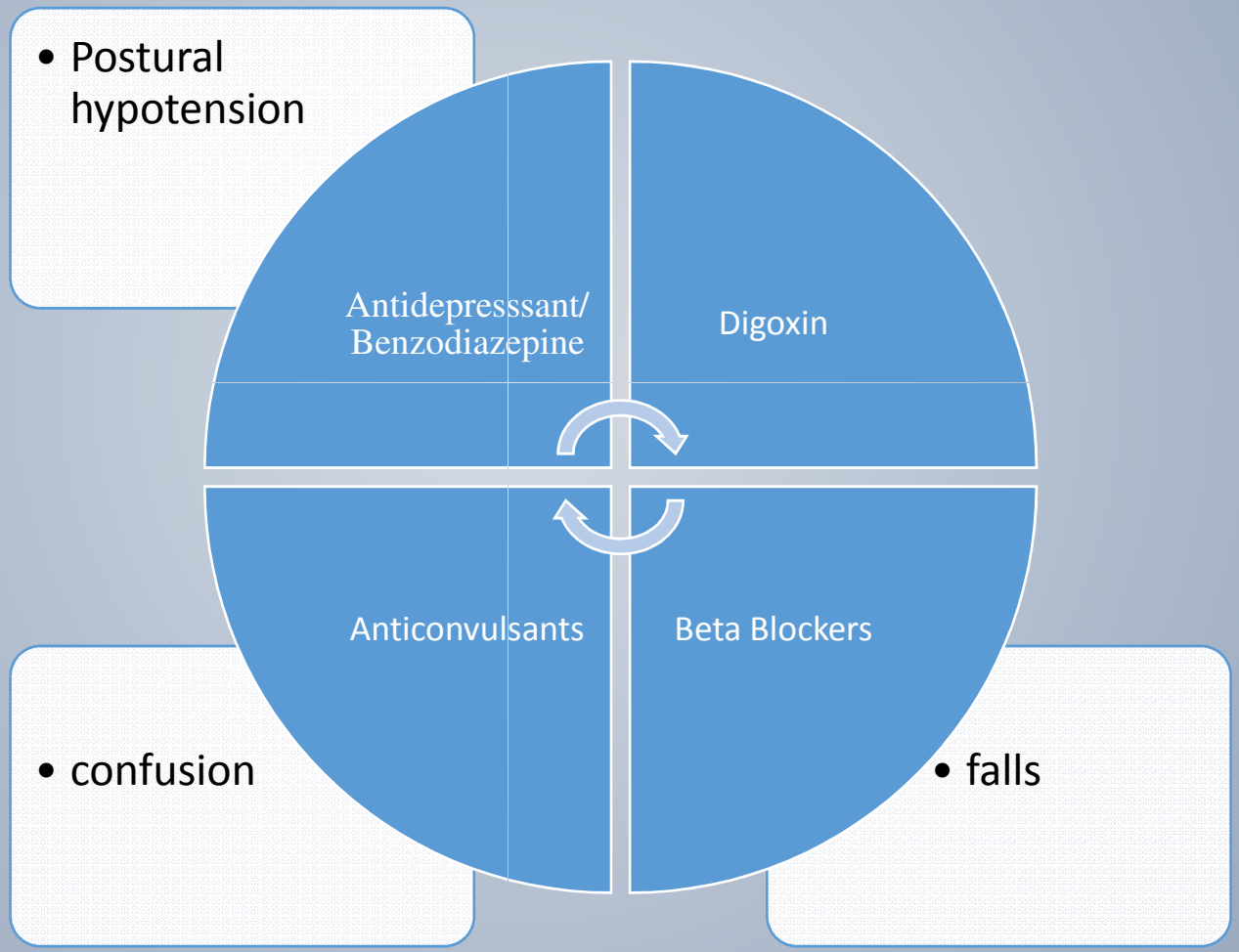
Commonalities Drug Interaction Tool

- Benzodiazepines
- Antidepressants
- Anticonvulsants
- Digoxin
- Beta Blockers

(Huang, Karter, Danielson, Warton, & Ahmed, 2010; Huang, Mallet, Rochefort, et al., 2012; Mangoni & Jackson, 2004)



Drug Interaction Tool





Commonalities Drug Interaction Tool

Benzodiazepines

74% of patients who fell were on antidepressants

- Antidepressants
- Antipsychotics

Beta Blockers

37% of patients who fell were on beta blockers



Commonalities Drug Interaction Tool

Diuretics

- 59% of residents who fell were on diuretics

Non-steroidal inflammatory agents (NSAIDS)

- 41% of residents who fell were on NSAIDS

Anti-arrhythmics

- 48% of residents who fell were on anti-arrhythmics



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

- Institute of Medicine, Health professions education: A bridge to quality. *Washington DC: National Academies Press;* 2003
- Cronewett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., … & Warren, J. (2007). Quality and Safety education for nurses. *Nursing Outlook, 55*(3) 122-131.

- Medical Diagnosis
- Physiological Characteristics
- Environmental Factors (cultural and physic 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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