

# Improving Quality of Life for Elders Through Interdisciplinary Fall Prevention Initiatives and Bone Health Education

Lisa Slater, MSN, RN; Mary L. Wagner, MS, PharmD; Lori Morell, BA, CWC



Lisa Slater, MSN, RN



Mary L. Wagner, MS, PharmD



Lori Morell, BA, CWC

## Purpose

The purpose of this project is to understand how two complimentary eldercare research projects influenced the insightful development of Bone Health Awareness and Fall Prevention Initiatives for senior care recipients and staff nurses.

## Background

1. A 2012 Parker funded study, **Nursing Home Registered Nurses' and Licensed Practical Nurses' Knowledge of Causes of Falls**, demonstrated significant knowledge deficits of fall prevention among both RNs and LPNs.
2. A Parker funded pilot study in 2012-2014, **Project Healthy Bones (PHB)** demonstrated that the program can improve, postural stability, strength, flexibility, knowledge and ultimately fall prevention in seniors.

*Project Healthy Bones is a 24-week education and exercise program supported by the New Jersey Department of Human Services, Division of Aging Services. It is designed for older adults with or at risk for osteoporosis. Over 2,000 elderly New Jersey residents have participated in the program.*

- ❖ Results of these studies were the impetus of Parker's fall prevention program to engage nurses and elders in a multipronged approach to prevent falling, improve and maintain quality of life while engaging nurses in the promotion of quality care. IRB approval and informed consents were obtained for each study.

## Rationale

- Improve nurses' understanding of risk factors related to falls in senior care environments.
- Decrease fall risk in Long Term Care and Assisted Living Facility elders.
- Empower elders to have a better quality of life through education of fitness and nutrition classes to improve bone health.
- Participation allows elders to remain in place longer to stabilize physical and psychosocial well-being, thus decreasing hospitalizations for fall related incidents.
- Stronger bones reduce hip fractures due to improved postural stability.

## Methods

### 1. Nurse Knowledge Research on Falls

- A multisite, cross sectional study was conducted with nurses from 3 nursing homes, which used a randomized viewing of validated fall clinical vignettes by nurse participants.
- 23 RNs and 24 LPNs subjects participated in the study.
- Outcome data were evaluated and utilized in the development and implementation of fall prevention education programs for nurses.
- Nurse knowledge of fall prevention and bone health was tested pre and post learning.

### 2. Project Healthy Bones

- A single site study enrolled 53 participants (6 men; 34 women, average age 80.3±9.1)
- Project Healthy Bones programs were initiated to maintain elder fall prevention behaviors.
- Survey Tool Questions: Patient demographics, medical history, apathy evaluation scale, fear of falling survey, nutrition log, osteoporosis/nutrition/fall pre/post prevention quizzes, exercise attendance log, and PHB evaluation surveys were collected.
- Geriatric Fitness Assessments: The functional reach, timed up and go, thirty second chair stand, tandem stand, single leg stand tests were done at baseline, midpoint, and at the end of the program.
- Each class included 40 minutes of exercise and 20 minutes of education.
- Educational demonstrations, notes of encouragement, incentives, samples of nutritious food and recipes, prizes, and reminders were used to promote participation.
- Statistical analysis: The data for each subject were organized on an Excel spreadsheet. Baseline and post study data were analyzed using paired t-tests.
- Three Parker Home staff members were trained to execute and maintain the Project Healthy Bones program.
- The course was led by trained Wellness staff.

## Outcomes

### 1. Nurse Knowledge Research on Falls

- Nurses knowledge post test scores improved.
- Nurses who received ongoing fall prevention and bone health education demonstrated improved skills to assess frail elders for fall risk.
- Nurse led fall prevention initiatives identified elders to enroll in restorative therapy.

### 2. Project Healthy Bones

- Forty of the 53 participants completed the program with an average attendance rate of 88%. Two dropped out after midpoint tests due to health problems and eleven dropped after a few classes.
- Knowledge (bone health, fall prevention, nutrition), diet, fear of falling, strength, posture, flexibility, balance, and overall function improved. This may prevent or slow down the progression of their osteoporosis. The participants may also have a lower risk of falls and fractures by improving their balance through this program.
- Knowledge and geriatric fitness tests showed significant improvement in the assisted living/day care group at 12 weeks.
- Improvement was significantly greater in subjects with a lower age on the chair stand and with a lower number of medications for the single leg stand with eyes closed.
- Those with higher MMSE \* were associated with better outcomes.

## Conclusion

- Adopting an interdisciplinary approach is a promising avenue for collaborative research between academia and long term care facilities to improve healthcare delivery.
- RN/LPN educational initiatives across the continuum of care benefit nurse care providers and care recipients.
- Project Healthy Bones classes are successfully run by the wellness staff.
- Initiatives can be developed that improve an elder's fall risk, increase independence and promote quality of life.
- **Next steps:** Nurses and interdisciplinary healthcare providers lead fall prevention education, PHB classes and promote restorative therapy.

## References

1. Osteoporosis. *The States of New Jersey Human Services Division of Aging*. Retrieved May 25, 2013, from <http://www.state.nj.us/humanservices/doas/healthy>.
2. Clinicians Guide to Prevention and Treatment of Osteoporosis. *National Osteoporosis Foundation*. Retrieved December 26 2013, from <http://www.nof.org>.
3. Downey PA, Siegel MI. Bone Biology and the Clinical Implications for Osteoporosis. *Physical Therapy*. 2006; 86(1): 77-90
4. Pathophysiology: Biological Causes of Osteoporosis. *International Osteoporosis Foundation*. Retrieved December 26, 2013, from <http://www.iofbonehealth.org>
5. Nursing Home Registered Nurses' and Licensed Practical Nurses' Knowledge of Causes of Falls, *J Nurs Care Qual*, Vol 00, No. 00, pp. 1-8, Copyright © 2015 Wolters Kluwer Health, Inc. All rights reserved, Deanna Gray-Miceli, PhD, RN, GNP-BC,FGSA, FAANP, FAAN, et.al
6. Wagner. M (et al)(2014) *Efficacy of the Project Healthy Bones Program in an Elderly Community*. Poster session

