EXAMINING THE EFFECTS OF AN OTAGO-BASED PROGRAM ON FALLS IN RESIDENTS OF ASSISTED LIVING FACILITIES
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Abstract
Objective: The Otago exercise program is a strengthening, balance and walking program designed to decrease falls in community-dwelling older adults. Few studies have assessed the effects of the Otago-based home exercise program in an assisted living environment. The purpose of the current study was to assess the effects of an Otago-based home exercise program in decreasing falls and the risk of falls in older adults living in assisted living facilities.

Methods and Materials: A retrospective chart review was conducted with patients records obtained over a 24 month period from September 2011 to September 2013. Several authors conducted a randomized controlled trial based on Otago intervention located in the greater Orlando, Florida area. The assisted living facility was designed to assess the effects of the Otago based program among and falls in older adults each year and are referred by their physicians to home health physical therapy for strengthening exercises and fall interventions.

A master list was obtained from the home health agency for all persons living in the assisted living facility who were referred to home health physical therapy and who are at risk for falls as determined by the Tinetti Performance Oriented Mobility Assessment (POMA), living in an assisted living facility, referred between 2011 and 2013, and treated with an Otago-based intervention by home health physical therapy. The outcome measures were the number of falls and the Tinetti POMA scores.

Results: The number of falls significantly decreased (tn=19.82, p<0.01) after home health physical therapy with Otago based-exercise intervention. The exercise intervention resulted in a significant improvement in Tinetti scores (p=0.01), which indicated reduced risk for falls in these individuals.

Conclusion: An Otago-based strengthening and balance home exercise program can potentially be used to decrease the number of falls and decreasing the risk of falls in older adults living in an assisted living facility.

Introduction
Falls in the elderly are a major public health issue as the incidence of falls and the number of older adults continues to increase. Nearly one third of older adults in the United States experience a fall each year3 increasing their risk of early death.4 More than half of the falls in the elderly result in some form of injury.5 Exercise alone or in combination with other risk reduction, seems to be the most important element of fall prevention in the elderly.6 Strengthening and a balance training have been shown to be the most important element of an exercise program designed to reduce the risk of falls in the elderly.7 The Otago exercise program is an individually tailored home based strength and balance exercise program that has been shown to be effective in decreasing the falls and injuries in older adults.8

Methods
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Figures
Figure 1. Number of Falls Before and After Otago-based Intervention
Figure 2. Frequency of Falls Pre-Intervention
Figure 3. Frequency of Falls Post Intervention
Figure 4. Tinetti Score Before and After Intervention

References

Discussion
The results of the study have shown that an Otago-based exercise program could be effective in reducing falls in the elderly. There was a significant decrease in the number of reported falls before and after the Otago-based exercise intervention with 43 falls reported prior to the intervention and 14 falls reported after the intervention. After the intervention, 63.3% (n=19) of the patients did not report any fall compared to 10% (n=3) of patients not reporting any fall prior to the intervention, an improvement of almost six times in the number of reported falls before and after the intervention. The number of falls per patient decreased significantly before (Fig. 2) and after (Fig. 3) the Otago-based physical therapy intervention.

Conclusions
The authors found that an individually tailored Otago-based home exercise program, prescribed by a physical therapist, may be effective in preventing falls and improving mobility among and falls in older adults living in an assisted living facility. This exercise program includes strengthening and balance exercises which have been demonstrated to be an effective fall reduction exercise program. Findings from this study demonstrate the need for more research to examine the effects of Otago-based exercise programs against a wide range of fall risk factors. In practice recommendations for physical therapists working in the home health setting to patients who have history of falls and patients who are at risk for falling.