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Background and Significance

Falls are the leading cause of accidental death and injury in older adults and nurses have a role in risk factor identification, prevention, assessment and management. Evidence based research shows that fall prevention requires a multi-focal interprofessional approach to the plan of care.

The Virginia Geriatric Education Center (VGEC), a HRSA-funded consortium from The University of Virginia, Virginia Commonwealth University and the Eastern Virginia Medical School, completed five years of fall-related evidence-based practice (EBP) curriculum development, implementation, and evaluation at urban/rural community sites across the state. The VGEC secured additional funds through HRSA's Geriatrics Workforce Educational Program to continue the falls education program. The 24-hour EBP falls program was recently conducted in acute care.

Educational Approach

The program consists of seven 2-1/2 hour sessions supplemented by on-line resources that include required and optional readings. The faculty teaching these sessions and content focus for each includes nursing (definition of a fall, risk factors, assessment, intervention, interprofessional care planning), medicine (rationale and evidence overview, assessment, intervention), pharmacy (medication and alcohol related risk factors, assessment and intervention of drug therapies), occupational and physical therapy (assessment tools including environmental factors, interventions for muscle weakness, gait and balance problems and sensory deficits) and social service (fear of falling, team-based care). Each faculty uses an evidence-based approach. The program concludes with a focus group that addresses planned changes.



Methods

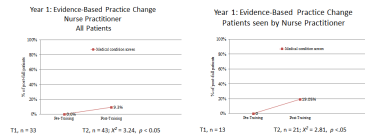
The program uses PDSA and a Logic Model. Refinements to the model are continuous and addressed after each session. Quantitative (pre-post tests, medical record abstractions) and qualitative (focus groups, open-ended survey) methods were used in the analysis of outcomes. 106 healthcare practitioners across the five clinical sites were trained and approximately 7% (n=7) were advanced practice nurses.

Results

The VGEC training evaluation team, composed of four researchers with limited clinical experience, employed a consensual review process for abstracting information contained in medical record case-notes. Using web-based conference technology, each case note was simultaneously reviewed by at least two data abstractors and an arbitrator, the director of evaluation, to reach a consensus judgment on assigning each piece of information to the appropriate variable and value. Each abstractor's reliability was measured by comparison with the arbitrator to ensure accuracy in all aspects of data collection. If an abstractor had less than 90% agreement at the criterion level with the arbitrator, the abstractor was given additional training until 90% agreement was achieved.

Quantitative Results:

Medical records were reviewed for six medical conditions recommended by AGS/BGS for EBP falls approach to prevention and intervention (orthostatic hypotension, neuropathy, bradycardia, depression, vision, and incontinence). A comparison of charts reviewed three months prior to the training (n=33) and three months after training (n=43) revealed that at baseline the nurse practitioners did not routinely screen for medical conditions. Looking across all post-fall patients there was a 9.3% increase in this practice at the follow-up ($X^2=3.24, p<.05$). An examination of charts for just those post-fall patients seen by the advance practice prior to the training (n=13) and during the three months afterwards (n=21) showed a 19.05% practice improvement ($X^2=2.81, p<.05$).



Qualitative Results:

1. New Approaches Adopted

- Year 1: "Clinical falls assessment procedures were reviewed to include a review of the curriculum and a formal screen for fall related medical conditions"
 - Year 4: "I liked the VF-14 QOL questionnaire for looking at the consequences of cataract surgery, and plan to share this with other members of the falls committee"
 - Year 5: "One important development was our realization that although we provide a round of 50,000 IU of Vitamin D2 when we discover low levels, we don't follow that with a daily D3 regimen"
- #### 2. Alterations in the decision making process related to the identification of fall risk
- Year 4: "As a consequence of the training, I spend more time considering what intrinsic or extrinsic risk factors might be involved"
 - Year 5: "I ask about cataract surgery now, and I didn't often think about vision screening as a fall risk assessment tool before"
- #### 3. Modifications to the retrospective analysis of events
- Year 1: "More interest in a more structured post-fall huddle"
 - Year 4: "I intend to ask patient more about the fear of falling"
 - Year 5: "I now think about environmental hazards when analyzing the circumstances of a fall"

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Interprofessional Communication

The falls training curriculum has been enhanced in interprofessional knowledge and communication. Comments made by the advance practice nurse participants:

Year 1: "Our teamwork related to the identification of fall risk is more formal and uniform now. We are avoiding duplication of effort and sharing more about our post-fall patient encounters and problem-solving approaches. This has led us to have a faster response when falls occur"

Year 5: "I am more aware of what other team members do when they make their assessment of fall risk"



Conclusions and Recommendations

Advanced practice nurses are core members of an interprofessional team that uses EBP to address the prevention and management of falls in older adults. Through participation in an inter-professional team training program on EBP practice and interprofessional communication they are in an ideal position to serve not only as members but also potential leaders of a falls team and should consider this opportunity.

Outcomes measured reflect enhancement of knowledge of advanced practice nurses in falls prevention and management which is a necessary precursor to behavioral changes in practice. Future work should include analysis of behavioral change.

Measuring specific patient outcomes such as reduced fall risk and reduction in the number of falls is recommended.