general assessment series

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Best Practices in Nursing Care to Older Adults

From The Hartford Institute for Geriatric Nursing, New York University, College of Nursing

Issue Number 8, Revised 2013

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Fall Risk Assessment for Older Adults: The Hendrich II Fall Risk Model™

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WHY: Falls among older adults, unlike other ages tend to occur from multifactorial etiology such as acute[1,2] and chronic[3,4] illness, medications,[5] as a prodrome to other diseases,[6] or as idiopathic phenomena. Because the rate of falling increases proportionally with increased number of pre-existing conditions and risk factors,[7] fall risk assessment is a useful guideline for practitioners. One must also determine the underlying etiology of why a fall occurred with a comprehensive post-fall assessment.[8] Fall risk assessment and post-fall assessment are two interrelated, but distinct approaches to fall evaluation, both recommended by national professional organizations.[9]

Fall assessment tools have often been used only on admission or infrequently during the course of an illness or in the primary care health management of an individual. Repeated assessments, yearly, and with patient status changes, will increase the reliability of assessment and help predict a change in condition signaling fall risk.

BEST PRACTICE APPROACH: In acute care, a best practice approach incorporates use of the Hendrich II Fall Risk Model™, which is quick to administer and provides a determination of risk for falling based on gender, mental and emotional status, symptoms of dizziness, and known categories of medications increasing risk.[10] This tool screens for primary prevention of falls and is integral in a post-fall assessment for the secondary prevention of falls.

TARGET POPULATION: The Hendrich II Fall Risk Model™ is intended to be used in the acute care setting to identify adults at risk for falls. The Model is being validated for further application of the specific risk factors in pediatrics and obstetrical populations.

VALIDITY AND RELIABILITY: The Hendrich II Fall Risk Model™ was originally validated in a large case control study in an acute care tertiary facility with skilled nursing, behavioral health, and rehabilitation populations. The risk factors in the model had a statistically significant relationship with patient falls (Odds Ratio 10.12-1.00, .01 > p <.0001). Content validity was established through an exhaustive literature review, use of accepted nursing nomenclature and the extensive experience of the principal investigators in this area.[11]

The instrument is sensitive (74.9%) and specific (73.9%), with inter-rater reliability measuring 100% agreement.[11] Numerous national and international published and unpublished studies and presentations have tested the Hendrich II Fall Risk Model™ in diverse settings. For example, a recent study reported on the adaptation and evaluation of the Hendrich II Fall Risk Model™ for use in inpatient settings in Portugal.[12] The authors reported a sensitivity of 93.2% at admission and 75.7% at discharge, with positive and negative predictive values of 17.2% and 97.3%, respectively. The Model was also recently adapted for use in Italian geriatric acute care settings, with high specificity, sensitivity, and inter-rater reliability.[13] A comparison of the Hendrich II Model™ to other fall risk models in the acute care setting found similar, strong sensitivity compared to other models, but acceptable specificity only with the Hendrich II Model™.[14]

STRENGTHS AND LIMITATIONS: The major strengths of the Hendrich II Fall Risk Model™ are its brevity, the inclusion of "risky" medication categories, and its focus on interventions for specific areas of risk rather than on a single, summed general risk score. Categories of medications increasing fall risk as well as adverse side effects from medications leading to falls are built into this tool. Further, with permission, the Hendrich II Fall Risk Model™ can be inserted into existing electronic health platforms, documentation forms, or used as a single document. It has been built into electronic health records with targeted interventions that prompt and alert the caregiver to modify and/or reduce specific risk factors present.[11]

FOLLOW-UP: Fall risk warrants thorough assessment as well as prompt intervention and treatment. The Hendrich II Fall Risk Model™ may be used to monitor fall risk over time, minimally yearly, and with patient status changes in all clinical settings. Post-fall assessments area also critical for an evidenced-based approach to fall risk factor reduction.

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Hendrich II Fall Risk Model

RISK FACTOR	RISK POINTS	SCORE
Confusion/Disorientation/Impulsivity	4	
Symptomatic Depression	2	
Altered Elimination	1	
Dizziness/Vertigo	1	
Gender (Male)	1	
Any Administered Antiepileptics (anticonvulsants): **(Carbamazepine, Divalproex Sodium, Ethotoin, Ethosuximide, Felbamate, Fosphenytoin, Gabapentin,** Lamotrigine, Mephenytoin, Methsuximide, Phenobarbital, Phenytoin, Primidone, Topiramate, Trimethadione, Valproic Acid)[1]	2	
Any Administered Benzodiazepines:[2] (Alprazolam, Chloridiazepoxide, Clonazepam, Clorazepate Dipotassium, Diazepam, Flurazepam, Halazepam[3], Lorazepam, Midazolam, Oxazepam, Temazepam, Triazolam)	1	
Get-Up-and-Go Test: "Rising from a Chair" **If unable to assess, monitor for change in activity level, assess other risk factors, document both on patient chart with date and time.**		
Ability to rise in single movement - No loss of balance with steps	0	
Pushes up, successful in one attempt	1	
Multiple attempts but successful	3	
Unable to rise without assistance during test **If unable to assess, document this on the patient chart with the date and time.**	4	
(A score of 5 or greater = High Risk)	TOTAL SCORE	

On-**going Medication Review Updates:**

1. **Levetiracetam (Keppra) was not assessed during the original research conducted to create the Hendrich Fall Risk Model. As an** antieptileptic, levetiracetam does have a side effect of somnolence and dizziness which contributes to its fall risk and should be scored (effective June 2010).

2. The study did not include the effect of benzodiazepine-**like drugs since they were not on the market at the time. However, due to their similarity in drug structure, mechanism of action and drug effects, they should also be scored (effective January 2010).**

3. **Halazepam was included in the study but is no longer available in the United States (effective June 2010).**

The Hartford Institute would like to acknowledge the original author of this *Try This:*®, Deanna Gray-Miceli, DNSc, APRN, BC, FAANP