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Developing a Taxonomy to Categorize Patient Falls

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Abstract

The KU Patient Fall Taxonomy was derived from four patient fall risk assessment tools. Nine concepts emerged from the fall assessment tools as specific fall risk factors. The taxonomy will be utilized to systematically analyze patient fall error reports.

Keywords:

taxonomy, patient falls, risk assessment

Introduction

Patient falls in hospitals continues to be a patient safety issue. [1] In an effort to reduce falls, a number of fall risk assessment tools such as those in Table 1, have been developed to prospectively identify patients at risk to sustain a fall. [2-5]Each tool is designed to assess a patient and calculate a risk score. Using the risk score, interventions are implemented to reduce or mitigate the likelihood that the patient will experience a fall. In spite of these efforts, falls continue to occur. The purpose of this study was to develop a patient fall taxonomy derived from four risk assessment tools.

Table 1 - Previously published patient fall risk assessment tools

Morse Fall Risk, Morse 1985	Fall Risk Assessment Tool (FRAT), Peninsula Health Fall Prevention Service, 1999	Hendrich II Hendrich, Bender, Nyhuis, 2003	STRATIFY, Oliver, Britton, Seed, Martin, Hopper, 1997
History of falling immediate or within the last 3 months	Recent falls	Confusion/ Dis-orientation	Did the patient present to hospital with a fall or has fallen or has she or he fallen on the ward since admission?
Presence of secondary diagnosis	Medications	Depression	Do you think the patient is agitated?
Use of ambulatory aid	Psychological	Altered elimination	Visually impaired to the extent that everyday function is affected?
IV/Heparin lock	Cognitive Status	Dizziness/ vertigo	In need of especially frequent toileting
Gait/ Transferring	Vision	Gender (male)	Transfer and mobility score of 3 or 4?
Mental status	Mobility	Any administered antiepileptics (anticonvulsants)	
	Behaviors	Any prescribed benzodiazapenes	
	Activities of daily living (A.D.L.)	Get-up-and-go Test	
	Environment		
	Continence		
	Other		

Methods

Design A retrospective analysis of four previously published risk assessment tools using techniques of line-by-line coding and constant comparison. [6]

Findings

Nine concepts emerged from the fall risk assessment tools. The concepts were arranged as categories using Rosch's three-tiered hierarchical structure for concepts (Fig 2).[7]

Figure 2 – KU Patient Fall Taxonomy

Contributing Factors	Risk Factors
History of Falls	Immediate Within last 3 months None Home in last 3 months Fall while an inpatient/resident Fall within last 12 months
Cognitive	Forgets own limitations Intact Mildly impaired Moderately impaired Severely impaired
Psychological	Agitation Depression Confusion Disorientation Decreased cooperation Decreased insight Decreased judgment Difficulty following directions Non compliant
Gender	Male
Medical Conditions	Secondary diagnosis
Medications	IV/heparin lock Type
Body System Involvement	Excretory Musculo-Skeletal Visual impairment Digestive Neurologic
Personal Independence	ADLs Use of ambulatory aid Get up and go out of chair
Environmental	

Discussion

An inductive method of identifying and structuring the risk factors categories into a taxonomy was enhanced using Rosch's hierarchical structure for concepts. The hierarchy is a two dimensional structure composed of a vertical and a horizontal axis. The vertical axis corresponds to the level of abstraction. The horizontal axis corresponds to the typicality of members represented in the category.

Conclusion

The KU Patient Fall Taxonomy was derived and grounded in the risk assessment tools. The taxonomy provides a consistent set of categories and attributes by which will be used in future research to retrospectively code patient fall error reports.

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