

Effectiveness of Bed Alarms on Falls

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Abstract

- ❖ Objective: To determine the effectiveness of bed alarm implementation on lowering fall rates
- ❖ Design: Quantitative experimental
- ❖ Setting: Long-term care facilities in Hays, Kansas
- ❖ Participants: 30 patients selected from the chosen long-term care facilities
- ❖ Methods: The efficiency of bed alarms will be evaluated with a independent t-test
- ❖ Results/Conclusions: Pending data collection

Introduction

Falls are a major concern among clients within health-care facilities, leading to injury and death. According to the Agency for Health-Care Research and Quality (2013), "Each year somewhere between 700,000 and 1,000,000 people in the United States fall in the hospital". Research has been conducted and interventions have been implemented, but the effectiveness is still up for debate. Several research studies have been performed and published by universities and health-care officials, but no conclusive evidence supporting the effectiveness of alarms has been determined.

Purpose

The purpose of this study is to evaluate the effectiveness of bed alarms in reducing the number of falls in long-term care facilities.

- ❖IV: Bed alarms vs. no bed alarms
- ❖DV: Number of falls

Framework

The Hendrich II Fall Risk Model developed by Ann Hendrich was used as a framework for this study (see fig. 1). The model includes best practice approach for the targeted population and contains key fall factors that are relevant in determining fall risk for the study. The model was validated by a large control study and the risk factors are statistically significant in the relationship among patients and falls (Gray-Miceli, 2008).

Methodology

Research Design/Interventions

- ❖Quantitative Experimental

Proposed Research Question

- ❖Do bed alarms in long-term care facilities reduce the number of falls among patients?

Literature Sources

- ❖This is a partial replication study that is based off of multiple studies done by universities in the United States. The main difference between this study and others previously conducted is the type of bed alarms that were used. This study will utilize Posey pressure alarm systems as illustrated in figure 2.

Methodology (Cont.)

Sample

- ❖ Simple random sample
- ❖ N=30 clients
- ❖ N= 15 clients with interventions
- ❖ n= 15 clients without interventions
- ❖ Inclusion criteria- clients who score a five or higher on the Hendrich II Fall Risk Model
- ❖ After meeting the fall criteria, we will use simple random sample to decide which patients will be receiving the intervention.

Ethical Considerations

- ❖ Informed consent must be obtained from all participants
- ❖ University in north-western Kansas IRB approval pending
- ❖ Long-term care facilities' IRB pending approval

Data Collection

- ❖ Nursing staff will be documenting all patient fall occurrences into the patient's medical charts.
- ❖ Research staff will access patient charts to acquire information regarding falls.
- ❖ Data collection will be over a six month period.
- ❖ Results will be inputted into a password protected excel spreadsheet.

Hendrich II Fall Risk Model		
Confusion, Disorientation, Impulsivity	4	
Symptomatic depression	2	
Altered Elimination	1	
Dizziness, Vertigo	1	
Male gender	1	
Any administered antiepileptics	2	
Any administered benzodiazepines	1	
Get Up & Go Test		
Ability to rise in a single movement	0	
Pushes up, successful in one attempt	1	
Multiple attempts, but successful	3	
Unable to rise without assistance during test (OR if a medical order states the same and/or complete bedrest is ordered)	4	
*If unable to assess, document this on the patient chart with date and time		
A score of 5 or greater = High Risk	TOTAL SCORE	

Figure 1. Hendrich II Fall Risk Model (table adapted from Gray-Miceli, 2008)



Figure 2. Posey pressure sensor pad and alarm system

(Images retrieved from https://www.posey.com/sites/default/files/8283-2_2014_bed_sensor_pad_920x920.jpg & <https://www.vitalitymedical.com/media/extendware/ewimageopt/media/inline/c2/c/posey-keepsafereg-deluxe-alarm-442.jpg>)

Results/Findings

Projected Data Analysis Method

- ❖Data will be analyzed using an independent t-test to compare the relationship between the IV and DV.

Literature Findings

- ❖Prior research studies have found no significant difference in the use of bed alarms versus no bed alarms (Shorr et al, 2012)
- ❖One study found that adequate staffing is necessary for proper patient safety (Capezuti et al., 2008)

Discussion

Implications For Nursing

This study will determine the effectiveness of bed alarms in a long-term care facility and will influence the need for further interventions to help reduce the risk of falls, promoting patient safety.

Conclusion

The results of this study are pending. After collection and data analysis, the findings will be revealed to see if there is a statistical difference in the use of bed alarms. Shorr et al. (2012) concluded that there is no significant difference in the use of bed alarms versus no alarms.

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