Patient Falls In The ED Setting:

An Integrative Review

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Cody Hughes

Liberty University

Lynchburg, VA

06/2022

INTEGRATIVE REVIEW PROPOSAL SIGNATURE PAGE

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Scholarly Project Chair Approval:

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Dr. Cynthia Goodrich EdD, MSN, RN, CNE   Date 06/2022

ABSTRACT

The purpose of this integrative review was to search through the data available on the best practices for preventing accidental patient falls in the emergency room setting. Fall rates continue to be a major problem for many hospital systems across the world. Even when hospital systems put attention toward addressing this problem, many hospital systems continue to struggle with improving their falls rate in the emergency care areas. This integrative review aimed to identify the most effective interventions to decrease the accidental fall rates in the emergency care setting. Many interventions have been proposed to help reduce this occurrence, but many of these interventions have been shown to have little to no difference in the overall accidental fall rates. Some common interventions that have been implemented in an effort to reduce patient fall occurrences are various screening measures to categorize a patient's likelihood of sustaining an accidental fall, introducing high falls risk patients with various safety measures like nonslip socks, bed alarms, high falls risk bracelets, and ensuring the call light is within reach, and introducing video surveillance for patients who have been deemed as high risk for an accidental fall. This integrative review researched the most effective interventions to reduce accidental fall rates and displays those results with specific numbers to show the improvement correlation. In order to have the best results in any situation, one must follow the researched evidence. This integrative review was initiated with the thought-process of understanding the best interventions to utilize to reduce the patient fall rates effectively and efficiently in the emergency room setting.

Keywords: Emergency room, patient fall rates, accidental falls, patient safety.

Dedication

This manuscript is dedicated to my savior Jesus Christ, my loving wife, my family, and my instructors at Liberty University. Thank you all for supporting, encouraging, and being there for me.

Acknowledgments

I want to acknowledge the entire staff at Liberty University for the DNP program, my

project chair Dr. Goodrich, and all of my peers. You all have been instrumental in my growth

and knowledge throughout this journey, and I could not have accomplished so much without all

of you.

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List of Abbreviations

Doctor of Nursing Practice (DNP)

Emergency Room (ER)

Institutional Review Board (IRB)

SECTION ONE: FORMULATING THE REVIEW QUESTION

The purpose of this project was to provide an integrated review of the current evidence-based research surrounding fall rates in the emergency room (ER) setting and what are the best interventions that can be implemented to decrease the fall rates in the ER. Hospitals across the world are being plagued by the problem of accidental patient falls in the emergency room care settings. Patient fall rates are a statistic that is tracked as one of the data points a hospital's leadership quality improvement team focuses on ways to improve their patient care practices. The best intervention for fall prevention needs to be identified, so hospitals systems can see the evidence and implement the best strategy for this specific system and budget to decrease their accidental patient falls and increase patient safety. It is vitally important to adequately address this patient safety issue in an effective way.

Many hospital systems have been trying to implement fall preventative measures, but these same hospitals have seen little to no improvement for their efforts. One common intervention that has proven to have minimal effects in decreasing patient falls risks is to use a fall classification system alone. A classification system is used to identify whether a patient presenting to the ER is a high, medium, or low falls risk. This classification system can use a variety of methods to determine a patient's fall risk, but when used alone it has been shown that it is ineffective in reducing patient falls mainly because of over classification of high falls risk patients. Patient falls are a huge problem across the world, and finding the most efficient and effective interventions should be a top priority for any hospital system that cares about patient safety, reducing patient costs to the hospital, reducing the length of stay of patients, and improving patient outcomes. Patient falls directly attribute to longer stays in the hospital due to the increased incidence of injuries associated with accidental falls. By decreasing patient

hospitalization lengths, the hospital also reduces costs to the hospital. When a patient sustains an accidental fall in the care of a hospital, that hospital pays for the injuries associated with the accidental fall. Thus, decreasing patient fall rates have a direct impact on reducing costs to the hospital. The DNP essential that supported this project were Essential I (Scientific Underpinnings for Practice), Essential II (Organizational and Systems for Quality Improvement and Systems Thinking), Essential III (Clinical Scholarship and Analytic Methods for Evidence – Based Practice), and Essential VII (Clinical Prevention and Population Health). These DNP Essentials were utilized throughout the project, and are outlined in Appendix D.

Defining Concepts and Variables

The conceptual definition of a patient fall is an accidental loss of control that results in a patient's landing on the floor, whether in a controlled or reckless manner. The operational definition of a patient fall is any circumstance where the patient was unable to maintain an upright position, which ultimately led to a loss of body control. The three types of classifications of an accidental patient fall are a fall, fall with injury, or a near miss. A fall is classified as an accidental patient fall that does not result in patient injury. A fall with injury is classified as an accidental patient fall that results in an associated patient injury. A near miss is classified as a scenario where the patient is in a situation where they almost have an accidental fall but do not actually fall over.

Rationale for Conducting the Review

The background surrounding the importance of fall rates is in the increased expense on the hospital and the increasing mortality and morbidity rates of patients who experience accidental falls in the hospital setting. High fall rates have been a problem facing many ERs around the country and many interventions have been proposed to attempt to decrease these fall

rates. Although many hospitals have attempted to address this issue, they continue to have higher than the national average fall rates in their ER. This problem has been an ongoing problem that is hard to fix for many hospitals, causing an increased expense to both the hospital and the patient. The increased expense for both the patient and the hospital is rooted in the related lengthening of stay and associated additional diagnostic tested needed after an accidental patient fall. These medical tests are very expensive for both parties involved. The length of stay for a patient on average is extended by two or three days due to additional injuries sustained after an accidental patient fall. This starts to cause problems with other metrics the hospital tracks to ensure adequate healthcare efficiency for patients is being maintained. Many hospitals have relied on utilizing a classification system for fall risk patients. The problem with this approach is that an identification tool used alone has proven to be ineffective in decreasing the patient fall rates. Many hospitals systems see the option as utilizing a falls risk classification tool as a fall prevention method that is inexpensive and easy to implement, however, evidence shows that a classification tool alone is mostly ineffective in preventing falls. The main reason classification tools prove to have little impact in reducing fall rates in the ER is due to too many patients being classified as high risk. This results in every patient being treated similarly, regardless of their fall classification (Castellini et al., 2017).

Fall rates still remain high in the ER hospital setting, and there are not specific determined interventions that have been recognized as standard fall preventions. Some hospitals adopt one strategy, while other hospitals try another with no real results to show for their interventions. Some common interventions that hospitals have implemented in attempt to decrease patient falls rates are classification systems, trying to hire additional staff to monitor high fall risk patients, and installing video surveillance.

Purpose and/or Review Questions

The purpose of this project was to identify the most effective fall prevention interventions for ER hospital implementation to decrease the overall accidental fall rates, decrease the expense the hospitals have due to a patient fall, and decrease worsening morbidity and mortality for these patients. The following questions were addressed: (1) what circumstances contribute to patient falls in the ER setting; (2) What interventions are the most effective in decreasing fall rates in the ER; and (3) what interventions are the most practical for Emergency Rooms to implement?

Formulate Inclusion and Exclusion Criteria

Inclusion criteria for this integrative review published research studies that identified interventions used in the attempt to reduce patient falls, emergency room fall interventions, only utilizing articles published within the last five years, in English, and from other scholarly sources. The inclusion criteria was focused on gathering a specific set of data for the purpose of this integrative review paper. The exclusion criteria included any publication older than five years from the time of this integrative review to help maintain relevant data, interventions utilized in out-patient care settings or care settings outside of the ER, interventions to reduce fall rates in home care settings instead of in an emergency care setting, and any publications not written in English.

Conceptual Framework (Whitmore & Knafl)

The framework of Whitmore and Knafl was used for this integrative review. This framework helped guide the organization of this integrative review by outlining the five steps to follow through this integrative review process. The first step is to identify the problem. This step focused on the clear identification of the problem that accident fall rates are at an all time high in many hospitals. The second step is to conduct literature review of the scholarly evidence-based

research about how to effectively reduce ER patient falls. This step includes a thorough database

search, evidence-based articles, and peer-reviewed articles. Step three involves data evaluation.

This step in the framework aims at utilizing empirical and theoretical sources. Step four in the

framework is data analysis. Data analysis is the primary research analyzed for the level of

evidence utilized and allowing for comparisons in the research. Step five is the presentation.

Synthesizing the results for review is the essential conclusion of this framework to adequately

make conclusions from the data presented. These results can be displayed in a table or written

format and should be supported by the evidence found in the integrative review.

SECTION TWO: COMPREHENSIVE AND SYSTEMIC SEARCH

Search Organization and Reporting Strategies

The search organization included were PubMed and CINAHL. I chose these databases as

they are the most widely utilized for healthcare research. An extensive search approach was used

to gather as much information as possible was utilized, and then this data was vetted to meet the

inclusion and exclusion criterion in order to be utilized for this integrative review. The search

terms used were: (a) falls, (b) falls with injuries, (c) patient accidental falls, (d) falls in the

emergency room, (e) implantation for reducing patient falls, (f) and interventions to reduce

accidental falls."

The search strategy I utilized for these literature review articles was only searching for

articles in the related subject area that were peer-reviewed, published within the last five years,

and identified articles that had significant fall rate improvement findings. There are many articles

that do not show significant improvements after their implementations, and these articles were of

little value to this integrative review. These articles would have been sorted out during the

PRISMA flow chart utilization. Also, any source information that utilized a lower level of

evidence was not included. As with any integrative review, the research for this integrative review utilized the highest levels of evidence based on Mylenk's evidence leveling system to ensure quality in its research.

Terminology

Database terminology can be confusing so the terms utilized will be defined below:

1.   *Platform*: The software used by a specific database

2.   *Database*: An electronic collection of published articles.

3.   *Search engine*: Systems to include Google, Bing, and the world wide web.

4.   *Search interface*: A search page that allows for a search on a specific database.

5.   *Fall*: An accidental patient fall that does not result in patient injury.

6.   *Fall with injury*: An accidental patient fall that results in an associated patient injury.

7.   Near miss: A scenario where the patient is in a situation where they almost have an accidental fall but do not actually fall over.

SECTION THREE: MANAGING THE COLLECTED DATA

The entire research process started with utilizing the keywords established and searching for information that met the inclusion and exclusion criterion to find a wide range of data related to emergency room patient fall rates and the interventions to reduce them. This wide variety of information was then vetted further to ensure the evidence was best suited for this integrative review with a purpose in finding the best interventions to reduce patient fall rates and increase patient safety in the emergency care settings.

It is important to only include quality research articles in this integrative review, otherwise it could skew data. Integrative reviews are only accurate if the information sources are gained through a scholarly manner. For this integrative review I did not include evidence that was not pertinent to accidental patient falls in the emergent care setting. There was one article that specifically targeted reducing patient falls, but it was not included in this integrative review because it was focused outside of the hospital setting. A literature review was completed to identify the best evidence-based research available on the prevention of falls occurrences in the emergency care setting. These research articles were sorted utilizing Mylenk's evidence leveling system and noted in Appendix C in the literature matrix. Mylenk's evidence leveling system organizes different types of research into levels, which level one would be the most reliable and level seven would be the least creditable. These ranges of evidence play a crucial role in the gathering of information because the higher the level of evidence, the less likely a bias can distort the evidence at hand. Mylenk's levels of evidence are: (1) level one- a meta-analysis of randomized controlled trials, (2) level two- one or more randomized controlled trials, (3) level three- a controlled trial, (4) level four- a case control or cohort study, (5) level five- a systemic review, (6) level six- single descriptive study, and (7) level seven- an expert opinion. Also, these

research articles were sorted through the PRISMA flow chart. The PRISMA flow chart is located in the figures page in this integrative review. The PRISMA flow chart helped to narrow down the focus of the evidence utilized in this integrative review by casting a wide net of researched evidence and slowly narrowing down the evidence until around ten evidence-based sources of information were utilized for this integrative review. I specifically excluded articles that were duplicated, utilized lower levels of evidence, and that were older than five years.

SECTION FOUR: QUALITY APPRAISAL

A quality appraisal is described as a systemic evaluation of literature to evaluate its relevance, value, and reliability. For integrative reviews, some incorporate both high-quality and low-quality findings to show evidence diversity in their study, while others will not include the lower-quality research to pinpoint their evidence findings more precisely. This integrative review used inclusion and exclusion criteria to avoid utilizing low-quality research evidence. The relevance of the evidence was assessed before deciding whether to include that information in the integrative review or not. For this integrative review, the articles in the literature matrix included research at various levels of evidence. The research evidence levels included one level two source, five level three sources, two level four sources, and two level six sources based on Melnyk's levels of evidence.

Sources of Bias

Bias can come at any stage of an integrative review, and one can only reduce the possibility of bias by looking at each piece of the integrative review for potential bias. Common types of bias in research studies include selection, measurement, attrition, and performance. Selection bias occurs when allocating people or resources in a way that could cause differences in groups. Measurement bias are caused by having inconsistency in measuring effectiveness in

variables. Attrition bias occurs when study participants drop out from a research study who differ significantly than others remaining in the study. Performance bias occurs when one type of information or group receives more attention or care than other groups. For this integrative review, there were no participants utilized so that greatly decreases the possibility for bias in selection and attrition bias. To best limit any bias from occurring in this study, each step was analyzed and doubled checked for evidence validity in order to draw any conclusions from that evidence (Toronto & Remington, 2020).

Internal Validity

Internal validity refers to how the results of the study appropriately describe the truth of the results. Bias can negatively affect the integrative review and cause a lessen believability for the scholarly project as a whole. Internal validity is simply defined as a combination of risk of bias and believability, while external validity focuses on how the results of the study will be used. If there is a significant bias in the research study, the results then will not be trustworthy. This integrative review was utilized without any bias, and, therefore, the evidence shown is trustworthy (Toronto & Remington, 2020).

Appraisal Tool

The appraisal tool utilized for this integrative review was a literature matrix. A literature matrix takes each research reference and breaks down what that specific referenced material is about, what year it was published, the study's objectives, what level of evidence it is, the main interventions and outcomes, and the results of the study. By overlaying all researched material into a literature matrix, the integrative review can be quickly checked for where its researched information came from and the validity of that evidence.

I also used the Melnyk framework to evaluate the scholarly articles used for this integrative review. The Melnyk framework helped identify reliable scholarly resources to be utilized for this integrative review by listing each reference's study purpose, sampled demographic, method of studied evidence, level of evidence of the reference, study limitations, and a column for myself to designate whether or not I would use the reference in this integrative review or not.

The research articles that I utilized for this integrative review were ones that found specific fall reductions rates after their proposed intervention was introduced. The best intervention identified in my research articles was installing video cameras for higher falls risk individuals. This intervention allowed for healthcare staff to be more proactive in stopping a high falls patient from engaging in risky behaviors. Specifically, this can greatly help healthcare staff see what the patient needs and help them obtain it without accidentally falling. Some of the most common reasons for patients to try to get out of their bed when they cannot stand well is to use the bathroom, reach for their phone, or try to get something to eat. All of these circumstances could be avoided with proactive healthcare presence to assist the patient with their needs (Danielsen et al., 2016).

Applicability of Results

Integrative reviews can vary greatly in the way they are constructed and what critical appraisal tools are used. This integrative review utilized a preamble abstract, an introduction to the study, a design layout of an integrative review, data collection was utilized by searching databases and evidence-base research articles within the last fiver years, ethical consideration were included, the results displayed from the research, discussion about the results, and

incorporating the results discussion back to the relevance of the guiding questions (Toronto &
Remington, 2020).

The results of this integrative review are applicable to any emergency care setting. This
study identified the three most common reasons for emergent care patients to attempt to get out
of their bed unattended, which were to use the bathroom, get something to eat, or look for a
phone. The evidence found in this integrative review also identified that the best intervention for
preventing accidental falls in the emergent care setting was to utilized video surveillance on
patients who were designated to be a high falls risk patient. These results are applicable to
practice utilization in any emergent care setting across the world. The most shocking results
found in this integrative review identify that after the implementation of video surveillance of
patients at a high falls risk criteria improved from 15.38% to 0% in one study (Akubuilo, 2020).

Reporting Guidelines (Whitmore & Knafl)

The reporting guideline used for this integrative review was the Preferred Reporting
Items for Systematic Reviews and Meta-Analyses (PRISMA). The PRISMA diagram outlines a
process for sorting through database and registers for appropriate systemic reviews. The
PRISMA is broken up into three stages of identification, screening, and inclusion. Identification
is the first stage where this tool identifies the records that have been screened or removed before
screening had taken place. The second stage of screening breaks down how many records were
screened or excluded, how many records were sought for retrieval or not retrieved, and which
reports were eligible for use or excluded. The third stage on this tool identified the number of
reports and studies included in the review (Toronto & Remington, 2020).

SECTION FIVE: DATA ANALYSIS AND SYNTHESIS

The data analysis was completed through the literature matrix by taking the referenced information and separating it into brief categories showing when it was published, what findings related to the topic the article revealed, and what level of evidence it was.

The synthesis of the information found in the data analysis for this integrative review was focused on the top intervention of implementing video surveillance of high falls risk patients in the emergency care setting has been shown to be the most effective type of fall prevention method. Most falls in the emergent care setting occur because the patient is trying to use the restroom, reach for their phone, get something to eat, or if they are confused. All of these situations can be identified before a fall occurs if the appropriate video monitoring devices are utilized.

Data Analysis Methods (Content Analysis)

The data analysis method I used for this integrative review was the Whitmore & Knafl Framework. This framework goes over five stages for analyzing researched content. The first step is problem identification, which is the high incidence of patient falls in the emergent care setting. The next step is a literature search of relevant evidence-based data around the topic. The third step is data evaluation of the collected data. The fourth step is to analyze the data and allowing for comparisons across data sources. The last step for this framework is presenting the synthesis of results and making conclusions based on this synthesis (Whitmore & Knafl, 2005).

This analysis uses either quantitative or qualitative data and is aimed at summarizing the information of the data collected. This synthesis consists of three phases are preparing, organizing, and reporting. The preparing phase is a focused on obtaining a sense of the entire data found and synthesizing it. The organizing phase is focused on coding, grouping, and

categorizing the data. The reporting phase is the last phase where the reviewer reports the results of the analysis data (Toronto & Remington, 2020).

Data Analysis Methods (Thematic Analysis)

For this integrative review I utilized a thematic analysis. A thematic analysis is widely used for its flexibility with identifying, analyzing, and reporting patterns in data. Thematic analyses are used to search across a wide variety of data to identify the most important themes consistent with the data set. For this integrative review, the data was focused on fall prevention methods. There are six steps to the thematic analysis: (1) become familiarized with the data, (2) generate codes to sort the data found, (3) search for themes with the data, (4) review the themes, (5) define and name the themes, and (6) produce the report of the information gathered throughout (Toronto & Remington, 2020). I used a thematic analysis for this integrative review.

The literature review I conducted for this integrative review started with an extensive search to find creditable evidence-based information about ways to effectively reduce patient fall risk in the emergency department setting. This literature review started to reveal themes in the research. The two major themes identified in the research for this integrative review were the implementation of a classification system of patient fall risks and common reasons why patients attempt to get up without a staff member present.

Classification System

One common theme was the implementation of a fall risk classification system. Many hospitals have utilized some type of fall risk classification system, so they can identify patients who are at an increased risk of have an accidental fall while in the hospital's care. The implementation of a fall risk classification system is a common theme mainly due to its ease of implementation and inexpensive nature. By introducing one of the various fall classification

tools into the hospital's charting system, the hospital can say they've introduced a fall prevention method for its patients without having a larger financial burden of other fall prevention interventions. The main problem with this type of intervention is the healthcare staff fall into a pattern of marking many patients as "high risk" for falling in their hospital's classification system. This, in turn, results as treating all patients as high falls risk, and that inevitably turns into treating nobody like a high falls risk patient (Fontenot, 2021).

Common Reasons Patients Get Out of Bed

Another theme a found in my research was the most common reasons why patients, who were classified as high risk for falling, were trying to get up without assistance. The three most common reasons patients in the emergency department try to get out of their bed without a healthcare staff member present are to go to the bathroom, to find a phone, or to get something to eat. These three common reasons for patients attempting to get out of their beds contribute to the majority of accidental patient falls in emergency care settings (Danielsen, Olofsen, & Bremdal, 2016).

<center>**Descriptive Results**</center>

Patient falls make up approximately three million emergency room visits each year (Bjarnadottir, & Lucero, 2019). There were many results for effective fall preventative measure that could be implemented for a reduction of fall occurrences, like utilizing a balancing measure for the elderly (Lan Hing Ting, et al., 2020). However, the overarching results of the evidenced-based articles utilized for this integrative review found that adequate video surveillance of high falls risk patients in the emergent care settings reduced accidental patient falls and increased patient safety. This directly correlates to decreased patient harm, decreased morbidity and

mortality, decreased hospital expense, and decreased patients length of stay at the hospital (Akubuilo, 2020).

Synthesis

The main findings of the literature review were that many interventions have been found to decrease fall rates in the ER setting, but the most practical intervention identified was introducing ER patients who were identified as high falls risk to video surveillance. Other interventions have been found to also be effective, like educating patient on how to reduce their likelihood of falling, but this intervention is only effective when the patient is ready to learn (Flint et al., 2020). Therefore, video surveillance is the key intervention showed significant improvement on the fall rates. The video surveillance allowed the healthcare staff in the ER to identify when patients were attempting to get out of bed when they were without any other healthcare staff to assist. This early warning alert helped to decrease the fall rates in the ER drastically.

The evidence collected from the literature review mostly found improvement in ER fall rates when video surveillance was implemented for high risk falls patients. This helps the healthcare team be more proactive in preventing patient falls. Another type of video surveillance that was found to be effective in reducing patient falls was the implementation of a tele-sitter. A tele-sitter would utilize video surveillance to watch the patient and could alert healthcare staff at the facility if the patient tried to get out of bed. These tele-sitters were very effective in reducing patient fall rates, and some tele-sitter technologies had the capabilities for the tele-sitters to talk to the patients through the monitoring system as well. This meant the tele-sitters could calmy remind the patient to stay in bed or that their nurse was coming to assist them shortly (Akubuilo, 2020).

Ethical Considerations

This integrative review was submitted to the IRB for approval and gained an exemption. The IRB Exemption is in the appendices. I also completed CITI training (see Appendix B).

The ethical considerations for this integrative review are focused on improving patient care practices and decreasing patient harm. These considerations involve finding the best accidental fall prevention intervention for the most hospitals. Although these prevention methods may be expensive for hospitals, the prevention of patient harm should be more important.

TIMELINE

IRB Submission (3/1/2022)

CITI Training Certificate (3/1/2022)

Primary Project Defense with Project Chair (3/1/2022)

Expanding on Integrative Review Paper (5/30/2022)

Submitting Integrative Review Paper to an editor (6/14/2022)

Finalizing Integrative Review Paper and Project Defense PowerPoint (6/22/2022)

SECTION SIX: DISCUSSION

Patient falls in the emergency and acute care setting have continued to be an ongoing problem despite introducing new ways to classify patients as high, moderate, or low fall risk patients. Many hospitals rely on a classification system for their patients in the emergency care setting to act as the main intervention for preventing accidental patient falls, but this has shown to be ineffective by the continued rates of accidental patient falls in these hospital continue to rise and may not be effective on its own (Fontenot, 2021). A patient who has sustained a fall has

a 30% higher chance of falling again (Goldberg et al., 2019). Although some measures are put

into place when a patient is deemed to be a high falls risk patient, those interventions are not

making enough of an impact of the overall fall rates in the emergency room settings. Some

evidence suggests that with these types of classification systems registered nurses are classifying

too many patients as *high falls risk*, which ultimately leads to treating every patient that same.

This has contributed to the rising fall rates across the world. A classification system of risk levels

for patient falls seems to be the most common intervention for many hospitals to attempt to

decrease their fall rates, but these methods have proven to be ineffective, and their falls numbers

continue to rise.

After reviewing the evidence gathered from the various databases and scholarly

evidence-based articles, the most impactful intervention identified was the implementation of

video surveillance for patients who were deemed to be a high risk for an accidental fall. The

future recommendations for fall prevention is rooted in the need for video surveillance of

patients due to its significant reduction of fall rates where they have been implemented. The most

common reasons emergency room patients will try to get out of their bed without a healthcare

staff member present were due to the patient wanting to get something to eat, go to the bathroom,

or find their phone. These common reasons for a patient to attempt to get out of their bed could

be prevented if a healthcare staff member is able to be notified when the patient is attempting to

get up.

The three questions at the beginning this integrative review were (1) what circumstances

contribute to patient falls in the ER setting, (2) what interventions are the most effective in

decreasing fall rates in the ER, and (3) what interventions are the most practical for emergency

rooms to implement? The first question deals with what circumstances contribute to patient falls

in the emergent care setting. The evidence presented in this integrative review identified the

three most common reason for a patient in the emergent care setting to attempt to get out of their

bed without a staff member present are to use the bathroom, find a phone to call their family, or

to get something to eat. These three circumstances are what lead to the most numbers of

accidental falls. The second question of what interventions are the most effective in decreasing

patient fall rates was the clearest answer with the need of video surveillance being the most

consistent and effective intervention. Not only does having video surveillance on high-risk

patients help decrease the fall rates of emergency care patients, but it also dramatically decreases

patient harm at the same time. One study found that fall rates decreased on one floor by two

percent while another floor saw fall rates decrease to 0% (Akubuilo, 2020). The third question

about which intervention is the most practical may change from one facility to another, so this

question was not specifically addressed in this integrative review. The best solution to solve this

question will be based on an individual facility's ability for implementation of the best

intervention or their system. Although this integrative review identified that video surveillance

dramatically decreases the accidental patient fall rates, it can also be an expensive intervention

for the hospital to integrate.

Implications for Practice/ Future Work

The findings of this integrative review identified that the introduction of video

surveillance for high falls risk patient greatly reduced the number of accidental patient falls in

the emergent care setting. This critical finding allows for hospital systems to see the data and

apply this evidence to their own safety system in order to reduce accidental patient falls, reduce

patient length of stay times, and reduce the morbidity and mortality associated with patient falls

(Harper et al., 2017).

The future work that is indicated after this integrative review would be to implement the invention of video surveillance compared to a hospital's current fall prevention methods to collect more data on its significance.

The gaps in this integrative review are rooted in the understanding that only the fall prevention methods aimed specifically in the emergency care setting were focused on. Gaps in this study pertains to any fall prevention outside of the emergent care setting. The research points at the best intervention for fall prevention to be around video surveillance of high fall risk patients. Suggestions for how hospitals can implement video surveillance for high fall risk patients are to provide video surveillance in all patient rooms or to have video surveillance on a mobile platform that can be brought where it is needed. Further research still need to be done on the exact expense to the hospital to install video surveillance for patients in the emergency department.

Dissemination

This integrative review will be published for use in evidence-based research for future scholarly projects. This information can be disseminated for use for hospital systems to incorporate to reduce their accidental patient fall rates in their emergency room settings. The need for an implementation of a sound accidental patient fall prevention is vital (Muray et al., 2018). This data can also be disseminated to the local and national levels for any healthcare organization that is facing continued rise in their accidental patient fall rates.

The information from this integrative review can be disseminated easily throughout the healthcare system by being used in pre-shift huddles in the emergency departments, at the research day within any hospital organization, and in a presentation format or on a poster presentation. This information is vitally important to spread throughout the healthcare system to

help impact the interventions of hospital systems to decrease patient accidental fall rates in the

emergent care setting. Also, this integrative review will be given to the hospital I work at as well

to better support and disseminate the most effective and efficient fall prevention method for

emergency care.

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    community%2Fdocview%2F2500515039%2Fse-2%3Faccountid%3D12085

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    acute and post-acute fall prevention intervention-a pilot investigation of an emergency

    department-based fall prevention program for community-dwelling older adults. *Pilot*

    and Feasibility Studies, 5(1), 106-106. https://doi.org/10.1186/s40814-019-0491-9

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    in an emergency department. *Emergency Medicine Australasia, 29*(5), 524-530.

    https://doi.org/10.1111/1742-6723.12804

Lan Hing Ting, K., Dessinger, G., & Voilmy, D. (2020). Examining usage to ensure utility: Co-

    design of a tool for fall prevention. *Ingénierie Et Recherche Biomédicale*, *41*(5), 286-293.

    https://doi.org/10.1016/j.irbm.2020.03.001

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    department. *International Journal of Health Care Quality Assurance, 31*(1), 2-9.

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Appendices

Appendix A: IRB Email

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

March 23, 2022

Cody Hughes
Cynthia Goodrich

Re: IRB Application - IRB-FY21-22-817 Falls Prevention In the Emergency Room: An Integrative Review

Dear Cody Hughes and Cynthia Goodrich,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your project with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your study is not considered human subjects research for the following reason:

(1) It will not involve the collection of identifiable, private information from or about living individuals (45 CFR 46.102).

Please note that this decision only applies to your current application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

Appendix B: CITI Training Certificate

CITI PROGRAM

Completion Date 13-Dec-2021
Expiration Date 12-Dec-2024
Record ID   46344676

This is to certify that:

Cody Hughes

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical & Health Science Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Liberty University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w09f2c80c-28ce-4e5e-b4dc-12756299b087-46344676

Appendix C: Literature Matrix

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Article 1 Goldberg, E. M., Resnik, L., Marks, S. J., & Merchant, R. C. (2019). GAPcare: The geriatric acute and post-acute fall prevention intervention-a pilot investigation of an emergency department-based fall prevention program for community-dwelling older adults. *Pilot and Feasibility Studies, 5(1),* 106-106. https://doi.org/10.1186/s40814-019-0491-9	To identify if the proposed intervention decreased ER length of stay times and decreased potential fall risks	Two hospital's emergency department patients	A single-blinded randomized control trial	This study appropriately addressed the patient denial of having a falls risk	Level 2: Randomized Controlled Trial (RCT)	This study is not meant to observe reduced fall rates	Yes, I would use this article because it introduces a good intervention to raising fall awareness to the patients
Article 3 Muray, M., Bélanger, C. H., & Razmak, J. (2018). Fall prevention strategy in an emergency department.	To document the need for fall prevention implementation in the emergenc	The Morse Scale was used on patients 65-years-old and older, totaling 5,371 who were	One group pre- and post- test quasi-experiment	The results showed that more individuals were identified as	Level 3: Quasi-experimental design	The limitations were only using one ED and that practitioner may	Yes, I plan to use this article for my project because it had a positive correlation with implementing

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
International *Journal of Health Care Quality Assurance, 31(1),* 2-9. https://doi.org/10.1108/IJHCQA-09-2016-0122	y department	identified as high fall risk		being at an increased falls risk		have underreported falls due to misunderstanding of what high fall risk means	fall preventive measures
Article 4 Harper, K. J., Barton, A. D., Arendts, G., Edwards, D. G., Petta, A. C., & Celenza, A. (2017). Controlled clinical trial exploring the impact of a brief intervention for prevention of falls in an emergency department. *Emergency Medicine Australasia, 29(5),* 524-530. https://doi.org/10.1111/1742-6723.12804	Implement an intervention to reduce falls in older patients in the ER	412 patients over the age of 65	Quasi-randomized controlled clinical trial	A falls intervention reduced hospital admissions associated with patient falls	Level 3: Quasi-experimental design	The limitations are that patient were recruited only during business hours and quasi-randomization may result in a bias	Yes I plan to use this article for my project because it correlates an intervention with decreased falls risk
Article 5	To assess whether	All patients in this	Controlled trial (no	365 falls reports	Level 3: quasi	Over the entire	Yes, I would use this

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Castellini, G., Demarchi, A., Lanzoni, M., & Castaldi, S. (2017). Fall prevention: Is the STRATIFY tool the right instrument in italian hospital inpatient? A retrospective observational study. BMC Health Services Research, 17(1), 656-656. https://doi.org/10.1186/s12913-017-2583-7	the STRATIFY falls prevention tool was effective	hospital in Italy were included in the comparison of the STRATIFY falls prevention tool implementation	randomization)	were found in the analysis	experimental design	teaching hospital in Northern Italy	because it identifies a direct correlation with reduced fall rates
Article 6 Lan Hing Ting, K., Dessinger, G., & Voilmy, D. (2020). Examining usage to ensure utility: Co-design of a tool for fall prevention. Ingénierie Et Recherche Biomédicale, 41(5), 286-293. https://doi.org/10.1016/j.irbm.2020.03.001	To evaluate falls risk assessments ease of use in practice	Types of falls prevention methods	Qualitative study	The Balance Quality Tester (BQT) was a good predictor of patient falls	Level 6: descriptive design	This study only reviewed a few methods.	Yes, I would use this for change because it outlines different falls prevention practical uses.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Article 7 Fontenot, J. (2021). Impact of a Fall Prevention Tool Among Community-Dwelling Adults (Order No. 28318237). Available from ProQuest Dissertations & Theses Global. (2500515039). http://ezproxy.liberty.edu/login?qurl=https%3A%2F%2Fwww.proquest.com%2Fdissertations-theses%2Fimpact-fall-prevention-tool-among-community%2Fdocview%2F2500515039%2Fse-2%3Faccountid%3D12085	This study focuses on clinical evaluation to prevent falls	18 to 64 year old patients in a community setting	A quantitative quasi experimental study	Prevention falls in the low and medium fall risk groups improves overall falls prevention as well	Level 3: controlled trial	Only conducted on 18–65-year-olds	Yes, because this study compared a before and after implementation concept
Article 8 Bjarnadottir, R., & Lucero, R. (2019). an innovative data-driven fall prevention	To identify what factors place individuals at an	Individual living in The Villages aged 55-85	Correlation Design	Patient with higher memory scores had less falls and	Level 4: Case control	Small sample size	Yes, this study provides data that identifies increased risk factors

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
communication tool for administrators, nurse managers, and staff nurses. Innovation in Aging, 3(Supplement_1), S332-S332. https://doi.org/10.1093/geroni/igz038.1208	increasing risk for falling			vice versa.			
Article 9 Akubuilo, N. L. (2020). Effectiveness of Telesitter Monitoring System as a Fall Prevention Tool in the Acute Care Setting: A Quality Improvement (Order No. 27742223). Available from ProQuest Dissertations & Theses Global. (2388049016). http://ezproxy.liberty.edu/login?qurl=https%3A%2F%2Fwww.proquest.com%2Fdissertations-theses%2Feffec	This study aims to identify the benefit of having a telesitter to prevent patient falls	The telesitter technology was implemented in a Southern California Hospital	Quasi-experimental design	The results of this study shows a decreased falls rated when the telesitter was implemented	Level 3: controlled trial	It does not differentiate between the tele sitter monitor and a live sitter	Yes, this should be used for change because of the study's positive research finding to preventing falls.

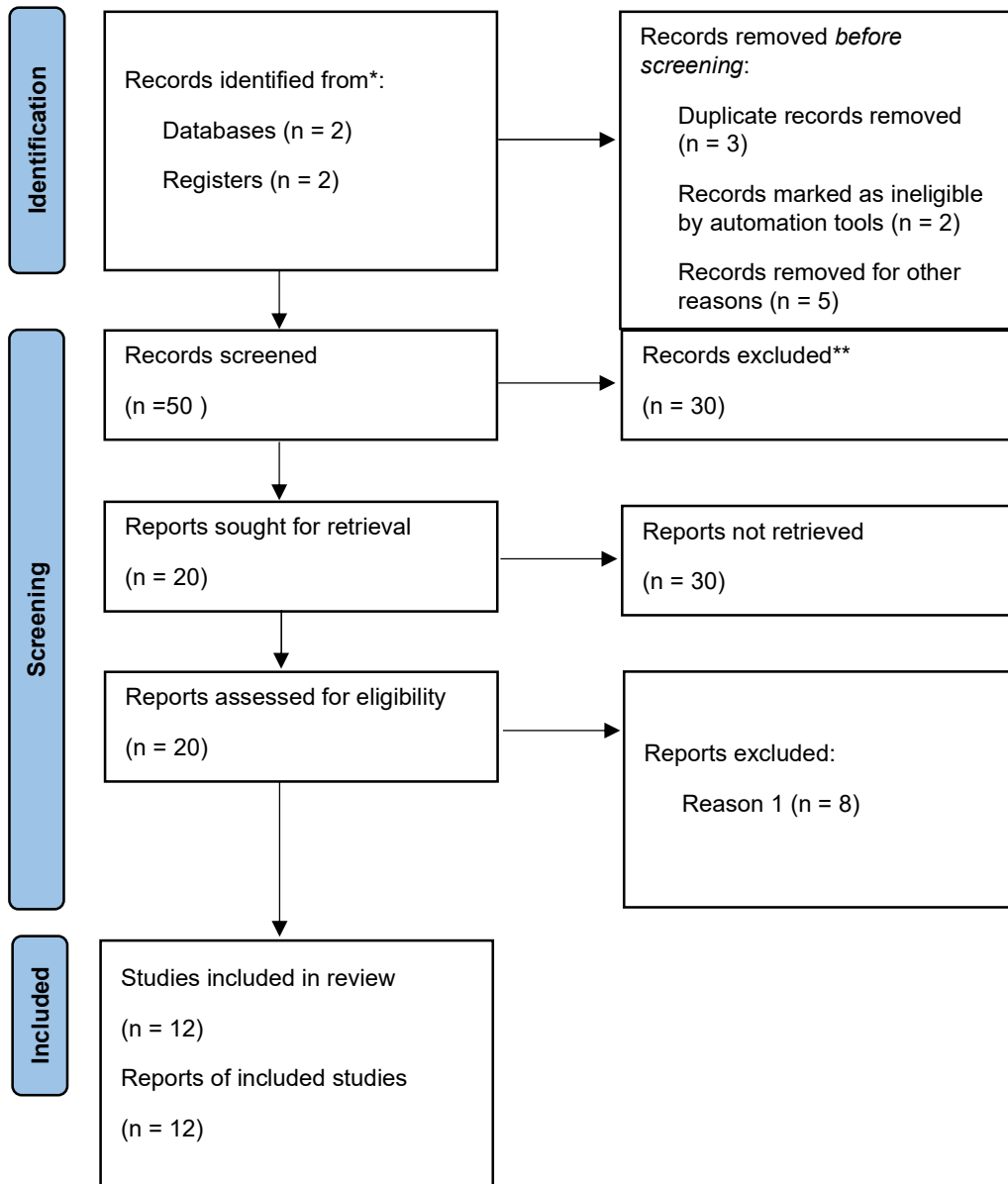| Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
tiveness-telesitter-monitoring-system-as%2Fdocview%2F2388049016%2Fse-2%3Faccountid%3D12085							
Article 10 Danielsen, A., Olofsen, H., & Bremdal, B. A. (2016). Increasing fall risk awareness using wearables: A fall risk awareness protocol. Journal of Biomedical Informatics, 63, 184-194. https://doi.org/10.1016/j.jbi.2016.08.016	Assessing falls prevention with wearable sensors	A systematic review of long term versus immediate falls risks and utilizing wearable monitors	Descriptive design	This study found that short stride length correlated with increasing risk of falls	Level 6: descriptive study	This study negates other contextual factors that could contribute to falls	Yes, because this identified keys aspects that increases the likelihood of patient falls.
Article 11 Flint, J., Morris, M., Nguyen, A. T., Keglovits, M., Somerville, E. K., Hu, Y., & Stark, S. L. (2020). Fall prevention bingo: Effects	To evaluate the impact of falls prevention education	110 community older adults with an average age of 72 across 11 senior centers	Case control or Cohort study	The knowledge of falls prevention increasing after playing	Level 4: correlation design	This study did not show how it directly impacted the fall rates	Yes, I would use this study because it showed an effective way to educate the elderly population of falls prevention

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
of a novel community-based education tool on older adults knowledge and readiness to reduce risks for falls. American Journal of Health Education, 51(6), 406-412. https://doi.org/10.1080/19325037.2020.1822236				the game			

Appendix D: DNP Essentials Table

DNP Essential	Definition of Essential	Description of How Essential Applied
Essential I	Scientific underpinnings for practice	Only scientific evidence was used for this integrative review
Essential II	Organizational and systems for quality improvement and systems thinking	The focus of this integrative review revolved around the goal of improving patient fall occurrences
Essential III	Clinical scholarship and analytic methods for evidence-based practice	Peer reviewed evidence-based sources were utilized for this scholarly project
Essential VII	Clinical prevention and population health	The prevention of patient falls are instrumental to promoting overall population health as well

Appendix E: PRISMA Flow Figure

PRISMA Figure

Identification

Records identified from*:

    Databases (n = 2)

    Registers (n = 2)

Records removed *before screening*:

    Duplicate records removed (n = 3)

    Records marked as ineligible by automation tools (n = 2)

    Records removed for other reasons (n = 5)

Screening

Records screened (n = 50)

Records excluded** (n = 30)

Reports sought for retrieval (n = 20)

Reports not retrieved (n = 30)

Reports assessed for eligibility (n = 20)

Reports excluded:

    Reason 1 (n = 8)

Included

Studies included in review (n = 12)

Reports of included studies (n = 12)

(Page, McKenzie, Bossuyt, Boutron, Hoffmann, Mulrow, et al., 2020).