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Does Implementing an Evidence-Based Fall Risk Scale Decrease Fall Rates?

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Does Implementing an Evidence-Based Fall Risk Scale Decrease Fall Rates

by

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Abstract

In this research facility, the falls risk assessment that was previously used was replaced with an evidenced-based tool, the Morse Falls Scale. Fall rates were analyzed for a five month period after implementation of the new scale, from May 1, 2016 – September 30, 2016, and compared to the same months the previous year to see if fall rates decrease with using the evidenced-based scale. Fall prevention is multi-factorial and begins with an assessment of the patients risk for a fall, and interventions which are personalized for each patient. Fall prevention should include all staff, as anyone can make a difference in preventing falls. In this study, fall rates did start to slightly decrease in the months following implementation of the new scale. Further research is needed to see if the fall rates continued to decline long term.

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CHAPTER I

Introduction

Patient falls have long been an issue for healthcare facilities, and are still today considered an adverse event that healthcare facilities try to avoid. Patient falls have the potential to be devastating to patient outcomes, as well as have a detrimental impact to the financial aspect on the business end. Quigley and White (2013) found the most frequently reported adverse events in the inpatient setting, were falls and falls injuries, with at least 3-20% of inpatients falling at least once during their hospital stay (para. 4). The Joint Commission (TJC) began tracking sentinel events in 1995 through voluntary reporting, so not all cases were reported (Quigley & White, 2013, para. 6). From 1995 through 2012, there were 659 fall-related events reported which resulted in death or permanent loss of function (Quigley & White, 2013, para. 6). As of 2008, the Centers for Medicare and Medicaid Services (CMS) recognized falls as a hospital-acquired condition (HAC), defined as a preventable complication which occurs during hospitalization (Quigley & White, 2013, para. 6). CMS will not cover charges that occur due to a HAC (Quigley & White, 2013, para. 6). Value-based purchasing, links the payment facilities receive to the care they provide, so the number of HACs a facility reports, has a large impact on the payment received (U.S. Department of Health and Human Services, 2007, p. 3).

Background

The research facility is a 207-bed facility. It is a smaller facility in the community, and is considered a level IV trauma center. In acute care, there are two telemetry units, a medical-surgical unit and an orthopedic unit. The facility also has an inpatient rehab

facility, a gerontology-psychology unit, and an intensive care unit. Fall rates in the facility had been increasing for some time, so in October 2015, hospital administrators determined that decreasing fall rates would be a performance improvement (PI) project for 2016. The PI project was given to the "falls collaborative team", which was scheduled monthly for all nurse managers, directors, and hospital administrators. Upon reviewing fall rates and the process of fall risk identification, the consensus of the group was the fall risk assessment did not accurately identify patients at high risk for a fall during hospitalization. The scale being used was created within the corporation, and was used only in these facilities. It was not evidenced-based, but was used for more than 10 years. In November 2015, the corporate office issued an initiative to implement an evidenced-based falls risk assessment, the Morse Falls Scale (MFS). The falls collaborative team decided that the change for this facility would take place on May 1, 2016. This would allow time for revision of the fall prevention policy for the facility. The falls collaborative team continued to meet every month making preparations for the change, and ensuring staff received the proper education and tools to initiate the new scale, and interventions associated with it. With the change of the falls risk assessment tool to the MFS, the team also incorporated individualized interventions, specific to risk factors. This change was made on the acute care units, the inpatient rehab facility, gerontology-psychology, and the intensive care units. After the change, nurse managers and hospital administrators frequently ensure staff has the tools and education needed to continue the new process.

Scales

Until this change to the MFS, most patients fell into the same category for fall risk, with the same interventions used for all patients. Consequently, a completely oriented patient with no gait deficits had the same fall risk care plan as a confused patient, or one who needed maximum assistance to the restroom. The previously used scale factored age, medications, assistive devices, and intravenous access. The scale ranged from zero to five points depending on the patient's status. One of the major issues found was, regardless of risk factors, a majority of patients fell into the high risk category. Although a majority of patients were categorized as high risk, the interventions were the same for all patients. With no variability in patient assessments and interventions being repetitive, the staff became complacent with fall prevention measures. Whereas with the MFS, age is not a factor and a patient's mental status and ambulatory status are taken into account. The MFS identifies fall history, secondary diagnoses, ambulatory aids, intravenous therapy, gait, and mental status as factors (Watson, Salmoni, & Zecevic, 2016, p. 34). The MFS ranges from zero to 135, with a score of 50 or higher being high risk.

Morse Falls Scale

Morse, Black, Oberle, and Donahue (1989) completed a study to test the validity of the MFS and showed 90.7% of patients who fell were identified by the scale as high risk (p. 85). The MFS was found to be sensitive to changes in patient conditions, as evidenced by the variability in daily scores (Morse et al., 1989, p. 85). "Sensitivity and specificity are important criteria for judging the usefulness of a diagnostic tool "(Faller, 2005, p. 46). Watson et al. (2016) completed a study to assess the predictive validity of

the MFS by determining the sensitivity and specificity of the tool on a medical unit in a large teaching facility (p. 33). The study concluded the sensitivity was 98% on the MFS when using a cut-off point of 25 on the scale (Watson et al., 2016, p. 37). The main difference from the old scale is that age and medications are not factored in with the MFS.

Significance

Healthcare facilities are constantly trying to improve assessment and prevention processes to decrease fall rates. Of course the ideal goal rate is zero falls because one fall can cost a facility a large amount of funds, and possibly cause a negative outcome for a patient. Facilities are continuously looking at evidence-based practices which may help to decrease fall rates. The facility's fall rates per admission the year 2016 have been as follows: January fall rates were 4.6 per 1,000 patient days, February was 8, March was 5.4, and April was 2.9. The national benchmark for fall rates is 3.20% per 1,000 patient days in 2013 (National Database of Nursing Quality Indicators [NDNQI], 2013). The high amount of falls during this time frame led the facility to initiate a new falls risk assessment tool. There had been one fall with injury in 2016, which was in January on an inpatient acute care unit. Ang, Mordiffi, &Wong (2011) stated the most common approach to fall reduction in healthcare facilities was implementing universal multiple interventions, which include patient assessment and risk identification (p. 1984). This study will evaluate if the implementation of the MFS risk assessment tool decreased falls, by comparing falls data before and after implementation of the tool.

Purpose

When a facility makes any change, especially related to something as important as patient fall rates, the facility must examine if the change helped the issue and to what extent. With falls being such a huge focus in healthcare, every effort set forth must be evaluated for its effectiveness. The healthcare facility can then continue to improve fall prevention efforts. In this study, data will be collected and analyzed to assess if implementing the MFS risk assessment tool had an impact on fall reduction, as evidenced by the facilities fall rates.

Theoretical or Conceptual Framework

For any fall prevention efforts to be effective, many factors must come together. The nursing process is utilized to identify the high risk for patient falls, and those with risk factors which could be modified for fall prevention. An accurate assessment must be done, and the nursing care plan must state specific individualized interventions based on the facts of each patient's status. Then, the nursing care plan must be followed in order for fall prevention efforts to be effective.

In this research study, Imagine King's Theory of Goal Attainment and the nursing process provide the basis for a successful fall prevention program. The nurse must assess the patient's risk for falling while in the facility and then, based on the patient's fall risk category, put the appropriate interventions into place. Once identified, there are some risk factors which can be modified based on the assessment, such as environmental issues or ambulation needs. Some cannot be modified, such as age or functional disabilities, and would need special attention. Some interventions the nurse can initiate, and may be a part of the everyday routine. Other interventions rely on patient adherence to the prescribed

measure. The nurse must communicate effectively in order to get the patient engaged in reaching the goal. King (2011) stated the nurse and patient communicate and make decisions about how to obtain goals (p. 110). By using these measures, it could help the patient to better adhere to the steps required to be successful. In the end, the goal can be obtained with effective nursing care.

King's conceptual system was based on the use of three interacting systems, which are the personal systems, interpersonal systems, and social systems (King, 2011, p. 109). A majority of this theory, as well as fall prevention, relies on the interpersonal system, which is essentially "formed by human beings interacting" (George, 2011, p. 237). Communication occurs when people exchange information (George, 2011, p. 237), such as between a nurse and the patient. (Figure 1).

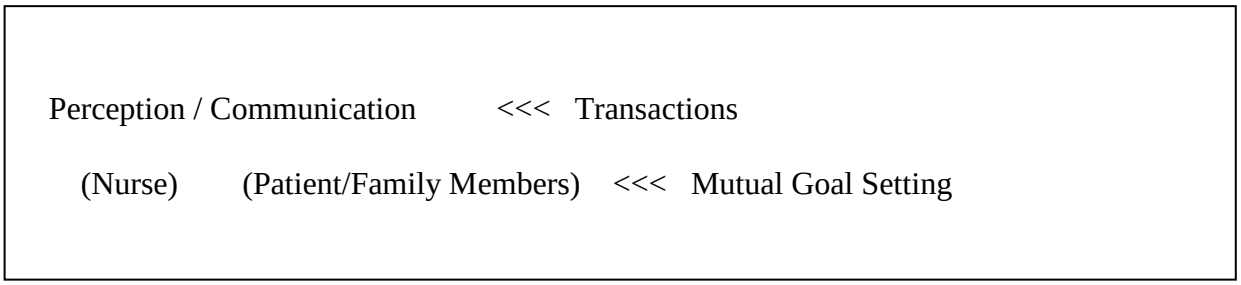

Figure 1. Nurse/Patient Interactions (George, 2011, p. 242)

In this research, King's conceptual system is used in developing the fall prevention plan with the patient. The nurse must communicate what the plan should entail and how important each aspect of the plan is in keeping the patient safe. The patient should be involved in the fall prevention process, to ensure they feel in control of the mutual healthcare goals set in place.

Thesis Question or Hypothesis

When looking at fall prevention, the assessment is the starting point of any good fall prevention program. Healthcare facilities must ensure they have the best fall risk assessment tool in place to correctly identify the patients at risk for falls upon admission. Also, an ongoing assessment will help to identify the patient's risk for falling if there is a change in the patient's status for any reason. Any interventions put into place for fall prevention are done so based upon the falls risk assessment. This research study will determine if the implementation of the MFS assessment tool decreased falls, by comparing falls data from before and after implementation of the tool.

CHAPTER II

Literature Review

Whereas inpatient falls are a risk to patient outcomes and cost for healthcare facilities, it is very important for facilities to have an interdisciplinary falls team which continuously assesses and improves fall prevention strategies. During the admission process the facility should have a reliable tool to accurately assess a patient's risk for falling, and then the healthcare team can initiate interventions appropriate for each specific patient who is a fall risk, based on the individualized care plan. With the change in the research facility's falls risk assessment tool to the MFS, the purpose of this study is to evaluate if the tool was effective in reducing fall rates. The study will also look at age category and class of drugs taken prior to a fall, to determine if these risk factors could be used in the future to better determine falls risk.

The literature review was conducted in order to relay to the reader the background of falls in healthcare facilities, how facilities are affected by falls, and provide knowledge on the MFS. The key words used in the search were falls in healthcare, inpatient falls, MFS, cost related to falls, and fall interventions. The databases used for this collection were Medline, CINAHL, CINAHL Plus, Academic Search Complete, Business Source Complete, and PsycINFO. Limitations placed on the search were that it was a scholarly, peer reviewed journal, and with a publication date in the last 10 years, so the information is current.

Impact of Patient Falls in Healthcare Facilities

Falls are one of the largest issues healthcare facilities face, and have been for some time. Falls are considered an adverse event that cost the facility money, extend the

patient's length of stay (LOS,) and are continuously viewed as a patient safety concern. Event reporting systems record a different "spectrum of events" (Paradis, Stewart, Bayley, Brown, & Bennett, 2009, p. 53) than the medical record. Event reports were analyzed from three major hospitals for a two-year period, and placed into one of five categories, with one of them being falls (Paradis et al., 2009, p. 54). Also, each was assigned an outcome number used to describe the potential effect the event had on the patient (Paradis et al., 2009, p. 54). It was analyzed how each event impacted the LOS and the cost on the facility (Paradis et al., 2009, p. 55). Cost increased 17% and LOS increased by 22%, just for having any type of event during hospitalization (Paradis et al., 2009, p. 56). Fall events showed the greatest increase in LOS with a 34% increase (Paradis et al., 2009, p. 56). When cost was analyzed, falls came in third behind medication events and treatment events, and cost the facilities $900,000 yearly on average (Paradis et al., 2009, p. 56).

With fall rates increasing, healthcare facilities must examine the impact each fall has on the patient's LOS, and overall cost. A longer LOS can have additional detrimental effects on a patient. A longer LOS puts the patient at risk for other issues such as nosocomial infections, falls, and functional decline (Dunne, Gaboury, & Ashe, 2014, p. 396). Dunne et al. (2014) completed a study to see if a fall increased a patient's LOS by evaluating patients who were very similar in age, disease process, and gender to compare the LOS (p. 397). They examined and compared similar patients who had a fall, and those who did not (Dunne et al., 2014, p. 397). The secondary purpose of the study was to look at the diagnosis to see if there was any relationship in regards to the patients who had fallen while inpatient (Dunne et al., 2014, p. 397). For this study, the researcher

chose a specific time frame to target from a large teaching hospital and completed an observational study (Dunne et al., 2014, p. 397). This study showed that inpatient falls strongly correlate with a longer LOS, so to decrease cost in facilities, all falls must be reviewed collaboratively and not just those with a negative outcome (Dunne et al., 2014, p. 399). The diagnosis with the most number of falls in this study was dementia (Dunne et al., 2014, p. 399).

Assessing Patterns of Falls Useful in Fall Prevention

With falls being such a huge issue in healthcare, healthcare facilities should address where they stand on fall prevention, and work to decrease fall rates. Weil (2015) examined the fall rates for many facilities over the last 60 years, if there was a pattern with the incidents reported, and what still needed to be accomplished in regards to fall prevention (p. 342). Over the recorded time span for the study, there was an increase of an estimated 46% in inpatient falls per 1000 patient days, which could have been due to the patient's acuity levels rising and more accurate reporting (Weil, 2015, p. 343). The data for the survey was reviewed from reporting facilities at random. The authors concluded more falls happened with males, more falls happened during the night shift hours, and more were with patients which had some form of cognitive diagnosis (Weil, 2015, p. 343). It was also found, if a patient had a recent previous fall, they were very likely to have another incident (Weil, 2015, p. 343). The study also showed in facilities with a formed falls or patient safety committee, rates decreased (Weil, 2015, p. 344).

As previously mentioned, it has been thought that the acuity of the patient could be a factor in fall rates. McAlister (2009) compared fall rates to see if there was an increase, as the severity of a patient's illness increased using the All Patient Refined

Diagnosis Related Groups (APR DRG) as measurement (p. 119). In 2007, CMS examined patient data of those with Medicare who had fallen and the money spent on these events (McAlister, 2009, p. 119). The research took place using data from a medical center, where the patient's medical records were abstracted from patients 18 years and older (McAlister, 2009, p. 120). The results were that patients with APR DRGs above a certain number, are at a higher risk for falling while in the hospital (McAlister, 2009, p. 123).

There is continuing focus on fall prevention in healthcare facilities. There is mounting research on fall prevention programs and risk assessments, but very little on how to prevent or limit injuries from falls (Anderson, Dolansky, Damato, & Jones, 2015, p. 269). The purpose of Anderson et al. (2015) study was to evaluate if there were any intrinsic or extrinsic factors found to be common in a majority of the falls which could be used in the future as a predictor of a fall in the inpatient setting. This was a retrospective study from an 863-bed facility during a two-year span (Anderson et al., 2015, p. 274). They acquired the fall risk score from the medical record and all other information came from the event reporting system (Anderson et al., 2015, p. 275). There were five categories of severity related to falls, with the lowest level being "none" and the highest being "death" (Anderson et al., 2015, p. 275). From the falls in the study, 8% resulted in serious injury, and the two factors that statistically showed the most significance were being age 64 and older, and being male (Anderson et al., 2015, p. 276).

Fall Prevention Programs

With falls being such a prevalent concern in the healthcare field, there are many studies which look at fall prevention strategies and address the efficiency of different

factors. Not only is CMS looking at patient falls and penalizing facilities through decreased reimbursement, in 2007 TJC stated healthcare facilities must reduce harm from falls (Tzeng & Yin, 2008, p. 179). Nurses are at the bedside of the patient and tend to have more impact on fall prevention when the strategies and interventions are reviewed and accepted by the nursing staff (Tzeng & Yin, 2008, p. 186). Tzeng and Yin (2008) completed a qualitative study to look at nurses' perceptions of solutions to prevent falls in an effort to promote understanding of these issues and prevent patient falls, and the solutions identified were compared to TJC guidelines (p. 180). They used a semi-structured interview design and completed interviews with the nurses on an acute adult medical unit (Tzeng & Yin, 2008, p. 180). Twenty-four solutions were identified, and of those 15 were related to unsafe work environments, and five were related to inadequate caregiver communication (Tzeng & Yin, 2008, p. 185).

Nurses are a large part of fall prevention, but the overall task is multifactorial and needs to be multidisciplinary, from front line staff to administration, in order to be effective. Fall prevention starts with the assessment of the patient's risk for a fall, all interventions put into place based on the assessment, as well as interventions that would keep the patient safe should a fall occur. Hempel et al. (2013) hypothesized that if an effective fall prevention plan was chosen, and there was a tight monitoring system to implement and ensure compliance, this would ensure success of the program (p. 484). Their study was a meta-analysis to assess the effectiveness of the interventions (Hempel et al., 2013, p. 484). Several falls risk assessment tools were assessed and the MFS was the "most commonly used published tool" (Hempel et al., 2013, p. 489). As the studies were multifactorial, not one intervention could be narrowed down as being the most

successful for fall prevention, although great insights were gained from the strategies and interventions used (Hempel et al., 2013, p. 493).

For fall prevention efforts to be successful, information must be gathered as to why patients fall, and what they were doing at the time of a fall, in order to try and prevent a fall in the future. Rheaume and Fruh (2015) completed a study to look at the causes of falls in older adults by performing case reviews from a large medical facility, and only the falls which resulted in serious injury or death were reviewed (p. 318). The two things that stood out among the charts reviewed, were not all falls were witnessed, and all falls occurred while the patient was attempting to either use the bedside commode alone or ambulate to the restroom alone (Rheaume & Fruh, 2015, p. 319). Some of these patients did not call out for assistance, whereas some did, but did not wait for assistance to arrive (Rheaume & Fruh, 2015, p. 324). Therefore, fall prevention measures should include correctly identifying a fall risk, supervising the patient closely, and responding quickly to any requests (Rheaume & Fruh, 2015, p. 324).

Interventions must be individualized for every patient. All patients are unique, as are their needs. Trepanier and Hilsenbeck (2014) completed a study which was a larger, multi-site study, as it included a healthcare system that owned and operated 50 hospitals in 11 states (p. 138). The purpose was to decrease the number of falls with injury by developing a standardized fall prevention program for the adult patients in the facilities where the research took place (Trepanier & Hilsenbeck, 2014, p. 138). After much review of the evidence and seeking expert consultation, the team developed the facilities' fall prevention program, which included a very detailed policy and procedure that incorporated things from identification of falls risk patients, to tools used when a fall

occurred (Trepanier & Hilsenbeck, 2014, p. 138). If a patient was identified as a fall risk, the team developed an individualized care plan for that patient, so not all interventions were the same for every patient (Trepanier & Hilsenbeck, 2014, p. 138). After four months of education, the program took effect. After 12 months from the start date, there was a 41% decrease noted in anticipated falls with injury, with a total decrease in the acute care setting of 58.3% over two years after implementation (Trepanier & Hilsenbeck, 2014, p. 138). The critical components which were attributed to this program's success were initial fall risk screening to include medication regimen, individualized care plan, discussion during handoff communication, hourly rounding, continuous observation for those which met criteria, and education for the staff, family and patient (Trepanier & Hilsenbeck, 2014, p. 139).

Patient's Factors that Affect Fall Prevention

With so much work being done on fall prevention, and patient education being one of the measures used, the patient's perception of this whole process has to be considered. For example, the patient may have a different view of their own risk for falling, than what the healthcare providers have concluded. Getting patients engaged in fall prevention strategies is a large part of fall prevention. Twibell, Seila, Sproat, and Coers (2015) performed a study to look at perceptions that could impact a patient's engagement in fall prevention efforts, to examine the differences in the patient's perception of his/her likelihood for falling compared to the nurses' perception, and to look at predictive factors for inpatient falls (p. 79). The sample was taken from a large facility in Indiana and the study instrument was a survey of fall-related perceptions, with four scales and three single items, which was completed after the participants were

determined to have no cognitive impairment (Twibell et al., 2015, p. 80). Almost half (48%) of the participants reported they could get out of bed without help and would not fall, and 81% reported they did not need help reaching for anything on their bedside tables (Twibell et al., 2015, p. 81). Although 75% reported they would call for assistance to go the bathroom (Twibell et al., 2015, p. 81). The activity where the patients showed the most fear in the study, was ambulating outside the hospital room (Twibell et al., 2015, p. 81).

For patients to be involved in any fall prevention efforts, the facility must have interventions to facilitate patient engagement in each specific fall prevention plan. The teach-back method of patient education has been shown to be effective as a patient-centered fall prevention strategy. Education should be well designed, and the facility must get patients feedback on their perception of how effective the measures were and their understanding (Tzeng & Yin, 2015, p. 328). Healthcare providers should not only instruct the patient what they should do, but get them engaged and assess their willingness to participate in the fall prevention measures (Tzeng & Yin, 2015, p. 328). Empowering patients to be engaged in their care and fall prevention measures could be the key to any great fall prevention program. For nurses to be successful with this, they must first have an understanding of the concept of patient centeredness (Tzeng & Yin, 2015, p. 333).

The MFS

Sensitivity and specificity are measurements used to determine the validity of falls risk assessment tools, and can be done internally in each facility to test the validity specific to an organization (Feil & Gardner, 2012, p. 73). Morse, R., Morse, J., and

Tylko, (1989) investigated the significant variables which differentiated patients, both those with falls and those without, in a randomly selected patient sample (p. 367). A weight was established for each variable to develop a scale which was tested numerous times on a computer simulated patient population (Morse, R. et al., 1989, p. 367). Then, to test the validity even further, the samples were randomly split and tested again (Morse, R. et al., 1989, p. 372). After development and use, the sensitivity for the MFS was 78% and the specificity was 83% (Morse, R. et al., 1989, p. 374). The patient's score should be used as a diagnostic indicator, to examine the patient and modifiable risk factors for the purpose of reducing the score, and in turn the fall risk (Morse, R. et al., 1989, p. 374).

The MFS has been researched with the long term care (LTC) population as well. In LTC, the issue had been patient's scores left many in the high risk category, so this research study added five additional fall risk groups with the low risk and high risk, according to their patient population (Bailey, Rietze, Moroso, & Szilva, 2011, p. 265). The study wanted to determine if these new categories could further assist healthcare providers with fall prevention (Bailey et al., 2011, p. 266). The facility where this research took place was a 288 resident LTC facility, and the researchers reviewed 2,475 fall incidents and established that 90% of the residents who fell were rated as high risk (Bailey et al., 2011, p. 266). Most patients who fell while in the facility, had a score on the MFS from 90-105, and only a small amount had a score from 110-140 (Bailey et al., 2011, p. 266). With this information, five new categories were incorporated from very low risk to very high risk. Those with the highest scores were actually the very low risk category, as they were mainly immobile patients who would not try to get out of bed (Bailey et al., 2011, p. 266).

Other Risk Assessment Tools

As evidenced by many falls prevention studies, a valid and reliable risk assessment tool puts the process into motion. The St. Thomas Risk Assessment Tool in Falling Elderly Inpatients (STRATIFY) and the Hendrich II Fall Risk Assessment Model (HFRM) are some of the tools often compared with the MFS. Billington, Fahey, and Galvin (2012) examined the validity of the STATIFY tool and its accuracy when used in a variety of clinical settings, to include acute care inpatients, rehabilitation inpatients, and nursing home inpatients (p. 2). Data was collected and analyzed in this study to conclude the tool's diagnostic accuracy is limited at a cutoff point ≥ 2 on the scale and should not be used as the sole measurement of risk for falling in healthcare facilities (Billington et al., 2012, p. 3).

As mentioned, the HFRM is another assessment tool comparable to other acute inpatient falls risk assessment tools. A study by Swartzell, Fulton, and Friesth (2013) examined the relationship between patient scores on the HFRM and fall occurrences in an acute care setting, and to narrow down the study, they looked at those with a diagnosis of diabetes, stroke and heart failure (p. 183). A random sample was used from a level 1 trauma hospital, and charts were reviewed in depth (Swartzell et al., 2013, p. 184). There was a significant relationship between the HFRM and patients with the diagnosis of diabetes but not heart failure (Swartzell et al., 2013, p. 185). They found some were omitting the get-up-and-go test, which is a test to score how well the patient gets up from a seated position, or completing the test incorrectly, and this test ties into the total score of the HFRM (Swartzell et al., 2013, p. 185). The HFRM did not identify 44% of patients who should have fallen into the high risk category. Any fall risk assessment tool

should be used in conjunction with individualized interventions (Swartzell et al., 2013, p. 185).

Fall Prevention Interventions

Fall risk assessment tools are the start of the fall prevention process, but the correct interventions must be initiated for any fall prevention efforts to be effective. With a total of 75 possible interventions, this study examined the most effective interventions for fall prevention, based on nurse's perceptions in regards to each specialty area (Tzeng & Yin, 2014, p. 11). Five hospitals were included and 10 specialty areas (Tzeng & Yin, 2014, p. 11). There was one common intervention among all 10 specialty areas, which was to keep the hospital bed brakes locked. Keeping the call light in reach, having non-slip footwear, and using a sitter were the three common interventions used more often in the medical-surgical and telemetry areas (Tzeng & Yin, 2014, p. 16). Using individualized interventions to cater to the patient's needs is essential, and will lead to better outcomes (Tzeng & Yin, 2014, p. 17).

In looking at interventions, a facility in New Jersey developed an interdisciplinary falls team. The fall event reports were reviewed for the last year to look for a trend, which revealed many falls occurred in some context of toileting (Carroll, Pappola, & McNicoll, (2009, p. 281). The team compiled interventions appropriate for all fall risk patients and made it easy for staff to use individualized interventions on the patient's specific care plan (Carroll et al., 2009, p. 281). Initially fall rates rose, but over a three-month period they began to decline (Carroll et al., 2009, p. 282). From that point, falls rates continued to stay slightly down from previous numbers, and falls with injury moved below the national benchmark (Carroll et al., 2009, p. 282). When falls were reassessed,

toileting continued to be an area of concern and would be the next project for the facility (Carroll et al., 2009, p. 282).

Undoubtedly, the fall prevention efforts that take place after an accurate fall risk assessment are vital to the success of any fall prevention program. Feil and Gardner (2012) completed a large, multi-site study which examined fall prevention efforts in facilities in Pennsylvania (p. 73). During this study, 32,802 falls were reported and the falls risk assessment scores were reviewed to ensure they were completed correctly (Feil & Gardner, 2012, p. 74). They also reviewed charts of those who fell into the high risk category to ensure all measures were in place, documented appropriately, and were specific for the patient. Of all the patients who fell, 82.5% had a completed risk assessment and were identified as a fall risk, and 65.2% had the appropriate prevention strategies in place (Feil & Gardner, 2012, p. 75).

CHAPTER III

Methodology

The purpose of this study was to determine if fall rates decreased in the research healthcare facility, after the implementation of the MFS. Prior to the MFS being utilized, the fall risk assessment tool was not evidence-based, so by switching to the MFS the facility hypothesized that the change would decrease fall rates. Fall rates for five months after implementation of the MFS, will be compared with fall rates for the same time period the previous year prior, to see if the switch in the fall risk assessment tool was beneficial, as evidenced by fall rates.

Study Design

This is a quantitative research study and will follow a correlational study design which will compare fall rates from two separate time frames. Data from May 1, 2016 to September 30, 2016 will be analyzed and compared with data from the same time period in 2015 to assess if the switch to the MFS decreased fall rates

Setting and Sample

This research will be conducted in a 207-bed facility on the acute care units. There are two telemetry units, one medical-surgical unit and one orthopedic unit. Data will be extracted by the researcher from the Event Reporting System (ERS). The time frames reviewed will be five months after the implementation of the MFS, compared to the same months in 2015, which was prior to implementation of the MFS. The sample includes no PHI. The number of falls will be extracted from the facilities ERS. All ERS reports related to falls will be reviewed to ensure they meet criteria: (1) the fall occurred

on one of the acute care units, (2) it was an unintentional fall, witnessed or not, (3) it was in the time frame being studied, and (4) the patient was 18 years old or greater.

Design for Data Collection

This was a retrospective review of data. The research nurse pulled the data from the ERS and review the event reports related to fall events. No protected health information (PHI) was used. The researcher collected the raw number of falls from each time frame that was compared to see if the hypothesis was correct, that changing the falls risk assessment tool to the evidence-based MFS, decreased fall rates. The time frames were May 1, 2016 to September 30, 2016 and were compared with data from the same time period for 2015. All inclusion criteria must be met for the fall event to be counted in the data. The data was initially collected using the facility's ERS. The researcher used the data collected to compare fall rates per 1000 patient days on the acute care units for the separate time periods.

Protection of Human Subjects

No patient data was used for this study. There were no foreseeable risks involved.

Data Analysis

All data was pulled from the facilities ERS based on the inclusion criteria discussed. The data was inputted into the ERS by the nurses and nurse managers on the unit after a fall event occurred, and the nurse completing the research collected the data from the ERS. The data for this study were inputted into SPSS by the nurse researcher. All statistical analysis carried out were used to compare data from the time frames to assess the effectiveness of the MFS in the research facility.

CHAPTER IV

Results

The purpose of this research study was to examine if the implementation of the MFS, reduced falls rates in the research facility when fall rates were reviewed for a period before and after implementation. The dates reviewed were May 1, 2015 – September 30, 2015 which was prior to implementation of the MFS, and May 1, 2016 – September 30, 2016, after implementation. According to the Agency for Healthcare Research and Quality (AHRQ), (2013), the best way to record falls are to calculate the falls rates, as this takes into account the number of falls, with the census of the facility at that time. When a patient fall is entered into the ERS, all of the information needed to obtain the fall rates is collected. Fall rates are reported monthly. To obtain the fall rate, the number of falls per month is divided by the number of occupied beds per month, and then, the result is multiplied by 1,000 (AHRQ, 2013). This formula to establish fall rates with the number of falls and the patient census being factored in, will calculate the fall rate, which is reported as a whole number with two decimals places to follow. Fall rates were extracted from May 1, 2015 to September 30, 2015 when the previously used scale was in place, as well as May 1, 2016 to September 30, 2016 after the MFS was implemented. The previously used falls risk assessment scale was not evidence-based and most all patients were treated the same, regardless of their individualized needs. Fall rates were compared to evaluate if the implementation of the MFS had an impact on fall rates in the research facility. Falls rates for five months prior to the MFS were compared with the same five months after the MFS was implemented to evaluate if the new fall scale had an impact on falls rates.

Sample Characteristics

The final sample size analyzed in this study was 21 falls for the period of May 1, 2015 – September 30, 2015, which was prior to the implementation of the MFS, and 18 for the same period in 2016, after the MFS was implemented. This is a total of 39 patient falls. The number of falls for May, 2015 – September, 2015 and May, 2016 – September 2016, was used with the patient number of inpatient days for the correlating month, to calculate the fall rate for each month. The fall rates for 2015 prior to the MFS were as follows: May was 4.81, June was 4.79, July was 5.45, August was 9.23 and September was 4.56. After implementation of the MFS, 2016, the fall rates were as follows: May was 5.78, June was 7.64, July was 7.58, August was 3.39 and September was 4.62.

Major Findings

When descriptive statistics were used to acquire the means of the fall rates for the months prior to MFS implementation and the same months after MFS implementation, there was only a slight variation, with the mean for months prior being only 0.034 less than after implementation, as seen in Table 1. Again, the fall rates are calculated by dividing the number of falls per month by the number of occupied beds per month, and then the result is multiplied by 1000 (AHRQ, 2013). In Table 1, the pre-MFS, is the fall rates for each month, May – September, for 2015 which is pre-MFS implementation, and 2016 which is post-MFS implementation, averaged together to get the mean.

Table 1

Means of Pre and Post MFS

Descriptive Statistics			
	N	Mean	Std. Deviation
Pre MS months	5	5.7680	1.96342
Post MFS months	5	5.8020	1.85438
Valid N (list wise)	5		

Figure 2 maps the fall rates for the months prior to the MFS, and Figure 3 shows the months after implementation of the MFS.

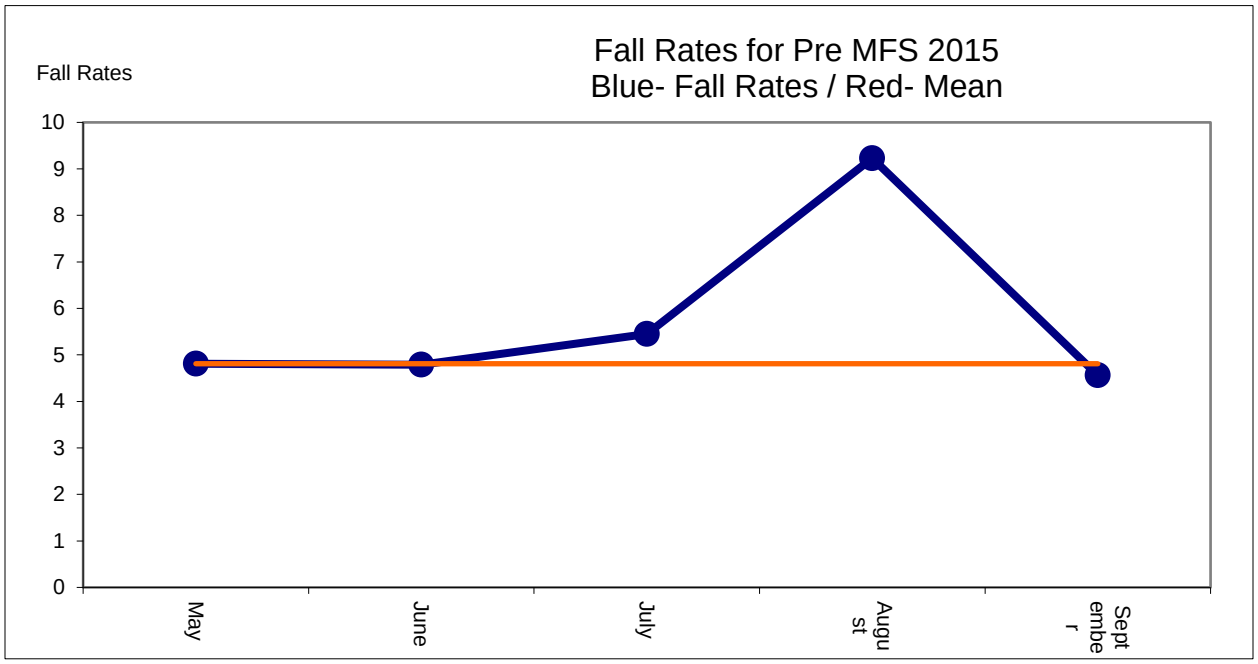

Figure 2. Fall Rates for Months Pre-MFS (2015)

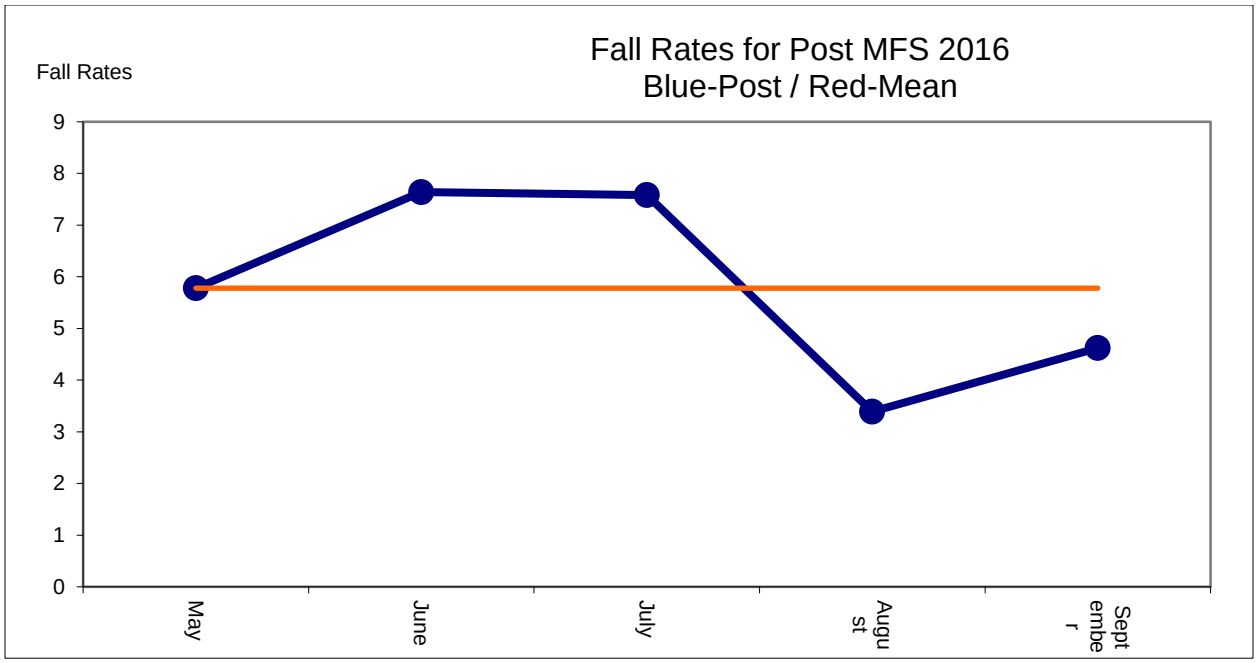

Figure 3. Fall Rates for Months Post-MFS (2016)

Figure 4 shows the fall rates for May – September of both years on the same graph.

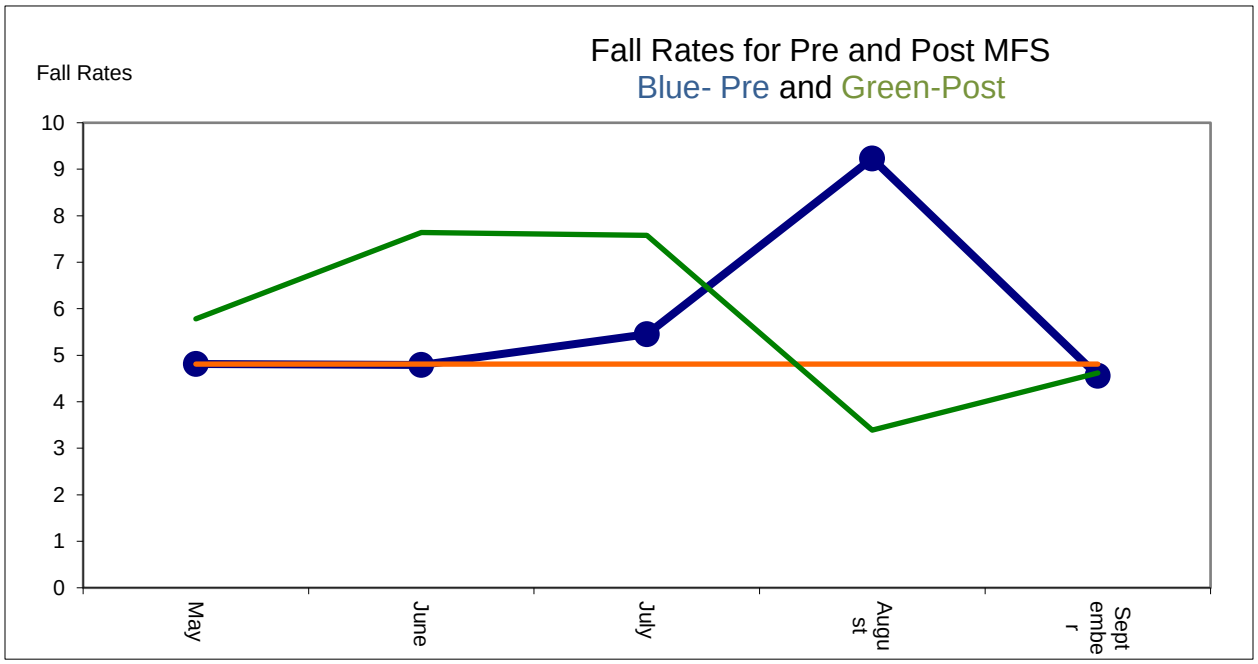

Figure 4. Fall Rates for Both Pre-MFS and Post-MFS

So, with Figure 4 looking at each month, in August, the fall rate decreased significantly and evened back out to pre-MFS numbers from 2015 in September, although the post-MFS fall rates started higher than the pre-implementation rates for May, June and July.

CHAPTER V

Discussion

The mean, or the average, of the fall rates for the months prior to implementation, which are May 1, 2015 – September 30, 2015 is slightly lower than the same months for 2016, after implementation. This does not show a significant difference in the period analyzed prior to implementation of the MFS, from the period analyzed after the MFS was implemented. Although, when looking at each month individually, fall rates were down from pre-implementation rates for August. The fall rate for August 2016, was 5.84 lower than August 2015, and then evened back out to the same as the pre-MFS fall rate for September. Also, there were no additional interventions for falls in place in the month of August, where there was a significant decrease in falls. Therefore there are no further implications for practice regarding fall prevention. More data is needed to determine if the fall rates continued to decrease in the following months.

Implications for Practice

Education was completed with all staff regarding the new falls risk assessment tool and interventions for each risk category. There was an adjustment period for the nurses to become familiar with the new falls risk assessment tool after implementation, and the interventions that coincided with each level of risk for a fall. This could be why fall rates did not immediately decline. This study does lay the foundation for fall prevention based on an evidence-based fall prevention tool, and increasing interventions used. All staff should be involved in fall prevention, and interventions within the patient's immediate environment should be individualized for patient safety. Further

research would be needed to evaluate if fall rates declined long term, after the first five month period evaluated in this study.

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