Quality improvement paper falls prevention in hospital and mental health unit the...

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Introduction

Nurses are responsible for delivering quality health care services that are acceptable to the patients. Since patient expectations and standards change frequently, quality improvement is an important part of nursing practice. The aim of quality improvement (QI) is to improve service level and promote patient outcomes. This paper is a quality improvement project that focuses on preventing falls in the mental health unit. Falls are an inherent risk for psychiatric patients such especially those with eating disorders. The objective of this paper is to improve quality of health care services by reducing falls in the mental health unit among patient with eating disorders.

The Need for the QI Project

Falls are an inherent risk among patients with eating disorders. Anorexia nervosa causes negative changes in blood sugar regulation, electrolytic balance, peak bone density and muscle strengths which lead to dizziness and an unsteady gait increasing the risk of falls (Faje et al., 2014). Falls can lead to injury, distress, loss of self-confidence, prolonged hospital stay, or death (Jones, Morgan & Arcelus, 2013). Therefore, fall prevention is an important aspect in improving the quality of services offered in the mental health unit. However, the challenges in the mental health unit make it impossible to employ the fall prevention strategies used in other nursing units. For instance, walking canes used to reduce falls in the geriatric unit are not suitable in the mental health unit since the patients may use the devices to inflict self harm or harm others. Psychiatric patients are encouraged to be independent in self-care activities and interventions such

as exit alarms and close supervision which limit mobility have adverse psychological and physical effects on the patients. The QI project would improve patient outcomes by preventing falls and promoting functional recovery among patients with anorexia nervosa.

Evidence supporting QI in Falls Prevention

Falls are a cause of hospital acquired injuries and contribute to poor patient outcomes. Preventing falls improves patient safety; reduce the cost of health care and hospital stay. Fall prevention has been widely studied among geriatric patients who are at a greater risk of falling and sustaining injuries from the falls compared to younger people. For instance, Dykes et al., 2010 conducted a randomized clinical trial to test strategies for preventing falls in acute care hospitals. Psychiatric patients are also at risk of falling due to the physical and psychological effects of the illness and the side effects profiles of psychiatric medications. Fisher & Schenkman, (2012) identify lack of robust fall prevention strategies as a challenge in promoting functional recovery in patients with anorexia nervosa. Since fall prevention strategies have been effective in other nursing units, similar strategies customized to the special needs of the mental health unit can be used to promote patient safety by preventing falls especially among patients with eating disorders. The need for as structured falls prevention strategy is was evidence in the mental health unit due to the high incidents of falls. In the 15 months before the QI project began, there were 13. 2 falls per 1000 patient hospital days in the mental health unit. Of this falls, 42. 5% occurred in patients suffering from eating disorders especially anorexia nervosa. Before implementing the

QI project, falls prevention in the mental health care unit was guided by the nurse's preexisting knowledge and assessment of the risk of fall. This led to lower quality care and a greater risk of falls among patients in the unit since nurses did not have clear guidelines to address falls.

Variables and Factors Influencing the QI Process

There are many factors that affect falls in the mental health unit including patient specific factors and environmental factors. The patient's specific factors in a mental health unit that promote falls include illness symptoms such as dizziness and disease pathophysiology such as reduction in peak bone density and muscle strength due to anorexia nervosa. The environmental factors that promote falls in the mental health unit include in appropriate patient clothing and shoes, lack of seats in some areas where patients converge, slippery floors, and lack of hospital policies to address falls. Identifying the variables that affect falls was conducted during the planning stage of the QI process. A committee was set up to conduct a root cause analysis of each fall in the mental health unit. The committee identified the cause of the fall and the opportunities to improve safety at the individual patient, unit and system level.

The stakeholders in the QI system include hospital administration, nurses, patients and their family. A reduction in the risk of falls improves the quality of care enjoyed by patients by reducing the risk of injury, maintaining physical function, controlling cost of health care, and length of hospital stay. The patient's families enjoy peace of mind that their sick family member is in an environment that promotes healing without the risk of comobidities

arising from falls. The hospital administration benefits from providing quality services that meet regulations and reduce the risk of malpractice and negligent law suits. The nurses and health care providers benefit from offering acceptable health care services that lead to positive patient outcomes.

Micro-system and Macro-system of the QI process

The micro-system of the QI process was the small interventions which can be undertaken by one nurse on one patient to reduce the risk of fall while the macro-system refers to the system-wide interventions that are implemented at the unit level. To set the micro and macro system of the QI process in context, the process to reduce the falls and injuries arising from falls in the mental health unit were divided into two groups. These are the leadership actions and the front line actions which target reducing the risk of falls among in the mental health unit especially among patients with eating disorders. The leadership actions cover the macro-system while the frontline actions cover the micro-system of the QI process. The leadership actions that can help reduce the frequency and injury from falls in the mental health unit especially for patients with eating disorders include establishment of falls prevention groups, analysis and learning from reported falls, creating safer environments by eliminating environmental factors that promote falls, and training and developing staff members on fall prevention. The frontline actions that can be used to reduce the risk of falls and subsequent injuries in the mental health unit include patient assessment to determine the risk of fall, ensuring patients have appropriate clothing and footwear, avoiding

sedative medication or drugs which make a patient dizzy, implementing post fall protocols and preventing secondary falls. The identification of the micro and macro-systems for the QI process enables the variables to be clearly highlighted and measurable.

Process of the QI

Falls are a leading cause of hospital acquired injuries. Despite psychiatric patients being at an increased risk of falls, little research has covered fall prevention in the mental health unit with focus being on the geriatric unit instead. Psychiatric patients are at an increased risk of fall due to the tendency to commit self harm, side effects of medication such as dizziness, and disease pathophysiology such as reduced peak bone density, blood sugar and muscles common in patients suffering from anorexia. The QI project to prevent falls in the mental health unit was implemented in two years. The project consisted of four steps; planning, staff training, interventions, and evaluation. Additionally, the project involved creation of the position of a falls liaison nurse.

The falls liaison nurse was a nurse with advanced knowledge in caring for falls victims and devoted 20 hours per month in the planning stage to identify baseline data. The baseline data was collected from existing medical recodes and from direct observations during the planning period. The baseline data was used to characterize the frequency and causes of falls in the mental health unit.

Project Goals

The objectives of the project were to reduce the frequency and injuries' resulting from falls in the mental health unit by use of a multifaceted interventional approach. The goals of the project were;

- Characterize falls in mental health unit and divide them into accidental and non-preventable falls and evaluate the circumstances of falls such as where and when most falls occur.
- Reduce accidental fall incidences in the mental health unit by 50% in the first year.
- Reduce falls among high risk patients such as those with eating disorders by 20% in the first year.
- Reduce the overall number of falls per 1, 000 patient days by 30% in the first year

These goals were selected in order to complement the objectives of the study. Characterizing falls and the circumstances surrounding falls is important because it helps identify areas which the fall prevention interventions should target. Accidental falls occur due to factors such as patient clothing and footwear, slippery floors, or slow response of medical personnel when a patient calls. This is in contrast to non-accidental falls which result from factors that cannot be easily controlled such as dizziness as side effects of vital drugs that a patient must take.

Project Design

The project was designed as a clinical trial a multi faceted fall prevention intervention. The focus of the study was preventing falls among psychiatric

patients especially those with eating disorders such as anorexia nervosa. The project was implemented in three phases. Phase one covered three months an involved a preliminary study on the nature of falls and the historical frequency of falls in the mental health unit. The second phase involved stakeholder training and the multifaceted intervention to control falls. The final phase was post intervention tests to evaluate the efficacy of the QI project.

Project Implementation

This was a quality improvement project and therefore, the first step was evaluating current quality level with regards to falls in the mental health unit. Understanding the current quality level would help the practice nurses to identify areas where improvements are needed.

Planning Phase

The first phase of the project involved collecting historical data on falls in the unit. Additionally, a falls committee chaired by the falls liaison nurses was formulated. The committee conducted root cause analysis of fall incidents to identify the circumstances of a fall such as patient characteristics, where and when the fall occurred, cause of the fall, opportunities to improve safety and the post-fall care the patient required. The committee developed a fall rounding tool to trigger discussion regarding the existing and modifiable fall risks in the mental health unit. The fall rounding tool consisted of a table with columns that must be filled to describe the fall comprehensively. A sample of the fall rounding tool is attached in the appendix. Since the hospital already uses electronic patient records, a database was developed

to store falls data. The data from the falls prevention committee indicated that there were 13. 2 falls per 1000 patient hospital days in the mental health unit. Of this falls, 42. 5% occurred in patients suffering from eating disorders specially anorexia nervosa. Majority of the falls occurred in the patient's room or outside the nurse's office. While most falls caused little or no injury to the patient, 23% of fall victims required additional nursing care due to the fall.

Implementation Phase

The second phase of the project was the implementation phase and was carried out in two steps; stakeholder training and interventions. Stakeholder training targeted the hospital administration, nurses and patients. The training was carried out by the researcher using presentations focused on the needs of each group. The administration training targeted the nurse leaders and hospital administrators and enabled support for the project. This support was important in the intervention implementation where policy changes and hospital resources were required. The nurses were educated on how to conduct patient analysis to determine a patient's risk of falling, reporting falls, and post-fall care. Training on how to report falls was important so that nurses can not only report a fall event, but also analyze the circumstances of the fall and identify opportunities to improve safety. The patients were trained on self-care strategies such as calling for help when they feel dizzy and preempting factors that can lead to a fall.

Intervention

The intervention used to prevent falls in this study was a multi faceted approach derived from Cameron et al., (2012) and then modified to suite the mental health unit. This intervention has proven efficacy in reducing the rate of alls among hospitalized patients. The intervention was carried out by conducting environmental improvements, addressing the functional and physiological attributes of the patients and miscellaneous fall prevention strategies derived from the opportunities identified to improve safety in the root cause analysis of falls. Environmental interventions sought to address the causes of falls that were inherent in the environment. Environmental improvements included installing non-skid rubber mats in the patient's showers, providing fitting hospital gowns to the patients, controlling the amount of water used to wash the floor to prevent slippery floors, and reducing clutter in the patient's rooms.

The functional and physiological attributes of the patients were addressed by involving an occupational therapist in an interdisciplinary team. The occupational therapist devised ways of doing every day activities such as bathing and moving around the clinic in a safe manner that minimizes the risk of falls. Additionally, the drugs given to patients were reviewed in order to use the drugs with least side effects and proven efficacy. The nurses monitored the patients orthostatic blood pressure twice a day since the root cause analysis and literature evidence had indicated hypotension, tachycardia and orthostatic vital sign changes are present prior to, during and after many falls (Tinetti & Kumar, 2010). Additional fall prevention strategies adopted include patient education on notifying the nurses when

they feel dizzy, avoiding sudden changes in posture, and providing seats in the areas where patients assemble. Poster to remind patients to sit down and call nurses when they feel dizzy was added in the clinic. The multifaceted falls prevention intervention was carried out alongside the regular therapies to restore health and functioning in patients.

Evaluation

The effectiveness of this QI was evaluated by conducting a falls assessment survey, one year after full implementation and comparing it to the project goals. After full implementation, the prevalence of falls in the metal health unit was 8. 5 falls per 1, 000 patient days down from 13. 2 falls per 1, 000 patient days. There was a reduction of 68% of accidental falls in the mental unit and a 23% reduction in falls among high risk patients with eating disorders. The successful implementation of the QI project to reduce falls in the mental health unit required an interdisciplinary approach. The nurses were the project champions and were responsible for implementing the project and providing care to the patients. Physicians responded to changes in the patient's orthostatic blood pressure which may indicate an impending fall event while the occupational therapist identified safer ways of doing every day activities to reduce the risk of fall. The hospital cleaners were also incorporated in the team to help identify the slippery areas and conduct cleaning in a manner that no water is left which may cause a fall.

Contribution of APRNs to QI

Masters prepared nurses can use their skill set and knowledge to promote QI. First, they are trained in policy formulation and changes. This skill is useful in

QI projects since robust policies improve patient outcomes and quality of care offered. The success of QI projects depends on supporting policies which encourage the adoption of evidence based care and best practices. In this project, the role of APRNs in policy formulation was evident in the creation of the post of falls liaison nurse. APRNs also have management skills. This is an important skill since it enables them to take champion roles and motivate other nurses to adopt and implement strategies meant to improve quality. QI projects require data collection and analysis to evaluate efficacy. APRNs are trained in research methods and can use this knowledge in QI projects to enhance rigor and to measure the goals set.

Conclusion

Falls are leading cause of hospital acquired injuries and psychiatric patients are at risk especially those suffering from eating disorders. In this QI project, a multifaceted intervention to prevent falls and related injuries was implemented in a mental health unit. The areas addressed by the intervention include environmental factor, functional and psychological attributes of the patient and addressing the areas identified in the root cause analysis of falls. The program met and exceeded all the goals set in a one year period. This QI project was successfully implemented using an interdisciplinary approach, and leveraging on the attitude, skills and knowledge of APRNs.

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Appendix

Fall Rounding Tool