



A Study on Patient's Fall's Risk Management in a Tertiary Care Hospital in NCR

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ABSTRACT

Context:

Patient fall is one of the leading concerns of patient safety in healthcare organisations these days. It's a global issue whose importance is enlisted in the International Patient safety Goals and also emphasized in our standards elaborated by NABH. A patient fall in hospital can result in various types of injuries ranging from head injuries, wrist fractures, spine fractures and hip fractures. Falls can also cause injuries that are not visible to others, for example some people who experience a fall become fearful and worried that they will fall again. Being hospitalized increases a persons risk for falls as hospitalized persons are often weak from their illness. Along with patient education regarding fall prevention it is very essential for early risk detection. Staying with the patient, especially if they are confused or unable to call for assistance to get out of bed can be comforting and reassuring to the patient. Making the infrastructure fit for use reduces the chances of patient fall. This study is an attempt to analyse the process of risk assesemnt of patients at risk of fall in the current healthcare settings, finding the major contributors leading to increase probability of fall and give recommendation to enhance good practices in the future.

Aims: The aim of the study is to analyse Patient's fall's Risk Management in a Tertiary Care Hospital in NCR with help of a self-administered questionnaire. The study will assess the level of information shared with the patient regarding fall risk.

Settings and Design: The design of our proposed study is a descriptive study where we will use a self-administered questionnaire to assess the level of awareness of patient regarding Fall Prevention in the selected study setting.

Methods and Material: The NABH Standard were used as a guideline for preparing the self-administered questionnaire. All admitted vulnerable patients of the selected study area will consist of the population for the study. Simple Random sampling technique will be used to derive the sample out of the population.

Statistical analysis used: Correlation and ANOVA were used to establish associations between the independent and dependent variables.

Results & Conclusions:

The results of the study thus conclude that patients who have attributes which may act as risk factors and increase the probability of Patient falling in a hospital should be given more care in terms of patient education and explanation regarding fall prevention.

KEYWORDS

Patient Fall, Risk Assessment, MFS, NABH, IPSPG, Ease of Use

Introduction

According to the definition accepted for the purpose of epidemiological research, a fall is an event which results in a person coming to rest inadvertently on the ground or floor or other lower level. (WHO 2007). Falls are the leading cause of unintentional injuries and injury-related disability, morbidity and mortality in the geriatric population. Therefore, they may also lower quality of life. (Kaminska 2015).

In the hospital setting, falls continue to be the top adverse event. Injury falls are 'never events' not only associated with morbidity/mortality but also impact reimbursement. Some 3-20 percent of inpatients fall at least once during their hospitalization. Injury prevalence ranges from 30-51 percent. Of these, 6-44 percent experience similar types of injury (i.e.,

fracture, subdural hematomas, excessive bleeding) that may lead to death. Adjusted to 2010 dollars, one fall without serious injury costs an additional \$3,500, while patients with equal to or greater than two falls without serious injury have increased costs of \$16,500. Falls with serious injury are the costliest with additional costs of \$27,000. Many interventions to prevent falls and fall-related injuries have been tested, but require multidisciplinary support for program adoption and reliable implementation for specific at-risk and vulnerable sub-populations, such as the frail elderly and those at risk for injury. (VANCPs 2013, Spoelstra 2012, Oliver 2010, WU 2010)

Research design:

The current study was conducted at a super-specialty hospital. A descriptive research design was utilized in the current

study. This design is concerned with description of a phenomenon of interest and focused on a single group or population characteristics without trying to make interference. A sample of convenience including 100 patients, representing all those who are admitted in the IPD units of the selected study setting was taken. A structured questionnaire was developed, tested for clarity and feasibility, and then used to collect data. Development of this questionnaire was guided by NABH Standards (Continuous Quality Improvement, Facility Management System and Patient Rights and Education Chapter) and Morse Fall Scale. Designed tools were examined for content validity by a panel of five experts.

Ethical Clearance and confidentiality: The current study was approved by ethical committee of the selected Hospital. Confidentiality and anonymity of each subject were assured through coding of all data.

Methodology:

Our Study population consisted of High risk Patients Identified at the selected study Setting using Morse fall Scale.

Classification of patients into High Risk category at the selected study setting:

- **Assessment using Morse Scale:** All admitted patients are assessed for Falls Risk using the Morse Scale in the selected study setting. Nurses assess patients using the Morse scale on admission, and the assessment is repeated on transfer, with a change in a patient's condition, as well as after a fall. The Morse Scale Assessment is based on History of falling, Secondary diagnosis, Ambulatory aids, IV therapy/saline lock, Gait and Mental status. Once assessed, each patient receives an overall score. All patients will be considered at risk for falling when in a hospital setting. This assumption is based on the fact that patients are vulnerable when they are unwell, when they are receiving treatments/tests/medications and are in an unfamiliar environment. If the assessment results in a score of 45 or higher the patient is categorised as a High Risk Patient. All these patients identified as High Risk formed our study population. A sample was drawn based on convenience and availability of patients from this population.
- The current study was conducted in two phases: the preparation phase and implementation phase. As regards to the preparation phase; it was concerned with construction and preparation of data collection tools, in addition to obtaining managerial agreement to carry out the study. This phase lasted for about four months. Concerning the implementation phase; it was carried out after obtaining official permissions to carry out the study. Data of the current study were collected over a period of four months starting from November 2014 to February 2015. The researcher/research associate was available during the time of filling the data collection sheet to answer any question, and to provide the needed explanations. Filling the questionnaire required about 15 minutes from each patient. Obtained data was fed into Microsoft Excel for further analysis. The questionnaire had two parts. Part 1 was aimed to record the demographic details i.e. gender and age of the respondents while, part 2 of the questionnaire had 15 questions pertaining to Risk Assessment focussing on Patient Characteristics (3 questions), Fall Prevention focussing on Patient Education (7 questions) and Ease of Use of Infrastructure (5 questions).

Results and Discussion:

The Section One of the questionnaire consisted of questions pertaining to Risk Assessment focussing on Patient Characteristics (3 questions).

The first question analysed if the patients were suffering from any kind of sleep disorder or not. The results are depicted in the figure below.

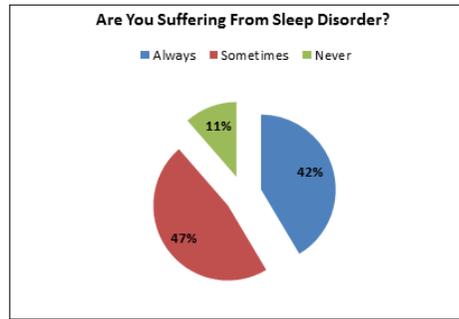


Fig 1: Patient Responses on Sleep Disorder

The pie diagram indicates that only 11% of the patients admitted in the hospital never suffered from the sleep disorder, while 89% of the patients had a history of suffering from sleep disorder. Out of the 89% of the patients who suffered from sleep disorder, 42% of the patients always suffered from sleep disorder and thus they were more vulnerable towards patient fall while 47% of the patients occasionally suffered from sleep disorder which makes them less vulnerable.

Question two of section one inquired whether the patient was getting up frequently in night. The results are illustrated in Fig 2.

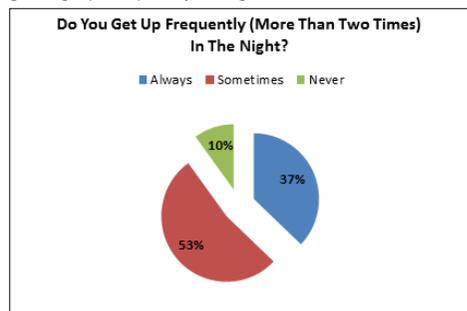


Fig 2: Patient Responses on Frequently Getting Up in Night

The pie diagram indicates that only 10% of the patients admitted in the hospital never used to get up frequently in the night, while 90% of the patients had a history of frequently getting up at night. Out of the 90% of the patients who used to get up frequently in the night, 37% of the patients always had to get up frequently in the night and thus they were more vulnerable towards patient fall while 53% of the patients occasionally used to get up frequently in the night which made them less vulnerable. The findings were in line with the responses pertaining to sleep disorder, since there 11% of the patients never suffered from sleep disorder and 89% of the patients had a history of sleep disorder. Hence, it was evident that only those who were suffering from sleep disorder seemed to be more prone to get up frequently in the night, which made them vulnerable to patient fall.

Question three elaborated on the use of an assistive device by the patient. The graph depicts the findings.

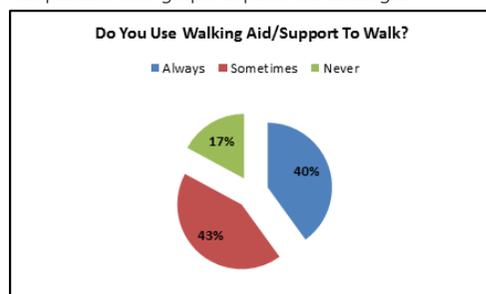


Fig 3: Patient Responses on Using Walking Aid/ Support to Walk

The pie diagram indicates that only 17% of the patients admitted in the hospital never used a walking aid or support to walk, while 83% of the patients used a walking aid or support. In the past findings, it was revealed that around 89% of the patients suffered from sleep disorder and around 87% of the patients used to get up frequently at night. However, statistics of 83% of the patients using a walking aid indicated that around 4-6% of the vulnerable patients never used a walking aid which aggravated the probability of patient fall among them.

The second Section of the questionnaire focused on Fall Prevention concentrating on Patient Education (7 questions). The following figure 4 to figure 10 depict the findings of the seven questions.

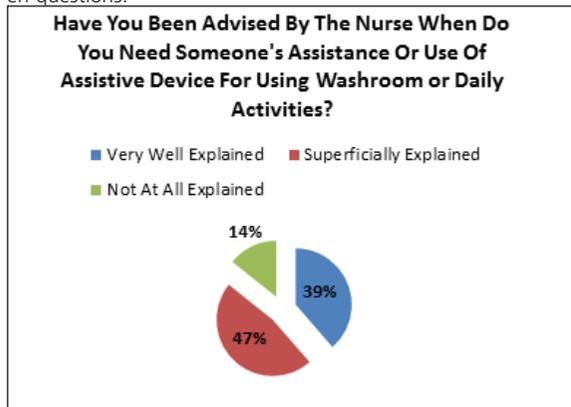


Fig 4: Patient Responses On Upon Being Advised By The Nurse On When Someone's Assistance Should Be Sought

The pie diagram indicated that 14% of the patients were never being explained by the nurses regarding when they should seek for someone's assistance or about the use of assistive devices for using washroom or daily activities while 47% of the patients said that they were explained superficially. 39% of the patients admitted that the nurses explained everything very well i.e. around 61% of the patients were not happy with way the things were explained to them.

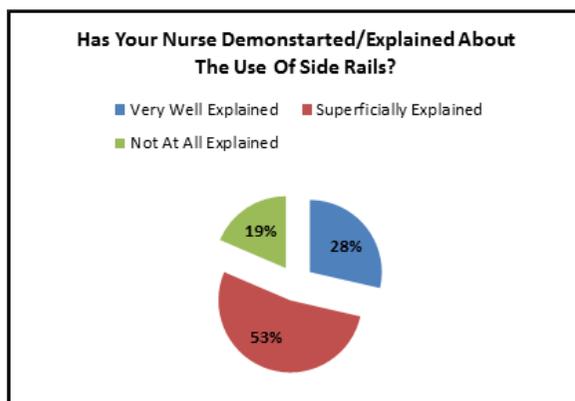


Fig 5: Patient Responseon Demonstration by the Nurses the use of Side Rails

The pie diagram indicated that 19% of the patients were never being explained by the nurses regarding the use of side rails while 53% of the patients said that they were explained superficially. Only 28% of the patients admitted that the nurses explained everything very well i.e. around 72% of the patients were not happy with way the things were explained to them.

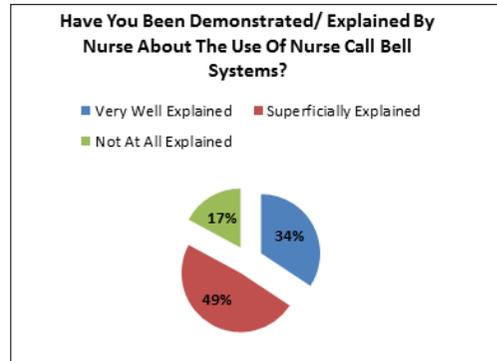


Fig 6: Patient Responseon Demonstration by the Nurses the use of Nurse Call Bell Systems

The pie diagram indicated that 17% of the patients were never being explained by the nurses regarding the use of Nurse Call Bell Systems while 49% of the patients said that they were explained superficially. Only 34% of the patients admitted that the nurses explained everything very well i.e. around 66% of the patients were not happy with way the things were explained to them.

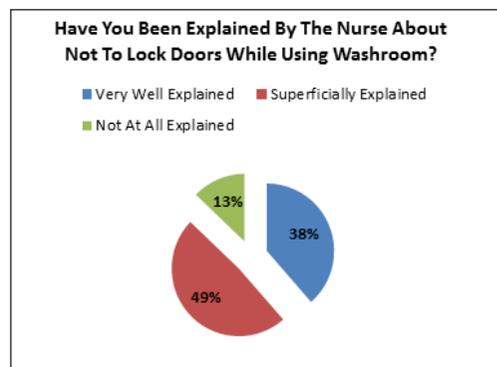


Fig7: Patient Response on being explained by the nurse not to lock door while using washroom

The pie diagram indicated that 13% of the patients were never being explained by the nurses regarding not to lock door while using washroom while 49% of the patients said that they were explained superficially. Only 38% of the patients admitted that the nurses explained everything very well i.e. around 62% of the patients were not happy with way the things were explained to them.

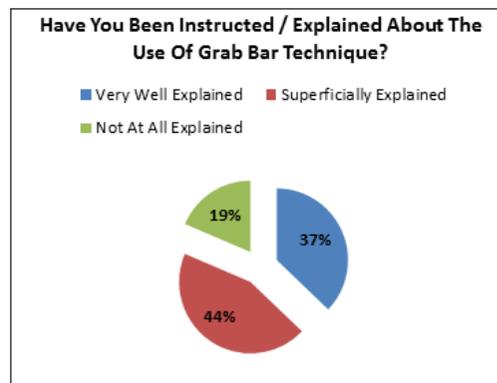


Fig 8: Patient Response on being explained by the nurse the use of grab bar technique

The pie diagram indicated that 19% of the patients were never being explained by the nurses regarding the use of grab bar

technique while 44% of the patients said that they were explained superficially. Only 37% of the patients admitted that the nurses explained everything very well i.e. around 63% of the patients were not happy with way the things were explained to them.

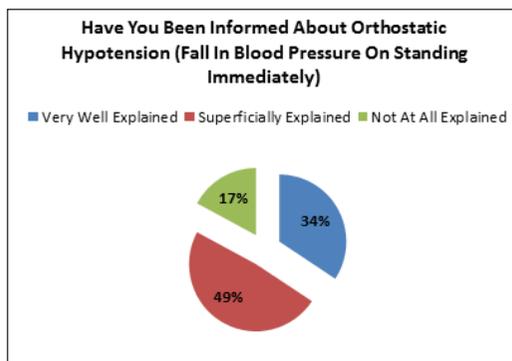


Fig 9: Patient Response on being informed about orthostatic hypotension

The pie diagram indicated that 17% of the patients were never being explained about orthostatic hypotension while 49% of the patients said that they were explained superficially. Only 34% of the patients admitted that the nurses explained everything very well i.e. around 66% of the patients were not happy with way the things were explained to them.

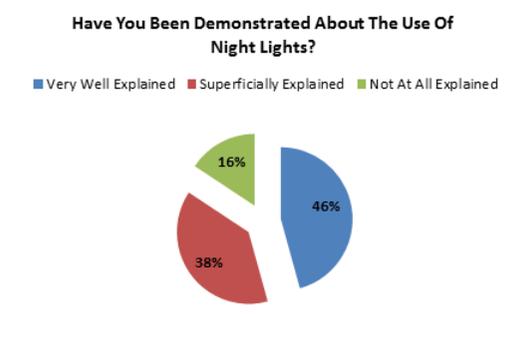


Fig 10: Patient Response on being informed about the use of night lights

The pie diagram indicated that 16% of the patients were never being explained about the use of night lights while 38% of the patients said that they were explained superficially. 46% of the patients admitted that the nurses explained everything very well i.e. around 54% of the patients were not happy with way the things were explained to them.

In following tables and figures the findings of the correlations between various questions within a section are illustrated.

Table 1: Correlations Among Patient Characteristic Variables

	PC1	PC2	PC3
PC1	1	.495	.455
PC2	.495	1	.429
PC3	.455	.429	1

Table 1 revealed moderate correlation between the various dimensions of patient characteristics which determine the vulnerability of the patients towards patient fall. Moderate correlation among the dimensions indicated moderate linear association among sleep disorder patients, the frequency of getting up at night and the use of walking aid or support while walking. Though correlation does not imply causation still, the results can be interpreted in a pragmatic way as the patients who were suffering from sleep disorder tends to get up frequently in the night and vice versa. Also, as these pa-

tients were more vulnerable towards patient fall, they used walking aid or support while walking. However, a moderate to weak correlation indicated that this was not the case i.e. the patients who were suffering from sleep disorder did not necessarily use to get up frequently in the night and vice versa. Also, not all patients who suffered from sleep disorder or used to get up frequently at night used a walking aid or support which increased the risk factor of fall among the patients. Hence the behavior of the patients should be monitored properly so as to minimize the patient fall in the hospital.

Table 2: Correlations Among Patient Education on Fall Risk Prevention Measures' Variables

	PE1	PE2	PE3	PE4	PE5	PE6	PE7
PE1	1	.347	.541	.456	.515	.512	.515
PE2	.347	1	.447	.478	.515	.598	.404
PE3	.541	.447	1	.457	.504	.588	.578
PE4	.456	.478	.457	1	.521	.518	.548
PE5	.515	.515	.504	.521	1	.561	.630
PE6	.512	.598	.588	.518	.561	1	.550
PE7	.515	.404	.578	.548	.630	.550	1

Table 2 revealed moderate correlation among the dimensions pertaining to patient education risk prevention measures' variables. Moderate correlation among the dimensions pertaining to patient education risk prevention measures' variables indicated moderate linear association among the dimensions since correlation implies strength of linear association. Though correlation does not necessarily causation yet the results could be perceived in a pragmatic way that the responses of a patient was consistent across all the dimensions i.e. a patient who said that the nurses explained very well in a category tended to agree in other categories as well or if a patient did not agree that he/she was being explained very well by the nurse in one category tended to maintain similar response for other categories as well.

Table 3: Inter – Correlations Among Patient Characteristics and Patient Education on Fall Risk Prevention Measures' Variables

	PE1	PE2	PE3	PE4	PE5	PE6	PE7
PC1	.343	.568	.508	.438	.451	.415	.527
PC2	.442	.370	.382	.478	.516	.480	.510
PC3	.611	.537	.548	.441	.632	.491	.553

Table 3 revealed inter-correlation among dimensions pertaining to patient characteristics and patient education on fall risk prevention measures. Except barring three cases (PC1-PE1; PC2-PE2; PC2-PE3) where the correlation coefficient r was lesser than .40, the results revealed moderate correlation among the dimensions pertaining to patient characteristics and patient education on fall risk prevention measures. Since, correlation implies linear association between variables, hence in this case the results indicated moderate linear association among the dimensions pertaining to patient characteristics and patient education on fall risk prevention measures. Though correlation does not imply causation, yet the results could be interpreted in a pragmatic way that if a patient was suffering from sleep disorder or he used to get up frequently in the night or he used a walking aid or support to walk then he tended to agree that he was explained by the nurses about various fall risk prevention measures and vice-versa. On the contrary, if a patient never suffered from sleep disorder or did not use to get up frequently in the night or did not use the walking aid or support then that patient tended to disagree about being explained by the nurses about various fall risk prevention measures and vice-versa. The findings indicated that only those patients who were aware of their vulnerability towards fall seemed to take deeper interest in being educated by the nurse and hence, they rated the patient education on a positive note while those who were unaware of their vulnerability or were not suffering from high risk symptoms did not take great care of imbibing the learning from the nurses and thus tended to rate the patient education on fall risk prevention measures poorly.

Conclusion

The results of the study thus conclude that patients who have attributes which may act as risk factors and increase the probability of Patient falling in a hospital should be given more care in terms of patient education and explanation regarding fall prevention.

The study results show that the high risk patients have more risk factors associated with them and have a greater tendency to fall hence they should be given more detailed explanations or elaborative patient education regarding fall prevention to inculcate the environment of patient safety.

The following recommendations can be given for preventing patients fall in hospitals

1. Patient falls are serious problems in hospitals and are used as a standard measure of quality hence early detection of risk factors should be incorporated in patient safety policy.
2. The unfamiliar environment, acute illness, surgery, bed rest, medications, treatments and the placement of various tubes and catheters are common challenges that place patients at risk for falls in hospitals hence these obstructions should be minimized or the patient and his care taker should be made aware about these.
3. The connection from nursing assessment of fall risk, to risk communication of care team members, to custom-made interventions to prevent falls can be recommended

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