

## **Characteristics of Mental Patients with High Fall Risk and the use of Fall Assessment Tool in a Mental Hospital**

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### **Abstract**

*Background: The Morse Fall Scale was used to assess the risk of fall of patients in Castle Peak Hospital since 2011. Participants and Methods: A comparison between the previous and new assessment scales was conducted to assess their agreeability if they were performed on the same patient at the same time. Results: Seven hundred thirty-two in-patients were involved. Forty-six patients were identified to have high fall risk (26 by both tools, 19 by the Fall Risk Predictive Factors Assessment only and one by the Morse Fall Scale only). The commonest risk factor for fall was their overestimation of their ability, followed by the presence of more than one active diagnosis as well as the need for medications which would increase their fall risk. Conclusion: There is a need to follow up the number of fall incidents in the hospital after the change in the fall assessment tool.*

*Keywords: Fall assessment, mental hospital*

### **Background**

Castle Peak Hospital (CPH) is a mental hospital in Hong Kong with about 1100 beds. Fall prevention is one of the areas of concern in the hospital as patients with mental illnesses have an increased risk of fall. This may be related to their mental illness and the medications prescribed (Finkelstein, Prabhu, & Chen, 2007; Hien le et al., 2005). Since 2007, CPH has been using the Fall Risk Predictive Factors Assessment from the Best Practice Committee of the Health Care Association of New Jersey (HCANJ) to assess the fall risk of the patients so that special fall prevention strategies can be diverted to those with high fall risk (HCANJ, 2007). This assessment scale consists of eight parameters commenting

on the level of consciousness, ambulatory and elimination status, gait and balance, vision status, orthostatic blood pressure, falls history, mediations and predisposing diseases. Those with a score of ten or higher will be considered as having high fall risk. The assessment will be performed for all new admissions to the ward of CPH within 24 to 48 hours of admission. Those assessed to have high fall risk will have the assessment repeated after three months, upon a fall or when there is a significant change in patient's conditions that could increase fall prediction factors.

The Fall Committee of CPH was formed in early 2011 which consisted of multidisciplinary staff with an aim to prevent falls in the

hospital. The Committee would like to replace the current fall assessment tool with the Morse Fall Scale (MFS). The MFS has been evaluated in various hospital settings and is found to have good psychometric properties, good clinical validity, and excellent inter-rater reliability. MFS consists of six variables and assesses history of falling, presence of secondary diagnosis, use of ambulatory aid, presence of intravenous therapy/saline lock, gait and mental status of patients (Chow et al., 2007; Morse et al., 1989). Currently, a general hospital (Tuen Mun Hospital) in the same cluster as CPH is using the MPS for fall assessment. Standardisation of fall assessment tool across hospitals within the cluster can facilitate communication and training.

### **Methods**

Before the implementation of the proposed change, we had conducted a study to compare the Fall Risk Predictive Factors Assessment with the MFS to evaluate the agreeability of the results of the two assessments performed on the same patient at the same time.

This exercise was carried out in May 2011 in CPH. A total of 20 wards and 732 in-patients of CPH were involved. The wards which participated in the exercise included the long stay wards of the Department of General Adult Psychiatry, Forensic Psychiatry and Child and Adolescent Psychiatry and the admission and long stay wards of the Department of Old Age Psychiatry. A cut-off point of > nine was used for the Fall Risk Predictive Factors Assessment and >45 was used for MFS as having high fall risk. A total of 46 patients were identified to have high fall risk (26 by both tools, 19 by the Fall Risk Predictive Factors Assessment only and one by MFS only).

### **Results and discussion**

Of the 26 patients who were assessed to have high fall risk by both tools, 17 were

female and nine were male. Their mean age was 64 with a standard deviation (SD) of 18.9. The youngest patient was 24 years old while the oldest one was 101 years old.

Literature supported that older patients tend to have a higher risk of fall. The commonest risk factor for fall for this group of patients was their overestimation of their ability, followed by the presence of more than one active diagnosis as well as the need for medications which would increase their fall risk. The third commonest risk factor was related to their gait problem. The presence of mental illness may affect the insight of the patients. They may have problem in safety awareness and may overestimate their ability in walking or balancing. Many of the medications used for the treatment of different mental illnesses including benzodiazepines and hypnotics may increase the risk of fall. Elderly patients who are taking other medications such as antihypertensives or hypoglycemics at the same time, will have an even higher risk of fall as there may be interactions between these medications. Some patients developed extra-pyramidal symptoms after taking antipsychotics and their gait may be affected as a result which increases their fall risk (Finkelstein, Prabhu, & Chen, 2007; Hien et al., 2005; Lappin et al., 2007; Rawsky & Digby, 2000; Tandon & Jibson, 2002; Ziere et al., 2001).

For the 19 patients who were assessed to have high fall risk by the Fall Risk Predictive Factors Assessment only, 10 were male and nine were female. Their mean age ranged from 52-91 (mean= 65.3, SD=10.8). All of participants did not have any history of fall in the past three months.

In order to explain the difference in the results by the two assessment tools, we need to look into the characteristics of this group of patients and the difference in the parameters assessed by both tools. The Fall Risk Predictive

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Factors Assessment had separate items capturing the use of medications and the presence of predisposing conditions which would increase fall risk. All of the participants were put on at least one of the following types of medications: anaesthetics, antihistamines, antihypertensives, anticonvulsants, benzodiazepine, cathartics, diuretics, hypoglycemics, narcotics, psychotropics, and sedatives/hypnotics. The majority of them had predisposing conditions which increased their fall risk.

However, the MFS only addresses the presence of secondary diagnosis. The patients would not receive extra score if they were taking certain medications which would increase fall risk. It is also important to note that all patients scored zero for item 4 in MFS that is related to intravenous infusion which is not allowed in the mental hospital for safety reason.

The Fall Risk Predictive Factors Assessment also assessed the ambulatory elimination status of the patients which was not included in the MFS. Eighteen out of the 19 patients scored extra marks either because they had impaired mobility but continent or because they were ambulatory but incontinent. Six of them scored extra marks because they were blind or had poor vision in the Fall Risk Predictive Factors Assessment. However, they would not be given extra marks in MFS because of poor vision status. Therefore, for those who did not have a recent history of fall, who were taking medications which might increase risk of fall, had incontinence problem or had poor vision and who would likely be assessed to have high risk of fall by the Fall Risk Predictive Factors Assessment in the past would no longer be the case when assessed by MFS.

There was only one patient who was assessed to have high fall risk only by MFS with scores over 30 points. Such high scores could be related to her practice of using furniture for assistance when walking. She did not have other gait or balancing problem. The

Fall Risk Predictive Factors Assessment gave a comparatively lower score for this condition.

### Conclusions

There are clinical implications in changing the fall assessment tool. A significant proportion of patients whom were assessed to have high fall risk in the past and were given extra care in fall prevention because of the high fall risk might no longer be so after the adoption of MFS. If the MFS does not identify these patients as having high fall risk, they will be provided standard care only. However, this does not necessarily imply that the number of fall incidents in the hospital will increase. If MFS is a more accurate fall assessment tool with a better predictive validity of fall risk, resources can then be diverted to those more in need. There is a need to further evaluate the use of MFS and to follow up the fall incidents in the hospital after the implementation of MFS.

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### 摘要

精神病人跌倒高危險因子的特徵及評估量表的運用

青山醫院自2011年起轉用了一個新的病人跌倒高危險因子評估量表。這個研究為舊及新的量表作出比較。共有732名住院病人參加了這研究。當中有46名病人被視為有高跌倒風險（26名病人被兩個量表視為有高風險、另外19名病人只被舊的量表視為有高風險、1名病人則只被新的量表視為有高風險）。精神病人最常見的跌倒高危險因子包括高估了自己的能力、患有多過一個疾病、以及需要服用藥物。由於新舊量表有明顯分別，醫院有需要繼續跟進自轉換量表後病人跌倒的數目。

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