Evaluation of the Morse Fall Scale cut-off scores in residential care homes for elderly (RCHE) in Hong Kong

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Introduction
Kowloon Central cluster is now employing the Morse Fall Scale (MFS) for all hospital inpatients as a fall risk screening tool. It was also suggested to be used in the intake assessment of all patients under Kowloon Hospital Community Geriatric Assessment Service (KHCGAS). The MFS has been validated for use in acute and long term care areas overseas with high sensitivity and specificity (0.78, 0.83) to identify admitting patients for risk of fall risk. However, it has not been validated for use in residential care homes our locality where the settings are vastly different from western institutions.

Objectives
This study aims to determine the best cut-off score for fall risk in our setting so that appropriate and early fall prevention interventions can be put in place.

Methodology
This is a retrospective cohort study with 6 months follow up in a convenient sample of consecutively admitted new cases to RCHE under KH CGAS. The MFS of each newly admitted residents are scored and observation made within the 6 month period after admission to record fall episodes. These episodes are obtained retrospectively from records of the RCHE. Contact with the public health care system including emergency attendances and hospital admissions are obtained from Clinical Management System of each of these cases in the 6 month follow up period. The number of falls are analysed against the MFS and sensitivity, specificity are obtained.
Result
A total of 417 subjects were recruited. There were a total of 80 (19.1%) subjects (38 females and 42 males) who sustained one or more falls within the 6 months follow up period. There were 121 fall episodes. The mean fall rate for the whole study population was calculated to be 1.61 per 1000 bed days. The difference in MFS between fallers and non-fallers was not significant by 2-independent-sample t test $p=0.06$. MFS had a sensitivity of 59% and a specificity of 56% at the best cut off point of $>45$. A score range of 30-75 reflected the highest fall risk in RCHE residents (Figure 1). ROC curve was obtained. Area under curve was 0.557 and was not statistically significant $p=0.111$ (Figure 2). MFS could not be validated for use in RCHE in this study. Consideration should be given for validity, applicability and scientific evidence before selecting screening tools to be used on a large scale basis in the community.