DEVELOPING A RISK ASSESSMENT TOOL FOR USING BEDRAILS

ABSTRACT
This article reports on a study that tests the validity and reliability of the Coventry Bed Rails Use tool. The study consisted of three stages: training in the use of the tool; three separate patient assessments using professional judgement, an experienced CBRU tool user and a novice user, to modify the tool; and assessment using the modified tool by an experienced and novice CBRU user. Use of the amended tool resulted in very high agreement between users. This is a summary: the full paper can be accessed at nursingtimes.net.

The use of bedrails to prevent patients falling out of bed is common in many healthcare settings.

Bedrails become physical restraints when they restrict a patient’s movement or hinder them when attempting to get out of bed unaided. This cannot be regarded as good practice and may be caused by inadequate assessment (Govier and Kingdom, 2000) or a failure to consider alternatives for safe management of patients at risk of falling.

Audit evidence suggests that nurses and other healthcare practitioners sometimes pull up bedrails without really considering whether they are needed (Govier and Kingdom, 2000), despite research evidence indicating that they can cause injury and even death (Parker and Miles, 1997; Gray and Gaskell, 1990).

Raising the rail on a bed increases the height from which a patient can fall by a minimum of 18 inches. Bedrails themselves are a potential hazard because there are gaps between the rails and at the head and foot of the bed where arms and legs can become trapped.

BACKGROUND
At our trust, an 80-year-old woman on a rehabilitation ward got her knee stuck in a metal bedrail and the incident prompted a review of the policy for bedrail use.

The policy directed staff to carry out an assessment before using bedrails but gave no specific guidance on how to perform this. A literature search to find a suitable assessment tool found none that were suitable for everyday use on a busy hospital ward.

Assessing the risk of bedrail use
The Medicines and Healthcare products Regulatory Agency (2006) says that assessment should look at the likelihood of a person falling from bed and whether their condition increases the risk of becoming trapped.

The lack of an effective and easy-to-use risk assessment tool means nurses’ professional judgement tends to be the only justification given for the use of bedrails. This may lead to inconsistencies and raises the possibility of assessments not being evidence-based.

This led us to devise our own tool, which brought about a decrease in the use of bedrails and the number of incidents resulting from their inappropriate use. After numerous modifications, the tool became the Coventry Bed Rails Use (CBRU) tool.

DEVELOPING THE CBRU
Deciding whether individual patients need bedrails will involve assessing their risk of falling out of bed, determining whether bedrails are the best way to prevent a fall, and whether they are at greater risk of injury from falling or from the rails themselves.

The CBRU works on the premise that most patients do not need bedrails but that, when there is a perceived need, a risk assessment is essential. It uses two factors in assessing whether a patient is at risk of injury if bedrails are used – level of orientation and mobility. This is based on evidence that any reduction in cognitive ability, which may lead to irrational or unpredictable behaviour, can put patients at risk of falling from bed. The mobility of such patients will also contribute to the level of risk.

These factors are incorporated into a matrix for determining whether bedrail use is appropriate. Five colours are used: red means bedrail use is not recommended and four other colours give a range of times for reassessment if bedrails are used.

IMPLICATIONS FOR PRACTICE

- Inappropriate use of bedrails can result in serious injury or even death.
- The CBRU tool can be used to help staff decide whether patients need bedrails in adult inpatient areas alongside an education programme about the risks associated with inappropriate use of bedrails.
- An audit should be undertaken of bedrail use and adverse incidents linked to them in adult inpatient areas following the introduction of the CBRU tool.
- Further research is needed to identify whether the CBRU tool is appropriate for use in other clinical areas such as A&E and paediatrics, and in the community.
The tool gives no firm direction on whether to use bedrails but offers evidence-based recommendations. It also includes guidance on the timing of reassessment and a variance chart to record the rationale for not following the guidance.

Professional judgement is still part of the decision-making process. The CBRU tool aims to: reduce inconsistencies that may contribute to inappropriate use; raise awareness of the risks associated with bedrails; and reduce the number of injuries attributable to their inappropriate use.

Study design
The value of any assessment tool lies in its ability to distinguish between theoretically distinct groups and to produce similar responses under repeated conditions – that is, the tool's validity and reliability. To test reliability and validity of the CBRU tool, a three-stage study was conducted.

Stage one involved nurses attending training sessions. They were asked to apply the CBRU tool to six patient scenarios and to comment on the its ease of use and whether they would be happy to use it in their own clinical area.

In stage two, patients on four wards had three assessments of the need for bedrails: one based on professional judgement; one based on the CBRU tool carried out by an experienced user; one by a nurse using the CBRU tool for the first time.

Data from the two stages were analysed and the CBRU tool was amended in the light of the findings.

In stage three, an experienced and a novice user employed the modified tool on two wards. The patient scenario testing was repeated using the modified tool.

Data from the assessments recorded during the study was not used to determine patient management. Ethical approval was gained from the university ethics committee.

Sample
In stage one, 23 nurses applied the CBRU tool to six patient scenarios and were also asked to comment on its acceptability and ease of use. A further nine nurses applied the modified tool to the same scenarios.

Data collected from three wards (one elective care ward and two elderly care/rehabilitation wards), with approximately 25 patients on each ward, was used in stage two. A 60-bed medical/stroke ward was also used. Typically, bedrail use was 15–35% for the non-elective care wards and minimal on the elective care ward.

Stage three data was collected using assessments on the medical/stroke ward and the rehabilitation ward where the tool was developed. This was a pragmatic decision as these wards provided an adequate sample size, with the convenience of collecting data from only two wards and being able to test the validity and reliability of the revised tool.

RESULTS
Use of the CBRU tool with scenarios Twenty-three completed forms were available for analysis, covering use of the tool in five patient scenarios. Responses to the sixth were not analysed as this scenario apparently caused confusion.

Overall, the test group was in fair agreement over which colour code to assign to patients (kappa \(=0.40\), 95% CI: 0.36–0.43, \(p<0.001\)). In all scenarios the colours chosen were generally the same as those assigned by an experienced ward manager and practice facilitator, apart from scenario E (a critically ill 60-year-old man admitted with a suspected bleeding duodenal ulcer, low blood pressure and a history of heart disease. He is rational and able to request assistance to get out of bed). For this scenario, 15 (65%) of the testing group chose ‘red’, while the experts selected one of the other colours.

This process was repeated using the modified tool in stage three. Similar levels of agreement were obtained, again except for scenario E where two-thirds of the group agreed with the experts.

Use of the CBRU tool on the wards There were 301 fully reported cases available for analysis from four wards. There was high agreement overall (kappa =0.65, \(p<0.001\)) between professional judgement and novice CBRU tool users’ decisions. This appears to vary by ward type. There was fair agreement overall in use between the experienced and novice CBRU tool users (kappa =0.40).

There was some concordance between experienced and novice CBRU users (kappa =0.30, 95% CI: 0.23–0.37, \(p<0.001\)) but particular disagreement among novice users over the use of the tool and making ‘certain’ colour choices. In some circumstances the tool’s instructions caused confusion, resulting in test group members choosing different colours from the experts.

The modified version of the tool was trialled with a further 59 cases from the medical/stroke ward. Use of the amended tool resulted in very high agreement (kappa = 0.93, 95% CI: 0.867–0.997 , \(p<0.001\)), with discrepancies in only three cases (5%).

Conclusion
The value of the CBRU tool depends on appropriate professional judgements being made about the use of bedrails. This means that simply using the tool will not change practice – this requires education and increased awareness by nurses and other healthcare professionals regarding the risks associated with inappropriate use of bedrails. Nonetheless, using the tool has been successful in raising awareness of when it is appropriate to use bedrails.

REFERENCES