CORRECTIONAL SERVICE CANADA

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Exploring Release Outcomes in the Romanian Prison Service

A revised algorithmic scale that was developed to help identify release potential can also predict returns to custody.

Why we are doing this study

Previous research identified a valid algorithmic scale for the Romanian Prison Service (RPS) in which scores could be automatically calculated from available information and yield reliable probability estimates of release decisions.[1] Psychometric review and revisions of an initial algorithm led to item reductions and substantial improvements in predictive accuracy. Examining the scale's ability to predict future returns to custody is the next step towards extending the utility of the revised algorithm to be used assisting in the successful reintegration of offenders.

What we did

Offender information was extracted from RPS's automated database. Complete data pertaining to demographic, criminal history, prison performance and community work were available for 4,575 offenders who had recorded a first assessment and were subsequently released to the community. Of those in the study group, 3.7% (169) were female offenders and 96.3% (4,406) were male offenders. Approximately 7% (312) of the study group returned to custody after release. Interestingly, of those who received a positive decision to be released early 3% (41) returned to custody whereas 8% (271) who did not receive a positive decision returned to custody. In other words, 87% of those who returned to custody did not receive a positive decision to be released early.

The algorithmic equation was derived from nine separate items in a scoring system that yielded probability estimates of release decisions: demographic (education); criminal history (prior adult offending, offence groupings, and sentence length); prison performance (sanctions, credits earned/lost, and security level increases); and, community work. Each item is statistically associated with decisions and scored using the Burgess method. This method applies positive scores to individual items, based on differences between endorsed items and population decision to release rates.

Simple summation of item scores yields a possible total ranging from 0 to +32. In this study, total scores for the revised equation ranged from 2 to 31 (Mean=14.9, SD=6.0).

What we found

Simple Pearson correlation coefficients indicated statistically significant relationships between all nine items and returns to custody [*sanctions imposed* r =-.78 (p < .0001), *offence type* r =-.12 (p < .0001), *credits lost* r =-.11 (p < .0001), *prior adult offending* r =-.10 (p <.0001), *education* r =-.10 (p <.0001), *security level increase* r =-.09 (p <.0001), *credits earned* r =-.06 (p <.001), *community work* r =-.05 (p <.001), and *sentence length* r =-.03 (p <.05)]. As had been found with identifying release potential, summation of the revised algorithm total scores yielded a stronger association with return to custody (r = -.15, p <.0001) than the initial version (r =-.11, p <.0001).

Again in this study, the Receiver Operating Characteristic (ROC) was used to calculate true positive and false positive rates for the initial and revised algorithm. In this study, Area under the Curve (AUC) results revealed that the revised algorithm was found to be statistically significant and robust at 0.667 whereas for the initial algorithm it was found to be weaker at 0.591.

What it means

Results show that the revised algorithmic scale with a restricted set of items can accurately identify release potential and release outcomes in the Romanian prison population. The study finds a valid algorithmic scale for which scores can be automatically calculated from available information. Finally, the utility of the revised algorithm could be extended to assist in the successful reintegration of offenders.

For more information

Please e-mail the Research Branch or contact us by phone at (613) 995-3975.

You can also visit the Research Publications section for a full list of reports and one-page summaries.

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[1] Motiuk, L. & Keown, LA. (2017). *The Identification of Release Potential in the Romanian Prison Service.* Research in Brief 17-08. Correctional Service Canada.

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