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Research in Brief

The Identification of Release Potential in the Romanian Prison Service

Proposed algorithmic revisions can lead to item reductions and substantial improvements in predictive accuracy.

Why we did this study

The Romanian Prison Service (RPS) has been developing an integrated assessment approach to identify candidates with good potential for release decisions. Upon psychometric review of an initial algorithmic equation, it was found that efficiencies and predictive improvements could be made. Consequently, a revised equation was derived from a reduced set of items that when scored and aggregated could yield improved probability estimates of release decisions. The present study examined the initial and revised equations for reliability, predictive validity and practical utility of sentenced Romanian offenders.

What we did

Data were extracted from RPS's automated database. Complete information pertaining to demographic, criminal history, prison performance and community work were available for 5,637 offenders who had recorded a release decision in 2016. Of those, 3.5% (200) were female offenders and 96.5% (5,437) were male offenders. Approximately 25% of the study group received a decision to release.

A revised algorithmic equation was derived from nine separate items in a scoring system that yields probability estimates of release decisions. Each item is a measure of a demographic (education), criminal history (prior adult offending, offence groupings, and sentence length), prison performance (sanctions, credits earned/lost, security level increases) and community work measure(s) found to be 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=15.1, SD=5.9).

What we found

To assess the internal consistency of the revised algorithm, Cronbach's alpha reliability coefficient was used. Standardized and raw alphas were 0.65 and 0.67, respectively. Simple Pearson correlation coefficients indicated statistically significant relationships (all p's <.0001) between all nine items and decision to release [*credits lost* r=.31, *sanctions imposed* r=.29, *prior adult offending* r=.28, *offence type* r=.22, *education* r=.20, *credits earned* r=.20, *security level increase* r=.20, *community work* r=.14, and *sentence length* r=.13]. A summation of the revised algorithm total scores yielded a stronger association with release decision (r=.43, p <.0001) than the initial version (r=.18, p <.0001).

The Receiver Operating Characteristic or 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 0.808 whereas for the initial algorithm it was found to be weaker at 0.575.

What it means

Results show that the revised algorithm with a restricted set of items was internally reliable and accurately identified release in the Romanian prison population. The study identifies 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

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