Stopping the revolving door: a meta-analysis on the effectiveness of interventions for criminally involved individuals with major mental disorders

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CRD summary
Results suggested a relationship between intervention effects on mental health and criminal justice re-involvement, but future research was needed. The authors stated the results were highly tentative. The authors' conclusions reflect the evidence presented and seem appropriately cautious.

Authors' objectives
To explore the effectiveness of interventions to improve the outcomes for offenders with mental disorders.

Searching
PsycINFO and Web of Science databases were searched up to 2008 for peer reviewed articles. Search terms were reported. Relevant reference lists and previous reviews were handsearched.

Study selection
To be included, studies had to: be tested on hypothesis that a particular intervention improved offender mental health and/or reduced re-involvement with criminal justice system (CJS); include a comparison group; have a sample size of at least five; report a statistic to compute an effect size; and have a sample of adults age eighteen or over with mental disorders formally processed by the criminal justice system. Studies were excluded if they included sex offence interventions, or focused on antisocial personality, intellectual and cognitive or substance use disorders. Outcomes of interest were on mental health and criminal justice outcomes. Subjective mental health measures were excluded.

Outcome measures included arrest, violent arrest, conviction, jail days and breaches. Interventions characteristics included medication, individual or group therapy, social skills training, cognitive behavioural therapy, anger management or problem solving programming. Very few details were provided on the interventions and treatment regimens. There were also limited details on controls. Patients included those with mood disorders, psychotic disorders and cognitive disorders, sometimes with co-existing substance abuse.

Four reviewers were involved in study selection. Any discrepancies were resolved by discussion to reach consensus.

Assessment of study quality
The quality was assessed using modified coding tool previously developed for sex offender treatment outcome research. The scale assessed 20 items on a three point scale (the ratings were from 0 to 2, with higher scores indicating less bias) falling within seven categories (control of the independent variable, experimenter expectancies, sample size, attrition, equivalence of groups, outcome variables and correct comparison conducted).

The coder subjectively weighed the individual items ratings to provide global confidence and bias ratings.

A global study quality rating was then calculated based on global bias and confidence ratings. Ratings of 2 on both sub-scales were rated as "strong", a rating of 2 on one sub-scale and 1 on the other indicated "good" global rating. Studies that scored 1 on both scales represented 'weak' global rating, and a score of 0 on either scale was "rejected".

Four reviewers were involved in quality assessment.

Data extraction
For continuous data, means and standard deviations, and for categorical data, frequencies, proportions, or odds ratios with their 95% confidence interval (CIs) were used to calculate effect size (Cohen's d). Where these values weren't reported, F, t or p values were used.

Four reviewers were involved in data extraction. Any discrepancies were resolved by discussion to reach consensus.
Methods of synthesis
Individual study effect size was pooled to produce a mean weighted effect size for all studies, using fixed-effect model (though random-effects model was considered). The study reported overall results for criminal justice and mental health, but also results for different components (such as arrest, breach for criminal justice, medications and symptoms for mental health). The Q statistic was used to examine the degree of heterogeneity. Outlier analysis was conducted by calculating the Q statistic if each study were removed. Where outliers were detected, tables present results both with and without outlier(s). The authors also assessed the effects of moderator variables such as allocation and sample size.

Publication bias was assessed with funnel plots. Fail-safe N was calculated to determine the number of studies required to produce a non-significant overall effect size.

Results of the review
Twenty-five studies with thirty-seven effect sizes (involving non-overlapping participant samples) for the criminal justice outcomes were included in the review (15,678 participants). The authors reported that 16 outcomes were rated as good quality and 21 had “quality issues”. According to fail safe N calculation, the publication bias was negligible.

There was a significant positive effect for criminal justice outcomes overall (d=0.19, 95% CI 0.14 to 0.23; 15,512 participants; 36 studies excluding one outlier). When individual criminal justice outcomes were assessed, an increase in breaches in the treatment group was reported and no significant differences were found for convictions. There was no significant effect on mental health outcomes overall. Individual mental health outcomes indicated that the treatment group had significantly fewer symptoms (d=0.12, 95%CI 0.04 to 0.2; 2,641 participants; 12 studies excluding one outlier) and higher functioning (d=0.20, 95%CI 0.01 to 0.40; 629 participants; five studies). There was evidence of statistical heterogeneity for overall criminal justice and mental health outcomes.

Moderator analysis showed significant positive effects of the interventions of criminal justice outcomes at most levels of the moderator variables except seven variables for which there were significant contrasts (three study/design characteristics, three intervention characteristics and mental health outcomes).

Authors’ conclusions
Results suggested that some relationship between intervention effects on mental health and criminal justice re-involvement. Future research was needed, especially the absence of mental health outcome data in many studies. The authors stated the results were highly tentative.

CRD commentary
The review addressed a clear question and was supported by broad inclusion criteria. Relevant data sources were searched but it was unclear whether language restrictions were applied. Formal assessment of publication bias found no publication bias. Four reviewers were involved in each stage of the review process, which reduced possible error and bias. The authors reported that more than half of the outcomes had quality issues. It may not have been appropriate to pool statistically heterogeneous studies that had apparent differences in interventions and outcomes.

The authors’ conclusions reflect the evidence presented and seem appropriately cautious.

Implications of the review for practice and research
Practice: The authors stated some implications for practice, including the need for continued commitment to understand the factors related to improving outcomes among offenders with mental disorders is required to prevent them from continuing to pass through the revolving doors of criminal justice and mental health systems.

Research: The authors stated that further research should consider and address study quality, identify other moderator variables and include better definitions for interventions.

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