

Screening for psychological and mental health difficulties in young people who offend: a systematic review and decision model

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Scientific summary

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Background

Young people who offend are at an increased risk of a range of mental health problems including depression, anxiety and disruptive disorders, including conduct disorder and attention hyperactivity deficit disorder (ADHD). These mental health difficulties are associated with a number of negative consequences both for the young person and for society, such as an increased risk of reoffending. Despite this, mental health problems remain underdetected and undertreated in young people who offend. In recognition of this, there is currently policy interest in screening for mental health problems in this population. Although mental health screening is currently recommended for young people who offend, the value of this is currently unknown.

Objectives

The review had five objectives:

1. to conduct a systematic review and evidence synthesis of the diagnostic properties and validity of existing screening measures for mental health problems in young people who offend
2. to assess the clinical effectiveness of screening strategies in this population and (more broadly) to assess the clinical effectiveness of interventions for mental health problems
3. to assess the cost-effectiveness of screening strategies in this population and (more broadly) to assess the cost-effectiveness of interventions for mental health problems, with specific reference to identifying in which groups they may be cost-effective
4. to assess whether or not current screening strategies meet minimum criteria laid down by the UK National Screening Committee (NSC) in the light of this evidence synthesis
5. to identify research priorities and the value of developing future research into screening strategies for young offenders with mental health problems.

Methods

A single, comprehensive search of the literature was undertaken to identify literature relevant to each stage of the review. In total, 25 electronic databases were searched, including MEDLINE, PsycINFO, EMBASE and The Cochrane Library. Each database was searched from inception until April 2011. Internet resources of relevant organisations and conference proceedings were also examined. Sources of data spanned the health, mental health and criminal justice literature.

Reverse citation searches of included studies were undertaken and reference list of included studies and previous reviews were also examined. Experts in the field were contacted to identify other potentially relevant literature.

After deduplication, 13,580 studies were examined for potential inclusion, of which 219 were selected for further evaluation. Data were extracted to a standardised coding sheet for all studies meeting the inclusion criteria. At each stage, two reviewers independently examined citations and extracted data. Disagreements were resolved by consensus or deferred to a third party if necessary.

Separate inclusion and exclusion criteria were developed for each phase of the review; these can be broadly summarised as follows:

- *population*: young people (aged 10–21 years) who have offended and who are in contact with the criminal justice system
- *intervention/instrument*: screening instruments for mental health problems, implementation of a screening programme or psychological or pharmacological interventions as part of a clinical trial
- *comparator*: for diagnostic test accuracy studies, a standardised diagnostic interview conducted to internationally recognised standards; for screening programmes, any comparator
- *outcomes*: details of diagnostic test accuracy, mental health outcomes over the short or longer term or any measurement of cost data
- *study design*: for diagnostic test accuracy studies, any design; for screening programmes, randomised controlled trials or controlled trials; for clinical effectiveness studies, randomised controlled trials; and for economic studies, economic evaluations of screening strategies or interventions.

Evidence was sought across a range of mental health difficulties in young people who offend, including depressive disorders, anxiety disorders, disruptive disorders and other disorders such as psychosis and autistic spectrum disorders, and self-harm and suicidal behaviour. There were too few studies to conduct a meta-analysis for any stage of the review and so a series of narrative syntheses was undertaken.

To evaluate the cost-effectiveness of identification strategies, the policy question addressed by the decision model was constrained to focus on the screening and subsequent management of one common mental health problem in the young offender population: depression. The rationale for constraining the policy question and developing an 'exemplar' case study for the decision model was that (1) depression is highly prevalent in young offenders; (2) taken together there is more evidence on screening and treatment effectiveness for depression in young offenders than for other mental health conditions; (3) depression-related health states could be mapped onto health-related quality of life (or utility) measures [e.g. quality-adjusted life-years (QALYs)]; and (4) depression is not an externalising condition and may, therefore, go undetected.

Results

Nine studies including eight independent samples met the inclusion criteria for the diagnostic test accuracy and validity of screening measures review. The Massachusetts Youth Screening Instrument – version 2 (MAYSI-2) was the most commonly used screening measure. Data for the MAYSI-2 suggested moderate sensitivity and specificity at standard cut-off points commonly cited in the literature. Firm conclusions could not be made because of the low number of included studies for any one combination of mental health problem and screening measure. However, data were identified on screening accuracy for some mental health problems, including depression, post-traumatic stress disorder (PTSD), ADHD, conduct disorder and oppositional defiant disorder (ODD). There appeared to be no evidence that screening measures specifically designed for use in young offender groups such as the MAYSI-2 had superior operating characteristics to more general measures.

No studies were identified that examined the clinical effectiveness of screening. Ten studies met the inclusion criteria for the examination of clinical effectiveness. Of the included studies, some interventions targeted depression, anxiety including PTSD, conduct disorder, ODD and ADHD, while other interventions had a broader focus (e.g. improving interpersonal functioning). There were too few studies for any one combination of intervention and outcome to make firm conclusions about the clinical effectiveness of treatments for mental health problems, particularly because the quality assessment indicated either an unclear or a high risk of bias for many of the studies.

No studies met the inclusion criteria for the assessment of the cost-effectiveness of screening or treatment.

On the basis of the data identified in the systematic reviews, an exemplar decision model for depression was developed to provide initial insights into the possible merits of identification and treatment strategies and the importance of perspectives adopted given the intersectoral nature of this question. However, these insights need to be considered within the limitations of the available evidence emerging from the systematic review of diagnostic and clinical effectiveness studies. Nonetheless, the decision model makes a contribution to the overall evidence by providing an exemplar based on a formal quantitative framework that provides a clear indication of the various inputs and data sources required to appropriately inform cost-effectiveness assessment. Although formal value of information analysis was not feasible, deterministic sensitivity analysis highlighted key drivers of the model, which should inform future research design. These include identifying the level of previously undetected mental health problems in this population, the importance of using generic measures to permit the calculation of QALYs, and assessing the impact of mental health treatment on intersectoral outcomes, including recidivism. Importantly, the model provides an iterative basis for updating and revisiting the findings as new evidence emerges in the future.

The results of the evidence synthesis were used to assess whether or not UK NSC criteria were met for screening for mental health problems in young people who offend. Five of the UK NSC criteria could be examined on the basis of the current review; these included the existence of a precise and valid screening instrument (UK NSC criterion 5), a known distribution of test values and a cut-off agreed for the instrument (criterion 6), the existence of an effective treatment (criterion 10), evidence from randomised controlled trials that screening is effective (criterion 13) and opportunity costs should be economically balanced in relation to expenditure (criterion 16). None of the criteria was met on the basis of the evidence examined as part of this review.

Conclusions

Screening is only of value if there is an effective intervention, and this has not yet been established for the treatment of mental health problems in this population. In terms of clinical effectiveness, the limitations of the existing randomised controlled trial evidence base suggest that further feasibility trials of clinical effectiveness are needed to establish important parameters ahead of definitive trials of effectiveness in this area. As indicated by the decision model, future trials should gather information to permit the calculation of QALYs and should seek to assess whether or not treatment alters intersectoral outcomes, particularly recidivism.

Future research priorities for diagnostic test accuracy include validation studies in which the performance of a range of screening measures is directly compared against a gold standard diagnostic interview conducted to internationally recognised criteria. Screening measures currently recommended for use in the UK to identify mental health difficulties among young people who have offended, specifically the mental health screen of the Comprehensive Health Assessment Tool, should be directly compared with other available screening measures as part of such studies. As indicated by the decision model, studies should seek to calculate the diagnostic performance of measures in identifying previously unidentified cases. This fundamental work on clinical effectiveness and diagnostic test accuracy should be conducted ahead of a trial of screening in this area. Evidence was lacking for both community and incarcerated settings, so these recommendations apply equally to both settings.

Study registration

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