Report prepared for Brå by Darrick Jolliffe and David P. Farrington

The Influence of Mentoring on Reoffending

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Report prepared for
The Swedish National Council for
Crime Prevention

Brå – a centre of knowledge on crime and measures to combat crime

The Swedish National Council for Crime Prevention (Brottsförebyggande rådet – Brå) works to reduce crime and improve levels of safety in society by producing data and disseminating knowledge on crime and crime prevention work and the justice system´s responses to crime.

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Foreword

Mentoring constitutes a method of preventing criminality and other destructive behaviours that is becoming the focus of an increasing amount of attention. The method usually involves a more experienced individual providing a young person with special needs with support, advice and guidance in order to improve the latter's chances in life. But how well does it work? What does the research tell us? There are never sufficient resources to conduct rigorous scientific evaluations of all the crime prevention measures employed in individual countries. Nor has an evaluation been conducted in Sweden of efforts employing mentoring to prevent crime. For this reason, the Swedish National Council for Crime Prevention (Brå) has commissioned two distinguished researchers to carry out an international review of the research published in this field.

This report presents a rapid evidence assessment of the effects of mentoring on reoffending that has been conducted by Dr. Darrick Jolliffe of the University of Leicester (United Kingdom) and Professor David P. Farrington of Cambridge University (United Kingdom), who have also written the report. The study follows a rigorous method for the conduct of rapid evidence assessment. The analysis combines the results from a number of evaluations that are considered to satisfy a list of empirical criteria for measuring effects as reliably as possible. The analysis then uses the results from these previous evaluations to calculate and produce an overview of the effects that the measure in question does and does not produce. Thus the objective is to systematically evaluate the results from a number of studies in order to produce a more reliable picture of the possibilities and limitations associated with mentoring in relation to crime prevention efforts. Studies of this kind are also valuable when assessing which circumstances contribute to a certain measure producing a positive effect.

In this case, the rapid evidence assessment builds upon a relatively small number of evaluations and only examines evaluations that have been conducted in the United States and the United Kingdom. A number of questions concerning the potential crime preventive effects of mentoring in a country like Sweden thus remain unanswered. But the study does offer the most accessible overview to date of the use of mentoring in order to prevent reoffending.

Stockholm, February 2008

Jan Andersson
Director-General

Abstract

The purpose of this study was to estimate the effect of mentoring on reoffending based on a rapid evidence assessment. This is similar to, but less comprehensive, than a systematic review. A number of searching strategies were used and eighteen studies were found that met our inclusion criteria. Taken together, the results suggested that mentoring reduces reoffending by approximately 4 to 10 per cent. Mentoring was more effective in reducing reoffending when the average duration of each contact between mentor and mentee was greater, in smaller scale studies, and when mentoring was combined with other interventions. However, studies of higher methodological quality found little evidence that mentoring reduced reoffending, suggesting that inadequate control of pre-existing differences between those who received mentoring and the comparison group might have contributed to the most positive results. Mentoring may be a useful strategy for reducing reoffending, but more high quality mentoring programmes and more high quality evaluations of these programmes are required before the true benefits of mentoring can be confidently established.

Executive Summary

Introduction

There has been a significant amount of recent interest in the influence of mentors in increasing the life success of at-risk individuals (e.g. DuBois, Holloway, Valentine & Cooper, 2002). Typically, mentoring involves the exposure of an 'at risk' individual to another person (a member of the public, not a professional) who acts as a positive role model in the hope that the mentor will provide guidance and support that would otherwise be unavailable to the individual being mentored (the mentee). It has been suggested that having a mentor might reduce the likelihood of reoffending by providing direct assistance (e.g. helping fill in job applications) and indirect support (e.g. acting as a positive role model). Also, the time spent with the mentor might reduce the opportunity that the mentee has to offend or might help to break up previously established delinquent networks.

There have been a number of evaluations of the impact of mentoring on later life outcomes, but many of these have been based on limited research designs such as case studies, small-scale qualitative studies and evaluations which did not use a control group or comparison group. These studies have a limited ability to estimate the impact of mentoring on reoffending.

Method

A rapid evidence assessment, which is a rigorous method for locating, appraising and synthesising evidence from previous studies, was used to assess the impact of mentoring on reoffending. The main benefit of a rapid evidence assessment is that it produces results much more quickly than a full systematic review. However, because of the restricted time period, certain material (e.g. unpublished research, foreign language studies, studies that were difficult to obtain) was not included. This might bias the results of this study, especially because significant results are more likely to be published (i.e. that mentoring has a beneficial influence on offending).

A set of criteria for including and excluding studies in the review were developed. The search for relevant studies involved a number of strategies, which led to the identification of 49 potentially relevant studies, of which 48 were obtained. These included 18 comparisons of mentored and control groups that met the predefined criteria and were analysed.

Results

The results suggested that mentoring reduced reoffending by about 4 to 10 per cent, but this benefit was mainly produced by the studies of lower methodological quality. High quality evaluations designed to provide the most accurate assessment of the impact of mentoring did not find that mentoring had an appreciable beneficial effect on reoffending. However, there was evidence to suggest that some mentoring programmes were more successful than others. Importantly, those in which the mentor and mentee spent more time together per meeting (5 hours or more) and met at least weekly were more successful in reducing reoffending.

Interestingly, mentoring programmes that had a longer duration (total time period) were not more effective than shorter programmes, possibly because of the difficulty in continuing to recruit high quality mentors, or because mentoring continues for longer periods with more antisocial youths. Also, mentoring only had a beneficial influence on reoffending when it was given as part of a larger set of interventions. Mentoring along with employment, education and drawing up contracts of acceptable behaviour was the most effective according to this review. Mentoring as a stand-alone intervention did not reduce reoffending.

There was some indication that mentoring worked best when it was applied to those who had been apprehended by the police, as opposed to those who were at risk because of personal or social circumstances, or those who were convicted or imprisoned. However, studies which applied mentoring to those who were apprehended by the police also tended to use the most comprehensive mentoring programmes. Mentoring only appeared to have a beneficial influence on reoffending during the time period while the mentoring was taking place. After the mentoring ended, there was little evidence that any benefits on reoffending persisted.

Policy Implications

Our review generally supports the use of mentoring as a method of reducing reoffending, but the evidence is not totally convincing. There was no evidence to suggest that mentoring had any harmful effects in increasing reoffending. Our review indicates what features should be included in successful mentoring programmes. First, mentors and mentees should meet at least weekly for several hours at a time. Second, mentoring should be given as a part of a larger set of interventions. Third, mentoring should be used especially with persons who have been apprehended by the police. Existing evidence suggests that mentoring might be a valuable component of intervention programmes with persons who are at an early stage of their criminal careers.

Research Implications

Mentoring is a promising but not proven intervention. Our conclusions are limited by the small number of studies (18), and we cannot necessarily draw causal inferences from correlations with effect size. Large scale randomised controlled trials should be mounted to evaluate the effects of mentoring programmes on subsequent offending. Also, cost-benefit analyses of mentoring programmes are needed.

Background Information

There has been a significant amount of recent interest in the influence of mentors in increasing the life success of at-risk individuals (e.g. DuBois, Holloway, Valentine & Cooper, 2002). Mentoring programmes originated in the US in the early twentieth century and are currently in widespread use in North America. The largest organisation is Big Brothers/Big Sisters of America (BBBSA), which is estimated to have over 500 agencies nationwide, while the National Mentoring Database suggests that there are an additional 4500 organisations in the US that currently support mentoring activities (Rhodes, 2002).

The general theme of all mentoring programmes involves contact between a less experienced or 'at-risk' individual and a more experienced and often older desirable role-model. Ideally, the mentor should provide guidance, advice and encouragement that would help to develop the competence and character of the mentee (Rhodes, 1994). The mentee is usually perceived to be 'at-risk' for various reasons, including individual factors (e.g. disruptive behaviour in school, offending, substance use etc.) and/or social circumstances (e.g. lone-parent family, socially excluded etc.).

While drawing heavily on the US experience, mentoring in the UK is comparatively new, with the larger and better known programmes (such as Big Brothers and Big Sisters) implemented in the 1990s. Other well known mentoring programmes in the UK are the Dalston Youth Project (DYP) and project CHANCE. DYP was set up in 1994 to support 15 to 18 year-olds at risk of offending by introducing them to a trained mentor in the community (Tarling, Burrows & Clarke, 2001). Project CHANCE was established in 1996 with the specific goal of providing mentors to primary school children with behavioural problems (St. James-Roberts & Singh, 2001). Mentoring was also a component of two probation-based programmes that were designed to improve the training and employment prospects of unemployed offenders (Sarno *et al.*, 2000).

Mentoring as an Intervention in the Criminal Justice System

Mentoring has been implemented as an intervention in the criminal justice context. In this setting mentoring is usually intended to be a method of both reducing reoffending and increasing positive life outcomes such as greater levels of education, training and employment (e.g. Grossman & Tierney, 1998; Newburn & Shiner, 2005; O'Donnell, Lydgate & Fo, 1979). The theory is that the mentor can provide both direct assistance (e.g. helping to fill in job applications, locate appro-

priate housing) and indirect support (e.g. encouragement, acting as a positive role model) that would otherwise be unavailable to most offenders or youths who are 'at-risk' because of their family or social background. In addition to providing the mentored individual with a valued social bond, mentoring is also intended to reduce the likelihood of reoffending by reducing opportunity. Regular meetings between mentors and mentees not only allow less time for the mentee to offend, but might disrupt their relationships with delinquent friends.

There have been a number of evaluations of the impact of mentoring on later life outcomes. However, as pointed out by Newburn and Shiner (2005), many of these have been based on limited research designs such as case studies, small-scale qualitative studies and evaluations which did not include a control group (e.g. St. James-Roberts & Singh, 200; Tarling, Burrows & Clarke, 2001). Unfortunately, these types of evaluations do not allow the effectiveness of mentoring programmes to be adequately tested, and this makes it difficult for researchers and policy makers to interpret the results of these studies. As suggested by Chitty (2005, p. 80): "The quality of the research design affects the interpretations that can be made from the results: the lower the quality of the research design, the greater the uncertainty about the validity of the interpretations (and in turn any decisions) that can be made from them".

Method

The purpose of the present review was to summarise the literature on the effect of mentoring on reoffending in a systematic manner, including a meta-analysis. This review was not a full systematic review, but a rapid evidence assessment (REA) using systematic methods[1]. Similar to systematic reviews, rapid evidence assessments use rigorous methods for locating, appraising, and synthesising evidence from previous studies. They are reported with the same level of detail that characterises high quality original research. The main difference between a systematic review and a rapid evidence assessment is that the REA omits unpublished 'grey' materials and restricts the time period available to search for eligible studies.

The main benefit of a rapid evidence assessment is that it produces results in a fraction of the time required for a full systematic review. The major limitation of a rapid evidence assessment is that it might yield biased results, because there is a greater tendency for statistically significant findings to be published than non-significant ones (e.g. Bozarth & Roberts, 1972; Vevea & Woods, 2005). Because of its focus on easily obtainable published studies, a rapid evidence assessment might disproportionately include projects finding that mentoring had a significantly beneficial influence on offending.

Objectives of the Study

This rapid evidence assessment had the following objectives:

1. To summarise (and as far as possible quantify) the evidence to date on the effects of mentoring interventions on reoffending (e.g. self-reported offending, arrest, conviction etc).

2. To identify (and as far as possible quantify) the mediators and moderators of these relationships identified (e.g. the fidelity of implementation of the mentoring programme, the frequency of mentor/mentee contact).

3. In light of what has been learned from past evaluations, and their limitations, to make recommendations about what future evaluation research is needed to advance knowledge about the effects of mentoring on offending.

[1] More information about systematic reviews can be found in Farrington and Petrosino (2001). This REA was funded by the Home Office, and a summary was published on the Home Office website (Jolliffe & Farrington, 2007).

Inclusion/Exclusion Criteria

Below is a list of the eligibility criteria for including studies in the current review.

1. The study investigated the effects of a mentoring intervention or treatment broadly defined. For the purposes of the current review mentoring was considered to have taken place if a non-professional person spent time with an at-risk individual in a supportive manner acting as a role model or advocate. The mentor could have been acting in a paid or unpaid capacity, but could not be acting as a member of a professional group or in a professional capacity.

2. The intervention was applied to a sample that included those who were offenders, broadly defined. An offender was defined as a person apprehended by the police, involved with the criminal justice system, or identified as having committed chargeable offences, whether or not apprehended or charged. Chargeable offences include running away, truancy, curfew violations and antisocial behaviour. Furthermore, studies which included actions in schools and other such contexts that could be classified as chargeable offences, even if not presented as such, were included in this review.

3. The study measured at least one quantitative offending outcome. In addition, it reported results on at least one such variable in a form that, at a minimum, allowed the direction of the effect to be determined (whether the outcome was positive or negative). If an offending outcome was measured but the reported results fell short of this standard, the study was still included if the required results could be obtained from the author or other sources. An offending outcome was one that measures, at least in part, a person's involvement in behaviour as defined in 2 above.

4. The study design involved at a minimum a comparison between one or more 'mentoring' interventions and one or more comparable control conditions. Control conditions could be 'no treatment', 'treatment as usual', 'placebo treatment' (etc.) as long as they did not include mentoring.

Random assignment designs that met the above conditions were always eligible for inclusion[2]. Studies with just one group, in which behaviour was compared before and after treatment ('one-group pretest-posttest studies') were never eligible.

Studies in which a group who received treatment were compared to another, different group ('non-equivalent comparison group designs') could be eligible even though the research subjects were not randomly assigned to those groups. In such designs, other differences between the groups might explain differences in the outcome; the ability of studies to examine this possibility would determine whether they could be included. To be eligible, such studies had to have either:

a) matching of the treatment and comparison groups prior to treatment on at least one recognised risk variable for offending such as prior offending history, age, ethnicity, socioeconomic status or (preferably) on a risk score;

b) a pre-intervention measure (pre-test) of at least one offending outcome on which the treatment and control groups could be compared.

These criteria are equivalent to including studies at Level 3 to Level 5 of the modified Scientific Methods Scale (Friendship et al, 2005), a tool designed to assess the quality of studies in terms of their ability to isolate the effectiveness of interventions. Level 5 studies are those which use randomised controlled trials, Level 4 are studies which are quasi-experimental and Level 3 studies use an experimental group and a control group matched on some characteristics.

5. Because of the severe time restriction imposed by a REA, only studies reported in English in books/articles or official websites (e.g. government or non-government organisations like NACRO, Crime Concern, Supporting Others though Volunteer Action) would be included. No unpublished or 'grey' material was searched for or included.

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[2] Random assignment involves randomly allocating some individuals to receive the given treatment and others to a control condition. The main benefit of this method is that it ensures that the experimental and control groups are equivalent (within statistical fluctuation) on all measured and unmeasured variables prior to the intervention. This method ensures that any difference between the groups after the intervention can be attributed to the intervention, rather than to pre-existing differences between the groups.

6. At least 50 individuals should be assigned to each condition, or at least 100 individuals would be assigned in total to treatment and comparison conditions. If a study met this criteria, but due to attrition the number of subjects dropped below this level at follow-up it was not included. Studies with sample sizes smaller than this would have insufficient statistical power to detect any effect of mentoring and would have limited generalisability.

7. Only studies published in 1979 or more recently were included. This decision was partly based on the limited time available for the REA and also to ensure that any conclusions drawn would be applicable to contemporary society.

Searching Strategies

The search for relevant studies was based on a number of strategies. These included: (1) contact with leading researchers in the area; (2) electronic database searches; (3) focused internet searches; (4) searches of research registers; and (5) hand searches of specific journals[3]. This led to the identification of 49 potentially relevant studies of which 16 were judged to meet our inclusion criteria[4].

[3] Greater detail about the searching strategies can be found in the Technical Appendix.

[4] Table 2.1 in the Technical Appendix gives the references of all 49 studies identified. Since the completition of this rewiew an additional study, which would have met our inclusion criteria has been published (Clancy et al., 2006). For those studies included in the analysis the table indicates how they were located. For those studies that were excluded the table indicates the reason for exclusion.

Included Studies

Two of the studies that met our inclusion criteria reported on more than one separate evaluation. In one case (Davidson & Redner, 1988) three independent comparisons were available, but in one of these the numbers were too small to meet our criteria (total n=73). The study by Frazier *et al.* (1981) contained two independent comparisons, both of which were included in our analysis.

We now provide descriptions of the 16 studies and 18 comparisons which were included in our review. Unfortunately, these descriptions are limited by the information available in the original reports. More information about the studies is available in Tables 2.2, 2.3, and 2.4 in the Technical Appendix.

Descriptions of the Studies

Barnoski (2002) examined the results of a mentoring programme for incarcerated juveniles. The mentor met monthly with the youth during the last five to six months of the youth's confinement and was required to call on or write to the youths weekly. Once the youth was released the mentor was required to meet with the youth weekly for approximately six months. Seventy-eight juvenile offenders were mentored in this way. The comparison group (n=78) comprised juvenile offenders released to similar communities in Washington State during the same period as the mentored group. Comparison group members were matched to mentored youths on gender, race and a risk of reconviction score. The results suggested that those who had received mentoring were less likely to reoffend (45%) compared to the controls (54%) in a 12-month follow-up after period release, but this difference was not significant[5].

Blakely et al. (1995) evaluated a project which used university undergraduates as mentors to provide individual academic tutoring and instruction in social skills for 10–14 year-old school students in Texas. The students were randomly assigned either to receive a mentor (n=206) or to a no-treatment control group (n=179). Mentors and mentees were matched on gender, race and mutual interest and met weekly for 6 months. Twelve months prior to the commencement of the mentoring 10 per cent of the treatment group and 12 per cent of the comparison group had been referred to court, while after six months of mentoring 11 per cent of the treatment group and 15 per cent of the comparison group had been referred to court. These changes in court referrals were not significant.

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[5] For the purposes of this research the word 'significant' will be used to denote statistical significance at the $p<.05$ level. This provides at least 95% certainty that the results are not due to chance.

Blechman et al. (2000) compared juvenile offenders' recidivism following non-random assignment to juvenile diversion from court (n=137), juvenile diversion plus skill training (n=55) or juvenile diversion plus mentoring (n=45) using propensity score matching. Propensity score matching is a statistical method of controlling for some pre-existing differences between treatment and comparison groups. Only the comparison between the first and third group will be considered in this review. Mentoring involved having an adult mentor (arranged by a mentoring agency) for an average of 147 days. In the 32 month follow-up period, 51 per cent of those who had been mentored had been rearrested compared to 46 per cent of those who had been diverted, a non-significant difference. Further analysis suggested that there was also no significant difference between these two groups in the time to rearrest, suggesting that mentoring had little discernable benefit in this study.

Buman and Cain (1991) examined the impact of summer work-oriented mentoring on a sample of low-income youths in Minnesota. The evaluation consisted of a follow-up examining various outcomes for youths who had taken part in a summer employment programme, some of whom (n=137) had been allotted Business Partners (mentors) and others (n=107) who had not. The Business Partners were employees from the same company which had employed the youths. Mentors and mentees averaged 0.7 contacts a week over a ten week period. The control group was randomly selected from the remaining files and was determined to be similar in a number of features such as age, race, gender, family status and educational status. Four years after the intervention arrest records for the experimental and comparison groups were compared. Approximately 22 per cent of those who had been mentored had been arrested compared to 29 per cent of controls. This difference was not statistically significant.

Davidson and Redner (1988) described a series of interventions designed to divert juvenile offenders from the juvenile justice system. Juveniles were referred to the Adolescent Diversion Project by the courts after being arrested for an offence. Diverted juveniles were randomly assigned to be matched with a university student mentor or to be in a control condition receiving no intervention. Juveniles in the experimental condition worked with the mentors for 6 to 8 hours a week for 18 weeks. The goal of the mentoring was to develop a good relationship with the juvenile and increase the juvenile's access to community resources. In the first study undertaken in Michigan, some of the intervention group received mentoring and others received various other interventions. For the purposes of this report only the mentoring and the control conditions (which involved typical court processing) are considered. Of the 76 juveniles who comprised the mentoring group, 38 per cent were referred to court in a 2 year

follow-up period compared to 62 per cent of the 60 control juveniles. This difference was statistically significant.

The second intervention also involved comparing those randomly allocated to mentoring (as previously described) with those in a control condition (Davidson & Redner, 1988). In this case, however, mentoring was provided by trained university students along with other types of volunteer mentors (community college and community volunteers). For the purposes of our analysis these mentoring groups were combined to form the experimental group (n=99). The controls comprised a comparable group of juveniles who had been returned to the juvenile justice system for normal court processing (n=25). The results suggested that mentoring was significantly more successful than normal court processing, with 30 per cent of the intervention group being petitioned to court in the following two years compared to 68 per cent of the controls.

Frazier, Richards & Potter (1981) reviewed the impact of Project Diversion in Orange County, Florida.The purpose of this intervention was to provide alternative services to delinquent youths who otherwise would be processed through conventional juvenile justice channels. The intervention involved the assignment of a student or community volunteer to mentor the delinquent youths for 12 months. The evaluation of this intervention involved comparing 198 youths who had been diverted and received mentoring support with 112 delinquent youths who were randomly selected from available files. The mentors were college students who provided a range of services including tutoring, individual and family counselling, recreation, transportation and employment assistance. The experimental and comparison groups were similar in gender, race and amount of prior delinquency. However, the members of the comparison group had more serious index offences and also were older than the treatment group. These differences between the treatment and control groups were not controlled in subsequent analysis, and therefore may have biased the results. Four months after the initial offence, Frazier *et al.* (1981) found that 5 per cent of the intervention group had committed delinquency, compared to 20 per cent of the comparison group. Similarly, 4 per cent of the intervention group committed misdemeanors and 2 per cent had committed felonies, compared to 14 per cent and 13 per cent of the comparison group, respectively. These differences were all statistically significant.

Project Diversion was also evaluated in Alachua County, Florida (Frazier *et al.,* 1981). This evaluation compared 67 youths who received mentoring support with 123 comparison youths four months after the initial offence. The two groups were similar in age, race, gender, amount of prior delinquency and offence seriousness. The results showed that 15 per cent of the intervention group had committed de-

linquency, compared to 14 per cent of the controls. Also, 11 per cent of the intervention group committed misdemeanors and 2 per cent committed felonies compared to 12 per cent and none of the comparison group, respectively. None of these differences was significant.

Grossman and Tierney (1998) used a large-scale randomised trial to investigate the impact of the Big Brothers and Big Sisters mentoring programme on a number of outcomes, including self-reported violence, theft and vandalism, for a group of 959 youths (aged 10–16) from eight areas across the US. Of these 959 youths, 487 were randomly allocated to receive an adult "Big Brother" or "Big Sister" and 472 were allocated to a control condition (waiting list). The mentors and mentees were matched based on gender and race (where possible) and met at least once a month for an average of 3.6 hours per meeting. The results suggested that those in the experimental condition were significantly less likely than those in the control condition to initiate illegal drug and alcohol use over the study period (about 11 months). However, there were no significant differences in the prevalence of self reported violence, theft or vandalism between the treatment and control groups.

Hanlon et al. (2002) examined the influence of group mentoring on a sample of 428 children aged 9 to 17 referred to 2 community-based clinics in Baltimore. The experimental condition involved mentoring groups of approximately 20 students 4 to 5 times a week after school with a staff to child ratio of 1 to 8. There were also occasional group recreational activities. This group mentoring lasted for approximately 3 months. Comparing the intervention and comparison conditions while controlling for measured pre-existing differences, the results suggested that the programme reduced the frequency and variety of self-reported offending. Overall, 17 per cent of experimental children and 27 per cent of comparison children cases were arrested 12 months after the completion of the program.

Johnson & Larson (2003) evaluated The Inner Change Freedom Initiative (IFI), which was a faith-based pre-release prison programme in Texas and was expressly Christian in its orientation. It comprised education, work, life skills, values restructuring and one-on-one mentoring in an environment where religious instruction permeated all aspects of the programme. Male prisoners with 16 to 24 months left to serve and who volunteered for the programme were matched with a mentor from a church in the local area to which the prisoner would be released. The mentor and mentee met for two hours per week both before and after the inmate was released from prison. The mentor assisted the inmate with re-entry to the community by providing transportation, job referrals and attending parole visits. This programme was evaluated by comparing the arrests of those who received the IFI (n= 177) to a comparison group matched on race, age, current offence

and a risk score selected from available files (n=1754). Two years after release 36 per cent of those in the IFI group had been re-arrested compared to 35 per cent of those in the comparison group. This was a non-significant difference.

Kelley, Kiyak & Blak (1979) compared 65 predelinquent youths who received a college student mentor to 63 comparison youths, matched on age, race, gender, offence type and history. In this programme mentoring involved weekly meetings for a minimum of four contact hours for approximately seven months. During this time, 20 per cent of those who had mentors had police contacts compared to 37 per cent of comparison cases. This difference, although substantial, was not significant.

Maxfield et al. (2003) evaluated a programme which offered intensive and comprehensive services to help at-risk youths graduate from high school in seven sites across the US (Cleveland, Fort Worth, Houston, Memphis, Philadelphia, Washington DC and Yakima). Randomly selected eligible youths (aged 14 to 19) were provided with case management and mentoring, supplementary education, developmental activities, community service activities, supportive services and financial incentives. When the treatment group (n=580) was compared to the control group (n = 489) 48 months after the commencement of the programme the results suggested that the treatment group were more likely to have graduated from high school, but there was no significant difference between the groups in self-reported offending. Thirty-one per cent of the treatment group reported committing any offence in the past 12 months compared to 28 per cent of the control group.

Moore (1987) used random assignment to examine the influence of probation compared to probation plus citizen counselling on 100 young offenders (aged 16 to 22) in Florida. The two groups, each of 50 offenders, were similar in age, education, IQ, and offending history. The counselling relationship lasted about 9 months with an average of three meetings each month. The results suggested that citizen counselled offenders had a significantly lower recidivism rate than those who received only probation (14% compared to 54%).

Newburn and Shiner (2005) evaluated a group of ten mentoring programmes in the UK called Mentoring Plus were evaluated to assess the influence of mentoring on a number of outcomes including self-reported offending. A total of 378 young people comprised the treatment group and 172 young people comprised in the comparison group. The experimental group received a mentor with whom they had shared some life experiences and the mentors and mentees met once a week. The comparison group included those on the waiting list for a mentor and those who had expressed an interest in the programme but chose not to take part. Those who chose not to take part

are unlikely to be comparable to those who received a mentor. The degree of attrition was extremely high in this study and only 50% of the treatment group and 33% of the comparison group were assessed at the 1 year follow-up. While there were clear reductions in offending over the course of the mentoring programme, the comparison group showed an even greater decline in offending rates. This led the researchers to suggest 'that the reductions in offending could not be attributed to the programme with any confidence' (Newburn & Shiner, 2005: p.157). Interestingly, the results also suggested that those participants who said that the programme had helped to tackle their offending behaviour did not show corresponding reductions in their offending.

O'Donnell, Lydgate and Fo (1979) evaluated the 'Buddy System' in Hawaii which matched 'at risk' youths with adult 'buddies'. The youths were referred to the programme for behaviour and academic problems primarily by public schools and were randomly allocated either to receive an adult buddy (n=335) or to be in a control condition (n=218), which involved not being invited to participate in the buddy programme. Two years after the programme arrest rates were compared for the two conditions. The results suggested that those in the buddy programme had significantly fewer arrests for major offences compared to controls, but this applied only to those who had no arrests at the commencement of the programme. Those who had arrests prior to being allocated a buddy were significantly more likely to be arrested than those in the control group. This could possibly have reflected the negative effect of associating with other disruptive children (see McCord, 2003). Overall, there was no significant difference in re-arrest rates between experimental and control conditions.

Rollin et al. (2003) examined the effectiveness of a mentoring programme for reducing infractions on school property in Florida. These infractions included arson, assault, breaking and entering, disorderly conduct, fighting, larceny/theft, sexual offences, threat/intimidation, vandalism and weapon offences. School officials matched those selected for intervention (n=78) with community-based mentors in an employment setting to allow youths to explore careers and receive one-to-one mentoring. A comparison group of students (n=78) were matched on age, gender and ethnicity. Infractions in the previous school year were compared with those in the year in which the mentoring was received. Those in the mentoring group had an average of 4.7 infractions in the previous year compared to an average of 2.0 for those in the comparison group. Therefore, the two groups were not very comparable in infractions. In the year after the mentoring, infractions in the mentoring group significantly reduced to a mean of 1.6 whereas those in the control group increased (nonsignificantly) to an average of 2.9. In light of the initially high infraction rate of the

mentored group the results of this study should be interpreted with caution. The mentoring group were chosen because of their high infraction rate, and it is difficult to determine how much of the observed reduction in reoffending reflected "regression to the mean" and would have happened without any intervention.

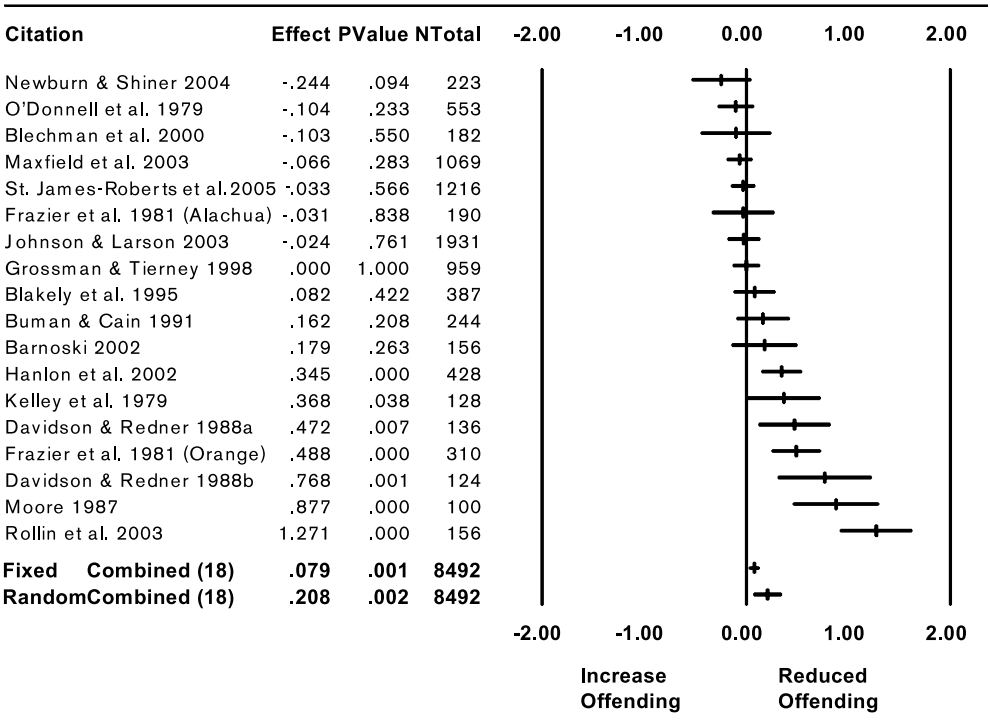
St-James Roberts et al. (2005) investigated the impact of approximately 80 community-based mentoring programmes on reconviction. Each of these programmes was uniquely designed and operated, and this evaluation was not able to relate the characteristics of the specific programmes or individuals to their subsequent reconvictions. This study reported on the reconvictions of those who had been mentored for an average of seven months compared to those who were referred to the mentoring programmes but had not received a mentor. The main reason for not receiving a mentor was that there were few mentors available. Information about reconvictions was obtained from the Police National Computer. For the mentored group convictions were obtained for the time period of twelve months prior to their successful match with a mentor (baseline), and the follow-up reconviction data was collected at twelve months after the match. For the non-mentored group conviction data was obtained for the period of twelve months prior to their referral to the mentoring programme (baseline), and the follow-up reconviction data was collected at twelve months after their referral.

For the 658 mentored youths for whom data was available 526 (80%) were convicted at baseline and 355 (54%) were convicted in the follow-up period. While this appears to be a substantial reduction in offending, the non-mentored youths showed a similar reduction. Of the 558 non-mentored youths 458 (82%) were convicted at baseline and 307 (55%) were convicted in the twelve month follow-up period. This suggests that the reduction in the percentage reconvicted could not be attributed to the mentoring programme. Again, this result could reflect the fact that the youths were originally referred to the mentoring programmes because of their high offending rates, which then fluctuated downwards in the next year.

Analysis of Included Studies

In order to determine if mentoring had an influence on reoffending in the studies included in this REA it was necessary to calculate a common measure of effect size in each evaluation[6]. The effect size (the standardised mean difference or *d*) provides an indication of the impact of mentoring on reoffending which is comparable across all 18 studies. Figure 1.1 shows the value of *d* (EFFECT), the associated statistical significance (PVALUE) and the total number of subjects (NTOTAL) for each of the 18 comparisons. Figure 1.1 also shows the forest plot of the eighteen effect sizes along with the 95% confidence intervals associated with each effect size (horizontal lines of varying lengths). Positive effect sizes reflect a desirable influence of mentoring on reoffending (i.e. mentoring decreased reoffending), and negative effect sizes reflect an undesirable influence of mentoring on reoffending (i.e. mentoring increased reoffending). Figure 1.1 shows

Figure 1.1. Effect of Mentoring on Reoffending.



[6] See the Technical Appendix for greater detail about the selection of the offending outcome that was used in calculating the effect size.

that seven effect sizes were significantly positive, three were positive but nonsignificant, and seven were negative and nonsignificant. One effect size was exactly zero.

The largest effect size of the 18 comparisons was that of the Rollin *et al.* (2003) study (d = 1.27), but this was one of the more methodologically weak studies, suggesting that this estimate might be inflated by bias. The next largest effect size was obtained by the methodologically strong study of Moore (1987) in which a randomised controlled trial was used. The most unfavourable effect size of the 18 comparisons was that of the Newburn and Shiner (2004) study of Mentoring Plus in the UK. This study was limited by very high attrition, which may have negatively influenced the result. The next most unfavourable effect size was the study by O'Donnell *et al.* (1979) which was a high-quality large scale randomised controlled trial in Hawaii.

Combining Effect Sizes

There are two main methods by which these 18 effect sizes can be combined to summarize the influence of mentoring on offending. These are the fixed effects model and the random effects model[7]. The fixed effects model tends to produce a more conservative average effect size because it is more influenced by larger studies which tended to yield lower effect sizes. The random effects model gives more equal weight to all studies, large or small.

The weighted average effect size for the 18 comparisons can be seen at the bottom of Figure 1.1. According to the fixed effects model the weighted average effect size was d = .08 (95% confidence interval .03 to .12) and this effect was significant (p<.001). The weighted average effect size for the 18 comparisons in a random effects model was d = .21 (95% confidence interval .07 to 34) and this effect was also significant (p<.002)[8]. Both of these estimates suggest that, taking all studies together, mentoring had a significant beneficial influence in reducing reoffending.

Perhaps the most useful method of making the magnitude of the effect size more meaningful is to convert it to a difference in proportions. In this case this would be the difference in the proportion of those reoffending between those who received mentoring compared to those who did not. In order to convert the effect size to a difference in proportions the effect size *(d)* is divided in half (see Lipsey & Wilson, 2001, pp. 199–202). Therefore, the fixed effects model indicates a difference in proportions of about 4 per cent, and the random ef-

[7] See the Technical Appendix for more details about the fixed effects and random effects models.

[8] See Technical Appendix for more details about how the average effect size was derived.

fects model indicates a difference in proportions of about 10 per cent. For example, if 50 per cent of offenders in a control group condition reoffended, then according to our meta-analysis, 40 to 46 per cent of those who had received mentoring would reoffend. This is a small to moderate difference[9].

There was also evidence to suggest that there was significant variation in the effect sizes for the 18 comparisons[10]. This could reflect the fact that the studies differed in key methodological features such as sample size and the frequency of contact between mentors and mentees. Therefore, we investigated the degree to which different study features might have influenced how successful the interventions were in reducing reoffending.

[9] In the study with the highest effect size (Rollin et al., 2003) an employment mentoring intervention was introduced to a group of adolescents with extremely high baseline levels of offending. This, along with the fact that a non-experimental methodology was used to evaluate its effect, suggested possible bias. When this study was removed from the meta-analysis there was a reduction in the estimated influence of mentoring on offending, but this effect was still significant.

[10] See the Technical Appendix for more details of heterogeneity of the studies.

Coding of Study Features

A coding protocol was developed to identify the key features of the included studies. These were classified into key features of the sample, key features of the methodology and key features of the mentoring programme. These features are described below, and further summarised in Tables 2.2, 2.3 and 2.4 in the Technical Appendix.

Key Features of the Sample

1. Year the study was published.
The year of the study was coded in case there has been an improvement over time in methodological sophistication, with more recent studies providing more accurate estimates. Of the eighteen studies two were published in 1979, five were published between 1980 and 1989, three were published between 1990 and 1999 and eight were published between 2000 and 2006.

2. Age of the sample.
By including the age of the sample as a variable it might be possible to determine the age range where mentoring had the greatest benefit. The mean age of the participants was available in eight comparisons. In the remaining ten comparisons only age ranges were provided. All except one study addressed the mentoring of juveniles rather than adults.

3. Gender composition of the sample.
Mentoring might work better with females rather than males. Ideally, the results of evaluations should separate the results by gender to allow this to be investigated. However, this information was not presented separately in any study. Information about the gender composition of the participants was available in seventeen comparisons. This was coded as the proportion of the sample that was male, and this ranged from 39 per cent to 100 per cent.

4. Ethnic composition of the sample.
Mentoring might work better with some ethnic groups rather than others. No studies presented offending results separately by ethnic group. However, an indicator that was available in most (16) studies was the ethnic composition of the sample. This was coded as the proportion of the sample who were identified as white, and this ranged from 3 per cent to 100 per cent.

5. Total sample size.

In addition to being a feature of the sample, sample size might also be considered a measure of the methodological quality of a study. Previous research has found that small studies tend to have higher effect sizes, possibly reflecting either their poorer methodological standards or their better quality control (Farrington & Welsh, 2003). The comparisons had initial sample sizes that ranged from 100 to 1931 (average = 472, sd = 234).

6. How the sample of individuals in the study was considered 'at risk'.

Mentoring might be most effective if it is given before offending behaviour is fully established, or as an alternative to an official sanction after coming to the attention of the criminal justice system. Another possibility is that mentoring may be more useful as a strategy for reintegrating those who have been incarcerated. In line with our inclusion criteria all eighteen comparisons included individuals who had been involved in some form of offending or antisocial behaviour. In nine comparisons the sample of individuals was considered 'at risk' because of their social situation (e.g. poor neighbourhood, single parent family), and in six comparisons the sample was considered 'at risk' because they had been diverted by courts or police (before sentencing). In three comparisons the sample was 'at risk' after sentencing by the court (e.g. probation, incarceration).

Key Features of the Methodology

7. Study quality based on the Maryland Scientific Methods Scale.

Studies with higher methodological quality provide a more accurate and less biased assessment of the relationship between mentoring and offending. Past research has shown that studies of higher methodological quality tend to have lower effect sizes (Weisburd *et al.*, 2001). Each of the eighteen comparisons was assessed according to the criteria of the Maryland Scientific Methods Scale (Farrington et al., 2002; Sherman *et al.,* 1997). Seven comparisons were rated as level 5 (random assignment), five comparisons were rated as level 4 (quasi-experimental) and six comparisons were rated as level 3 (two comparable groups).

8. Study quality based on the Quality Assessment Tool.

Each of the eighteen comparisons was assessed on the ten items of the quality assessment tool devised by the Home Office (Deaton *et al.*, 2004). This tool assesses the quality of the evaluation based on aspec-

ts of the sample, potential bias, aspects of data collection and appropriateness of data analysis. For this measure low scores represent high methodological quality and high scores represent low methodological quality. The scores of the eighteen studies ranged from 4 to 8.7 with an average of 5.8 (sd = 1.3).

9. Was there follow-up after the mentoring ended?

It is important to determine whether the benefits of mentoring on reoffending only occurred while the mentoring was taking place. If mentoring reduced reoffending after the mentoring had terminated this would suggest that mentoring had a persisting influence on the mentee, possibly by increasing bonds to school or work. If mentoring reduced reoffending, but only while the mentoring was taking place, this would suggest that mentoring had temporary effects, for example, in disrupting delinquent networks or reducing the opportunity that the individual had to offend. In eight comparisons the follow-up period included a period of time after the mentoring ended, and in ten cases it did not.

10. Type of reoffending outcome.

The success of a mentoring programme might depend on the reoffending outcome measure. It might be expected that less biased measures of reoffending might provide more accurate estimates of the true influence of mentoring. For example, research has found that self-reports generally provide more accurate information than official records about who has committed offences (Farrington *et al.,* 2003). It is possible that lower effect sizes might be expected when self-reports are used. Effect sizes might be higher when arrests or convictions are used because the decision to arrest or convict might be influenced by the fact that an individual has received mentoring and failed to benefit from this. In ten comparisons arrests were presented as the outcome measure and in three comparisons convictions were presented. In an additional four comparisons the offending outcome was self-reported offending (one was self-reported violence and three were self-reported total offending). In one case the offending outcome was a school record of legal infractions in school. As these could have led to arrest they were considered arrests for purposes of this analysis.

11. Length of follow-up period.

The average length of the follow-up period in the eighteen comparisons was 18.1 months (sd = 13.0 months).

Key Features of the Mentoring

12. Whether the programme used in the study involved only mentoring, or mentoring along with other interventions.
In many cases mentoring was implemented as part of a larger intervention strategy, but in some cases mentoring was the only intervention implemented. The latter studies allow for the pure effect of mentoring on reoffending to be isolated. In six studies the intervention involved only mentoring, and in twelve comparisons the intervention involved mentoring along with other interventions. In five comparisons this involved tutoring or some form of remedial education, and in another three this involved some form of behaviour therapy (e.g. contingency training, behavioural contracting). In two comparisons the additional component of the intervention was paid employment, while in one case this was writing letters of apology to the victim along with community service. The final additional component was religious education and faith training.

13. The duration of the mentoring.
The longer the duration of the mentoring the greater the benefit that would be expected. Assuming a dose-response relationship, this would be because longer mentoring would theoretically increase the opportunity for a stronger bond between the mentor and the mentee. The duration of the mentoring ranged from 2.5 months to 48 months in the eighteen studies. The average duration was 9.8 months (sd = 10.4).

14. The frequency of contact between mentors and mentees.
For similar reasons, more frequent contact would also be expected to increase the bond between mentor and mentee. Frequent contact may also disrupt the mentee's previously established delinquent networks. In twelve comparisons the mentor and mentee met weekly, and in one other comparison they met more frequently than once a month. In two cases the mentor and mentee met once a month, and in three cases this information was not available. For the purposes of analysis this variable was divided into weekly contact versus less than weekly contact.

15. The average duration per contact.
This variable assessed the amount of time per meeting that the mentor and mentee spent together. A greater duration per contact would be expected to foster a stronger bond between the mentor and the mentee and therefore possibly have a more beneficial influence in reducing offending. Unfortunately, this information was not reported in twelve comparisons. In eleven of these twelve cases it was clear that the

mentors and mentees met, and for the purposes of our analyses it was assumed that the mentor and mentee had spent one hour together. In one comparison it was stated that mentoring took place over the phone. In this case it was assumed that the average amount of time per meeting was 0.5 hours. With these assumptions the mean amount of time per meeting was 2.3 hours (sd =2.3).

16. Estimated total time mentored.

This information was either provided in the study (n=6), or estimated based on information provided about the duration of the mentoring, the frequency of contacts, and the average amount of time per meeting (n=10). In two cases this could not be calculated. The average total time mentored was 170 hours (sd = 199).

17. Details of the fidelity of the mentoring programme

Mentoring programmes implemented with greater fidelity provide a better opportunity to assess the relationship between mentoring and reoffending because of the increased likelihood that the protocols for mentoring have been followed and that the experimental participants really received mentoring. Five variables were measured to assess the fidelity of the mentoring programme. These were: (1) whether details of the mentor were provided (such as age, gender, ethnicity), (2) whether the mentors were screened for their suitability to be a mentor (including a criminal records check), (3) whether consideration was given to how to match the mentors and mentees (matched by gender, ethnicity or another factor), (4) whether there was training for mentors, and (5) whether there was support for mentors once the mentoring relationship had commenced.

Details about the gender, ethnicity or age of the mentor were provided in seven cases and not reported in eleven. Mentors were screened in seven comparisons, and this information was not reported in eleven comparisons. Consideration was given to how to match mentors and mentees in thirteen comparisons and this information was not reported in five cases[11]. Mentors received explicit training in ten studies,

[11] In nine comparisons the mentors and mentees were matched by gender, and in three cases they were not, while in six studies information about whether gender was considered in the matching process was not available. In ten comparisons the mentors and mentees were matched on ethnicity, and in one case they were not, while in seven studies information about whether ethnicity was considered in the matching process was not available. In ten comparisons mentors and mentees were matched on an additional factor, and in three comparisons they were not, while information about whether additional factors were considered in the matching process was not available in five cases. In seven comparisons this other factor was mutual interest or shared life experience, and in two comparisons this was working for the same employer. In one case this additional factor was educational or intellectual background and in another it was geographical location.

and this information was not reported in eight cases. There was support for mentors in nine studies, and this information was not reported in nine comparisons. For the purposes of analysis all this information was combined to produce one summary measure of the fidelity of the mentoring programme. This measure scored the five variables listed above on whether fidelity was indicated or not. Scores on this variable ranged from 0 to 5 with a mean score of 2.6 (sd = 1.7).

Relationship Between Effect Sizes and Study Features

Correlations were used to investigate the relationship between the study features measured on a continuous scale (e.g. year, total sample size) and the effect sizes (d values) of the eighteen comparisons. Because the number of studies was relatively small, and information was missing in some instances, few statistically significant results would be expected. However, as a rule of thumb correlations with a magnitude of greater than 0.2 were considered meaningful. These correlations are informative but do not necessarily indicate any causal effects of the features on effect size.

Table 1.1. Correlations Between Mean Effect Size and Key Study Features.

Variable	N	r	sig.
Features of Sample			
Year of Publication	18	-0.19	n.s.
Mean Age of Sample	8	**-0.21**	n.s.
Proportion of Sample Male	17	-0.11	n.s.
Proportion of Sample White	16	0.04	n.s.
Total Sample Size	18	**-0.43**	n.s.
Features of Methodology			
Quality Assessment Tool	18	**-0.20**	n.s.
Length of Follow-up	18	**-0.29**	n.s.
Features of Mentoring Programme			
Duration of Mentoring	18	**-0.31**	n.s.
Average Duration per Contact	18	**0.68**	0.002
Estimated Total Time Mentored	16	-0.14	n.s.
Estimated Fidelity of Mentoring Programme	18	-0.09	n.s.

Note: Correlations greater than 0.2 are shown in bold type.

Table 1.1 shows the correlation between the effect size and the eleven variables that were continuous. Six of the correlations were greater than 0.2, and one of these was statistically significant, suggesting that

this result is unlikely to be due to chance. These results suggest an association between some features of the mentoring studies and their effects on reoffending. There was a negative relationship (r = -.19) between the year of the study and the effect size showing that more recent studies found less impact on reoffending. There was also a negative relationship between the effect size and the mean age of the sample (r= -.21), suggesting that mentoring had a more desirable effect on reoffending for younger as opposed to older individuals. A negative relationship was also evident for the total sample size (r=-.43), suggesting that smaller studies of mentoring found a more desirable effect on reoffending.

There was also evidence of a negative relationship between the effect sizes and the measures of the methodological quality of the studies. The correlation of the effect sizes with the quality assessment tool was r = -.20 and with the length of follow-up was r = -.29. Worryingly, this suggests that lower quality studies found a more desirable effect of mentoring. However, the correlation of -.20 is not high and is not significant.

The correlation between the effect size and the duration of mentoring was r = -.31, suggesting that mentoring had a more desirable effect when it was conducted over a shorter time period. However, it is possible that more troublesome persons were given mentoring for longer time periods, or that mentoring was terminated when it appeared to be successful. There was a significant positive relationship between the effect size and the average duration per contact (r =.68). This provides evidence that there was a more desirable effect of mentoring on reoffending in those studies where mentors and mentees spent greater time together per meeting. In order to determine the extent to which this relationship might have been created by including one hour per meeting for the eleven studies and 0.5 hours for one study where this information was not available, an additional analysis was undertaken based only on those six studies where the duration per contact was explicitly reported. When the average duration per contact was correlated with the effect size in these six studies the correlation was r = .94 (p<.005). This suggests a very strong relationship between the average duration per contact and the beneficial effect of mentoring in reducing reoffending.

Table 1.2 presents the comparisons of the mean effect sizes by the selected categorical variables[12]. The average effect size of the nine studies that classified individuals as 'at risk' because of their social situation was d = .03 (n.s.) , compared to d = .31 (p<.0001) for the six studies in which individuals were mentored before sentence, and d = .10

[12] See the Technical Appendix for more details about the comparison of effect sizes with categorical study features.

(n.s.) for the three studies in which individuals were mentored after their sentences. The Q Between Groups of 15.0 was found to be significant (p<.006), suggesting that these effects size differed significantly from one another. Therefore, only mentoring before the sentence had a significantly beneficial influence in reducing reoffending.

Unfortunately, when the average effect sizes were categorised on study quality (according to the Maryland SMS) only the average effect size of the Level 3 studies showed a significant benefit of mentoring on offending (d = .15, p<.0003). Studies rated as Level 4 had a non-significant average effect size (d = .06) and studies rated as Level 5 (randomised controlled trials) had an even lower non-significant average effect size (d=.03). This suggests that mentoring was found to be beneficial mainly in studies of lower quality. Also, studies in which the follow-up period took place after the mentoring ended did not have a significant average effect size (d = .05, n.s.), while those studies in which the follow-up took place during the mentoring did (d = .11, p<.002). This suggests that the benefits of mentoring were limited to the time period when mentoring was taking place and did not persist after the mentoring had ended.

A significant difference was found between studies depending on the offending outcome measure that was used. Studies that used self-reports, as well as those that used convictions, did not find significantly positive average effect sizes, while studies that used arrests did (d= .16, p<.0001). However, most studies used arrests and few studies measured self-reports or convictions.

Comparing the type of intervention, the results suggested that studies that used only mentoring as the intervention produced a small and non-significant average effect size (d = .05, n.s.). However, studies that used mentoring alongside other interventions produced a larger average effect size that was significant (d = .10, p<.002). This suggests that mentoring alone may not have a desirable effect on offending. Many other evaluations have suggested that multimodal interventions are more effective than single modality interventions in reducing reoffending (e.g. Harper *et al*., 2005).

The frequency of contact between mentors and mentees appeared to have a positive influence on the effect of mentoring. In those studies where mentors and mentees met weekly the mean effect size was significant (d = .10, p<.002), but the mean effect size was very small and nonsignificant (d = .02, n.s.) where mentors and mentees met less often than weekly.

Table 1.2. Comparison of Effect Sizes with Categorical Study Features.

	Features of Sample						
	Considered 'at risk'						
	Social Situation	sig.	Before Sentence	sig.	After Sentence	sig	Q between groups
Mean Effect Size(d)	0.03	n.s.	0.31	0.0001	0.10	n.s.	15.0 (2df, p<.006)
N	9		6		3		
	Features of Methodology						
	Study Quality on						
	Maryland Scale						
	Level 3	sig.	Level 4	sig.	Level 5	sig.	Q between groups
Mean Effect Size(d)	0.15	0.0003	0.06	n.s.	0.03	n.s.	4.6 (2 df, n.s.)
N	6		5		7		
	Follow-up		*Follow-up*				
	After Mentoring Ended		Before Mentoring Ended				
	Yes	sig	No	sig.	Q between groups		
Mean Effect Size(d)	0.05	n.s.	0.11	0.002	1.33 (n.s.)		
N	8		7				
	Offending Outcome						
	Arrests		Self-Report	sig.	Convictions	sig.	Q between groups
Mean Effect Size (d)	0.16	.0001	0.01	n.s.	0.05	n.s.	7.9 (2 df, p<.02)
N	11		4		3		
	Features of Mentoring Programme						
	Intervention						
	Mentoring	sig	Mentoring and other	sig.	Q between groups		
Mean Effect Size(d)	0.05	n.s.	0.10	0.002	1.03 (n.s.)		
N	6		12				
	Frequency of Contact						
	Weekly		Less than weekly				
Mean Effect Size(d)	0.10	0.002	0.02	n.s.	Q between groups		
N	12		3		2.2 (1 df, n.s.)		

Note: N = Number of evaluations

Discussion

The results of this meta-analysis of 18 studies suggest that that those who received mentoring were less likely to reoffend than those who did not. Depending on the method of summarizing effect sizes, this effect was either small or moderate with a difference in the percentage reoffending of about 4–10 per cent. However, the relationships between the average effect sizes and measures of methodological quality (both the quality assessment tool and the Maryland Scale) suggested that the apparent benefit of mentoring may have been a methodological artifact. Studies with higher methodological quality did not show that mentoring had a significant benefit in reducing reoffending. In fact, only the lowest quality studies which met the inclusion criteria (level 3) found that mentoring was a useful intervention in reducing reoffending. This limits our confidence in the conclusion that mentoring had a beneficial influence on offending.

Further analyses suggested that the influence of mentoring on the average effect size varied considerably depending on the features of the studies. For example, there was some evidence that mentoring was more beneficial in reducing reoffending with younger as opposed to older individuals. However, the small number of studies which presented the average age of the sample (n=7) limits the generalisability of this finding. There was also evidence that mentoring had a more beneficial influence on offending in studies with smaller as opposed to larger sample sizes. This may mean that studies with larger samples yield more valid results. Alternatively, this negative relationship may mean that quality control is greater in smaller studies (e.g. Farrington & Welsh, 2003).

There was evidence to suggest that mentoring might reduce the likelihood of reoffending more among those who were mentored after preliminary contact with the criminal justice system as opposed to those who had penetrated less deeply ('at risk' because of their social situation) or those who had been sentenced to probation or incarceration. This suggests that mentoring might be most beneficial at an early stage of criminal careers. However, this result may have been artifactual as the studies that considered individuals to be 'at risk' because of their social situation also had a tendency to follow up individuals after the mentoring had finished as opposed to while the mentoring was still taking place.

Another important finding of this review was that the benefit of mentoring appeared to be limited to the time period during which mentoring was taking place. Studies that collected follow-up information after the mentoring relationship was over did not show evidence of reduced reoffending. This result was similar to that found by DuBois *et al.* (2002), who concluded that the benefits of mentoring

were limited to the time period during which the mentoring was being received. This suggests that, to the extent that mentoring reduces reoffending by creating social bonds, these bonds do not produce lasting change.

Similarly, the relationship between the average effect size and the measure of offending outcome are also open to different interpretations. There appeared to be some beneficial effects of mentoring on reoffending when this was measured using arrests but little benefit when reoffending was measured using self-reports or convictions. This is possibly because the studies which used arrests as their measure of reoffending also tended to have more comprehensive mentoring programmes. That is, studies that used arrests also tended to be the studies that used mentoring plus an additional intervention (chi squared = 7.3, $p<.03$), and where the mentors and the mentees met weekly as opposed to less often (chi squared = 6.1, $p<.05$).

The evidence suggests that certain types of mentoring programmes are better at reducing reoffending than others. For example, mentoring worked best when it was accompanied by other interventions. In fact, in those studies where mentoring was the only intervention the average effect size was not significant. This may mean that mentoring is not effective in reducing reoffending and only appears to be effective because of the influence of other interventions with which it is combined. Generally, however, most evaluations of offender treatment programmes have suggested that interventions with multiple components are more effective than those with a single component (e.g. Harper *et al.*, 2005). The main implication of this is that mentoring should not be used in isolation but in combination with other interventions, especially those for which there is evidence of their effectiveness. In the current review, mentoring along with employment (Rollin *et al.*, 2003), education (Frazier *et al.,* 1981) and drawing up contracts of acceptable behaviour (Davidson & Redner, 1988) appeared to be the most beneficial combinations. It would be useful to investigate the mechanism whereby mentoring might complement other interventions. There is some evidence to suggest that mentoring may be beneficial for increasing young offenders' compliance with other court mandated treatments (Gur & Miller, 2004).

There was a significant relationship between the average effect size and the average duration per contact between the mentor and the mentee, but not between the average effect size the estimated total time mentored. This suggests that mentoring might reduce subsequent offending because the mentor is providing some support for the mentee beyond simply removing the opportunity for offending. Those studies in which mentors and mentees had weekly contact produced more positive results than those in which they met less often. If mentoring reduced reoffending by removing the opportunity for

reoffending, the estimated time period over which the individual was mentored should have been positively related to the mean effect size, but it was not.

Surprisingly, the beneficial effects of the mentoring programme did not increase with the total period of mentoring. In other words, there was not a dose-response relationship between the total duration of mentoring and the reduction in reoffending. If anything, longer duration mentoring programmes had smaller effects, although this was not a significant relationship. This might suggest that, as mentoring programmes continue, they become less effective, possibly because identifying suitable mentors becomes more difficult (e.g. Newburn & Shiner, 2004; St. James-Roberts *et al.,* 2005). Alternatively, more antisocial people might require longer periods of mentoring.

Policy Implications

The suggestion that better designed studies show a lower effect of mentoring on reoffending means that our conclusion that mentoring causes a reduction in reoffending is not totally convincing. However, there was no evidence to suggest that mentoring increased the likelihood of offending. Our results suggest ways in which mentoring interventions might be improved. Mentoring interventions involving at least weekly contact between the mentors and the mentees, and those where the average duration per contact time between mentor and mentee per meeting was greater, tended to be more successful than less intensive interventions. By itself mentoring had little effect on reoffending. Only when mentoring was offered alongside other interventions was there a desirable impact. Also, mentoring was more successful with persons apprehended by the police rather than with 'at risk' children or those on probation or parole (although numbers in this last group were small). Finally, the beneficial impact of mentoring on reoffending appeared limited to the time period that mentoring was being offered. These results suggest that mentoring could be implemented as a valuable component of a long-term intervention strategy with persons who are at an early stage of their criminal careers. However, we cannot necessarily draw causal inferences from these correlations with effect size.

Limitations of the Current Research

Like all research, this review has limitations. The constraints of a rapid evidence assessment mean that some reports (i.e. unpublished, difficult to obtain) may have been missed. A full systematic review might provide a more accurate estimate of the effect of mentoring on offending, although we doubt that its conclusions would be very dif-

ferent. We were also limited by the information available in the publications which were obtained and analysed. Information about the quality of the implementation of the mentoring programme and the nature or type of the mentoring was not always available. The greater time available for a systematic review might allow this information to be obtained from the author of the publication or from other unpublished sources.

This REA has focused only on the effects of mentoring on reoffending. It did not systematically review literature on the causal mechanisms that might intervene between mentoring and a reduction in reoffending. This would be a useful topic for research in the future.

After extensive searching only a small number (18) of comparisons of mentoring and reoffending were found that met our criteria of methodological quality. When classified into categories for analysis this small number of evaluations might limit the generalisability of our findings.

Mentoring may have other benefits beyond reducing reoffending, such as increasing social inclusion, increasing employment and increasing involvement in education, and these may have a beneficial effect in reducing reoffending in the long-term. However, these issues were not the focus of the current study.

Out of necessity the meta-analysis mainly treated the offending outcome as dichotomous. While this was the best that could be achieved in light of the published material, outcome measures of frequency (i.e. the number of offences that a person commits) or type of offending might be more sensitive to changes in patterns of reoffending which might have been influenced by mentoring.

Directions for Future Research

1. More high quality studies (randomised controlled trials) are needed. Our results suggest that mentoring might have some promise as an effective intervention for reducing reoffending but investment in better studies is needed. Ideally this would include follow-up interviews with mentees, information about a number of outcome measures (e.g. self-reported and official offending), and a follow-up period beyond the end of the mentoring to study the persistence of effects. It would also be useful to study the effects of mentoring on reoffending separately for males and females and for different ethnic groups, but this would require a relatively large sample size.

2. Future research should aim to disentangle the specific influence of mentoring in reducing reoffending. Mentoring may reduce reoffending, but because most interventions apply mentoring along with educational classes, employment (etc.) it is difficult to disen-

tangle the specific role of mentoring or its interactive effects with other features.

3. Research should continue to examine the 'dose-response' relationship between mentoring and reoffending. If mentoring reduces reoffending by developing strong social bonds between mentors and mentees, then mentoring at a high frequency in the beginning (to facilitate bonding), followed by lower frequency contact later, may be sufficient to achieve the desired effect. If however, mentoring reduces reoffending by removing offending opportunities, then continued high frequency contact between the mentor and the mentee for a longer duration might be required.

4. Cost-benefit analysis (see Welsh et al., 2001) is needed to determine the financial benefit of mentoring. Without taking into consideration methodological quality, the effect of mentoring was found to be moderate or small, but the benefit of mentoring would be greater if the costs of these programmes were small and their financial benefits were large. However, there was evidence to suggest that mentoring programmes are challenging to run, and significant resources are needed to recruit mentors who are willing to volunteer (e.g. Newburn & Shiner, 2004; St. James-Roberts *et al*., 2005).

Conclusions

Our conclusions are tantalising. Mentoring is a promising intervention with some very hopeful results but also with some puzzling features, such as the negative relationship between effect size and methodological quality. More research is needed to determine the conditions in which mentoring is more or less effective in reducing reoffending.

References

Aos, S., Lieb, R., Mayfield, J., Miller, M., & Pennucci, A. (2004). *Benefits and Costs of Prevention and Early Intervention Programs for Youth*. Olympia, WA: Washington State Institute for Public Policy.

Aseltine, R., Dupre, M. & Lamelein, P. (2000). Mentoring as a drug prevention strategy: An evaluation of Across Ages. *Adolescent and Family Healt*h, 1, 11–20.

Barnoski, R. (2002). *Preliminary Findings for the Juvenile Rehabilitation Administration's Mentoring Program* (Research Report No. 02-07-1202). Olympia, WA: Evergreen State College, Washington State Institute for Public Policy.

Blakely, C. H., Menon, R., & Jones, D. J. (1995). *Project BELONG: Final report*. College Station, TX: Texas A & M University, Public Policy Research Institute.

Blechman, E. A., Maurice, A., Buecker, B. & Helberg, C. (2000). Can mentoring or skill training reduce recidivism? Observational study with propensity analysis. *Prevention Science,* 1, 139–156.

Bozarth, J. D., & Roberts, R., R. (1972). Signifying significant significance. *American Psychologist*, 27, 774–775.

Brand, S. & Price, R. (2000). *The Economic and Social Costs of Crime*. London: Home Office. (Research Study No. 217).

Buman, B. & Cain, R. (1991). *The impact of short term, work oriented mentoring on the employability of low-income-youth*. Minneapolis Employment and Training Program, 510 Public Service Center, 250 South 4th Street., Minneapolis, MN 55415.

Butler, G., Hodgkinson, J., Holmes, E. & Marshall, S. (2004). *Evidence Based Approaches to Gang Violence*. London: Home Office (Research Study).

Chitty, C. (2005). The impact of corrections on re-offending: Conclusions and the way forward. In G. Harper & C. Chitty (Eds.). *The Impact of Corrections on Re-offending: A Review of 'What Works'*.(pp. 75–82). London: Home Office. (Research Study No. 291).

Clancy, A., Hudson, K., Magoire, M., Peake, R., Raynor, P., Vanstone, M. & Kynch, J. (2006). *Getting out and staying out: Results of the Prisoner resettlement Pathfinders*. Bristol: Policy Press.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences (2nd ed)*. Hillsdale, NJ: Erlbaum.

Davidson, W. S. & Redner, R. (1988). Prevention of juvenile delinquency: Diversion from the juvenile justice system. In R. H. Price, E.L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), *Fourteen Ounces of Prevention: A Casebook for Practitioners* (pp.123–137). Washington DC: American Psychological Association.

DiTrolio, E., Rodriguez, J. M., English, K. & Patrick, D. C. (2002). *Evaluation of the Youthful Offender System (YOS) in Colorado*. http://dcj.state.co.us/ors/pdf/docs/YOSfinalreport2.pdf

DuBois, D. L., Holloway, B. E., Valentine, J. C. & Cooper, H. (2002). Effectiveness of mentoring programs for youth: A meta-analytic review. *American Journal of Community Psychology*, 30, 157–197.

Farrington, D. P., Gottfredson, D. C., Sherman, L. W. & Welsh, B. C. (2002). The Maryland Scientific Methods Scale. In L. W. Sherman, D. P. Farrington, B. C. Welsh & D. L. Mackenzie (Eds.), *Evidence-Based Crime Prevention* (pp. 13–21). London: Routledge.

Farrington, D. P., Jolliffe, D., Hawkins, J. D., Catalano, R., F., Hill, K. G. & Kosterman, R. (2003). Comparing delinquency careers in court records and self-reports. *Criminology,* 41, 933–958.

Farrington, D. P. & Loeber, R. (1989). RIOC and phi as measures of predictive efficiency and strength of association in 2X2 tables. *Journal of Quantitative Criminology,* 5, 201–213.

Farrington, D. P. & Petrosino, A. (2001). The Campbell Collaboration Crime and Justice Group. *Annals of the American Academy of Political and Social Science*, 578, 35–49.

Farrington, D. P. & Welsh, B. C. (2003). Family-based prevention of offending: A meta-analysis. *Australian and New Zealand Journal of Criminology*, 36, 127–151.

Frazier, C. E., Richards, P. J. & Potter, R. H. (1981). *Evaluation of the Florida Project Diversion – September 1, 1980 – January 31, 1981: Final Report (1st ed.)*. Rockville, MD: National Institute of Justice. (NCJRS Document Reproduction Service No 81816)

Friendship, C., Street, R., Cann, J. & Harper, G. (2005). Introduction: The policy context and assessing the evidence. In G. Harper & C. Chitty (Eds.). *The Impact of Corrections on Re-offending: A Review of 'What Works'*. (pp. 1–16). London: Home Office. (Research Study 291).

Grossman, J. B. & Tierney, J. P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters program. *Evaluation Review*, 22, 404–426.

Gur, M. & Miller, L. (2004). Mentoring improves acceptance of a community intervention for court-referred male Persons in Need of Supervision (PINS). *Child and Adolescent Social Work Journal*, 21, 573–591.

Hanlon, T. E., Bateman, R. W., Simon, B. D., O'Grady, K. E. & Carswell, S. B. (2002). An early community-based intervention for the prevention of substance abuse and other delinquent behavior. *Journal of Youth and Adolescence*, 31, 459 – 471.

Harper, G., Man, L., Taylor, S. & Niven, S. (2005). Factors associated with offending. In G. Harper & C. Chitty (Eds.). The Impact of Corrections on Re-offending: *A Review of 'What Works'*. (pp. 39–51). London: Home Office. (Research Study No. 291).

Johnson, B. R. & Larson, D. B. (2003). *Inner Change Freedom Initiative: A Preliminary Evaluation of a Faith-Based Prison Program*. Huntsville, TX: Center for Research on Religion and Urban Civil Society.

Jolliffe, D. & Farrington, D. P. (2007). *A Rapid Evidence Assessment of the Impact of Mentoring on Reoffending: A Summary*. London: Home Office

Online Report 11/07 (www.homeoffice.gov.uk/rds/pdfs07/rdsolr1107.pdf).

Kelley, T. M., Kiyak, H. A., & Blak, R. A. (1979). The effectiveness of college student companion therapists with predelinquent youths. *Journal of Police Science and Administration*, 7 (7), 186–195.

Lipsey, M. & Wilson, D. (1998). Effective interventions for serious juvenile offenders: A synthesis of research. In R. Loeber & D. Farrington (Eds.), *Serious & Violent Juvenile Offenders: Risk Factors and Successful Interventions* (pp. 313–341). Thousand Oaks, CA: Sage.

Lipsey, M. W. & Wilson, D. B. (2001). *Practical Meta-Analysis*. Thousand Oaks, CA: Sage.

Maxfield, M., Schirm, A. & Rodriguez-Planas, N. (2003). *A Quantum Opportunity Program Demonstration: Implementation and Short-Term Impacts*. Washington, DC: Mathematica Policy Research.

McCord, J. (2003). Cures that harm: Unanticipated outcomes of crime prevention programs. *Annals of the American Academy of Political and Social Science*, 587, 16–30.

Moore, R. H. (1987). Effectiveness of citizen volunteers functioning as counselors for high-risk young male offenders. *Psychological Reports*, 61, 823–830.

Newburn, T. & Shiner, M. (2005). *Dealing with Disaffection: Young People, Mentoring and Social Inclusion*. Cullompton, Devon: Willan.

O'Donnell, C. R., Lydgate, T. & Fo, W. S. O. (1979). The buddy system: Review and follow-up. *Child Behavior Therapy*, 1, 161–169.

Rhodes, J. E. (1994). Older and wiser: Mentoring relationships in childhood and adolescence. *Journal of Primary Prevention*, 14, 187–196.

Rhodes, J. E. (2002). *Stand By Me: The Risks and Rewards of Mentoring Today's Youth*. Cambridge, MA: Harvard University Press.

Ringwalt, C. L., Graham, L. A., Paschall, M. J., Flewelling, R. L. & Browne, D. C. (1996). Supporting adolescents with guidance and employment (SAGE). *American Journal of Preventive Medicine*, 12, 31–38.

Rollin, S. A., Kaiser-Ulrey, C, Potts, I. & Creason, A. H. (2003). A school-based violence prevention model for at-risk eighth grade youth. *Psychology in the Schools*, 40, 403–416.

Sarno, C., Hearnden, I., Hedderman, C., Hough, M., Nee, C. & Herrington, V. (2000).*Working Their Way Out of Offending: An Evaluation of Two Probation Employment Schemes* . London: Home Office. (Research Study 218).

St. James-Roberts, I., Greenlaw, G., Simon, A. & Hurry, J. (2005). *National Evaluation of Youth Justice Board Mentoring Schemes 2001–2004*. London: Youth Justice Board.

St. James-Roberts, I. & Singh, C. S. (2001). *Can Mentors Help Primary School Children with Behaviour Problems?* London: Home Office. (Research Study No. 233).

Tarling, R., Burrows, J. & Clarke, A. (2001). *Dalston Youth Project Part II (11–14): An Evaluation*. London: Home Office. (Research Study No. 232).

Tong, L. S. J. & Farrington, D. P. (2006). How effective is the "Reasoning and Rehabilitation" programme in reducing re-offending? A meta-analysis of evaluations in four countries. *Psychology, Crime and Law*, 12, 3–24.

Vevea, J. L. & Woods, C. M. (2005). Publication bias in research synthesis: Sensitivity analysis using a priori weight functions. *Psychological Methods*, 10, 428–443.

Weisburd, D., Lum, C. M. & Petrosino, A. (2001). Does research design affect study outcomes in criminal justice? *Annals of the American Academy of Political and Social Science*, 578, 50–70.

Welsh, B. C., Farrington, D. P. & Sherman, L. W. (Eds.) (2001). *Costs and Benefits of Preventing Crime*. Boulder, Co: Westview Press.

Technical Appendix

More Information on Searching Strategies

At the start of the rapid evidence assessment we were aware of three studies which, potentially, met our inclusion criteria. These were the studies by O'Donnell, Lydgate and Fo (1979), Grossman and Tierney (1998) and Newburn & Shiner (2005). (3 potential studies identified.)

As previously mentioned, the search for relevant studies involved a number of strategies. These included: (1) contact with leading researchers in the area; (2) electronic database searches; (3) focused internet searches; (4) searches of research registers; and (5) hand searches of specific journals.

Contact with Leading Researchers

Contact was made with Steve Aos, Mark Lipsey and David DuBois. Steve Aos and Mark Lipsey had recently carried out large scale reviews of the effectiveness of interventions with offenders, some of which included mentoring. David DuBois recently produced a review examining the effects of mentoring, and some of these studies included offending outcomes.

Steve Aos and his colleague Annie Pennucci helped us to identify the four studies which addressed mentoring and had offending outcomes (Buman & Cain, 1991, Grossman & Tierney, 1998; Hanlon et al., 2002, O'Donnell, Lydgate & Fo, 1979) from their review on *Benefits and Costs of Prevention and Early Intervention Programs for Youth* (Aos, Lieb, Mayfield, Miller & Pennucci, 2004). However, we were already aware of two of these. (5 potential studies identified.)

Mark Lipsey generously provided us with a copy of the references to the studies that had been included in his previous review of the effectiveness of interventions with juveniles, some of which had involved mentoring (Lipsey & Wilson, 1998). Twenty-two separate studies involved mentoring, but three of these had previously been identified. Nine of these studies were immediately excluded (five were dissertations and four were earlier than 1979), and the remaining 10 were obtained. (15 potential studies identified.)

David Dubois provided five citations, but all but one of these had been identified earlier. This one study (Blakely *et al.*,1995) proved difficult to obtain but was provided to us by David DuBois. (16 potential studies identified.)

Two other researchers who had recently produced reviews and studies related to mentoring and offending were contacted, but we did not receive a response from them.

Electronic Databases

Because of the limited time frame, the search terms were limited to mentor*[13] or volunteer* or buddy* AND crim* or offend* or viol* or reoffend* or prison* or recidivism* or delinq*. However, preliminary investigations using these search terms suggested that mentor* AND crim* or offend* or viol* or reoffend* or prison* or recidivism* or delinq* were the only useful search combinations to identify mentoring studies. This was because buddy* proved too restrictive and volunteer too all-encompassing[14].

The first electronic database searched was Cambridge Scientific Abstracts Illumina, which includes the Applied Social Sciences Index and Abstracts (1987 – current), Criminal Justice Abstracts (1968 – current), Educational Resources Information Center (1966 – current), National Criminal Justice Reference Service Abstracts (1975 – current), Social Services Abstracts (1979 – current) and Sociological Abstracts (1952 – current).

Applying the agreed search terms resulted in 1,018 'hits'. The abstracts for all of these studies were obtained and reviewed[15]. Of these 1,018 studies, 23 were identified as potentially relevant. The remaining 995 were excluded because: (1) the study was a review article, (2) it was a dissertation, (3) it did not contain a quantitative offending outcome measure with sufficient numbers to meet our inclusion criteria, or (4) it was not a study of mentoring.

The next database that was searched was OVID, which includes Psychinfo (1968 – current) and Embase (1980–2006)[16]. In Psychinfo 1,482 studies made mention of mentor* somewhere in the article, and 79,172 made mention of crim* or offend* or viol* or reoffend* or prison* or recidivism* or delinq*. Combining these two searches produced 18 'hits'. Of these 18, five had previously been identified, six were discussion or review studies, five were dissertations, one did not address offending explicitly and one had too small a sample to meet our inclusion criteria.

A number of other databases were searched, but they did not produce any new studies. The ISI Web of Science provided a total of 38 studies, Igenta Connect provided 20 studies, ZETOC provided 9 studies and Sciencedirect provided one article. However, all of these studies had either been identified earlier or were not relevant to the current project.

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[13] An asterisk (*) in a search term includes all possible derivations of a word. For example, mentor* would return the terms mentor, mentoring, mentored etc.

[14] Because most individuals 'volunteer' to take part in social research, especially offenders, including the term volunteer resulted in far too many irrelevant studies.

[15] A text file containing these is available upon request.

[16] Embase contained no studies relating to our search criteria.

The search of the electronic databases resulted in the identification of 23 additional potentially relevant studies. (39 potential studies identified)

Focused Internet Search

The websites investigated included Public/Private Ventures (Grossman and Tierney, 1998; www.ppv.com), the US Department of Justice (www.usdoj.gov), the US Office of Juvenile Justice and Delinquency Prevention (www.ojjdp.ncjrs.org), the Youth Justice Board (www.youth-justice-board.gov.uk), Justice Canada (www.justice.gc.ca), the Australian Government Attorney General's Department (www.ag.gov.au), and the Home Office (www.homeoffice.gov.uk).

Two studies were identified as potentially relevant from the Public/Private Ventures website, and this site provided a link to the Center for Research on Religion and Urban Civil Society which had a potentially relevant study. The studies identified at the US Department of Justice and the Office of Juvenile Justice and Delinquency Prevention (OJJDP) websites had already been identified through the electronic database search. A link provided within OJJDP led to an article at the California Research Bureau. Two studies were identified on the Youth Justice Board website, and a link was provided to an additional article at the Home Office. No studies were identified on the Justice Canada website. Two studies were identified on the Australian Government Attorney General's Department website. No new studies were identified on the Home Office website.

The focused internet search resulted in the identification of an additional 9 studies that were potentially relevant. (48 potential studies identified.)

Late in the review a website which contained a relevant article was brought to our attention by Pat Tolan, a leading researcher. (49 potential studies identified.)

Research Registers

An electronic search of the Cochrane Library identified the Grossman & Tierney (1998) study which had already been obtained. The Cochrane library contains high-quality independent evidence (especially based on randomised controlled trials) to inform health-care policy. An electronic search of the Campbell Collaboration website (Crime and Justice Section) identified no documentation relating to mentoring. The Campbell Collaboration prepares, maintains and disseminates systematic reviews of interventions. (49 potential studies identified.)

Hand Searches of Relevant Journals

No additional studies were identified by hand searching the journals *Evaluation*, *Evaluation Review* or *Mentoring and Tutoring*. Because of the limited time of this study, only these journals were searched because of their high relevance. (49 potential studies identified.)

Reviewing the Studies

Table 2.1 shows the 49 studies that appeared potentially relevant based on their abstracts. Attempts were made to obtain all 49 studies. However, we were unable to obtain one of these. This study was published in a journal that we could not obtain (Aseltine *et al.,* 2000). Of the 48 studies that were obtained 16 met our inclusion criteria and 32 were excluded. The right-hand column of Table 1.1 shows the main reason why the study failed to meet the inclusion criteria. In most cases (13) this was because the study provided no detail about the outcome, or there was no offending outcome presented. In eight cases the numbers were too low for inclusion, and in three studies the intervention did not involve mentoring. In three studies no comparison group was available, and in three studies there was no information provided about who (if anyone) received a mentor. In one study only previously included results were presented, and in another study only qualitative information was reviewed.

Table 2.1 Studies Identified as Potentially Relevant.

Ref No.	Study	How Identified?	Met Inclusion criteria?	Why Excluded?
001	O'Donnell, C. R., Lydgate, T., & Fo, W. S. O. (1979). The buddy system: Review and follow-up. Child Behavior Therapy, 1, 161 – 169.	Before REA started.	YES	• Included
002	Grossman, J. B. & Tierney, J. P. (1998). Does mentoring work? An impact study of the Big Brothers Big Sisters Program. Evaluation Review, 22, 403 – 426.	Before REA started.	YES	• Included
003	Newburn, T. & Shiner, M. (2005). Dealing with Disaffection: Young People, Mentoring and Social Inclusion. Cullompton, Devon: Willan Publishing.	Before REA started.	YES	• Included
004	Buman, B. & Cain, R. (1991). The impact of short term, work oriented mentoring on the employability of low-income-youth. Minneapolis Employment and Training Program, 510 Public Service Center, 250 South 4th Street., Minneapolis, MN 55415.	Steve Aos	YES	• Included
005	Hanlon, T. E.., Bateman, R. W., Simon, B. D., O'Grady, K. E. & Carswell, S. B. (2002). An early community-based intervention for the prevention of substance abuse and other delinquent behavior. Journal of Youth and Adolescence, 31, 459 – 471.	Steve Aos	YES	• Included
006	Frazier, C. E., Richards, P. J. & Potter, R. H. (1981). Evaluation of the Florida Project Diversion –September 1, 1980 – January 31, 1981: Final Report (1st ed.). Rockville, MD: National Institute of Justice. (NCJRS Document Reproduction Service No 81816).	Mark Lipsey	YES	• Included
007	Davidson, W. S. & Redner, R. (1988). Prevention of juvenile delinquency: Diversion from the juvenile justice system. In R. H. Price, E.L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), Fourteen Ounces of Prevention: A Casebook for Practitioners (pp.123 – 137). Washington DC: American Psychological Association.	Mark Lipsey	YES	• Included
008	Kelley, T. M., Kiyak, H. A., & Blak, R. A. (1979). The effectiveness of college student companion therapists with predelinquent youths. Journal of Police Science and Administration, 7, 186 – 195.	Mark Lipsey	YES	• Included

Table 2.1 cont.

Ref No.	Study	How Identified?	Met Inclusion criteria?	Why Excluded?
009	Moore, R. H. (1987). Effectiveness of citizen volunteers functioning as counselors for high-risk young male offenders. Psychological Reports, 61, 823 – 830.	Mark Lipsey	YES	• Included
010	Barnoski, R. (2002). Preliminary findings for the Juvenile Rehabilitation Administration's mentoring program (Research Report No. 02-07-1202). Olympia, WA: Evergreen State College, Washington State Institute for Public Policy.	Mark Lipsey	YES	• Included
011	Keating, L. M., Tomishina, M. A., Foster, S., & Allessandri, M. (2002). The effects of a mentoring program on at-risk youth. Adolescence, 37 (148) 717 – 734.	Mark Lipsey	NO	• Numbers too low (n= 68)
012	Gabriel, R. M., Hopson, T., Haskins, M., & Powell, K. E. (1996). Building relationships and resilience in the prevention of youth violence. American Journal of Preventive Medicine, 12, 48 – 55.	Mark Lipsey	NO	• Numbers too low (n= 57)
013	Abbott, D. A., Meredith, W. H., Self-Kelly, R., & Davis, M. E. (1997). The influence of a Big Brothers program on the adjustment of boys in single-parent families. Journal of Psychology, 131, 143 – 156.	Mark Lipsey	NO	• Initial numbers sufficiently high (N=120), but attrition was too high. Analysis based on n=44
014	Cavell, T. A. & Hughes, J. N. (2000). Secondary prevention as context for assessing change processes in aggressive children. Journal of School Psychology, 38, 199 – 235.	Mark Lipsey	NO	• Numbers too low (n= 62) • Both interventions involved types of mentoring
015	Royse, D. (1998). Mentoring high-risk minority youth; Evaluation of the Brothers project. Adolescence, 33 (129), 145 – 158.	Mark Lipsey	NO	• Numbers too low (n = 46) • No offending outcomes, just disciplinary infractions in school
016	Blakely, C. H., Menon, R., & Jones, D. J. (1995). Project BELONG: Final Report. College Station, TX: Texas A & M University, Public Policy Research Institute.	David DuBois	YES	• Included

Table 2.1 cont.

Ref No.	Study	How Identified?	Met Inclusion criteria?	Why Excluded?
017	Jackson, Y. (2002). Mentoring for delinquent children: An outcome study with young adolescent children. Journal of Youth and Adolescence, 31, 115 – 122.	Cambridge Scientific Abstracts Illumina	NO	• Numbers too small (N=12) • No control group
018	Aseltine, R., Dupre, M. & Lamelein, P. (2000). Mentoring as a drug prevention strategy: An evaluation of Across Ages. Adolescent and Family Health, 1, 11 – 20.	Cambridge Scientific Abstracts Illumina	Can't Obtain	Can't Obtain
019	Howitt, P. S., Moore, E. A., & Gaulier, B. (1998). Winning the battles and the wars: An evaluation of comprehensive, community-based delinquency prevention programming. Juvenile and Family Court Journal, 49, 39 – 49.	Cambridge Scientific Abstracts Illumina	NO	• No outcome detail • Policy document
020	Scruggs, J. (2005). Life skills project: Life skills for women at Shelby county division of corrections. Journal of Correctional Education, 56, 124 – 130.	Cambridge Scientific Abstracts Illumina	NO	• No outcome detail • Mentoring offered, but no details about who, how much
021	DiTrolio, E., Rodriguez, J. M., English, K. & Patrick, D. C. (2002). Evaluation of the Youthful Offender System (YOS) in Colorado. http://dcj.state.co.us/ors/pdf/docs/YOSfinalreport2.pdf	Cambridge Scientific Abstracts Illumina	NO	• Not a mentoring intervention
022	Blechman, E. A., Maurice, A., Buecker, B. & Helberg, C. (2000). Can mentoring or skill training reduce recidivism? Observational study with propensity analysis. Prevention Science, 1, 139 – 156.	Cambridge Scientific Abstracts Illumina	YES	• Included
023	Katarzyna, C. (2000). Volunteer involvement in ex-offenders' readjustment: Reducing the stigma of imprisonment. Journal of Offender Rehabilitation, 30, 99 – 116.	Cambridge Scientific Abstracts Illumina	NO	• Numbers too low (n = 32) • No outcome detail
024	Rollin, S. A., Kaiser-Ulrey, C, Potts, I. & Creason, A. H. (2003). A school-based violence prevention model for at-risk eighth grade youth. Psychology in the Schools, 40, 403 – 416.	Cambridge Scientific Abstracts Illumina	YES	• Included

Table 2.1 cont.

Ref No.	Study	How Identified?	Met Inclusion criteria?	Why Excluded?
025	Smith, J., Tremlow, S. W. & Hoover, D. W. (1999). Bullies, victims and bystanders: A method of in-school intervention and possible parental contributions. Child Psychiatry and Human Development, 30, 29 – 37.	Cambridge Scientific Abstracts Illumina	NO	• Not a mentoring intervention • No outcome detail
026	Ringwalt, C. L., Graham, L. A., Paschall, M. J. Flewelling, R. L. & Browne, D. C. (1996). Supporting adolescents with guidance and employment (SAGE). American Journal of Preventive Medicine, 12, 31 – 38.	Cambridge Scientific Abstracts Illumina	NO	• Presentation of baseline data only
027	Beier, S. R., Rosenfield, W. D., Spitalny, K. C., Zansky, S. M., Bontemp, A. N. (2000). The potential role of an adult mentor in influencing high-risk behaviors in adolescents. Archives of Pediatric Medicine, 154, 327 – 331.	Cambridge Scientific Abstracts Illumina	NO	• Not an intervention • Assessing impact of naturally occurring mentors
028	Schwartz, S. (2005). Life skills project: The San Francisco Sheriff's Department Life Skills for Prisoners Program. Journal of Correctional Education, 56, 115 – 123.	Cambridge Scientific Abstracts Illumina	NO	• Not clear who, if anyone received a mentor
029	Little, M., Kogan, J., Bullock, R. & Van Der Laan, P. (2004). An experiment in multi-systemic responses to persistent young offenders known to children's services. British Journal of Criminology, 44, 225 – 240.	Cambridge Scientific Abstracts Illumina	NO	• Not clear who received mentoring • Mentoring allocated in 69% of cases with 59% success • Numbers too small
030	Irwin, D. (2002). Alternatives to delinquency in Harlem: A study of faith-based community mentoring. Justice Professional, 15, 29 – 36.	Cambridge Scientific Abstracts Illumina	NO	• Descriptive • No outcome detail
031	Leverette-Sanderlin, A. (2001). Camp turning point. Law and Order, 49, 122.	Cambridge Scientific Abstracts Illumina	NO	• Descriptive • No outcome detail
032	Boaz, A. & Pawson, R. (2005). A perilous road from evidence to policy: Five journeys compared. Journal of Social Policy, 34, 175 – 194.	Cambridge Scientific Abstracts Illumina	NO	• Descriptive • No outcome detail

Table 2.1 cont.

Ref No.	Study	How Identified?	Met Inclusion criteria?	Why Excluded?
033	Roth, J., Brooks-Gunn, J. Murray, L. & Foster, W. (1998). Promoting healthy adolescents: Synthesis of youth development program evaluations. Journal of Research on Adolescence, 8, 423 – 459.	Cambridge Scientific Abstracts Illumina	NO	• Not mentoring intervention
034	Baltodano, H. M. Mathur, S. R. & Rutherford, R. B. (2005). Transition of incarcerated youth with disabilities across systems and into adulthood. Exceptionality, 13, 103 – 124.	Cambridge Scientific Abstracts Illumina	NO	• No outcome detail • No control group
035	Gur, M. & Miller, L. (2004). Mentoring improves acceptance of a community intervention for court-referred male Persons in Need of Supervision (PINS). Child & Adolescent Social Work Journal, 21, 573 – 591.	Cambridge Scientific Abstracts Illumina	NO	• No offending outcomes • Mentoring as a method of maintaining program attendance
036	Heard, C. A. (1990). The preliminary development of the Probation Mentor Home Program: A community-based model. Federal Probation, 54, 51 – 56.	Cambridge Scientific Abstracts Illumina	NO	• No outcome detail
037	Grossman, J. B. & Garry, E. M. (1997). Mentoring – A Proven Delinquency Prevention Strategy. Washington DC: US Office of Juvenile Justive and Delinquency Prevention.	Cambridge Scientific Abstracts Illumina	NO	• Based on Grossman & Tierney (1998) results • No new data presented
038	*Juvenile Mentoring Program 1998 Report to Congress.* Washington DC: US Office of Juvenile Justice and Delinquency Prevention.	Cambridge Scientific Abstracts Illumina	NO	• No control group
039	Novotney, L. C., Mertinko, E. Lange, J. & Kelly-Baker, T. (2000). *Juvenile Mentoring Program: A Progress Review*. Washington DC: US Office of Juvenile Justice and Delinquency Prevention.	Cambridge Scientific Abstracts Illumina	NO	• No outcome detail • No control group
040	Hockensmith, C. (2003). Improving Juvenile Delinquency Through Faith-Based Services. New York: Public/Private Ventures.	Public/Private Ventures Website	NO	• Descriptive • No outcome detail
041	Branch, A. (2002). Implementation of the National Faith-Based Initiative for High-Risk Youth. New York: Public/Private Ventures.	Public/Private Ventures Website	NO	• Descriptive • No outcome detail

Table 2.1 cont.

Ref No.	Study	How Identified?	Met Inclusion criteria?	Why Excluded?
042	Foster, L. (2001). Effectiveness of Mentor Programs: Review of the Literature from 1995 to 2000. Sacramento, CA: California Research Bureau.	Sacramento State Library (link from ojjdp website)	NO	• Review of past studies • No new data presented • Describes qualitative results
043	Tarling, R., Davison, T. & Clarke, A. (2004). The National Evaluation of the Youth Justice Board's Mentoring Projects. London: Youth Justice Board.	Youth Justice Board Website	NO	• No control group
044	St. James-Roberts, I., Greenlaw, G., Simon, A. & Hurry, J. (2005). *National Evaluation of Youth Justice Board Mentoring Schemes 2001 – 2004.* London: Youth Justice Board.	Youth Justice Board Website	YES	• Included
045	St. James-Roberts, I. & Singh, C. S. (2001). Can mentors help primary school children with behaviour problems.(Research Study, 233), London: Home Office	Home Office Website	NO	• Numbers too small (n= 50 plus attrition) • No offending outcome
046	Wilczynski, A., Culvenor, C. Cunneen, C. S, Schwartzkoff, J. & Reed-Gilbert, K. (2003). Early Intervention: Youth Mentoring Programs. Canberra: Australian Government Attorney-General's Department.	Australian Government Attorney General's Office Website	NO	• No control group
047	Polk, K. Adler, C. Muller, D. & Rechtman. K. (2003). Early Intervention: Diversion and Youth Conferencing. Canberra: Australian Government Attorney-General's Department.	Australian Government Attorney General's Office Website	NO	• Descriptive • No outcome detail
048	Johnson, B. R. & Larson, D. B. (2003). The InnerChange Freedom Initiative: A Preliminary Evaluation of a Faith-Based Prison Program. Huntsville, TX: Center for Research on Religion and Urban Civil Society	Internet (cited on Public/ Private Ventures website).	YES	• Included
049	Maxfield, M., Schirm, A. & Rodriguez-Planas, N. (2003). The Quantum Opportunity Program Demonstration: Implementation and Short-Term Impacts. Washington DC: Mathematica Policy Research.	Pat Tolan	YES	• Included

More Information About Analysis of Included Studies

Rules for Which Outcome was Chosen for Meta-Analysis

Because of practical limitations only a single measure of reoffending was chosen to assess the effect of each study. In studies where multiple reoffending outcomes were available, the prevalence of reoffending was used. Prevalence refers to the number of individuals involved in reoffending. Therefore, if 50 out of 100 individuals had offended, the prevalence of offending would be 50%. Prevalence was used rather than frequency, which refers to the number of offences committed per offender. If in the above example, 100 offences had been committed, that would be equivalent to a frequency of 2 offences per offender.

The decision to use prevalence rather than frequency was made because most studies only provide prevalence information. Also, research has demonstrated a greater concordance between different offending outcomes (e.g. self-reports and court referrals) for measures of prevalence compared to measures of frequency (Farrington et al, 2003).

In cases where different levels of reoffending outcomes were reported (e.g. arrest, court referral, conviction), the earliest was chosen (e.g. arrest) to increase comparability across studies. Also, this would increase comparability with self-reported offending, generally regarded as the most accurate measure of true offending (Farrington, 2001). In cases where there were multiple types of offending reported (e.g. self-reported offending total, self-reported theft, self-reported violence etc) the most encompassing measure was used (e.g. total offences). If a more global measure was not available, then the most serious type of offending was used (e.g. violence rather than theft in the example above). This ordering of offence seriousness was based on the costs of offending as estimated by the Home Office (Brand & Price, 2000).

Deriving the Average Effect Size

The weighted mean effect size in a fixed effects model is obtained by adding each effect size multiplied by its inverse variance, and dividing this sum by the sum of the inverse variance weights. For the 18 comparisons included in this REA the mean effect size using a fixed effect model was d = 0.08 (95% CI .03 –.12). The corresponding z-value of 3.29 calculated for this mean effect size is significant at the $p<.001$ level. The weighted mean effect size in a random effects model is the sum of each effect size multiplied by its inverse variance (modified by an additional random effects variance component), dividing this sum by the sum of the inverse variance weights. For the 18 compari-

sons included in this REA the mean effect size using a random effects model was d = 0.21 (95% CI .07–.34). The corresponding z-value of 3.04 calculated for this mean effect size is significant at the p<.002 level.

A number of methods of interpreting the magnitude of effect sizes have been proposed. A widely used convention is that proposed by Cohen (1988). An effect size of about .20 is considered small, while an effect size of around .50 is considered medium and an effect size greater than .80 is considered large. However, this convention seems too conservative. A more meaningful way of interpreting an effect size can be provided by converting the results to the differences in proportions offending between those who have or have not received mentoring. First, the standardised mean effect size (d) is converted to a phi correlation r (Lipsey & Wilson, 2001, p. 199). This results in an r value of approximately half that of d, and this value of r or phi is, in turn, equal to the difference in proportions between the two groups (Farrington & Loeber, 1989).

For example, if it was assumed that half (50%) of the controls in the 18 comparisons would commit offences at follow-up, the standardised mean difference (fixed effects model) d of .08 can be converted to r (.04), which is equal to the difference in proportions committing offences between those who have or have not been mentored. Therefore 46% of those who had been mentored would commit offences.

A similar conversion can be made for the random effects model. The d of the random effects model of .21 is equal to an r of about .10, and assuming half of those in the control group would commit offences the random effects model suggests that 40% of those who received mentoring would commit offences.

More Information About the Heterogeneity of Studies

The heterogeneity (Q) of this sample of 18 comparisons was calculated to determine if the variability across effect sizes was greater than would be expected from sampling error alone. The resulting Q value of 121.7 (17df) was significant at the p<.0001 level. Therefore, the variance of these samples of effect size measures was greater than would be expected from sampling error alone. Although some of this variance may have been random, or resulted from random differences between the studies, a certain amount of the variability might be explained using some of the methodological features of the comparisons.

Details of the Key Features of the Studies

Tables 2.2, 2.3 and 2.4 provide the key features of the studies that were coded and subsequently used in the analysis.

Table 2.2. Key Features of the Sample of Included Studies.

Study ID	Publication, Location	Initial Sample	Age of Sample	Gender Composition of Sample (% Male)	Ethnic Composition of Sample (% White)	No. Experimentals and Controls for Analysis	Sample Considered at Risk
010	Barnoski (2002) Washington	156 male and female incarcerated youth and controls	Maximum age 18	N/A	N/A	E = 78 C = 78 Attrition not reported	Incarcerated
016	Blakely *et al.* (1995) Texas	385 referred males and females	10 – 14	42%	49%	E = 206 C = 179 Attrition not reported	Social situation
022	Blechman *et al.* (2000) Colorado	182 male and female young offenders	11 – 18 (M = 15.3)	72%	77%	E = 45 C = 137 Attrition not reported	Diverted by courts or police
004	Buman & Cain (1991) Minneapolis	244 male and female young people	14 – 21	49%	9%	E = 137 C = 107 Attrition not reported	Social situation
007	Davidson and Redner (1988) Michigan – 1	136 male and female arrested youths	M = 14.2	83%	74%	E = 76 C = 60 Attrition not reported	Diverted by courts or police
007a	Davidson and Redner (1988) Michigan – 2	124 male and female arrested youths	M = 14.1	84%	70%	E = 99 C = 25 Attrition not reported	Diverted by courts or police
006	Frazier *et al.* (1981) Orange County Florida	419 male and female arrested youths	8 – 18	72%	72%	E = 198 C = 112 E attrition = 28% C attrition = 29%	Diverted by courts or police

Table 2.2 cont.

Study ID	Publication, Location	Initial Sample	Age of Sample	Gender Composition of Sample (% Male)	Ethnic Composition of Sample (% White)	No. Experimentals and Controls for Analysis	Sample Considered at Risk
006a	Frazier *et al.* (1981) Alachua County Florida	370 male and female arrested youths	8 – 18	78%	53%	E = 67 C = 123 E attrition = 69% C attrition = 19%	Diverted by courts or police
002	Grossman & Tierney (1998) 8 sites across US	1138 male and female referred youths	10 – 16	62%	43%	E = 487 C = 472 E attrition = 15% C attrition = 17%	Social situation
005	Hanlon et al. (2002) Baltimore	428 referred males and females	M = 13.3	59%	3%	E = 235 C = 193 Attrition not reported	Social situation
048	Johnson & Larson (2003) Texas	1931 adult male inmates in prison.	Minimum age 18	100%	25%	E = 177 C = 1754 Attrition not reported	Incarcerated
008	Kelley et al. (1979) Michigan	128 male and female arrested youths	10 – 17 M = 14.5	51%	22%	E = 65 C = 63 Attrition not reported	Diverted by courts or police
049	Maxfield et al. (2003) 7 cities across the US	1069 males and females	14 – 19	54%	6%	E = 580 C = 489 Attrition not reported	Social situation

Table 2.2 cont.

Study ID	Publication, Location	Initial Sample	Age of Sample	Gender Composition of Sample (% Male)	Ethnic Composition of Sample (% White)	No. Experimentals and Controls for Analysis	Sample Considered at Risk
009	Moore (1987) Florida	100 white male young offenders	16 – 22 M = 18.8	100%	100%	E = 50 C = 50 Attrition not reported	Probation
003	Newburn & Shiner (2005) 10 sites across UK	550 male and female referred youths	12 – 19	67%	43%	E = 155 C = 68 E attrition = 59% C attrition = 60%	Social situation
001	O'Donnell, Lydgate and Fo (1979) Hawaii	553 male and female referred youths	10 – 17	65%	N/A	E = 335 C = 218 Attrition not reported	Social situation
024	Rollin et al. (2003) Florida	156 referred males and females	M = 13.5	39%	3%	E = 78 C = 78 Attrition not reported	Social situation
044	St. James-Roberts et al. (2005) 80 sites across UK	2898 referred males and females	10 – 19	74%	84%	E = 658 C = 558 E attrition = 62% C attrition = 51%	Social situation

Notes: N/A – Information not available; M = Mean, E = Experimental, C = Control

Table 2.3. Key Features of the Methodology of Included Studies.

Study ID	Publication, Location	Allocation	Experimental and Control Matching	Modified SMS	Score on Quality Assessment Tool	Follow-up After Mentoring Ended?	Results
010	Barnoski (2002) Washington	Purposive	Gender, ethnicity and risk of reconviction score	4	5.7	No	12 month reconviction E 45% (78) C 54% (78)
016	Blakely *et al.* (1995) Texas	Random	Random Allocation	5	4.7	No	Court referrals 12 months before and 6 months after Pre Post E=9.7%(20) E=10%(21) C=12%(21) C=15%(27)
022	Blechman *et al.* (2000) Colorado	Purposive	Gender, age, ethnicity, parental income, level of SR delinquency	4	5.7	Yes	32 month rearrest E 51% (45) C 46% (137)
004	Buman & Cain (1991) Minneapolis	Purposive	Age, ethnicity, gender, family status, income, education	4	4.3	Yes	3 years arrest E 21.9% (137) C 29.0% (107)
007	Davidson and Redner (1988) Michigan – 1	Random	Random Allocation	5	5.0	Yes	24 month rearrest E 38.2% (76) C 61.7% (60)
007a	Davidson and Redner (1988) Michigan – 2	Random	Random Allocation	5	5.0	Yes	24 month rearrest E 30.3% (99) C 68% (25)
006	Frazier *et al.* (1981) Orange County Florida	Purposive	Ethnicity, gender and prior delinquency. Current offence more serious for controls. Controls older.	3	7.7	No	4 month rearrest E 4.5% (9) C 19.6% (22)

Table 2.3 cont.

Study ID	Publication, Location	Allocation	Experimental and Control Matching	Modified SMS	Score on Quality Assessment Tool	Follow-up After Mentoring Ended?	Results
006a	Frazier *et al.* (1981) Alachua County Florida	Purposive	Ethnicity, gender, age prior delinquency and current offence seriousness	3	7.7	No	4 month rearrest E 14.9% (10) C 13.8% (17)
002	Grossman & Tierney (1998) 8 sites across US	Random	Random Allocation	5	4.7	Yes	12 month SR violence E 41% (487) C 41% (472)
005	Hanlon et al. (2002) Baltimore	Purposive	Similar in ethnicity and gender. Controls older and reported greater family dysfunction, school problem behaviour and peer deviance. Controls also reported greater involvement in delinquency.	3	6.3	No	12 month SR of arrests E = 17.0% (235) C = 27.0% (193)
048	Johnson & Larson (2003) Texas	Purposive	Matched on age, ethnicity, current offence and salient risk score.	4	5.0	No	24 month rearrest E 36.2% (64) C 35.0% (614)
008	Kelley et al. (1979) Michigan	Purposive	Age, gender, ethnicity, offence history and current offence type	4	5.3	No	7.5 month rearrest E 20% (65) C 36.5% (63)
049	Maxfield et al. (2003) 7 cities across the US	Random	Random Allocation	5	4.0	No	12 month SR offence E 31% (180) C 28% (137)

Table 2.3 cont.

Study ID	Publication, Location	Allocation	Experimental and Control Matching	Modified SMS	Score on Quality Assessment Tool	Follow-up After Mentoring Ended?	Results
009	Moore (1987) Florida	Random	Random Allocation	5	5.7	No	10 month reconviction E 14% (50) C 54% (50)
003	Newburn & Shiner (2005) 10 sites across UK	Purposive	Ethnicity and gender. E more likely to be excluded from school	3	7.3	No	12 month SR offending pre post E 82%(127) E 71%(119) C 84%(57) C 62%(42)
001	O'Donnell, Lydgate and Fo (1979) Hawaii	Random	Random Allocation	5	4.7	Yes	3 years rearrest E 27.5% (335) C 22.9% (218)
024	Rollin et al. (2003) Florida	Purposive	Gender, age, ethnicity. Experimentals had higher number of legal infractions at school than controls at preintervention	3	7.0	No	Initial no. legal infractions at school. E 4.7 (sd=5.1) (78) C 2.0 (sd=1.9) (78) 10 month no. legal infractions at school E 1.6 (1.7) (78) C 2.9 (2.2) (78)
044	St. James-Roberts et al. (2005) 80 sites across UK	Purposive	Not Clear	3	8.7	Yes	12 month reconviction pre post E 80%(526) E 54%(355) C 82%(458) C 55%(307)

Note: SMS = Maryland Scientific Methods Scale; E = Experimental; C = Control; SR = Self-Report

Table 2.4. Key Features of the Mentoring of Included Studies.

Study ID	Publication, Location	Condition	Duration of mentoring (months)	Frequency of Contact Between Mentors and Mentees	Average Duration per Contact (hours)	Estimated Total Time Mentored (hours)	Estimated Fidelity of Mentoring Programme
010	Barnoski (2002) Washington	E = Mentoring C = Control	12	Weekly	N/A	52	4
016	Blakely et al. (1995) Texas	E = Mentoring C = No assistance provided	6	Weekly	N/A	146	5
022	Blechman et al. (2000) Colorado	E = Mentoring, Juvenile Diversion C = Juvenile Diversion	4.8	N/A	N/A	147	0
004	Buman & Cain (1991) Minneapolis	E = Summer work based mentoring C = Summer work	2.5	Weekly	N/A	5	1
007	Davidson and Redner (1988) Michigan – 1	E = Mentoring, behavioural contracting. C = control	18	Weekly	6	108	4
007a	Davidson and Redner (1988) Michigan – 2	E = Mentoring, behavioural contracting. C = control	24	Weekly	6	108	4
006	Frazier et al. (1981) Orange County Florida	E = Diverted from court, mentoring, other assistance. C = Processed via court	4	N/A	N/A	N/A	0

Table 2.4 cont.

Study ID	Publication, Location	Condition	Duration of mentoring (months)	Frequency of Contact Between Mentors and Mentees	Average Duration per Contact (hours)	Estimated Total Time Mentored (hours)	Estimated Fidelity of Mentoring Programme
006a	Frazier et al. (1981) Alachua County Florida	E = Diverted from court, mentoring, other assistance C = Processed via court	4	N/A	N/A	N/A	0
002	Grossman & Tierney (1998) 8 sites across US	E = Mentoring C = Waiting list	11.4	Once a Month	3.6	41	3
005	Hanlon et al. (2002) Baltimore	E = Group mentoring, individual counseling, field trips C = individual counselling	4.5	Weekly	N/A	162	1
048	Johnson & Larson (2003) Texas	E = Support groups, remedial education and mentoring in a religious context C = Control	24	Weekly	2	144	2
008	Kelley et al. (1979) Michigan	E = Mentoring C = Processed via court	7.5	Weekly	4	120	4
049	Maxfield et al. (2003) 7 cities across the US	E = Case management, mentoring, supplemental education, developmental activities, financial incentives C = Control	48	Weekly	N/A	696	3

Table 2.4 cont.

Study ID	Publication, Location	Condition	Duration of mentoring (months)	Frequency of Contact Between Mentors and Mentees	Average Duration per Contact (hours)	Estimated Total Time Mentored (hours)	Estimated Fidelity of Mentoring Programme
009	Moore (1987) Florida	E = Mentoring and Probation Programme C = Probation Programme	9.1	Greater than once a month	N/A	30	3
003	Newburn & Shiner (2005) 10 sites across UK	E = Mentoring C = Waiting list and those who expressed an interest, but chose not to take part	10 – 12	Weekly	N/A	572	5
001	O'Donnell, Lydgate and Fo (1979) Hawaii	E = Mentoring, contingency management C = Control	12	Weekly	N/A	52	2
024	Rollin et al (2003) Florida	E = Employment based mentoring C = Waiting List	5.4	Weekly	8.0	332	1
044	St. James-Roberts et al. (2005) 80 sites across UK	E = Mentoring C = Waiting list	7	Once a month	N/A	8	4

Notes: N/A = Information not available; E = Experimental; C = Control