



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

# Effectiveness of Interventions with Adult Male Violent Offenders

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Swedish National Council for Crime Prevention

# Effectiveness of Interventions with Adult Male Violent Offenders

Darrik Jolliffe, University of Leicester  
David P. Farrington, Cambridge University

Report prepared for  
The Swedish National Council for  
Crime Prevention

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

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# Foreword

Interventions to prevent criminal behaviour among offenders are vital in modern society's criminal policies. A number of programmes have been implemented and some of them focus on violent offenders specifically. But how well do they 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 an individual country like Sweden. For this reason, the Swedish National Council for Crime Prevention (Brå) has commissioned distinguished researchers to carry out an international review of the research published in this field.

This report presents a systematic review, including statistical meta-analysis, of the effects of programmes for preventing future offending among violent offenders, which has been conducted by Dr. Darrick Jolliffe of the University of Leicester (United Kingdom) and Professor David P. Farrington of Cambridge University (United Kingdom).

The study follows a rigorous method for the conduct of a systematic review. 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 meta-analysis then uses the results from these previous evaluations to calculate and produce overviews of the effects that the programmes to prevent violent and non-violent offending have. Thus the objective is to systematically evaluate the results from a number of studies in order to produce a more reliable picture of the opportunities and limitations associated with programmes in relation to crime prevention efforts.

In this case, the systematic review, and the statistical meta-analysis, builds upon a relatively small number of evaluations. Even though important questions remain unanswered, the study provides an accessible and far-reaching overview of programmes to prevent further offending among violent offenders.

Stockholm, October 2009

*Jan Andersson*  
Director-General

# Executive Summary

## Background

There have been a number of reviews of interventions with offenders, but these have focused on general offending groups (e.g. Tong & Farrington, 2006), rather than violent offenders. This is surprising given the significant impact of violent offending on victims and society, as well as the prolific criminal careers of typical violent offenders. This investigation attempts to fill this gap in the literature by undertaking a comprehensive systematic review and meta-analysis of empirical studies which evaluated the effectiveness of interventions with adult male violent offenders.

## Objectives of the Study

The purpose of the systematic review and meta-analysis was to assess the effectiveness of interventions with adult male violent offenders. Furthermore, the review was also designed to identify the possible mediators and moderators of effective interventions while also making recommendations about future research.

## Methodological Approach

A set of inclusion criteria were established to guide the search. For example, studies of interventions with domestic violence offenders, sex offenders and violent persons with a personality disorder or mental disorder were excluded. Also, evaluations needed to meet a minimum standard of methodological quality (e.g. Level 3 on the Maryland Scale or higher), have a minimum number of participants (50 persons total), and also have sufficient quantitative outcome information (e.g. on re-offending) so that an effect size could be calculated for each evaluation.

The strategy to identify studies involved searches of a number of sources. This included electronic databases, research registers, reference lists of relevant articles, and searches of studies that cited relevant articles. Furthermore, relevant journals were searched by hand and experts in the area were contacted for assistance in identifying potentially relevant articles.

Over 2000 potential articles were identified, but a large number of these could be excluded based on their title or abstract. A total of 89 studies were obtained and reviewed and 12 were judged to meet the inclusion criteria.

## Results

Of the twelve studies three reported a statistically significant reduction in re-offending, seven reported a reduction in re-offending, but not to a

statistically significant level, and two reported an increase in re-offending, but not to a statistically significant level. Combining these effect sizes together showed that the weighted mean effect size was between  $d = .14$  and  $d = .18$  ( $p = .001$  and  $p = .01$  respectively). This suggested that these interventions were successful in reducing re-offending among violent offenders by about 7–9%.

Nine of the twelve studies examined the impact of the intervention on later violence. Overall two studies reported a statistically significant reduction in violent re-offending, five reported a reduction in violent re-offending which was not statistically significant and two reported a (non-significant) increase in violent re-offending. Combining these effect sizes together showed that the weighted mean effect sizes was between  $d = .12$  and  $d = .14$  ( $p = .009$  and  $p = .02$  respectively). This suggested that these interventions were successful in reducing violent re-offending among violent offenders by about 6–7%.

Further analyses suggested that the effectiveness of interventions varied considerably depending on the features of the study, the content of the intervention, the delivery of the intervention and the method of the analysis. For example, there was some evidence to suggest that those interventions of greater overall duration were more effective, and that a greater duration per session was associated with a greater effect for both general and violent re-offending. Also, interventions that addressed anger control, cognitive skills, used role playing or relapse prevention appeared more effective than those that did not. Conversely, interventions that used moral training, basic education or empathy training were less effective in reducing general or violent re-offending.

A relationship was found between the effect size and the method of analysis of the evaluations. Those evaluations that included only persons who completed the intervention, arguably a biased sample, found higher effects than those that included all persons who were intended to be treated (completers plus those who dropped out of treatment).

Controlling for this potentially biasing factor, some features of the intervention continued to be related to decreases in re-offending. These were cognitive skills, role playing and relapse prevention. Further analyses suggested that not using any of these interventions, or only using one, was associated with little reduction in re-offending. However, interventions which employed two or three of these successful features had significantly higher effects in reducing general re-offending.

## Policy Implications

This systematic review and meta-analysis clearly shows that interventions with violent offenders are successful in reducing general re-offending and violent re-offending. In light of the considerable harm caused to victims and costs incurred by society, the treatment of violent offenders should be a priority. Furthermore, the research also provides suggestions about



what a particularly effective intervention with violent offenders would look like. Effective interventions were intensive in terms of their overall duration and in their duration per session; they tended to employ at least two and preferably all three of cognitive skills training, role play and relapse prevention. Furthermore, they did not teach basic skills or involve empathy training.

## Conclusions

The conclusion of this review is that interventions with violent offenders are usually successful. However, the success of these interventions depends on their intensity and content, with more intensive multi-modal interventions (of certain types) being more successful.

Clearly more evaluative research of higher methodological quality is needed before firm conclusions can be drawn about the most effective methods of intervening with violent offenders. Ideally this would involve careful randomised controlled trials which made efforts to control for previous violent and nonviolent criminal history, the point in the sentence when the intervention was applied, and the number of other interventions that the offenders had experienced and/or completed. Furthermore, greater detail about the type, frequency, severity and time to re-offence would allow for greater sensitivity when assessing the effectiveness of the intervention.

# Introduction

## Background information

There have been a number of prior reviews of the effectiveness of interventions with offenders in general. For example, a systematic review of 26 evaluations of the “Reasoning and Rehabilitation” programme by Tong and Farrington (2006) concluded that those offenders who received this intervention were about 14% less likely to be reconvicted than those who had not. Furthermore, in their extensive review Wilson, Allen and MacKenzie (2004) concluded that Reasoning and Rehabilitation, moral reconnection therapy and other cognitive-behavioural programmes were all effective according to ‘higher quality’ evaluations with reductions in reconvictions in the range of 8–25%. A Cambridge University Press book by Doris MacKenzie (2006) expands on these promising results.

There seems, however, to be a conspicuous absence of studies and reviews which deal with treatment effectiveness for violent offenders specifically, although there are reviews of effects of interventions on violent re-offending (e.g. Dowden & Andrews, 2000). This absence is surprising as violent crime is generally considered more serious than other forms of criminal behaviour, because of the harm to the victim of the violence as well as the greater costs incurred by society (Dowden et al., 1999). Violent offenders comprise a relatively small proportion of the total number of offenders, but research has found that this group commits a disproportionate amount of both violent and non-violent crime (e.g. Wolfgang et al., 1972). In many ways, violent offenders are similar to frequent offenders (Farrington, 1991). A small fraction of the population commits a large fraction of all violent offences. For example, in two large prospective longitudinal studies in the US, 14–15% of the samples committed 75–82% of all violent offences (Thornberry et al., 1995).

## The Current Investigation

This investigation involved a comprehensive systematic review and meta-analysis of empirical studies which evaluated the effectiveness of interventions with adult male violent offenders. Unlike narrative reviews of research, systematic reviews use rigorous methods for locating, appraising, and synthesising evidence from prior studies. Systematic reviews have explicit objectives, explicit criteria for including and excluding studies, and they are reported with the same level of detail that characterises high quality reports of original research (e.g. Farrington & Petrosino, 2000). Meta-analysis (a form of survey research based on research reports rather than subjects) was also used to quantify the results of the systematic review. An effect size measure was derived in

each study that was included in the systematic review and these effect sizes were summarised to provide a critical assessment of the impact of interventions with violent offenders.

## Objectives of the Study

This systematic review had the following objectives:

1. To characterise (and as far as possible quantify) the evidence to date on the effects of interventions with adult male violent offenders. This included assessments of the impact on various types of re-offending, but also the potential impact on the frequency and seriousness of re-offending as well as the time to re-offending where available.
2. To characterise (and as far as possible quantify) the potential mediators and moderators of the relationships identified in 1 above. For example, the results might be influenced by the type of intervention, the fidelity of implementation of the intervention, the setting where the intervention took place, or the types of violent offenders.
3. In light of what has been learned in past evaluations, and their limitations, to make recommendations about what future evaluation research is needed to advance knowledge about the effectiveness of interventions with violent offenders.

## Inclusion Criteria

Below is a list of the criteria that was used for including a study in the current review.

1. The study investigated the effects of an intervention or treatment broadly defined.
2. The intervention was applied to a sample of adult<sup>1</sup> males who were violent offenders, broadly defined. For the purposes of this review a violent offender was defined as a person identified as violent either by official contacts with the criminal justice system or through self-reports. Studies which evaluated interventions for domestic violence, sexual offending or those with a personality or mental disorder were not included (see reviews by Brooks-Gordon, Bilby & Wells, 2006; Doren & Yates, 2008; Feder & Wilson, 2005).
3. The study measured at least one quantitative offending outcome variable. In addition it must have reported results on at least one such variable in a form that, at a minimum, allowed the direction of

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<sup>1</sup> Adult was defined as age 18 or over. If an individual was present in an adult prison or community based treatment programme he was presumed to meet these criteria.

the effect to be determined (whether the outcome was more favourable for the treatment or control group). Information about the frequency and seriousness of the re-offending was also coded if available. If an offending outcome was measured but the reported results fell short of this standard, the study was still included if the required results were obtained from the author or other sources. At a minimum, information about the proportion of those re-offending amongst those who were or were not subject to the intervention was required. This allowed for the calculation of an effect size (and its variance) so that it could be included in a meta-analysis.

4. The study design involved a comparison that contrasted one or more interventions with one or more comparable control conditions. Control conditions could be 'no treatment', 'treatment as usual', 'placebo treatment' etc. Comparability between treatment and control conditions could be established by random assignment, matching, risk scores or prior measures of offending.

Random assignment designs that met the above conditions were always eligible under this criterion. One-group pretest-posttest studies were never eligible (studies in which the effects of treatment were examined by comparing measures before treatment with measures taken after treatment on a single sample). Non-equivalent comparison group designs might be eligible (studies in which treatment and control groups were compared even though the research participants were not randomly assigned to those groups). To be eligible, however, such comparisons must have had either: (a) matching of the treatment and control groups prior to treatment on a recognised risk variable for offending such as prior offending history or on a risk of reconviction score; (b) a pre-intervention measure (pretest) of at least one offending outcome variable on which the treatment and control groups can be compared; or (c) some other demonstration of the comparability of treatment and control groups.

These criteria are equivalent to including studies at Level 3 to Level 5 of the modified Scientific Methods Scale (Friendship et al., 2005).

5. The study included at least 25 persons per condition initially, or 50 persons in total. Smaller studies are likely to have low internal and external validity and insufficient statistical power and are therefore less likely to be robust. A minimum initial sample size of 100, as in the review of randomised experiments by Farrington & Welsh (2005), would have improved the robustness of included studies and therefore, the strength of the findings from this review. However, this would have led to the inclusion of very few studies and reduced the practical benefits of conducting a comprehensive search. Also, publication bias is more likely to be a problem with smaller studies

(significant findings are published whereas non-significant findings are not) and attrition rates may be high in post-intervention interviews.

6. The study was published between 1975 and March 2009.

## Search Strategy<sup>2</sup>

The search for relevant articles involved a number of strategies. The electronic database searches (e.g. Criminal Justice Abstracts, PsychLit) resulted in the identification of 2053 studies that were potentially relevant. Of those, it was possible to exclude 1962 on the basis of the title or after reviewing the abstract and 89 articles were obtained and reviewed. Eventually, 12 evaluations were included in our review.

The references to the papers that were obtained and reviewed and the reasons for exclusion are detailed in the Table of Excluded studies (Table 2.2d in the Technical Appendix) In addition to searching these electronic databases, a number of other sources of information were searched. These included searches of research registers (e.g. the Social, Psychological, Educational and Criminological Register), hand searches of relevant journals (e.g. Criminal Justice and Behavior, International Journal of Offender Therapy and Comparative Criminology), searches of the references of relevant or potentially relevant articles (e.g. Dowden & Andrews, 2000) and searches of studies that cited relevant or potentially relevant articles. A number of key researchers in the area were contacted and asked for assistance in identifying potentially relevant articles.

A considerable issue in carrying out this systematic review was the difficulty of locating evaluation research focussing specifically on violent offenders. Most research is conducted with mixed samples of serious and less serious offenders, which are often combined for the purposes of analysis. In their attempts to examine the efficacy of interventions with serious violent juvenile delinquents Lipsey and Wilson (1998) found it necessary to alter their inclusion criteria from interventions with serious or violent juveniles to interventions with those 'reported to be adjudicated delinquents' in order to include enough studies for analysis.

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<sup>2</sup> A full description of the search strategy can be found in the Technical Appendix.

# Description of Included Studies

Below are the references to the included studies, a list of key features of the intervention that the study used (see Influence of Study Features section below), and a narrative description of the study. The statistical significance of the results is also presented.

Statistical significance is one measure of the level of confidence that one can have in the results of a study. This is usually set at  $p < .05$ , which is equivalent to a 95% certainty that the results are not due to chance. However, statistical significance should not be treated as the only measure of the meaningfulness of a result. This is because statistical significance can reflect a large effect in a small sample or a small effect in a large sample. So a very effective intervention with a small number of violent offenders could be statistically significant, but a much less effective intervention with a large number of violent offenders could also be statistically significant. This is why it is important to consider effect sizes (which take in consideration the sample size; see Calculating Effect Sizes below and Technical Appendix), as well as statistical significance when assessing the meaningfulness of studies<sup>3</sup>.

The key features of the intervention, delivery and methodology of the studies are summarised in Tables 2.3 to 2.7 in the Technical Appendix.

Study ID 1. Hughes, G. V. (1993). Anger management program outcomes. *Forum on Corrections Research*, 5, 5–9.

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- |                       |   |
|-----------------------|---|
| • Anger Control       | • Delivered by Rehabilitation Professionals |
| • Cognitive Skills    | • Delivered in Prison                       |
| • Role-Play           | • Kingston, Canada                          |
| • Study Quality = Low |   |
- 

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<sup>3</sup> This is also why meta-analysis is an important tool for interpretation. Meta-analysis is based on summary effect sizes, and it takes account of sample sizes in each study.

Hughes<sup>4</sup> (1993) reported on a small-scale evaluation of an anger management programme with a group of violent adult males incarcerated in a Canadian Federal Prison. The programme consisted of 12 weekly two-hour sessions in which a combination of educational and experiential material was used to address three basic issues. These were: (1) understanding the concept of anger including why and when to control anger. Techniques included arousal awareness, anger recognition and basic moral reasoning; (2) reducing anger cognitively through the use of coping self-statements and problem-solving exercises and the basic tenets of rational-emotive therapy; (3) modifying and improving behavioural coping skills through relaxation training, assertiveness training and role-playing different behavioural responses. The intervention was administered in a group setting by a clinical psychologist, a drama teacher from a local university and drama student.

A total of 52 offenders attended at least six group sessions (half of the programme) and were deemed to have received treatment. The comparison group comprised 19 offenders who were referred to the programme but decided not to participate because of work priorities, imminent transfer to another institution or lack of interest. The comparability of the treatment and control groups is not clear in this report, but no statistically significant differences existed between these two groups on any of the initial psychometric assessments (Beck Depression Inventory, Over-Controlled Hostility Scale, IPAT Anxiety Index and questionnaires relating to the physical symptoms of anger and anger-provoking situations). The results suggested that 56% of the 42 treated offenders who were released were recidivists compared to 69% of the 19 untreated comparison offenders. This result was not statistically significant (chi square = 0.3, n.s.) which means that the differences between the treated and untreated offenders could be due to chance. Further analysis suggested that 40% of the treated men and 66% of the untreated men had violent reconvictions during the follow-up period (chi square = 3.0, n.s.).

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<sup>4</sup> The quality of this and other studies was measured using the Modified Score on the Maryland Scale (SMS; Friendship et al., 2005). Greater detail about these measures can be seen on page 29 and also Table 2.6 of the Technical Appendix. The quality of the study is summarised here as Low (SMS = 3), Medium (SMS = 4) or High (SMS = 5).

Study ID 2. Henning, K. R. & Frueh, B. C. (1996). Cognitive-behavioral treatment of incarcerated offenders: An evaluation of the Vermont Department of Corrections' cognitive self-change programme. *Criminal Justice and Behavior*, 22, 523–541.

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|----------------------|--------------------------------------|
| • Cognitive Skills   | • Study quality = Medium             |
| • Role-Play          | • Delivered by Correctional Officers |
| • Relapse Prevention | • Delivered in Prison                |
| • Offender Homework  | • Vermont, United States             |
- 

Henning and Frueh (1996) undertook an evaluation of the Vermont Department of Corrections' cognitive self-change (CSC) programme in a medium security prison. This evaluation was based on the same data as that of Bush (1995), but was reported in greater detail in the later report. Violent offenders who volunteered for this programme and were accepted were housed in a separate unit (housing approximately 25 offenders) within a larger prison. The programme began with an 8-week orientation phase in which offenders were introduced to the theory behind the treatment, taught to recognise the most common cognitive distortions associated with criminal behaviour and acquired the techniques necessary for cognitive-behavioural self-monitoring. Once the initial phase was completed, the participants were assigned to a treatment group, consisting of 5–10 offenders and several members of staff which met 3 to 5 times per week.

During each session a single offender was chosen to present a 'thinking report' which typically documented a prior incident of antisocial behaviour. This report entailed an objective description of the incident followed by a list of all of the thoughts and feelings that he had experienced before, during and after the event. The group would then work with the offender to identify the cognitive distortions that may have contributed to the antisocial behaviour. Role playing was occasionally utilised to assist the offender to develop a better understanding of the cognitions and emotions that led to the antisocial behaviour. Treatment length was largely dependent on the time remaining in an offender's sentence (mean=9.8 months), and most participants left the programme when they were transferred to a minimum security prison in preparation for their release.

In order to evaluate this programme, the 55 offenders who took part in the CSC programme were compared to 141 offenders who did not. The CSC treatment group and controls were similar on age at first offence, number of prior felonies, percentage of maximum sentence served, age released to the community and percentage with substance abuse problems. However, the CSC treatment group had served a significantly longer time for their current offence, were more likely to have a history of violent offending and were less likely to have a history of non-violent offending. There was substantial attrition in this study. This was appropriately accounted for in the analysis of the impact of the programme on re-offending using survival analysis, but it was only possible to col-



lect violent reconviction information for 28 of the CSC treatment offenders and 96 of the 141 controls two years after release. The results suggest that those who had taken part in the programme were significantly less likely to recidivate (50%) compared to those who did not take part in the treatment (70.8%; chi squared = 4.2,  $p < .05$ ). This significant difference held up after statistically controlling for the pre-existing differences between the CSC treatment and control groups.

Study ID 3. Motiuk, L., Smiley, R. & Blanchette, K. (1996). Intensive programming for violent offenders: A comparative investigation. *Forum on Corrections Research*, 8, 10–12.

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- |                    |   |
|--------------------|---|
| • Anger Control    | • Study Quality = Medium                    |
| • Cognitive Skills | • Delivered by Rehabilitation Professionals |
| • Basic Education  | • Delivered in Prison                       |
| • Empathy Training | • Vancouver, Canada                         |
- 

In another study undertaken in a Canadian Federal Prison, Motiuk et al. (1996) evaluated an intensive programme for the treatment of male violent offenders. This specialised programme emphasised cognitive-behavioural and psychosocial dynamic approaches to changing the anti-social behaviour of these offenders. Groups of 12 to 16 offenders were co-led by at least two professional staff members for eight months of intensive treatment. In this evaluation the reconvictions of 60 offenders who had completed the programme were compared to 60 controls who had not, matched on release date, age at release, sentence length and a risk of reconviction score (the Statistical Information on Recidivism Scale Revised). Two years after release 40% of the treated individuals had been reconvicted compared to 35% of the controls. Also, 18% of the treatment group had reconvictions for violence compared to 15% of the controls. Neither of these differences was statistically significant.

Study ID 4. Berry, S. (1998). *The Montgomery House Violence Prevention Programme: An Evaluation*. Wellington, NZ: Department of Corrections Psychological Services.

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- |                      |   |
|----------------------|---|
| • Anger Control      | • Offender Homework                         |
| • Cognitive Skills   | • Study Quality = Medium                    |
| • Basic Education    | • Delivered by Rehabilitation Professionals |
| • Role-Play          | • Delivered in Secure Community Facility    |
| • Relapse Prevention | • Hamilton, New Zealand                     |
- 

In New Zealand, Berry (1998) undertook an evaluation of a residential treatment programme for mainly Maori aboriginal men who repetitively committed serious violent offences. The goal of the treatment was to reduce the frequency and seriousness of the men's offences through a module-based programme including instruction in practical skills (e.g. social education, health) and cognitive-skills training (e.g. role-play, self-disclosure, skills practice). All modules were delivered in a group setting

with approximately 10 offenders. The treatment group (n=62; only those who completed the programme) and the comparison group were matched on a number of features including age at first violent offence, total number of offences (both violent and non-violent), time spent in prison, seriousness of previous offending, and estimated probability of re-offending.

The results showed that 16 of the 62 (25%) programme completers committed a violent offence in the 16 month follow-up compared to 27 of the 64 controls (42%). This difference was statistically significant (chi squared = 4.5, p<.05). There was also evidence to suggest that those who had received treatment had a lower frequency of violent offences and a longer time to reconviction than controls during the follow-up period. Unfortunately, it was not possible to assess the significance of these two findings because the standard deviations of the number of offences and time to reconviction was not reported. It is also important to note that as the treatment group only included programme completers, it may be argued that the difference between the two groups could be explained by the completers' motivation to change (regardless of participation in a programme).

Study ID 5. Dowden, C. Blanchette, K. & Serin, R. (1999). Anger Management Programming for Federal Male Inmates: An Effective Intervention. Ottawa: Correctional Service of Canada (Research Report R-82).

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- |                      |                                      |
|----------------------|--------------------------------------|
| • Anger Control      | • Study Quality = Medium             |
| • Cognitive Skills   | • Delivered by Correctional Officers |
| • Role-Play          | • Delivered in Prison                |
| • Relapse Prevention | • Kingston, Canada                   |
- 

Dowden et al. (1999) investigated the effectiveness of an anger management programme for adult male violent offenders in a Canadian Federal Prison. This programme was a cognitive-behavioural intervention with particular emphasis on skills building and staff involvement. The primary goal of the programme was to reduce aggressive behaviour by developing emotion management skills. The training was provided in a group setting (4–10 participants) in 25 two-hour sessions 2–5 times a week. The effectiveness of this programme was evaluated by comparing 110 offenders who had received the anger management training to a retrospectively chosen sample of 110 inmates (matched on age, index offence and risk of reconviction score) who had not received the training. The results showed that almost 30% of the control group had non-violently recidivated within the three year follow-up period compared to only 10% of the treatment group. This difference was statistically significant (chi squared = 11.6, p<.005). There was evidence that the anger management programme also had a positive influence on reducing violent recidivism, but this was only the case when the analysis was restricted to those offenders classified as high-risk (chi square = 4.4, p<.05).

Study ID 6. Polaschek, D. L. L. (2008). High intensity rehabilitation for violence: Examining reconviction outcomes for high and medium risk prisoners. Unpublished Manuscript.

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- |                      |   |
|----------------------|---|
| • Anger Control      | • Offender Homework                         |
| • Cognitive Skills   | • Study Quality = Medium                    |
| • Basic Education    | • Delivered by Rehabilitation Professionals |
| • Role-Play          | • Delivered in Prison                       |
| • Empathy Training   | • Wellington, New Zealand                   |
| • Relapse Prevention |   |
- 

Polaschek (2008) presented an updated evaluation of an intervention programme for imprisoned violent offenders in New Zealand. This intervention was previously described and initially evaluated in Polaschek et al. (2005). The programme was targeted at high-risk offenders and the content and delivery of the programme conformed to a cognitive-behavioural orientation. Programme components included identifying and presenting the offence chain, restructuring offence-supportive thinking, mood management, victim empathy, moral reasoning, problem solving, communication skills and relapse prevention planning. The programme was delivered by a professional to groups of 10 men and treatment intensity was approximately 330 hours in total comprising four 3-hour group meetings each week for 28 weeks.

In this study 112 offenders who were offered treatment were compared to a control group matched on ethnicity, age, offence history variables and a risk of reconviction score. Of the 112 treated offenders 86 were considered high-risk and 26 were considered medium risk to reoffend. Approximately 30% of the high risk treatment group and 19% of the medium risk treatment group did not complete the treatment. At an average of 3.5 years after release the results showed that the treatment group were about equally likely to have been reconvicted compared to the controls (84% compared to 86%, chi squared = 0.1, n.s.). The treatment group appeared to be somewhat less likely to be reconvicted for a violent offence compared to the control group (63% compared to 70%), but this difference was not statistically significant (chi square = 1.0, n.s.) However, a survival analysis suggested that high risk offenders who completed the treatment reoffended violently at a slower rate than the comparable control group.

Study ID 7. Boe, R., Belcourt, R., Ishak, K. & Bsilis, S. (1997). Follow-up of offenders from the Vancouver district violent offenders program. *Forum on Corrections Research*, 9, 3–0.

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- Anger Control
  - Cognitive Skills
  - Basic Education
  - Empathy Training
  - Study Quality = Low
  - Offender Homework
  - Delivered by Rehabilitation Professionals
  - Delivered in Prison
  - Vancouver, Canada
- 

In 1996 the Vancouver District Violent Offender Unit, a pilot programme for managing violent offenders under supervision in the community, was evaluated by Boe, Belacourt, Ishak, and Bsilis (1997). The Violent Offender Unit provided intensive community supervision for persistently violent offenders and was based on the same treatment formula as that delivered by Motiuk et al. (1996) above. Offenders were provided with intensive cognitive-behavioural treatment in groups of 10–16 co-led by two professional staff members for eight months. At least two sessions were provided each week. The programme was designed to assist offenders to deal with patterns related to their crime cycle. While learning about the behavioural, cognitive, interpersonal and affective components of violent offending, offenders focused on communication, addictions, thinking errors, human sexuality/relationships, anger management and empathy.

This evaluation compared 74 offenders who entered the programme over a two-year period to a matched group of non-treated controls (n=45). The outcome measure of this study was revocations, suspensions and convictions during the six-month follow-up after completing the programme. The results showed that 11 of the 74 (15%) treated offenders had ‘failed’, compared to 8 out of 45 untreated offenders (18%). This difference was not statistically significant (chi squared = 0.17, n.s.).

Study ID 8. Watt, K., Shepherd, J. & Newcomb, R. (2008). Drunk and dangerous: A randomized controlled trial of alcohol brief intervention for violent offenders. *Journal of Experimental Criminology*, 4, 1–19.

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- Basic Education
  - Empathy Training
  - Study Quality = High
  - Delivered by Rehabilitation Professionals
  - Delivered in the Community
  - Cardiff, Wales
- 

Watt, Shepherd and Newcomb (2006) used a randomised controlled trial to evaluate a brief intervention for violent offenders who were sentenced at Cardiff Magistrates Court. Offenders who were found guilty of a violent offence which was alcohol related were recruited immediately after sentence. Participants were not considered eligible if they were found not guilty, had the charge dismissed, had the case transferred to a Crown Court, received a custodial sentence, were too violent, had prior or concurrent sex offences or had cognitive or hearing

impairments. If offenders were eligible and agreed to take part in the research they were administered a screening questionnaire and then randomly assigned to treatment (n=135) or control conditions (n=134). Offenders assigned to the treatment condition were immediately given the brief intervention, which was guided by a manual and based on the principles of motivational interviewing. Based on the FRAMES methodology (Feedback, Responsibility, Advice, Menu, Empathy, Self-efficacy; Miller and Rollnick, 1991), the intervention took approximately 15–20 minutes to administer and focused on a pamphlet that was designed specifically for the study, which was given to participants to take home.

Subsequent offending was examined by searching the Police National Computer (PNC) at 3 and 12 months after the intervention. PNC information could not be found for 15 of those in the treatment group and 10 of those in the control group. Twelve months after the intervention 52.5% of those in the intervention group had committed a new offence compared to 51.6% of those in the control group (chi squared = 0.02, n.s.). The results also showed a statistically non-significant increase in re-offences for violence among those who were treated. Over 19% of those in the treatment group committed a violent offence compared to 18% in the control group (chi squared = 0.08, n.s.).

Study ID 9. Hatcher, R. M., Palmer, E. J., McGuire, J., Hounsome, J. C., Bilby, C. A. L. & Hollin, C. (2006). Aggression replacement training with adult male offenders within community settings: A reconviction analysis. *Journal of Forensic Psychology and Psychiatry*, 19, 517-532.

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- |                          |                                      |
|--------------------------|--------------------------------------|
| • Anger Control          | • Delivered by Correctional Officers |
| • Cognitive Skills       | • Delivered in the Community         |
| • Role-Play              | • England and Wales                  |
| • Study Quality = Medium |                                      |
- 

Aggression Replacement Training (ART) has been used to reduce offending successfully among violent adolescents (e.g. Goldstein & Glick, 1987), and has recently been adapted for use with adult populations. ART aims to minimise the occurrence of aggressive acts by addressing three different domains. First, ART aims to address the general shortfall in personal, interpersonal and social-cognitive skills that characterises aggressive individuals. Second, ART also attempts to reduce impulsive behaviour and low-level anger. Third, it addresses immature, egocentric and concrete moral reasoning.

ART was used as an intervention with 53 violent adult males with a Community Rehabilitation Order in England (Hatcher et al., 2006). Fifty-three male offenders who had not taken part in ART, but had been convicted of a violent offence and subsequently received a community penalty formed the comparison group. The experimental and comparison groups were matched on age, number of previous convictions and a risk of reconviction score. In this evaluation, re-offending was assessed

by searching the Offenders Index (OI) for the treatment and comparison groups. The results indicated that 51% of the comparison group had been reconvicted compared to 39% of the experimental group. This difference was not statistically significant (chi squared = 1.87, n.s.). There was little evidence of a dose-response relationship with this treatment. When the reconvictions of only those who had completed the treatment (n=15) were compared to their matched controls (n=15) the results were also non-significant (20% compared to 33%, chi squared = 0.68, n.s.).

Study ID 10. Finn, M. A. & Muirhead-Steves, S. (2002). The effectiveness of electronic monitoring with violent male parolees. *Justice Quarterly*, 19, 293–312.

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- |                                      |                          |
|--------------------------------------|--------------------------|
| • Delivered by Correctional Officers | • Study Quality = Medium |
| • Delivered in the Community         | • Atlanta, United States |
- 

Finn and Muirhead-Steves (2002) examined the effectiveness of using electronic monitoring (EM) as a supervision tool for violent male parolees in Georgia. The treatment group (n=128) comprised all male violent parolees who had been placed on EM in the fiscal year 1996 (July 1, 1995–June 30, 1996), and the comparison group (n=158) comprised a randomly selected group of violent male parolees who had been released in the previous fiscal year (July 1, 1994–June 30, 1995). The treatment and control groups were similar on race, level of education, mean age at release, reporting a drug or alcohol problem, average time served, average number of previous incarcerations and average number of felony convictions.

Both groups were followed up for return to prison within three to four years after the completion of parole. In that time 37 out of 158 (23.4%) of the experimental group were returned to prison compared to 30 out of 128 (23.4%) of the control group (chi squared = 0.00, n.s.). A logistic regression predicting return to prison, including EM as an independent variable, further suggested that EM did not statistically significantly reduce the likelihood of return to prison. The researchers also used survival analysis to examine the impact of EM on time to failure. Similar to the results with respect to return to prison, the survival analysis suggested that EM did not statistically significantly increase the time to failure when controlling for the background variables.

Study ID 11. Cortoni, F., Nunes, K. & Latendresse, M. (2006). An Examination of the Effectiveness of the Violence Prevention Program. Ottawa: Correctional Service of Canada (Research Report R-178).

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- Anger Control
  - Cognitive Skills
  - Basic Education
  - Role-Play
  - Relapse Prevention
  - Study Quality = Medium
  - Delivered by Correctional Officers
  - Delivered in Prison
  - Kingston, Canada
- 

The effectiveness of a specifically devised Canadian Violence Prevention Programme (VPP) was evaluated by Cortoni, Nunes & Latendresse (2006). The intervention phase of the VPP consists of 10 modules presented over the course of 94 two-hour group sessions, at the rate of six sessions per week. The modules addressed such issues as violence awareness, anger control, problem solving, social attitudes, relationships, conflict resolution, positive lifestyles, self-control and violence prevention. After the intervention, there was a review of the participant's relapse prevention plan. Evaluation of the VPP involved comparing reconviction after release of 305 offenders who had participated in the programme (199 completers, 106 non-completers), and 266 offenders who had not received the VPP. The comparison group was selected based on propensity score matching and were similar to the treatment group on race, marital status, age and risk and needs scores. Interestingly, the treatment group showed statistically significantly lower levels of motivation for treatment at intake than the comparison group.

A comparison of offenders released, and therefore at risk of committing a new offence, suggested that the treatment group (a combined group of completers and non-completers) were statistically significantly less likely to be reconvicted compared to the control group (27.2% compared to 39.1%, chi square = 8.7,  $p < .01$ ). The treatment group was also statistically significantly less likely to be reconvicted for a violent offence (14.1% compared to 21.8%, chi square = 6.1,  $p < .03$ ). However, when other factors that may have differed between the treatment and comparison individuals who were released (e.g. completion of other violence and non-violent programmes and risk score) were statistically controlled the results were less promising. Cox regressions showed that the offenders who started the VPP did not differ statistically significantly from the comparison group in the prevalence of reconvictions or violent reconvictions. Those who completed the programme were, however, statistically significantly less likely to be violently reconvicted than those in the comparison group.

Study ID 12. Serin, R. C., Gobeil, R. & Preston, D.L. (2009). Evaluation of the Persistently Violent Offender Treatment Program. *International Journal of Offender Therapy and Comparative Criminology*, 53, 57–73.

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- Cognitive Skills
  - Basic Education
  - Role-Play
  - Study Quality = Low
  - Delivered by Correctional Officers and Psychologists
  - Delivered in Prison
  - Ontario and New Brunswick, Canada
- 

Serin, Gobeil & Preston (2009) examined the effectiveness of the Persistently Violent Offender (PVO) Treatment Programme<sup>5</sup> using a sample of 256 violent offenders. Of these 256, 70 had completed the PVO treatment. The comparison group included a group who had completed an alternative treatment (anger and emotion management) and a group who had been allocated to one of the two treatments but did not complete them. The groups were similar in intellectual functioning, marital status, education, occupation and age. The PVO treatment was an intensive 16 week cognitive-behavioural programme involving four group sessions and one individual session per week. The PVO was based on the social information processing model of Crick and Dodge (1994) and involved the completion of three modules. These were the development of motivation, developing insight into the causes of their violent offending and skill acquisition to address the previously identified causes.

Of the 256 offenders 202 had been released into the community and were followed-up for an average of 3.3 years. The results suggested that the PVO group were somewhat less likely to reoffend than the controls (17% compared to 23%), but this difference was not significant. The PVO group was marginally less likely to have a violent reoffence (8.3% compared to 11%), but again this difference was not significant. Serin, Gobeil & Preston (2009) also examined the time to return to custody for the various groups. The results suggested that there was no significant difference in the time to return to custody for the treatment and control groups.

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<sup>5</sup> Additional detail about the Persistently Violent Offender Programme was obtained from Serin & Preston (2000).



# Results

The results first describe the overall effectiveness of all of the identified interventions on the general re-offending and violent re-offending of violent offenders. Then the extent to which features of the studies (e.g. variation in the studies, variation in the content of interventions, variation in the delivery of interventions) might have influenced the results is investigated. Finally, using multivariate statistics, attempts are made to establish the most effective intervention strategies.

## Impact on Offending

Figure 1 shows the results of the meta-analysis based on the eleven studies which reported results on general re-offending (see the Technical Appendix for explanation). Effect sizes were converted to *d*-values for ease of exposition. The study which showed the greatest impact on offending was that by Dowden et al. (1999) with an effect size of  $d = .717$  ( $p < .0001$ ), and the study with the least impact was that by Motiuk et al. (1996) with an effect size of  $d = -.116$  (n.s.). Overall, three studies reported a statistically significant reduction in re-offending, seven studies reported a reduction in re-offending, but not to a statistically significant level, and two studies reported an increase in re-offending, but not to a statistically significant level.

Combining these effect sizes together showed that the weighted standardized mean effect size of the twelve studies was between  $d = .14$  and  $d = .18$  depending upon the model chosen (either fixed effects or random effects). Both models were statistically significant ( $p = .001$  and  $p = .01$  respectively), suggesting that these interventions with violent offenders significantly reduced general recidivism. There was evidence to suggest that there might be greater variation in the effect sizes than would be expected by sampling error alone<sup>6</sup>.

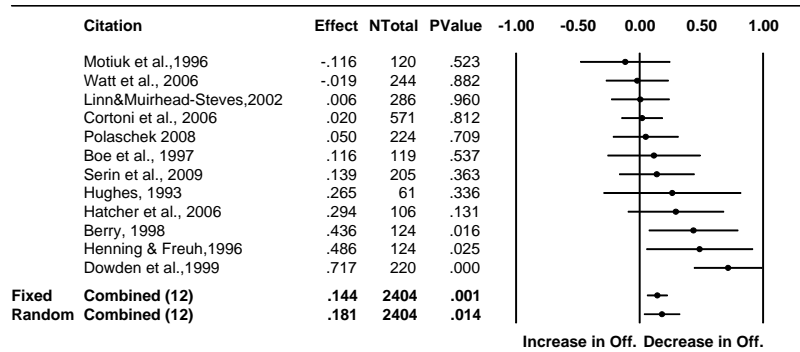
To aid in the interpretation of the effect size it is often useful to convert it to a difference in proportions<sup>7</sup>. Therefore, the twelve evaluations of interventions with violent offenders included in this analysis suggest that the programmes were followed by about a 7–9% reduction in re-offending for those who had received treatment compared to those who had not (e.g. from 50% reconvicted to 43–41% reconvicted).

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<sup>6</sup> See Technical Appendix for further detail.

<sup>7</sup> See Technical Appendix for further detail.

Figure 1. Effect of Interventions on General Offending of Violent Offenders.



## Impact on Violent Offending

Many of the studies that met the inclusion criteria were evaluations of interventions that were specifically designed to address violent behaviour. Therefore, some interventions may have a differential impact on violent re-offending as opposed to re-offending generally. Nine of the twelve studies reported the impact of the intervention on violent re-offending.

Figure 2. Effect of Interventions on Violent Offending of Violent Offenders.

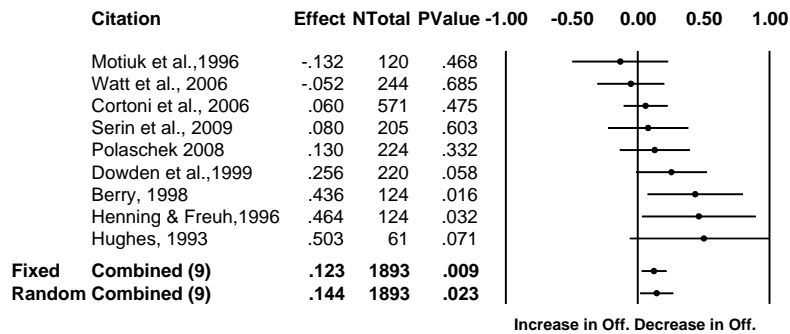


Figure 2 shows the result of the meta-analysis based on the nine studies which reported the results of the impact of the intervention on violent re-offending. The study which showed the greatest impact on violent re-offending was that by Hughes (1993) with an effect size of  $d = .503$ , but this was not statistically significant (possibly be due to the small numbers of participants). The study with the least impact was that by Motiuk et al. (1996) with an effect size of  $d = -.132$  (n.s.). Overall two studies reported a statistically significant reduction in violent re-offending, five studies reported a reduction in violent re-offending which was not statistically significant and two studies reported a (non-significant) increase in violent re-offending.

The results of this meta-analysis suggest that the nine interventions taken together significantly reduced violent re-offending. The weighted mean effect sizes ranged from  $d = .12$  ( $p = .009$ ) for the fixed-effects model to  $d = .14$  ( $p = .02$ ) for the random effects model, indicating that violent reoffending was reduced by about 6–7% by these interventions.

# Influence of Study Features

One method of investigating the identified variability in the effect sizes is to assume that some of this might be attributable to variation in the features of the studies (Lipsey & Wilson, 2001; p.118). In order to test this, a coding protocol was developed to investigate the key features of the included studies. These are summarised in Tables 2.3 through 2.7 in the Technical Appendix. Obviously, it was not possible to obtain information about all of the potentially relevant features from all of the studies. Importantly, it was not always clear why an offender had been classified as violent (e.g. because of violent history or violent index offence or both). Also, some features were coded but not subjected to analysis. For example, the average length of sentence was only available in four studies, information about whether those delivering the treatment had received specific training about the intervention was missing in five cases, and the estimated time released after completing the intervention was only available in one case. Also, some features did not vary enough to allow analysis. For example, all except one of the interventions was delivered in a group setting (Watt et al., 2006), and the treatment was based on a manual in all but one case (Hughes, 1993).

Unfortunately, information about the violent index offence that led to the classification of the individual as violent was not available in the studies. This meant that it was not possible, for example, to examine the relative effectiveness of the interventions with expressively violent versus instrumentally violent individuals.

## Key Features of the Study

Key features of the studies specified relevant features which were not directly connected to the intervention or the methodology of the study.

### **1. Date of publication**

The year of the study was coded in case there has been an improvement over time in the quality of interventions, with more recent studies finding a greater impact on re-offending. The twelve studies ranged in publication date from 1993 to 2008.

### **2. Country where the research was conducted**

Two studies were conducted in the UK, six were conducted in Canada, two were conducted in the US and two were conducted in New Zealand.

### **3. Age of the sample**

Interventions with violent offenders may work better with those of an older age, because older offenders may have more ability to control

their behaviour. The mean age of the sample was reported in nine of the twelve studies. The mean age of the participants in the nine studies was 29.7 (sd = 4.1) with a range of 23–36.

#### **4. Ethnic composition of the sample**

None of the studies presented offending results separately by ethnic group. However, an indicator that was available in some (6) studies was ethnic composition. This was coded as the proportion of the sample that was identified as white, and this ranged from 9 per cent to 95 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, publication bias or their better quality control (Farrington & Welsh, 2003). The studies had sample sizes for analysis that ranged from 61 to 571 (mean = 206.3, sd = 132.9).

## **Key Features of the Intervention Content**

Studies were coded based on the description of the nature and focus of the intervention or interventions that were delivered<sup>8</sup>.

Eight key features were identified across the studies and these were coded as either present or absent. These were: (1) Anger Control (any reference to addressing the anger of offenders, a feature of eight studies); (2) Cognitive Skills (any reference to cognitive-behavioural skills training, a feature of ten studies); (3) Moral Training (any reference to providing training about morals, a feature of four studies); (4) Basic Education (any reference to teaching life skills e.g. literacy, a feature of six studies); (5) Role-Playing (any reference to using role-playing as a training method, a feature of seven studies); (6) Empathy (any reference to empathy training, a feature of five studies); (7) Relapse Prevention (any reference to relapse prevention planning, a feature of six studies); (8) Homework (any reference to offenders being required to rehearse skills or training outside of the intervention context), a feature of four studies.

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<sup>8</sup> It is possible that some of these interventions may have been overlapping and not reported. For example, a cognitive skills programme might include role-playing. However, if this was mentioned in the original report the intervention was coded as having both skills training and role-playing.

## Key Features of the Delivery of the Intervention

### 1. Who delivered the intervention?

Interventions may be more successful in reducing re-offending when delivered by mental health or rehabilitation professionals. Information about who delivered the intervention was reported in all studies. In seven studies the intervention was reported to have been delivered by a psychologist or similar, and in another five the intervention was delivered by correctional/probation officers.

### 2. Duration of the Intervention

There may be a dose-response relationship between the duration of the intervention and the impact on re-offending. Information about the duration of the intervention was available from all twelve studies, and ranged from 10–15 minutes to 40 weeks (mean = 18 weeks, sd = 12.0).

### 3. Duration per Session

Information about the duration of the intervention per session was available in seven studies and ranged from 10–15 minutes to 3 hours (mean = 1.9 hours, sd = .73).

### 4. Frequency of Sessions

It might be expected that interventions which had more frequent contact between participants and intervention providers might be more effective in reducing re-offending compared to those that required less frequent contact. In studies where a range of the frequency was provided (e.g. 2–5 sessions per week) the lower limit of this range was used as the estimate of the frequency. This information was available in ten studies (mean = 3.4 sessions per week, sd = 2.2).

### 5. Total Time of the Intervention

The total time of the intervention was only provided in four studies. However, in an additional seven studies it was possible to make an estimate of the total time of the intervention using the duration of the intervention, the duration per session and the frequency of the sessions. The mean total time of the intervention was 335 hours (sd = 604.1)<sup>9</sup>.

## Key Features of the Methodology of the Studies

### 1. Study quality based on the Maryland Scientific Methods Scale.

Studies with higher methodological quality provide a more accurate and less biased assessment of the effect of the various interventions on re-offending. Past research has shown that studies of higher methodologi-

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<sup>9</sup> When an outlier was removed (Linn & Muirhead-Steves, 2002) the mean was 159 hours (sd = 160).

cal quality tend to have lower effect sizes (Weisburd et al., 2001). Each of the twelve comparisons was assessed according to the criteria of the Maryland Scientific Methods Scale (Farrington et al., 2006; Sherman et al., 1997). Only one study was rated as level 5 (random assignment), eight comparisons were rated as level 4 (quasi-experimental) and three comparisons were rated as level 3 (two comparable groups).

## **2. Follow-up was Intention-to-Treat or Completers**

Seven studies reported re-offending information only for those participants who successfully completed the intervention (completers), whereas five reported re-offending information for all who started the intervention (intention-to-treat). Some researchers (e.g. Hatcher et al, 2006) suggest that only participants who complete interventions should be followed up in evaluation research as many treatments are designed to be completed in their entirety, and those who only partially complete them will not benefit to the same degree. However, in studies that only examine completers it is not possible to disentangle the influence of self-selection, background factors or motivation for treatment from the treatment itself on the outcome (in this case re-offending). It could be that participants committed to attending all sessions of a treatment have personality features that make them less likely to reoffend regardless of the method/type of treatment, or that more antisocial people are more likely to drop out. Completers are not comparable to controls in advance of the treatment. Therefore, studies which use the intention-to-treat (ITT) sample produce more conservative and possibly more accurate estimates of effect.

## **4. Length of Follow-up the Period**

The length of the follow-up period was available in eleven of the studies and ranged from 6 months to 42 months (mean = 24.5 months, sd = 12.6).

# Comparison of Effect Sizes with Study Features

## Correlations with Study Features

Correlations were used to investigate the relationships between the study features measured on a continuous scale (e.g. year, total sample size) and the effect sizes ( $d$  values) of the twelve studies for re-offending and nine studies for violent re-offending. 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 or equal to  $r = 0.2$  were considered meaningful. There is evidence to suggest that correlations of this magnitude can indicate meaningful differences (e.g. Farrington & Loeber, 1989). These correlations are informative but do not necessarily indicate any causal effects of the study features on effect size.

Table 1.1 Correlations of Study Features with Effect Sizes.

	General	Re-offending	Violent	Re-offending
<i>Key Features of the Sample</i>	N	r	N	r
Date of Publication	12	-0.26	9	-0.58
Age of Sample	9	0.26	8	-0.10
Ethnic Composition (% white)	6	-0.25	5	-0.30
Total Sample Size	12	-0.08	9	-0.43
<i>Key Features of the Delivery of the Intervention</i>				
Duration of Intervention	12	-0.17	9	0.05
Duration per Session	8	0.24	7	0.39
Frequency of Sessions	9	-0.12	7	-0.40
Estimated Total Time of Intervention	11	-0.31	8	0.32
<i>Key Features of Methodology</i>				
Length of Follow-up	11	0.03	8	-0.09

Only five of a possible nine comparisons met the criterion of  $r \geq .2$  when the effect sizes for general re-offending were correlated with the study features, and six of nine met this criterion when the effect size for violent re-offending was correlated with the study features. The date of publication was negatively correlated with both the effect on re-offending ( $r = -.26$ ) and violent re-offending ( $r = -.60$ ). This result is likely to reflect the lower methodological quality of the studies that were undertaken earlier. For example, the control group for the study by Hughes (1993), with an effect size of  $d = .51$ , comprised those who did not complete or did not want to take part in the treatment, which is a very biased sample.



Although based on a small number of studies the analysis shows that those evaluations with a lower proportion of white offenders found greater effects for both re-offending ( $r = -.25$ ) and violent reoffending ( $r = -.30$ ). This finding is probably driven by one study that was designed for and delivered primarily to Maori populations (Berry, 1998). It should be noted that this study was evaluated only amongst those who completed the treatment which may have increased its effect size and this correlation as a result.

There was little evidence of a relationship between the size of the sample and the general re-offending mean effect size. However, in line with a number of previous studies that have found that smaller studies report larger effects, a negative correlation was identified between sample size and violent re-offending.

Similar to a previous systematic review (Jolliffe & Farrington, 2008) there was evidence to suggest that interventions which had a higher duration per session were more effective. This was true for both general re-offending ( $r = .24$ ) and violent re-offending ( $r = .39$ ). However, there was little variation in the duration per session (most interventions were two hours per session) and this result may have been caused by the low duration per session (15 minutes) and low effect in one study (Watt et al., 2006).

Interventions in which the frequency of sessions was greater had less effect on reducing subsequent violence ( $r = .40$ ) and was not related to re-offending. This result might have been somewhat influenced by the methodological quality of certain studies. For example, the Hughes (1993) study (a study of lower methodological quality – see Table 2.4 in the Technical Appendix) produced a high effect and had only one session per week. Furthermore, the Polaschek (2008) study had four sessions per week but a relatively small effect.

The estimated total time of the intervention was negatively related to the effect size for general re-offending ( $r = -.31$ ) but positively related for violent re-offending ( $r = .32$ ). This counterintuitive result was clearly caused by the inclusion of the Finn & Muirhead-Steves (2002) study of electronic tagging. This study only reported a general re-offending outcome, had a very long total time of the intervention and a very small effect. When this study was removed the correlation between total duration of the intervention and general re-offending was positive ( $r = .13$ ).

Studies with longer follow-ups did not appear more successful at reducing general reoffending ( $r = .03$ ) or violent re-offending ( $r = -.09$ ).

## Comparison with Dichotomous Measures of the Intervention Content

Table 1.2 shows the relationship between the content of the interventions and the effect size. The left-hand side of the table shows the relationships with general reoffending and the right-hand column shows the

relationships with violent reoffending. For example, when examining general reoffending, three interventions did not use anger control and the mean effect size of these evaluations was  $d=.08$  (n.s.). In comparison nine interventions did use anger control and these evaluations had a mean effect size of  $d = .24$  ( $p<.0001$ ). The difference between these two effect sizes (Q Between Groups) of chi square = 2.8 was not quite statistically significant ( $p<.09$ ). However, the fact that studies that used anger control had a significant mean effect size of moderate magnitude ( $d=.24$ ) and studies that did not had a non-significant effect size of small magnitude ( $d=.08$ ) suggest that providing anger control was more useful than not providing anger control in reducing general reoffending. The results are less supportive of anger control reducing violent reoffending as the difference between the effect sizes ( $d = .13$  for studies that used anger control and  $d = .08$  for those that did not) was less marked and the Q Between Groups was closer to zero.

Interventions that used cognitive skills had significantly higher effect sizes for general reoffending compared to those that did not (Q Between Groups = 6.6,  $p<.01$ ). This trend was also evident (but not statistically significant<sup>10</sup>) for violent reoffending.

The results of the provision of moral training, basic education and empathy training were somewhat counterintuitive, as for both general and violent reoffending providing these interventions were associated with lower effect sizes. This difference was greatest for empathy training and general reoffending as studies that did not provide empathy training had significantly higher effect sizes than those that did not (Q Between groups 8.5,  $p<.0001$ ). This trend was evident (but not quite significant) with violent reoffending.

A clear finding of the analysis was that interventions that used role playing were significantly more effective in reducing re-offending and violent re-offending than those that did not. Also, interventions that used relapse prevention planning were significantly more effective in reducing general re-offending and violent re-offending than those that studies that did not, but this difference was only significant for general re-offending. Interventions that required offenders to complete homework outside of the treatment setting appeared more effective than those that did not, but again this difference was not statistically significant.

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<sup>10</sup> This difference may not have been statistically significant because of the small number of interventions (one) that did not provide cognitive skills training.

Table 1.2. Key Features of the Intervention Content.

	N	General Mean ES (d)	Re- offending sig.	Q Between Groups	N	Violent Mean ES (d)	Re- offending sig.	Q Between Groups
No Anger Control	3	0.08	n.s.	2.8, n.s.	2	0.08	n.s.	.67, n.s.
Anger Control	9	0.24	0.0001		7	0.13	0.01	
No Cognitive Skills	2	-0.006	n.s.	6.6, p<.01	1	-0.05	n.s.	2.2, n.s.
Cognitive Skills	10	0.25	0.0001		8	0.15	0.003	
No Moral Training	8	0.23	0.0001	2.5, n.s.	6	0.14	0.01	.31, n.s.
Moral Training	4	0.08	n.s.		3	0.08	n.s.	
No Basic Education	6	0.29	0.0001	3.8, p<.06	4	0.26	0.003	3.3, p<.07
Basic Education	6	0.12	0.02		5	0.07	n.s.	
No Role-Play	5	0.02	n.s.	11.0, p<.001	3	-0.03	n.s.	4.4, p<.04
Role-Play	7	0.30	0.0001		6	0.19	0.001	
No Empathy Training	7	0.28	0.0001	8.5, p<.004	5	0.20	0.001	3.6, p<.06
Empathy Training	5	0.03	n.s.		4	0.02	n.s.	
No Relapse Prevention	6	0.04	n.s.	8.0 p<.005	3	-0.006	n.s.	2.3, n.s.
Relapse Prevention	6	0.28	0.0001		6	0.16	0.003	
No Offender Homework	8	0.17	0.0004	0.9, n.s.	6	0.07	n.s.	3.6, p<.06
Offender Homework	4	0.26	0.002		3	0.28	0.003	

Table 1.3. Key Features of the Delivery of the Intervention and Methodology.

	N	Re-offending Mean ES (d)	sig.	Q Between Groups	N	Violent Mean ES (d)	Re-offending sig.	Q Between Groups
Rehabilitation Profes- sional	7	0.09	n.s.	4.5, p<.03	6	0.10	n.s.	.26, n.s.
Correctional officer	5	0.27	0.0001		3	0.15	0.03	
Level 3 Maryland Scale	3	0.15	n.s.	.39, n.s.	2	0.18	n.s.	0.5, n.s.
Level 4 Maryland Scale	8	0.23	0.0001		6	0.15	0.008	
Intention to Treat	7	0.15	0.003	2.8, p<.09	4	0.06	n.s.	1.9, n.s.
Completers	5	0.29	0.0001		5	0.22	0.006	

### Comparison with Dichotomous Measures of the Delivery of the Intervention and the Methodology

Table 1.3 shows the key features of the delivery and methodology of the interventions. Interventions that were delivered by correctional officers had significant and desirable influences on general and violent re-offending, whereas studies in which the intervention was delivered by

rehabilitation professionals did not show a statistically significant desirable influence. This might be considered a counter-intuitive result, but the difference between these effect sizes was only significant for general reoffending.

In order to investigate the relationship between the methodological quality of the studies and the effect size, the Maryland Scale was used<sup>11</sup>. The difference between the magnitude of the effect sizes for both general and violent re-offending suggest there was little difference in the effect sizes produced by evaluations that were level 3 compared to level 4.

There was a clear tendency for studies that included only those who completed the programme to find higher effect sizes than those who included all those who were intended to be treated in the analysis. This difference however, was not statistically significant.

## Multivariate Analyses

To summarise, there was evidence to suggest that interventions that were of greater overall duration (especially those with a higher duration per session), those that included cognitive skills training, role playing, and relapse prevention<sup>12</sup> had more desirable influences on both general and violent re-offending than those that did not. Also, studies that did not provide moral training, basic education or empathy training also appeared to have a more desirable influence than those that did include these elements. However, there was also evidence to suggest that studies which might be biased (evaluating the effects of the programme only among those who completed the treatment), also had higher effect sizes. Therefore, it was important to investigate the extent to which these effective elements of the intervention were still effective after controlling for this potentially biasing factor.

Table 1.4 shows the results of the modified ordinary least squares regressions that were used to investigate whether the impact of the intervention features on the mean effect sizes were independent of the method of analysis (intention-to-treat versus only treatment completers). It would have been desirable to include all the variables in a single regression, but because of the small number of studies only two predictor variables could be included in each regression. Looking at general re-offending according to the Beta values and associated statistical significance, this analysis shows that the previously identified relationship between cognitive skills training and general re-offending did not appear to be the result of the method of analysis. That is, when controlling for the method of analysis (itt vs. completers), those interventions that used

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<sup>11</sup> Only one study was Level 5 (randomised controlled trial) so this was not included in the analysis.

<sup>12</sup> Having the intervention delivered by a correctional officer was also significantly related to a greater effect size in studies of general re-offending.

cognitive skills training were still found to be associated with a statistically significant mean effect size.

Similarly, with general re-offending this analysis confirmed that the mean effect size of interventions that used role-play, relapse prevention and were delivered by correctional officers was not the result of these interventions being more likely to use only offenders who completed the treatment. Not providing empathy training (-.62,  $p < .001$ ) continued to have a desirable impact on the mean effect size. Interestingly, controlling for method of analysis demonstrated that not providing basic education (-.40,  $p < .03$ ) and not providing moral training (-.37,  $p < .06$ ) were also associated with a desirable impact on the mean effect size of general re-offending.

For violent re-offending the results suggested that interventions that included role playing and did not provide empathy training were associated with a desirable impact on violent re-offending.

Table 1.4 Regressions Controlling for Method of Analysis.

General Re-offending			Violent Re-offending		
Variable	Beta	p	Variable	Beta	p
Anger Control	0.23	n.s.	Anger Control	-0.04	n.s.
<i>Method of Analysis</i>	0.22	n.s.	<i>Method of Analysis</i>	0.40	n.s.
	Q model = 4.0, n.s.			Q model = 1.9, n.s.	
Cognitive Skills	0.43	0.03	Cognitive Skills	0.32	n.s.
<i>Method of Analysis</i>	0.17	n.s.	<i>Method of Analysis</i>	0.28	n.s.
	Q model = 7.2, $p < .03$			Q model = 3.1, n.s.	
Moral Training	-0.37	0.06	Moral Training	-0.22	n.s.
<i>Method of Analysis</i>	0.38	0.05	<i>Method of Analysis</i>	0.42	n.s.
	Q model = 6.4, $p < .04$			Q model = 2.5, n.s.	
Basic Education	-0.40	0.03	Basic Education	-0.46	n.s.
<i>Method of Analysis</i>	0.34	n.s.	<i>Method of Analysis</i>	0.32	n.s.
	Q model = 7.0, $p < .03$			Q model = 4.6, n.s.	
Role Play	0.59	0.003	Role Play	0.52	0.07
<i>Method of Analysis</i>	0.13	n.s.	<i>Method of Analysis</i>	0.37	n.s.
	Q model = 11.5, $p < .003$			Q model = 5.2, $p < .07$	
Empathy Training	-0.62	0.001	Empathy Training	-0.56	0.04
<i>Method of Analysis</i>	0.41	0.03	<i>Method of Analysis</i>	0.43	n.s.
	Q Model = 13.0, $p < .002$			Q Model = 6.0, $p < .05$	
Relapse Prevention	0.49	0.01	Relapse Prevention	0.42	n.s.
<i>Method of Analysis</i>	0.22	n.s.	<i>Method of Analysis</i>	0.39	n.s.
	Q model = 9.2, $p < .01$			Q model = 4.2, n.s.	
Homework	0.08	n.s.	Homework	0.44	n.s.
<i>Method of Analysis</i>	0.29	n.s.	<i>Method of Analysis</i>	0.1	n.s.
	Q Model = 2.9, n.s.			Q Model = 3.9, n.s.	
Treatment Provider	0.60	0.003	Treatment Provider	0.29	n.s.
<i>Method of Analysis</i>	0.54	0.009	<i>Method of Analysis</i>	0.48	n.s.
	Q Model = 11.4, $p < .003$			Q Model = 2.9, n.s.	

## Number of 'Effective' Study Features

The results of the multivariate analyses suggested that three intervention features were related to a desirable impact on general re-offending controlling for the method of analysis. These were using cognitive skills, role

playing and relapse prevention. Because of the relatively small number of studies and issues of multicollinearity it was not possible to determine which of these three intervention features might be the most effective at reducing general re-offending among violent offenders. However, Table 1.5 shows how the effectiveness of the interventions varied with the number of these three effective intervention features.

Table 1.5 Comparison of Number of Effective Features to Mean Effect Size.

N	Mean Effect Size (d)	Sig.
0	-0.006	n.s.
1	-0.004	n.s.
2	0.21	.05
3	0.30	.0001

For example, interventions that did not include any of the effective features had a mean effect size of -0.006 (n.s.). Similarly, interventions that included only one of the effective features had a negligible (and nonsignificant) mean effect size. However, those interventions that used two of the effective features had a mean effect size equivalent to an 11% reduction in general re-offending (approximately half of  $d = .21$ ). Interventions that used all three of the effective features were the most effective with a significant mean effect size of  $d = .30$ , approximately equal to an 15% reduction in general re-offending.

# Conclusions

Overall, the results of this systematic review and meta-analysis suggested that interventions with violent offenders were effective both in reducing general and violent re-offending. This effect was small to moderate with a difference in percentage reconvicted of about 7–9% for general re-offending and 6–7% for violent re-offending. The magnitude of the effect was somewhat smaller than that identified by Wilson et al. (2004) of 8–25%, but their review was focussed only on cognitive-behavioural programmes with general offenders. However, violent offenders have extensive criminal histories (e.g. Farrington, 1998), are more likely to reoffend than general offenders (Loza et al., 2004), and tend to be more difficult to engage in treatment (Heseltine et al., 2006). In light of this challenging backdrop the mean effect sizes of the interventions included in this review are very promising.

Further analysis suggested that the influence of the interventions on the mean effect size varied considerably depending on the features of the study, the content of the intervention, the delivery of the intervention and the method of the analysis. For example, there was some evidence to suggest that those interventions of greater overall duration were more effective, and that the greater duration per session was associated with greater effect for both general and violent re-offending. This relationship between treatment intensity and reduction in re-offending has been identified in a number of other studies and reviews (Chitty, 2005). However, what is not clear, and what could not be assessed in the current review is what the optimal dosage of intervention might be. It is clear that more is better, but future research should examine the dose-response relationship to determine that point at which additional treatment duration no longer considerably adds to reductions in re-offending.

There was also evidence that certain features of the content of the intervention were more effective than others. That is, those interventions that addressed anger control, cognitive skills, used role playing, and relapse prevention appeared more effective than those interventions that did not. Furthermore, interventions that did not include moral training, basic education or empathy training also appeared more effective at reducing general and violent re-offending than those that did.

Interventions which were delivered by correctional officers were more effective than those delivered by rehabilitation professionals. Subsequent analysis suggested that this finding was not related to the method of analysis (intention to treat vs. completers). While this is a counter-intuitive finding it was not always possible in this review to determine the extent to which correctional officers had received specialised training for the intervention that they were delivering. It may be that correctional officers had received extensive training and therefore

were equivalent to rehabilitation professionals with respect to the interventions delivered. Future research should examine the extent to which the specific training of those delivering the treatment is related to subsequent general and violent re-offending by those receiving the treatment.

A relationship was identified between the mean effect sizes and the method of analysis of the evaluations. That is, those evaluations that included only those who completed the treatment, arguably a biased sample, found higher effects than those that included those who were intended to be treated (completers plus those who dropped out of treatment).

It was possible to control for this potentially biasing factor, and the analyses suggested that some features of the interventions continued to be related to decreases in general and violent re-offending. For general re-offending these were cognitive skills, role playing and relapse prevention, and for violent re-offending decreases were associated with role play. For general re-offending it was not possible to determine which of these features was most influential, but subsequent analysis suggested that not using any of these interventions, or only using one, was associated with little reduction in re-offending. However, interventions which employed two or three of these successful features had significantly higher effects for general re-offending. The finding that multi-modal treatments are more effective than those with a narrow focus is not a new finding (e.g. Chitty, 2005; Henggeler et al. 2002), but the current review does provide evidence that, given limited resources, multi-modal treatments which encompass cognitive skills, role playing and relapse prevention might be particularly effective with violent offenders.

In contrast to the possible beneficial influences of interventions which used cognitive skills, role playing and relapse prevention on general re-offending, the absence of certain intervention features were found to be independently associated with higher effect sizes. Not providing basic education was associated with higher effects sizes for general re-offending. Perhaps it is not surprising that simply teaching basic skills was not related to a reduction in re-offending, as the time allotted to this basic education might have reduced the time the offender was exposed to more effective interventions. Similarly, interventions which did not use empathy training had higher effect sizes. This might again be a case of allotting limited intervention time on less successful interventions. Recent research has suggested that the relationship between empathy and offending is more complex than originally thought (e.g. Jolliffe & Farrington, 2004), with some even suggesting that empathy could increase offending among certain types of offenders (Jolliffe & Farrington, 2007). The counter-intuitive results might also be a function of the small number of studies and confounding with other features of the study.

A notable exception from the list of effective interventions was anger control. Many researchers have suggested that anger control might be



an effective intervention for violent offenders (e.g. Novaco, 1997), but the current review does not find support for this. That is, interventions that used anger control were more effective than those that did not, but not amongst the studies that provided the most accurate estimate of the relationship between the intervention and mean effect size. This mixed result might reflect the heterogeneity of violent offenders (e.g. Serin, 1999). For example, anger control may be useful for intervening with violent offenders whose offending is linked to a diminished capacity to control anger (e.g. expressively violent offenders), but not for intervening with violent offenders whose offending is linked to alternative motives (e.g. instrumentally violent offenders). In this review it was not possible to examine the impact of interventions with different types of violent offenders as this information was not available in the studies.

## Policy Implications

The systematic review and meta-analysis clearly showed that interventions with violent offenders were successful at reducing general re-offending and violent re-offending. In light of the considerable harm caused to victims and costs incurred by society, the treatment of violent offenders should be a priority. Furthermore, the research also provides suggestions about what a particularly effective intervention with violent offenders would look like. Effective interventions were intensive in terms of their overall duration and in their duration per session; they tended to employ at least two, but preferably three of cognitive skills training, role play and relapse prevention. Furthermore, they did not teach basic skills or involve empathy training.

## Limitations of the Current Research

Like all research, this review has limitations. After extensive searching only a small number (12) of studies of interventions with violent offenders met our inclusion criteria. When disaggregated into categories for analysis this small number of evaluations might limit the generalisability of our findings. We were also limited by the information available in the publications which were obtained and analysed. Information about the age and ethnic composition of the cohort, the training received by those delivering the treatment, and the type of violent offenders was not available in many cases. Obtaining this information from the authors of the studies proved difficult.

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

## Final Conclusions

The conclusion of this review is that interventions with violent offenders are successful. However, the success of these interventions depends on their intensity and content, with more intensive multi-modal interventions (of certain types) being more successful.

Clearly more evaluative research of higher methodological quality is needed before firm conclusions can be drawn about the most effective methods of intervening with violent offenders. Ideally this would involve careful randomised controlled trials which made efforts to control for previous violent and nonviolent criminal history, the point in the sentence when the intervention was applied, and the number of other interventions that the offenders had taken part and/or completed. Furthermore, greater detail about the type, frequency, severity and time to re-offence would allow for greater sensitivity when assessing the effectiveness of the intervention.

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# Technical Appendix

## Search Strategy

Six studies had been identified at the commencement of the review. One study (Boe, Belacourt, Ishak, and Bsilis, 1997) was identified from the citations of one of the previously included studies (Motiuk et al., 1996), two reports were sent to us by colleagues (Hatcher et al., 2008; Watt et al., 2008), and one government publication was brought to our attention by a colleague (Cortoni et al., 2006). Only two additional studies were found in the database search (Finn & Muirhead-Steves, 2002; Serin, Gobeil & Preston, 2009). Two studies were identified as potentially useful, but could not be obtained (see Table 2.2). Twelve evaluations were included altogether. The search strategy is described in detail below.

### 1. Search Terms

Below is a list of key terms, searched in any part of a document, which formed the basis of our database search: *Violen\**, *aggressiv\**, *serious\** AND *offend\**, *crim\**, *delinq\**, AND *treat\**, *intervention\**, *program\**, *correction\**, *project*, *therapy*, *rehabilitat\**.

### 2. Electronic Database Searches

CSA Illumina contains details of a number of databases relevant to the current study. These are:

- a) Criminal Justice Abstracts (1968–2007)
- b) Applied Social Sciences Index and Abstracts (1987–2007)
- c) Conference Papers Index (1982–2007)
- d) ERIC (1966–2007)
- e) MEDLINE (1997–2007)
- f) National Criminal Justice Reference Service Abstracts (1975–2007)
- g) CSA Social Services Abstracts (1979–2007)
- h) CSA Sociological Abstracts (1952–2007)
- i) Criminal Justice Periodical Index

A search of CSA Illumina including the search terms (*Violen\**, *aggressiv\**, *serious\** AND *offend\**, *crim\**, *delinq\**, AND *treat\**, *intervention\**, *program\**, *correction\**, *project*, *therapy*, *rehabilitat\**) resulted in 53352 relevant articles. This was then reduced by including the search terms *adult* AND *male*. This reduced the number of potential articles to 805. The search was then further reduced by excluding studies that included the term *domestic*. This resulted in a total of 346 studies for which the abstracts were obtained and examined for relevance.



#### OVID

OVID contains details of three databases relevant to the current study. These are Embase (1980–2007), Psychlit (1980–2007) and the International Bibliography of the Social Sciences. Including the search terms resulted in 437 possible articles for which the abstracts were reviewed. It was not possible to automatically exclude studies that dealt with sex offender programmes, domestic violence programmes, or those not delivered to adult males.

#### Science Direct

The search terms resulted in the identification of a total of 24 possible studies. However, upon further review of their titles and abstracts none of these were deemed to be relevant. This is because they focused on domestic violence or sex offender programmes (18), were review articles with no specific intervention (3), or had already been identified (3).

#### Dissertation Abstracts

The search of Digital Dissertation Abstracts Proquest did not result in the identification of any relevant studies.

#### ZETOC

The search terms resulted in the identification of a total of 16 possible studies. Upon further review, none of these studies met our inclusion criteria. This was because they were evaluations of programmes not specific to violent offenders (e.g. general offenders, domestic violence offenders, sex offenders) (8), were review articles (5) or had already been identified (3).

#### OCLC Firstsearch

OCLC Firstsearch contains a number of relevant databases. These are ArticleFirst, EBooks, ECO, MEDLINE, WoldCat, World CatDissertations. This resulted in the identification of 573 possible studies, but there was considerable replication of studies across the different databases.

#### ISI Web of Knowledge

Including the agreed search terms in this database resulted in the identification of 657 possible studies. However, many studies were repeated several times.

The entire electronic database search resulted in the identification of 2053 studies which required further review. The titles and abstracts of these studies were reviewed and it was possible to exclude 1962.

Table 2.1 Reason for Study Exclusion.

Very Small Numbers or Case Studies	39
Review/Theoretical Articles	178
Studies of Juveniles	370
Studies of Females	16
Studies of those with Mental Health/Psychological/ Psychiatric Disturbance	297
Studies of Domestic Violence/ Sex Offender/General Offenders	354
Studies that were replications across the databases	708
Total	1 962

A total of 91 studies could not be excluded based on their titles and abstracts and 89 of these were obtained for further inspection. The references for the 77 articles that were not included can be seen in the Table 2.3. Only 2 new studies (that we previously had not heard of) that met our inclusion criteria were identified from the database searches (Finn & Muirhead-Steves, 2002; Serin, Gobeil & Preston, 2009).

Table 2.2 Table of Excluded Studies.

Reference	Why Excluded?
Attrill, G., (1999). Violent offender programmes. <i>Issues in Forensic Psychology</i> , 1, 58–61	Review/Theoretical article
Barajas, E. (1992). <i>High-Risk Offenders in the Community</i> . Washington DC: National Institute of Corrections.	Review/Theoretical article
Bannister, D. A. (2002). <i>Altering the readiness to change in violent offenders</i> . Unpublished Doctoral Thesis. Central Michigan University.	No offending outcomes
Barto-Lynch, J. A. (1995). <i>The use of aggression replacement training with adult offenders: A program for violent and aggressive inmates</i> . Dissertation Abstracts International-Section B: The Sciences and Engineering, Volume 56: 2314.	No offending outcome
Benda, B. B. (2003). <i>Survival analysis of criminal recidivism of boot camp graduates using elements from general and developmental explanatory models</i> . <i>International Journal of Offender Therapy and Comparative Criminology</i> , 47 89–110.	Analysis only involved nonviolent offenders
Benda, B. B., Toombs, N. J. & Peacock, M. (2003). <i>Discriminators of types of recidivism among boot camp graduates in a 5-year follow-up study</i> . <i>Journal of Criminal Justice</i> , 31, 539–551.	No control group
Berry, S. (2003). <i>Stopping violent offending in New Zealand: Is treatment an option?</i> <i>New Zealand Journal of Psychology</i> , 32, 92–100.	Only previously included data presented (Berry, 1998)

Bonta, J. & Motiuk, L. L. (1996). High Risk Violent Offenders in Canada. Paper presented at the 104th Annual Convention of the American Psychological Association in Toronto Canada, 1996.	Review/Theoretical article
Bryan, J. & Day, A. (2006). The Violent Offender Treatment Program (Long Bay Prison, NSW): Preliminary Report and Outcome Data Forensic Psychology Research group, Centre for Applied Psychological Research. University of South of Australia.	No control group. Low number subjects receiving intervention
Burdon, W. M., Messina, N. P., Prendergast, M. L. (2004). The California treatment expansion initiative: Aftercare participation, recidivism, and predictors of outcomes. <i>The Prison Journal</i> , 84, 61–80.	Not possible to disentangle violent from non-violent offenders
Chambers, J. C., Ecclestone, L. Ward, A. & Howells, K. (2008). Treatment readiness in violent offenders: The influence of cognitive factors on engagement in violence programs. <i>Aggression and Violent Behavior</i> , 13, 276–284.	Review/Theoretical article
Chick, J. (1998). Treatment of alcoholic violent offenders: Ethics and efficacy. <i>Alcohol and Alcoholism</i> , 33, 20–25.	Review/Theoretical article
Cooke, D. (1989). Containing violent prisoners: An analysis of the Barlinnie Special Unit. <i>British Journal of Criminology</i> , 29, 129–143.	No control group. Small Numbers
Cohen, B., Eden, R. & Lazar, A. (1991). The efficacy of probation versus imprisonment in reducing recidivism of serious offenders in Israel. <i>Journal of Criminal Justice</i> , 19, 263–270.	Not possible to disentangle violent from non-violent offenders
Crocker, K. (1998). Nashville SAVE Program Addresses Violent Behavior. Washington DC: National Institute of Corrections.	Domestic Violence
Daggett, D. M., Camp, S. D., Kwon, O., Rosenmerkel, S. P. Klein-Saffran, J. (2008). Faith-based correctional programming in federal prisons: Factors affecting program completion. <i>Criminal Justice and Behavior</i> , 35, 848-862.	Review/Theoretical article
Davey, L., Day, A. & Howells, K. (2005). Anger, over-control and serious violent offending. <i>Aggression and Violent Behavior</i> , 10, 624–635.	Review/Theoretical article

Day, A., Bryan, J., Davey, L. & Casey, L. (2006). The process of change in offender rehabilitation programmes. <i>Psychology, Crime and Law</i> , 12, 473–487.	Review/Theoretical article
Day, A. Gerace, A., Wilson, C. & Howells, K. (2008). Promoting forgiveness in violent offenders: A more positive approach to offender rehabilitation? <i>Aggression and Violent Behavior</i> , 13, 195–200.	Review/Theoretical article
Daley, M., Love, C. T., Shepard, D. S., Petersen, C. B., White, K. L & Hall, F. B. (2004). Cost-effectiveness of Connecticut's in-prison substance abuse treatment. <i>Journal of Offender Rehabilitation</i> , 39, 69–80.	No possible to disentangle violent from nonviolent offenders
Dobash, R. P., Dobash, R. E., Cavanagh, K. & Lewis, R. (1999). A research evaluation of British programmes for violent men. <i>Journal of Social Policy</i> , 28, 205–233.	Domestic violence
Fabiano, E. A., Porporino, F. J. & Robinson D. (1990). Rehabilitation through Clearer Thinking: A Cognitive Model of Correctional Intervention. Ottawa: Correctional Service of Canada (Report B-04).	Not possible to disentangle violent from non-violent offenders
Forbes, M. R. (1990). The effects of prosocial skills training on anger management of aggressive adult inmates. Unpublished Doctoral Dissertation. Indiana State University.	No offending outcomes
Fox, K. (1999). Reproducing criminal types: Cognitive treatment for violent offenders in prison. <i>Sociological Quarterly</i> , 40, 435–453.	Review/Theoretical article
Goldstein, A.P. & Glick, B. (2001). Aggression replacement training: application and evaluation management. In G. A. Bernfield, D. P. Farrington & A. W. Leschied (Eds.). <i>Offender Rehabilitation in Practice</i> (pp. 121–148). Chichester: Wiley.	Review/Theoretical article
Griffith, J. D., Hiller, M. L., Knight, K. Simpson, D. D. (1999). A cost-effectiveness analysis of in-prison therapeutic community treatment and risk classification. <i>The Prison Journal</i> , 79, 352–368.	Not possible to disentangle violent from non-violent offenders
Gudjonsson, G. & Drinkwater, J. (1986). Intervention techniques for violent behaviour. <i>Issues in Criminological and Legal Psychology</i> , 9, 37–47.	No intervention

- Hall, G. (1998). Changing offending behaviour: The violent offenders' treatment programme. Paper presented at the conference Partnerships in Crime Prevention, convened jointly by the Australian Institute of Criminology and the National Campaign Against Violence and Crime, Hobart Tasmania. Review/Theoretical article
- Hartmann, D. J., Wolk, J. L., Johnston, J. S. & Colyer, C. J. (1997). Recidivism and substance abuse outcomes in prison-based therapeutic community. *Federal Probation*, 61, 18–25. Not possible to disentangle violent from non-violent offenders
- Heseltine, K., Howells, K. & Day, A. (2006). Anger management with offenders: Needs and readiness as moderators of outcome. Unpublished manuscript. No offending outcome
- Hiller, M. L., Knight, K. & Simpson, D. D. (1999). Prison-based substance abuse treatment, residential aftercare and recidivism. *Addiction*, 94, 833–842. Not possible to disentangle violent from non-violent offenders
- Hollenhorst, P. S. (1998). What do we know about anger management programs in corrections? *Federal Probation*, 62, 17–33. Review/Theoretical article
- Hollin, C. R. (1999). Treatment programs for offenders. *International Journal of Law and Psychiatry*, 22, 361–372. Review/Theoretical article
- Hollin, C. R. & Palmer, E. J. (2003). Level of service inventory – Revised profiles of violent and non-violent prisoners. *Journal of Interpersonal Violence*, 18, 1075–1086. No intervention
- Hornsveld, R. H. J., Nijman, H. L. I., Hollin, C. R. & Kraaiaat, F. W. (2008). Aggression control therapy for violent forensic patients: Method and clinical practice. *International Journal of Offender Therapy and Comparative Criminology*, 52, 222–233. Psychiatric sample
- Hornsveld, R. H. J., Nijman, H. L. I. & Kraaiaat, F. W. (2008). Aggression control therapy for violent forensic psychiatric patients: First results. *Psychology, Crime and Law*, 14, 1–18. Psychiatric sample
- Howells, K. & Day, A. (2006). Affective determinants of treatment engagement in violent offenders. *International Journal of Offender Therapy and Comparative Criminology*, 50, 174–186. Review/Theoretical article
- Howells, K. & Day, A. (2002). Grasping the nettle: Treating and rehabilitating the violent offender. *Australian Psychologist*, 37, 222–228. Review/Theoretical article

- Howells, K., Day, A., Williamson, P., Bubner, S., Jauncey, S., Parker, A. Heseltine, K. (2005). Brief anger management programs with offenders: Outcomes and predictors of change. *Journal of Forensic Psychiatry and Psychology*, 16, 296–311. No offending outcome
- Howells, K., Watt, B., Hall, G. & Baldwin, S. (1997). Developing programmes for violent offenders. *Legal and Criminological Psychology*, 2, 117–128. Review/Theoretical article
- Hunter, D. L. (1997). Anger management in prison: An evaluation. *Forum on Corrections Research*, 5, 3–7. No offending outcome
- Inciardi, J. A., Martin, S. S. & Butzin, C. A. (2004). Five-year outcomes of therapeutic community treatment of drug-involved offenders after release from prison. *Crime and Delinquency*, 50, 88–107. Not possible to disentangle violent from non-violent offenders
- Kirchner, E. P., Kennedy, R. E. & Draguns, J. G. (1979). Assertion and aggression in adult offenders. *Behavior Therapy*, 10, 452–471. No intervention
- Knight, K., Simpson, D. D. & Hiller, M. L. (1999). Three-year reincarceration outcomes for in-prison therapeutic community treatment in Texas. *The Prison Journal*, 79, 337–351. Not possible to disentangle violent from non-violent offenders
- Krawczyk, S. C. Witte, T., Gordon, A., Wong, S. & Wormith, S. J. (2002). Treatment attrition and institutional offending in violent offenders. Poster presented at the Canadian Psychological Association's 63rd Annual Convention, Vancouver, B.C. No control group. No offending outcome
- Kuhns, J. (2005). The dynamic nature of the drug use/serious violence relationship: A multi-causal approach. *Violence and Victims*, 20, 433-447. No intervention
- Lemire, G., Rondeau, G., Brochu, S. Schneeberger, P. Brodeur, N. (1996). Programs for treating violent criminals: From community to correctional settings. *Canadian Journal of Criminology*, 38, 33–59. Review/Theoretical article
- Loza, W. & Conley, M. & Warren, B. (2004). Concurrent cross-validation of the self-appraisal questionnaire: A tool for assessing violent and nonviolent recidivism and institutional adjustment on a sample of North Carolina offenders. *International Journal of Offender Therapy and Comparative Criminology*, 48, 85–95. No intervention

Loza, W. & Loza-Fanous, A. (1999). Anger and the prediction of violent and non-violent offenders' recidivism. <i>Journal of Interpersonal Violence</i> , 14, 1014–1029.	No intervention
Loza, W. & Loza-Fanous, A. (1999). The fallacy of reducing rape and violent recidivism by treating anger. <i>International Journal of Offender Therapy and Comparative Criminology</i> , 43, 492–502.	No intervention was included
Mals, P., Howells, K., Day, A & Hall, G. (1999). Adapting violence rehabilitation programs for the Australian aboriginal offender. <i>Journal of Offender Rehabilitation</i> , 30, 121–136.	Review/Theoretical article
Marquis, H. A .Bourgon, G. A. Armstrong, B. & Pfaff, J. (1996). Reducing recidivism through institutional treatment programs. <i>Forum on Corrections Research</i> , 8, 3- 8.	Not possible to calculate effect size because the number of violent and nonviolent offenders was not presented
Martin, S. S., Butzin, C. A., Saum, C. A. & Inciardi, J. A. (1999). Three-year outcomes of therapeutic community treatment for drug-involved offenders in Delaware: From prison to work release to after care. <i>The Prison Journal</i> , 79, 294–320.	Not possible to disentangle violent from non-violent offenders
Matthews, R. & Pitts, J. (1998). Rehabilitation, recidivism, and realism: Evaluating violence reduction programs in prison. <i>The Prison Journal</i> , 78, 390–405.	No evaluation
Mills, J. F. & Kroner, D. G. (2003). Anger as a predictor of institutional misconduct and recidivism in a sample of violent offenders. <i>Journal of Interpersonal Violence</i> , 18, 282–294.	No intervention
Napolitano, S. (1992). Evaluation of prison anger control training (pact): A group treatment program for incarcerated murderers and violent offenders. <i>Dissertation Abstracts International-Section B: The Sciences and Engineering</i> , Volume 53 (2-B).	No offending outcome
Novaco, R. W. (1997). Remediating anger and aggression with violent offenders. <i>Legal and Criminological Psychology</i> , 2, 77–88.	Review/Theoretical article
Ortmann, R. (2000). The effectiveness of social therapy in prison—a randomized experiment. <i>Crime &amp; Delinquency</i> , 46, 214–232.	Not possible to disentangle violent from non-violent offenders

Petersillia, J. & Turner, S. (1990). Intensive supervision for high-risk probationers: Findings from three California experiments. Santa Monica, CA: RAND.	Not possible to disentangle violent from nonviolent offenders
Polaschek, D. L. L. & Collie, R. M. (2004). Rehabilitating serious violent adult offenders: An empirical and theoretical stocktake. <i>Psychology, Crime and Law</i> , 10, 321–334.	Review/Theoretical article
Polaschek, D. L. L. & Dixon, B. G. (2001). The Violence Prevention Project: The development and evaluation of a treatment programme for violent offenders. <i>Psychology, Crime and Law</i> , 7, 1–23.	No control group
Predergast, M. L., Hall, E. A., Wexler, H. K., Melnick, G. & Cao, Y. (2004). Amity prison-based therapeutic community: 5-year outcomes. <i>The Prison Journal</i> , 84, 36–60.	Not possible to disentangle violent from non-violent offenders
Ratel, P. (2005). Violence Prevention Program Evaluation with Community and Custody Sentenced Groups. Report prepared for the Corrections Branch, Public Safety and Solicitor General. British Columbia, Canada.	Not possible to disentangle violent from nonviolent offenders
Rice, M. (1997). Violent offender research and implications for the criminal justice system. <i>American Psychologist</i> , 52, 414–423.	Review/Theoretical article
Robinson, D. (1995). The Impact of Cognitive Skills Training on Post-Release Recidivism among Canadian Federal Offenders. Ottawa: Correctional Service of Canada (Report R-41).	Not possible to disentangle violent from non-violent offenders
Rugge, T., Bonta, J. & Wallace-Capretta, S. (2005). Evaluation of the Collaborative Justice Project: A Restorative Justice Program for Serious Crime in Canada. Ottawa: Public Safety and Emergency Preparedness (Report 2005–02).	Not possible to disentangle violent from non-violent offenders. No comparison group
Saum, C. A., Scarpitti, F. R. & Robbins, C. A. (2001). Violent offenders in drug court. <i>Journal of Drug Issues</i> , 31, 107–128.	No control group
Schippers, G. M. Marker, N., De Fuentes-Merillas, L. (2001). Social-skills training, prosocial behavior, and aggressiveness in adult incarcerated offenders. <i>International Journal of Offender Therapy and Comparative Criminology</i> , 45, 244–257.	No offending outcome



<p>Serin, R. (1999). Treating Violent Offenders: A Review of Current Practices. Ottawa: Correctional Service Canada (Research Report R-38.</p>	<p>Review/Theoretical article</p>
<p>Serin, R. &amp; Brown, S. (1996). Strategies for enhancing the treatment of violent offenders. Forum on Corrections Research, 8, 45-48.</p>	<p>Review/Theoretical article</p>
<p>Serin, R. &amp; Kuriychuk, M. (1994). Social and cognitive processing deficits in violent offenders: Implications for treatment. International Journal of Law and Psychiatry, 17, 431-441.</p>	<p>No intervention</p>
<p>Serin, R. C. &amp; Preston, D. L. (2000). Programming for violent offenders. Correctional Service Canada Forum, 12, 3-9.</p>	<p>Review/Theoretical article</p>
<p>Soferr, S. (1999). The Freedom from Violence program: An untraditional approach to violence management. International Journal of Offender Therapy and Comparative Criminology, 43, 49-60.</p>	<p>No evaluation</p>
<p>Tarran, M. (1987). Therapeutic Treatments for the Violent Criminal Offender. Unpublished Master's Thesis. University of Vermont.</p>	<p>No evaluation</p>
<p>Umbreit, M. S., Bradshaw, W. &amp; Coates, R. B. (1999). Victims of severe violence meet the offender: Restorative justice through dialogue. International Review of Victimology, 6, 321-343.</p>	<p>No offending outcome</p>
<p>Valliant, P. M. &amp; Raven L. M. (1994). Management of anger and its effect on incarcerated assaultive and nonassaultive offenders. Psychological Reports, 75, 275-278.</p>	<p>No offending outcomes</p>
<p>van Voorhis, P., Cullen, F. T. &amp; Applegate, B. (1995). Evaluating interventions with violent offenders: A guide for practitioners and policy-makers. Federal Probation, 59, 17-28.</p>	<p>Review/Theoretical article</p>
<p>van Voorhis, P., Spruance, L. M., Ritchey, P. N., Johnson-Listwan, S. &amp; Seabrook, R. (2004). The Georgia cognitive skills experiment: A replication of reasoning and rehabilitation. Criminal Justice and Behavior, 31, 282-305</p>	<p>Not possible to disentangle violent from non-violent offenders</p>
<p>Wagner, M., McBride, R. E. &amp; Crouse, S. F. (1999). The effects of weight-training exercise on aggression variables in adult inmates. The Prison Journal, 79, 72-89.</p>	<p>No offending outcome</p>

Walrath, C. (2001). Evaluation of an inmate-run alternatives to violence project. <i>Journal of Interpersonal Violence</i> , 16, 697–711.	No offending outcome
Wang, E. W., Owens, R. M. Long, S. A., Diamond, P. M. & Smith, J. L. (2000). The effectiveness of rehabilitation with persistently violent male prisoners. <i>International Journal of Offender Therapy and Comparative Criminology</i> , 44, 505–514.	No offending outcome. No control group
Ward, A. & Dockerill, J. (1999). The predictive accuracy of the violent offender treatment program risk assessment scale. <i>Criminal Justice and Behavior</i> , 26, 125–140.	No intervention
Ward, T., Mann, R. E. & Gannon, T. A. (2007). The good lives model of offender rehabilitation: Clinical implications. <i>Aggression and Violent Behavior</i> , 12, 87–107.	Review/Theoretical article
Watt, B. D. & Howells, K. (1998). Skills training for aggression control: Evaluation of an anger management programme for violent offenders. <i>Legal and Criminological Psychology</i> , 4, 285–300.	No offending outcomes
Wexler, H.K., DeLeon, G., Thomas, G. Kressel, D. & Peters, J. (1999). The Amity prison treatment evaluation: Reincarceration outcomes. <i>Criminal Justice and Behavior</i> , 26, 147–167.	Not possible to disentangle violent from non-violent offenders
Wexler, H. K., Melnick, G. & Cao, Y. (2004). Risk and prison substance abuse treatment outcomes: A replication and challenge. <i>The Prison Journal</i> , 84, 106–120.	Not possible to disentangle violent from non-violent offenders
Whitehead, P. R., Ward, T., Collie, R. M. (2007). Time for a change: Applying the good lives model of rehabilitation to a high-risk violent offender. <i>International Journal of Offender Therapy and Comparative Criminology</i> , 51, 578–598.	Case Study

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Articles Not Obtained

Groff, Jason, R. (2006). Effects of drug treatment on recidivism among violent felony offenders. Unpublished Master's Thesis, Penn State University at Harrisburg.

Sugg, D. (2000). Aggression replacement Training—Appendix F—Research Report ART, Unpublished report for CSAP.

### **3. Research Registers**

We thoroughly examined the Campbell Collaboration Social, Psychological, Educational and Criminological Register (C2 - SPECTR). While there were trials of interventions with violent and aggressive offenders, these were only with adolescent offenders (e.g. Guerra & Slaby, 1990). None of the references from these articles identified any new studies.

The National Research Register (NRR, research in progress) provided no additional studies.

### **4. Hand Searches of Relevant Journals/Print Articles/Catalogues**

Hand searches of relevant journals (Criminal Justice and Behavior, Criminology and Public Policy, Journal of Research on Crime and Delinquency, International Journal of Offender Therapy and Comparative Criminology, Offender Rehabilitation, Violence and Victims, Journal of Interpersonal Violence) were carried out. No additional studies which met our inclusion criteria were identified.

### **5. Reference List Searches**

The references of potentially relevant articles (e.g. Dowden & Andrews, 2000; Lipsey & Wilson, 1998), books (e.g. MacKenzie, 2006), and reviews (Chitty et al, 2005) were searched in hopes of identifying additional studies to be included. This strategy led to the identification of one new article that met our inclusion criteria (Boe et al., 1997).

### **6. Citation Searches**

Articles which cited seminal reviews (e.g. Dowden & Andrews, 2000) or articles which cited studies which were included in the systematic review (e.g. Berry, 1998; Dowden et al, 1999; Motiuk et al., 1996) were searched. This led to the identification of 45 potentially useful studies, but none of these met our inclusion criteria.

### **7. Contacting Key Researchers**

We sent out email requests for assistance to a number of researchers who were identified as having expertise in the area. This resulted in five potentially useful studies being brought to our attention, and in the identification of three studies that met our inclusion criteria (Cortoni et al., 2006; Hatcher et al., 2008; Watt et al., 2008). Two colleagues who were contacted suggested that they had undertaken evaluations that might meet the inclusion criteria, but were unable to produce reports in time for this review.

## Calculating Effect Size

The most consistently available and conservative measure of re-offending was used in the calculation of the effect size for each study<sup>13</sup>. The percentage reconvicted of treated and control participants was compared. Ten of the twelve studies provided data on the prevalence of reconviction for any offence. In one case (Berry, 1998) only violent reconviction was available, and in another instance (Linn & Muirhead-Steves, 2002) only information about the prevalence of return to prison was available. These outcomes were included in the analysis of the impact of programmes on offending.

Nine of the twelve studies reported the prevalence of a reconviction for violence, which was used in the calculation of an additional effect size to examine the impact of the interventions on violent re-offending. In one case (Dowden et al., 1999), chi squared figures were used to calculate an effect size.

In the study by Cortoni et al. (2006) the prevalence of general and violent reconviction for the experimental and comparison groups was available. However, there was an indication that there were pre-existing differences between experimentals and controls. In this case, and because it was available, the results of the more controlled analysis (controlling for pre-existing differences between the experimental and comparison groups) were used in the calculation of the effect size. This also applied to the study by Henning and Freuh (1996).

It would have been desirable to include effect sizes derived from more sensitive measures of re-offending such as the frequency of re-offending, time to reoffence or self-reports of re-offending, but these were not available in many studies (see Technical Appendix Table 2.7).

## Mean Effect Size

The weighted mean effect size in a fixed effects model was 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 12 studies of general re-offending included in this review the mean effect size using a fixed effect model was  $d = 0.14$  (95% CI .06–0.23). The corresponding  $t$  value of 3.6 calculated for this mean effect size was significant at the  $p < .0001$  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 12 general offending studies included in this review the mean effect size using a random effect model was  $d = 0.18$  (95% CI 0.04–0.33). The corresponding  $t$  value of 2.5 calculated for this mean effect size was significant at the  $p < .01$  level.

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<sup>13</sup> The figures that were used in the calculation of the effect size are shown in Table 2.7 of the Technical Appendix.

For the 9 studies of violent re-offending included in this review the mean effect size using a fixed effects model was  $d = .12$  (95% CI .03 - .22). The corresponding  $t$  value of 2.60 for this effect size was significant at the  $p < .01$  level. For the 9 studies of violent re-offending included in this review the mean effect size using a random effects model was  $d = .14$  (95% CI .02 - .27). The corresponding  $t$  value of 2.3 calculated for this mean effect size was significant at the  $p < .02$  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 of 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 12 studies would commit offences at follow-up, the standardised mean difference (fixed effects model)  $d$  of .14 can be converted to  $r$  (.07), which is equal to the difference in proportions committing offences between those who had or had not received an intervention. Therefore 43% 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 .18 is equal to an  $r$  of about .09, and assuming half of those in the control group would commit offences the random effects model suggests that 41% of those who received mentoring would commit offences.

The values for the fixed effects and random effects models for violent re-offending were  $d = .12$  and  $d = .14$  respectively. Converting these to the phi correlation makes these  $r = .06$  and  $r = .07$ . Therefore, if it was assumed that half (50%) of the controls in the 9 studies would commit violent offences at follow-up the percentage for those who received interventions would be 44% (fixed effects model) and 43% (random effects model).

## More Information About the Homogeneity of Studies

The homogeneity ( $Q$ ) of the sample of 12 general re-offending and 9 violent re-offending studies was calculated to determine if the variability across effect sizes was greater than would be expected from sampling error alone. For general re-offending the resulting  $Q$  value of 30.5 (11df) was significant at the  $p < .003$  level. For violent re-offending the resulting  $Q$  value of 12.7 (8df) was almost significant. Therefore, the

variance of these samples of effect size measures was likely 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.

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

Study ID	Publication, Location	Description of Sample	Age of Sample	Ethnic Composition of Sample (% White)	No. Experimentals and Controls for Analysis	Sentence Length
001	Hughes (1993) Kingston, Canada	79 incarcerated males (52 Experimentals, 27 Controls)	N/A	N/A	E = 42 C = 19 Attrition = 23%	N/A
002	Henning & Frueh (1996) Vermont, US	196 incarcerated males (55 Experimentals, 141 Controls) from a medium security prison	M = 28.0	95%	Reconviction E = 55 C = 141 Viol Reconviction E = 28 C = 96 Attrition = 37%	24–72 months
003	Motiuk <i>et al.</i> , (1996) British Columbia, Canada	120 incarcerated males (60 Experimentals, 60 Controls) from a federal prison.	M = 35	N/A	E = 60 C = 60 No attrition reported.	M = 86 months
004	Berry (1998), Hamilton, New Zealand	164 incarcerated males (82 Experimentals, 82 Controls) referred from court or prison	M = 28	91% Maori	E = 80 C = 80 Attrition = 2%	23–36 months
005	Dowden <i>et al</i> (1999) Kingston, Canada	130 incarcerated males (65 Experimentals, 65 Controls) from a federal prison	M = 36	N/A	E = 55 C = 55 Attrition = 15%	N/A
006	Polaschek (2008) Wellington, New Zealand	224 incarcerated males (112 Experimentals, 112 Controls) from a prison.	M = 28	67% Maori or Pacific Islander	E = 122 C = 122 No attrition reported.	N/A

Study ID	Publication, Location	Description of Sample	Age of Sample	Ethnic Composition of Sample (% White)	No. Experimentals and Controls for Analysis	Sentence Length
007	Boe, <i>et al.</i> (1997) Vancouver, Canada	119 males under supervision in the community (74 Experimentals, 45 Controls)	N/A	N/A	E = 74 C = 45 No attrition reported	N/A
008	Watt <i>et al.</i> , (2006) Cardiff, UK	269 males (135 Experimentals, 134 Controls) found guilty of alcohol related violence in magistrates court.	M = 23	93%	E = 120 C = 124 Attrition = 9.3%	N/A
009	Hatcher <i>et al.</i> , (2006) England and Wales	106 males convicted of violence (53 Experimentals, 53 Controls) who received community penalties	M = 27	N/A	E = 53 C = 53 No attrition reported.	N/A
010	Finn & Muirhead-Steves (2002) Georgia, US	286 violent male parolees (128 Experimentals, 158 Controls)	N/A	65%	E = 128 C = 158 No attrition reported.	N/A
011	Cortoni <i>et al.</i> , (2006) Kingston, Canada	571 incarcerated males (305 Experimentals, 266 Controls)	M = 30	67%	E = 305 C = 266 No attrition reported.	6.3 years
012	Serin, Gobeil & Preston (2008)	205 incarcerated males (60 Experimentals, 145 Controls)	M = 32	N/A	E = 60 C = 145 No attrition reported	N/A

N/A – Information not available





Study ID	Publication, Location	Description of Treatment	Anger Control	Cognitive Skills	Moral Training	Basic Education	Role-Play	Empathy	Relapse Prevention	Home-work
007	Boe, <i>et al.</i> (1997) Vancouver, Canada	Specialised programme that emphasizes a cognitive-behavioural and psychosocial dynamic approach to changing anti-social behaviour	Yes	Yes	No	Yes	No	Yes	No	No
008	Watt <i>et al.</i> , (2006) Cardiff, UK	Motivational interview based on a pamphlet that was specifically designed for the study.	No	No	Yes	Yes	No	Yes	No	No
009	Hatcher <i>et al.</i> , (2006) England and Wales	Aggression Replacement Training is a multi-modal approach to working with violent offenders.	Yes	Yes	Yes	No	Yes	No	No	Yes
010	Finn & Muirhead-Steves (2002), Georgia, US	Electronic Monitoring	No	No	No	No	No	No	No	No
011	Cortoni <i>et al.</i> , (2006) Kingston, Canada	An intervention targeted at social-learning and social-information processing.	Yes	Yes	No	Yes	Yes	No	Yes	No
012	Serin, Gobeil & Preston (2008)	An intervention based on social information processing deficits of offenders.	Yes	Yes	No	No	No	Yes	Yes	No

Table 2.5 Key Features of the Delivery of the Intervention.

Study ID	Publication, Location	Intervention Manualised?	Intervention Delivered by	Special Training for Those Delivering the Intervention	Group/ Individual Intervention	Duration of Intervention	Duration per Session	Sessions per week	Estimated Total Time of Intervention (min – max)
001	Hughes (1993) Kingston, Canada	No	Clinical Psychologist & Drama Teacher	Advanced training in rational-emotive therapy	Group	12 weeks	2 hours	Once per week	24 hours (12–24 hours)
002	Henning & Frueh (1996) Vermont, US	Yes	Predominantly Correctional Officers	Initial weeklong training and then additional training	Group	M = 39.2 weeks (R = 1–128)	N/A	3–5 times per week	300 hours (120–640 hours)
003	Motiuk <i>et al</i> (1996) British Columbia, Canada	Yes	Professional Staff Members	N/A	Group (12–16 offenders)	96 weeks	N/A	N/A	N/A
004	Berry (1998) Hamilton, New Zealand	Yes	Maori Staff and Psychologists	N/A	Group (10)	10 weeks	2 hours	7 days a week	470 hours
005	Dowden <i>et al</i> (1999) Kingston, Canada	Yes	Specially trained correctional officers	Yes	Group (4–10)	5–12 weeks	2 hours	2–5 times per week	50 hours
006	Polaschek <i>et al</i> (2005) Wellington, New Zealand	Yes	Psychologist and Rehabilitation worker	N/A	Group (10)	28 weeks	3 hours	4 times per week	330 hours

N/A – Information not available.

Study ID	Publication, Location	Intervention Manualised?	Intervention Delivered By	Special Training for Those Delivering the Intervention	Group/ Individual Intervention	Duration of Intervention	Duration per Session	Sessions per week	Estimated Total Time of Intervention (min – max)
007	Boe, <i>et al.</i> (1997) Vancouver, Canada	Yes	Professional Staff Members	N/A	Group (12–16 offenders)	24 weeks	N/A	2 per week	48 hours
008	Watt <i>et al.</i> , (2006) Cardiff, UK	Yes	Specially trained research team	Yes	Individual	15 minutes	15 minutes	N/A	15 minutes (15–20 minutes)
009	Hatcher <i>et al.</i> , (2006) England and Wales	Yes	Specially Trained Probation Officer	Yes	Group	16 weeks	2 hours	Once	32 hours
010	Finn & Muirhead-Steves (2002) Georgia, US	N/A	Specially Trained Probation Officer	N/A	N/A	M = 87 days	N/A	N/A	87 days (6–153 days)
011	Cortoni <i>et al.</i> , (2006) Kingston, Canada	Yes	Specially trained correctional officers	Yes	Group	16 weeks	2 hours	6 per week	188 hours
012	Serin, Gobeil & Preston (2008) Ontario, New Brunswick, Canada	Yes	Program Delivery Officer and Psychologist	Yes (most, but not all)	Group with individual component	16 weeks	1.8 hours	5 per week	144 hours

Table 2.6. Key Features of the Methodology of Included Studies.

Study ID	Publication, Location	Experimental and Control Matching	Modified SMS	Score on Quality Assessment Tool	Estimated Time Released After Intervention	Intention to Treat or Only Completers	Completion Rate	Length of Follow-up
001	Hughes (1993) Kingston, Canada	Similar on a number of psychometric measures (e.g. Beck Depression Inventory)	3	6.0	N/A	Completers	34%	At least 24 months
002	Henning & Frueh (1996) Vermont, US	Similar in age, number of prior felony convictions, age at release to community, and percentage of time served. E more likely to have a property and violent offence (ever).	4	8.3	N/A	ITT	51%	At least 24 months
003	Motiuk <i>et al</i> (1996) British Columbia, Canada	Similar in age, mean years in custody, mean sentence length and risk score.	4	8.3	12 months	Completers	N/A	M = 24 months
004	Berry (1998) Hamilton, New Zealand	Similar in age, total number of offences (violent and non-violent), time spent in prison, seriousness of offending, rate of pre-programme offending (violent and non-violent) and probability of reconviction score.	4	8.0	N/A	Completers	N/A	16–17 months
005	Dowden <i>et al</i> (1999) Kingston, Canada	Similar in admitting offence, age and risk score.	4	8.3	N/A	Completers	N/A	36 months
006	Polaschek <i>et al</i> (2005) Wellington, New Zealand	Similar in ethnicity, age at release, number of previous imprisonments, number of previous convictions (violent and non-violent), age at first violent offence and risk score.	4	8.0	N/A	ITT	N/A	42 months

N/A – Information not available.

Study ID	Publication, Location	Experimental and Control Matching	Modified SMS	Score on Quality Assessment Tool	Estimated Time Released After Intervention	Intention to Treat or Only Completers	Completion Rate	Length of Follow-up
007	Boe, <i>et al.</i> (1997) Vancouver, Canada	Similar in type of offence, release date, age at release day and sentence length.	3	7.0	N/A	ITT	100%	6 months
008	Watt <i>et al.</i> , (2006) Cardiff, UK	Random allocation of those found guilty of alcohol related violence in magistrates court who agreed to participate.	5	11.3	N/A	ITT	100%	12 months
009	Hatcher <i>et al.</i> , (2006) England and Wales	Similar in offence type, age, number of previous convictions and risk score.	4	8.0	N/A	ITT	28%	10 months
010	Finn & Muirhead-Steves (2002) Georgia, US	Similar in age, race, index offence, time served, number of incarcerations, number of convictions, risk score	4	10.0	N/A	N/A	N/A	36–48 months
011	Cortoni <i>et al.</i> , (2006) Kingston, Canada	Similar in age, current offence, risk and needs score.	4	8.3	N/A	ITT	67%	N/A
012	Serin, Gobeil & Preston (2008) Ontario, New Brunswick, Canada	Similar in age, marital status, education, occupation and sentence history.	3		N/A	Completers	N/A	40 months

Table 2.7. Impact of Interventions on Re-Offending.

Study ID	Publication, Location	Results	Results for Violence	Time to Re-offence	Time to Violent Re-offence	Results of Survival Analysis
001	Hughes (1993) Kingston, Canada	Reconviction* E = 57% (24) C = 68% (13)	Violent Reconviction* E = 40% (17) C = 63% (12)	E = 22.04 months (no sd) C = 5.55 months(no sd)	N/A	N/A
002	Henning & Frueh (1996) Vermont, US	Reconviction E = 50% (14/28) C = 70.8% (68/96)	Violent Reconviction* E = 11% (3/28) C = 22% (21/28)	N/A	N/A	Programme benefits were maintained when controlling for pre-existing differences between E and C. Wald $\chi^2 = 4.36, p < .05$ .*
003	Motiuk <i>et al</i> (1996) British Columbia, Canada	Reconviction* E = 40% (24) C = 35% (21)	Violent Reconviction* E = 18% (11) C = 15% (9)	N/A	N/A	N/A
004	Berry (1998) Hamilton, New Zealand	N/A	Violent Reconviction* E = 25% (16) C = 44% (27)	N/A	N/A	Those completing the programme were slower to be reconvicted for violent crimes than the comparison group.
005	Dowden <i>et al</i> (1999) Kingston, Canada	Reconviction* E = 10% (11) C = 30% (32)	Violent Reconviction* Comparison between E and C Low-Risk $\chi^2 = 0.32$ (n.s.) (108) High-Risk $\chi^2 = 4.38$ ( $p < .05$ ) (112)	N/A	N/A	Controlling for different time at risk between E and C, those completing the programme were reconvicted (both violently and non-violently) at a slower rate than those in the comparison group.
006	Polaschek <i>et al</i> (2005) Wellington, New Zealand	Reconviction* E = 73% (16) C = 85% (51)	Violent Reconviction* E = 32% (7) C = 63% (38)	N/A	N/A	High-risk E took significantly longer to be reconvicted compared to controls.

Study ID	Publication, Location	Results	Results for Violence	Time to Re-offence	Time to Violent Re-offence	Results of Survival Analysis
007	Boe, <i>et al.</i> (1997) Vancouver, Canada	Reconviction* E = 15% (11) C = 15% (8)	N/A	N/A	N/A	N/A
008	Watt <i>et al.</i> , (2006) Cardiff, UK	Reconviction* E = 53% (63) C = 52% (64)	Violent Reconviction* E = 19% (23) C = 18% (22)	N/A	N/A	N/A
009	Hatcher <i>et al.</i> , (2006) England and Wales	Reconviction* E = 38% (20) C = 51% (27)	N/A	N/A	N/A	N/A
010	Finn & Muirhead-Steves (2002) Georgia, US	Return to Prison* E = 23% (30) C = 23% (37)	N/A	N/A	N/A	Electronic monitoring did not significantly increase the time to failure.
011	Cortoni <i>et al.</i> , (2006) Kingston, Canada	Recidivism E = 29% (89) C = 41% (109)	Violent Reconviction E = 14% (43) C = 22% (58)	N/A	N/A	Controlling for the number of other violent and non-violent offender programmes completed and risk score there was no impact on reconviction (HR = 1.03)* or violent reconviction (HR = 1.11)*.
012	Serin, Gobeil & Preston (2008) Ontario, New Brunswick, Canada	Recidivism* E = 17% (60) C = 23% (145)	Violent Recidivism* E = 8% (60) C = 11% (145)	N/A	N/A	When age, previous failure on conditional release and previous violent offending was controlled there was no significant difference in the rate and speed of return to custody.

N/A – Information not available. \* - Figures used in the calculation of effect sizes.



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