

**On the Malleability of Self-Control: Theoretical and Policy Implications Regarding
a General Theory of Crime**

Alex R. Piquero
University of Maryland College Park

Wesley G. Jennings
University of Louisville

David P. Farrington
Cambridge University

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Abstract

Gottfredson and Hirschi's general theory of crime has generated significant controversy and research, such that there now exists a large knowledge base regarding the importance of self-control in regulating antisocial behavior over the life course. Reviews of this literature indicate that self-control is an important correlate of antisocial activity. There has been some research examining programmatic efforts designed to examine the extent to which self-control is malleable, but little empirical research on this issue has been carried out within criminology, largely because the theorists have not paid much attention to policy proscriptions. This study evaluates the extant research on the effectiveness of programs designed to improve self-control up to age 10 among children and adolescents, and assesses the effects of these programs on self-control and delinquency/crime.

Key words: self-control, prevention, intervention, general theory, malleability

INTRODUCTION

It can be stated with certainty that Gottfredson and Hirschi's general theory of crime stands as one of criminology's most important theories of antisocial activity. Developed largely in response to parental socialization efforts, the theorists isolate the individual characteristic of self-control as the key correlate of antisocial, delinquent, and criminal behavior. Since its inception, the theory has generated a significant amount of theoretical criticism, commentary, and attention with respect to its key independent variable of self-control (Goode, 2008), and summary statements about the empirical knowledge base identify self-control as an important, but not sole correlate of varied antisocial activity (Pratt & Cullen, 2000). At the same time, much less attention has been paid to the malleability of self-control.

There is significant variation in how scholars interpret Gottfredson and Hirschi's stance on whether self-control is absolutely or relatively stable once established by late childhood/early adolescence. Some criminologists have interpreted Gottfredson and Hirschi to mean that self-control is resistant to any change, once established. Our reading, which we believe is consistent with Gottfredson and Hirschi, is such that self-control appears malleable during the first 10/12 years of life, but after this point, while self-control tends to improve with age as socialization continues to occur, it is largely unresponsive to any intervention effort. Thus, although absolute levels of self-control may change within persons (rather increasing than decreasing), relative rankings between persons will remain constant over the life course. As they (1990, pp.107-108) note: "Combining little or no movement from high self-control to low self-control with the fact that socialization continues to occur throughout life produces the conclusion that the

proportion of the population in the potential offender pool should tend to decline as cohorts age...Even the most active offenders burn out with time...Put another way, the low self-control group continues over time to exhibit low self-control. Its size, however, declines." Elsewhere (1990, p. 177), they point out that "...individual differences in self-control are established early in life (before differences in criminal behavior, however the state defines it, are possible) and are reasonably stable thereafter."

The existing research on the stability of self-control tends to suggest that it is not absolutely stable within persons (once established by ages 10/12) and that it tends to change (increase) with age (Arneklev et al., 1998; Turner & Piquero, 2002; Winfree et al., 2006), but remains relatively impervious to alterations by the criminal justice system after adolescence and in adulthood (Mitchell & MacKenzie, 2006). Although these findings are consistent with the general theory of crime, interpreting and integrating these findings within the context of the theory has not come easy because Gottfredson and Hirschi have not devoted much attention to policy issues. This has been an unfortunate consequence because discussions of theory and policy must be closely intertwined as good theory should lead to good policy and good policy is guided by sound theory. Of course, this is not to suggest that the theorists have not devoted any attention to policy.

In their strongest policy statement, Hirschi and Gottfredson (2001, p. 93) downplay any potential effectiveness of the criminal justice system: "Self-control theory leads to the conclusion that the formal criminal justice system can play only a minor role in the prevention and control of crime. Because potential offenders do not consider the long-term consequences of their acts, modification of these consequences will have little effect on their behavior. Because criminal acts are so quickly and easily accomplished,

they are only rarely directly observed by agents of the criminal justice system. As a result, even large increases in the number of such agents would have minimal effect on the rates of most crimes”. Instead, the theorists are quick to point out the things that do not work and instead point to the few things they think will be effective, mainly to the socializing agents that are responsible for child-rearing.

More specifically, they (Hirschi & Gottfredson, 1995; Hirschi & Gottfredson, 2001, pp. 93-94) advance the following eight recommendations for crime control policy:

1. Do not attempt to control crime by incapacitating adults; this is so because by the time offenders are identified and incarcerated in adulthood, they have already finished the brunt of their criminal activity;
2. Do not attempt to control crime by rehabilitating adults; this is so because the age effect makes treatment unnecessary and no treatment program has been shown to be effective;
3. Do not attempt to control crime by altering the penalties available to the criminal justice system; this is so because legal penalties do not have the desired effect because offenders do not consider them. Increasing the certainty and severity will have a highly limited effect on the decisions of offenders;
4. Restrict unsupervised activities of teenagers; by limiting teens’ access to guns, cars, and alcohol, opportunities become restricted;
5. Limit proactive policing including sweeps, stings, intensive arrest programs, and aggressive drug policies;
6. Question the characterization of crime offered by agents of the criminal justice system and repeated by the media; this is so because evidence suggests that offenders are not dedicated, professional;
7. Support programs designed to provide early education and effective child care; this so because prevention/intervention in the early years are the most important. Programs that target dysfunctional families and seek to remedy lack of supervision have shown promise; and
8. Support policies that promote and facilitate two-parent families and that increase the number of caregivers relative to the number of children; this is so because large and single-parent families are handicapped with respect to monitoring and discipline (the key elements in producing adequate socialization and strong self-control). Programs to prevent teen pregnancies should be given high priority.

One of these policy proscriptions in particular (#7) points to the possibility that efforts aimed at children and young adolescents may improve self-control and also have the

added benefit of preventing delinquency/crime. In fact, there exists a fairly large stock of programmatic efforts aimed at improving self-control among children (up through age 10), but this line of research has not been integrated into the discussion of Gottfredson and Hirschi's theory, either by criminologists or the theorists themselves. Currently, there is no summary statement, similar to Pratt and Cullen's (2001) statement regarding the effect of self-control on antisocial activity, about the extent to which these programs are effective.

The Current Study

There has been much attention paid in both criminology and psychology with respect to the importance of self-control in regulating antisocial, delinquent, and criminal behavior over the life course. Given the importance of self-control, there have also been several programmatic efforts designed to improve self-control among children and adolescents. In an effort to build the knowledge base in this area, this study asks two critical questions: (1) What is the effectiveness of programs designed to improve self-control up to age 10 among children and adolescents?; and (2) What are the effects of these programs on self-control and delinquency/crime? Examining both self-control and delinquency outcomes would provide a comprehensive review that identifies a large number of studies and will likely evince a sounder conclusion and inform policy prescription for the general theory of crime. This meta-analysis, then, focuses on two inter-related outcomes: (1) What are the effects of self-control improvement programs up to age 10 for improving self-control among children/adolescents (self-control as the dependent variable)?; and (2) What are the effects of self-control improvement programs on delinquency outcomes (delinquency as the dependent variable).

METHODS

Criteria for Inclusion and Exclusion of Studies in the Review

Studies that investigated the effects of self-control improvement programs on child behavior problems such as conduct problems, antisocial behavior and delinquency were included. Following the more general systematic (e.g., Campbell) reviews, studies were only included if they had a randomized controlled trial design with post-test measures of self-control and/or child behavior problems for the experimental and control participants.¹ The preliminary eligibility criteria are as follows: 1. Types of Studies: The study must have used a randomized controlled experimental design; 2. Types of Participants: The review was primarily focused on children ages 10 and under or the mean age of the sample was no greater than age 10 at the start of the intervention. Studies with mentally and/or physically handicapped subjects were not included; 3. Type of Intervention: Studies were eligible for this review when self-control improvement was a major component of the intervention; 4. Types of Outcomes: The study must have included at least one child-based outcome measure of self-control² and/or at least one child-based behavioral outcome measure of general behavior problems including antisocial behavior and delinquency³; 5. Sufficient Data: The study had to provide

¹ We acknowledge that other meta-analysis studies often report effects on both short- and (slightly) long-term effects of programs (Lösel & Beelmann, 2003, 2006); however, since we are relying on Gottfredson & Hirschi's (1990) self-control theoretical framework, the theory does not assume that self-control is malleable after age 10. Thus, there is not a theoretical justification for assessing the long-term effects in this particular meta-analysis.

² Some examples of measures used to assess self-control included: Kansas Reflectivity-Impulsivity Scale for Preschoolers (KRISP: Wright, 1971), Kendall and Wilcox Self-Control Rating Scale (SCRS: Kendall & Wilcox, 1979), Social Skills Rating System (self-control sub-scale) (Gresham & Elliot, 1990), and Burks' Behavior Rating Scale (impulsivity sub-scale) (Burks, 1996).

³ Some examples of measures used to assess delinquency included: Child Behavior Checklist (externalizing problems, e.g. aggression or delinquency sub-scales) (CBCL: Achenbach, 1986, Achenbach & Edelbrock, 1983, 1986), Eyberg Child Behavior Inventory (ECBI: Eyberg & Robinson, 1983; Funderburg & Eyberg, 1989), and Social Behavior Questionnaire (fights subscale) (SBQ: Tremblay et al., 1991).

adequate post-test data for calculating an effect size if one was not provided (i.e., means and standard deviations, *t*-tests, *F*-tests, *p*-values, etc.); 6. There is no restriction to time frame; 7. There are no geographic restrictions; 8. Both published and unpublished reports were considered; 9. Qualitative studies were not included; and 10. Studies needed to be published in English.

Search Strategy for Identification of Relevant Studies

Several strategies were used to perform an exhaustive search for literature fitting the eligibility criteria: (1) A keyword⁴ search was conducted across a number of online abstract databases⁵; (2) The reference lists of previous reviews of early childhood prevention/intervention programs in general and self-control improvement programs specifically were consulted (Aos et al., 2004, 2006; Karoly et al., 1998; Greenwood et al., 2006; Suhodolsky et al., 2004; Farrington & Welsh, 2007); (3) Hand searches were carried out on leading journals in the field⁶; (4) The publications of research and professional agencies were searched⁷; and (5) Recognized scholars (experts) in various

⁴ “Self-control” or “self control;” or “impulsivity” and “childhood” or “preschool” or “school” and/or “delinquency” or “conduct disorder” or “antisocial behavior” or “aggression” or “physical aggression” or “behavior problems”.

⁵ Criminal Justice Abstracts, National Criminal Justice Reference Services (NCJRS) Abstracts, Sociological Abstracts, Dissertation Abstracts, Government Publications Office, Monthly Catalog (GPO Monthly), PsychINFO, C2 SPECTR (The Campbell Collaboration Social, Psychological, Educational and Criminological Trials Register), Australian Criminology Database (CINCH), MEDLINE, *Future of Children* (publications), and Helping America’s Youth.

⁶ *Criminology*, *Criminology and Public Policy*, *Justice Quarterly*, *Journal of Research in Crime and Delinquency*, *Journal of Criminal Justice*, *Police Quarterly*, *Policing*, *Police Practice and Research*, *British Journal of Criminology*, *Journal of Quantitative Criminology*, *Crime and Delinquency*, *Journal of Criminal Law and Criminology*, *Policing and Society*, as well as psychology/psychiatry journals including among others, *Child Development*.

⁷ Vera Institute of Justice, Rand Corporation, Australian Institute of Criminology, Cochrane Library, American Psychiatric Association, OJJDP (Office of Juvenile Justice & Delinquency Prevention), NICE (National Institute for Health and Clinical Excellence, United Kingdom), and Swedish National Council for Crime Prevention.

disciplines who were knowledgeable in the specific area of self-control improvement programs were contacted. These scholars were defined as those who authored two or more studies that appear on our inclusion list.

Several strategies were used to obtain full-text versions of the studies found through the searches of the various abstract databases. First, we attempted to obtain full-text versions from the electronic journals available through several university library systems. When electronic versions were not available, we used print versions of journals available at the library. If the journals were not available at the university libraries, we used the Interlibrary Loan System (ILL) to try to obtain the printed version from the libraries of other institutions. In the case where these methods failed, we then made attempts to contact the author(s) of the article and/or the agency that funded the research to try to obtain a copy of the full-text version of the study.

Details of Study Coding Categories

All eligible studies were coded (see protocol in Appendix A) on a variety of criteria such as reference information (title, authors, publication year, etc.); nature of description of selection of sample, outcomes, etc.; nature and description of control group; unit of analysis; sample size; a description of the self-control improvement intervention; reports of statistical significance (if any); and effect sizes (if any). One investigator independently coded each eligible study, and consulted with co-authors regarding the final coding decisions. Further, we attempted to assess the quality of the studies in terms of research design, sample bias, and attrition bias.

Criteria for Determination of Independent Findings

It is the case that most outcome studies rely on multiple measures, but there is disagreement as to how this issue should be handled with some researchers opting to use only one outcome source over another for reasons such as teacher ratings are likely to be less biased than parent reports and systematic “unbiased” observer ratings may be more accurate than teacher ratings (Farrington & Welsh, 2003). Other meta-analyses have averaged the effect sizes (ESs) across outcome measures and outcome sources when generating an individual effect size for each study (McCart et al., 2006). Still, others have noted that this method may lead to the loss of important information and create some difficulty when interpreting the overall effect (Casey & Berman, 1985).

In light of the apparent controversy over which method is more appropriate, we adopted a method of compromise, and report a series of effect sizes by outcome measure (e.g., self-control and delinquency) and outcome source (e.g., parent report, teacher report, direct observation, self-report, and/or clinical report). Further, if a study included more than one treatment condition, then only the treatment condition that used a self-control improvement program was used to generate the relevant ESs. In addition, in the case where multiple control groups exist, then only the outcomes for the no-treatment control group (or wait-list control group) were used to calculate the ES. Similarly, when multiple treatment groups existed where each treated group received a self-control improvement program, then only one ES was calculated for the study by averaging the mean and standard deviation across the treatment groups and then comparing this one pooled mean and standard deviation to that of the control group in order to generate the ES for the study. As one more method for ensuring the statistical independence of

findings, we calculated only one single ES for one particular sample in the event that multiple studies reported findings from the same sample of treated youth.

Analytic Procedures

We rely on Cohen's (1988) d for determining the effect sizes for this meta-analysis. The main source of information for calculating Cohen's d was the standardized mean difference, but in situations where means and standard deviations were not provided t -values, f -values, p -values, partial r etc. was used to calculate the effect sizes (see Lipsey & Wilson 2001 for the relevant formulas). Hedges and Olkin (1985) recommend calculating an unbiased ES that accounts for the discrepancy between the sample ES and the population ES. These authors also suggest that an ES of a small sample study does not have as much "impact" on the overall ES as does an ES calculated from a large sample study. As such, they recommend using inverse variance weights when performing a meta-analysis. Therefore, we used the Hedges and Olkin adjustment and inverse variance weights when determining the ESs in the analysis.

All of the meta-analysis results were estimated using Lipsey and Wilson's SPSS macros relying on a random effects model using inverse variance weight methods. It is also our general assumption that the individual ESs were not likely to be homogeneous so we estimated a series of moderator analyses using Lipsey and Wilson's SPSS analog to the ANOVA macro. Some of the relevant variables that are included in the moderator analyses include publication year, country of publication, small/large samples, published/not published, treatment type, treatment modality (group/individual), treatment duration, and treatment setting. The last stage of the analysis presents the results from a weighted least squares regression model (estimated with inverse variance weights and

random effects) where the variables mentioned above are included as predictors of the ES. Publication bias is also evaluated using traditional methods including a comparison of the mean effect size for published/unpublished studies and an investigation of publication bias with a funnel plot and associated test statistics (e.g., Kendall's test and Egger's test) estimated with the 'metafunnel' macro available in Stata.

Types of Interventions

Considering the variability of the self-control improvement interventions, it is important to discuss some examples of the broad categories of intervention type. The most recognizable of the social skills development programs are studies of the Conduct Problems Prevention Research Group (CPPRGa, 1999) and Tremblay et al.'s (1991) Montreal Youth Study. The social skills development intervention in the CPPRG study is called Fast Track and uses a "unified model of prevention" where a number of integrated intervention programs are applied such as: curriculum, parent groups, child social skills training groups, parent-child sharing time, home visiting, child peer pairing, and academic tutoring. The program involves lessons addressing four domains of skills: (1) skills for emotional understanding and communication; (2) friendship skills; (3) self-control skills; and (4) social problem solving skills (CPPRGa, 1999, p. 635).

Comparatively, Tremblay et al.'s intervention also involved multiple program components, but one of these core competencies involved social skills training and was administered within small groups of prosocial peers. Another key component of Tremblay et al.'s intervention was self-control improvement sessions developed around themes such as "look and listen," "following rules," "what to do when I am angry," "what to do when they do not want to play with me," and "how to react to teasing" (p. 154).

Jackson and Calhoun's (1982) study was classified as a cognitive coping strategies intervention, which involved "cognitive self-instructional training where children are taught to covertly emit verbalizations that will cue or guide their non-verbal behavior" (Jackson & Calhoun, 1982, p. 7). Similarly, Reid and Borkowski (1987) versions of cognitive coping strategies focuses on using psychoeducational tasks where an instructor verbalizes correct self-control statements such as "find out what I am supposed to do," "consider all answers," "stop and think," "mark my answer," and "check my answer" while performing various tasks, and then has the child repeat these steps and verbalize these statements while performing similar tasks.

Toner et al. (1978) is an example of a study classified as a video tape training/role playing intervention. Here, the children are sat in front of a television and told by the instructor: "Here is my television. The boy you will see on TV has been told not to touch the toys that are in front of him. Watch closely" (p. 285). During the course of watching the video, the boy in the video would either do things appropriately or be resistant to commands at times. At each response time (whether appropriate or resistant), the subject was asked whether the boy's response in the video was correct. If the subject replied with an affirmative response, then the video continued. Following the video tape training, the subject was also left alone for a period of time and their behavior and self-control was observed. Baggerly (1999) is another example of a video tape training/role playing intervention where didactic lectures, experiential activities (e.g., role playing), and viewing videos of child-centered play sessions were used with the intention of improving the children/adolescents' self-control. The children /adolescents in this particular study

received the training for 35 minutes twice a week for five weeks and then once a week for the remaining five weeks.

The immediate/delayed rewards clinical interventions can best be characterized by Mischel and Baker (1975). This type of intervention took place in an experimental room where the room was divided by a wooden barrier where there were battery operated toys and interesting games on one side of the barrier and a table and chair along with a desk bell on the other side of the barrier. The experimenter showed the child how to use the desk bell and informed them that once they left the room, the child could ring the bell and the experimenter would return. Upon returning (after the child rang the bell) the experimenter would reward the child and play a “game” with them. After a series of further instructions, the experimenter would then continue this interaction and assess the child’s ability to “transform the reward objects that face him during the delay period in ways that either permit or prevent effective delay of gratification” (p. 259).

The final classification of the intervention type in the included studies was relaxation training interventions. Lakes and Hoyt’s (2004) study was the most identifiable of this intervention type and involved periods of meditation where the children/adolescents were instructed to clear their minds of thoughts and worries while performing deep breathing techniques. Following this exercise, the subjects were then instructed to ask him/herself three questions intended to promote self-monitoring: 1) Where am I?; 2) What am I doing?; and 3) What should I be doing? After answering these questions the subjects were told to correct their thoughts and behavior if they were not consistent with the expectations of the particular situation. Ultimately, the instructors

encouraged these exercises while emphasizing that the subject (not anyone else) is responsible for regulating their own behavior (p. 289).

Quality Assessment

It is important to note several methods for assessing the “quality” of the included studies. One of the most agreed upon determinants of study quality is the study’s research design. Because all of the included studies were based on a randomized controlled experiment to evaluate the effectiveness of self-control improvement interventions, it is reasonable to assume that these studies are of high quality. Yet, it was rare for any of the studies to provide any detail on whether the randomization process was compromised or if attrition had any differential effects for the experimental/control groups. Thus, it is possible that some group imbalances might have arisen by chance. Further, most of the studies did not provide any information on whether the experimental/control groups were treated similarly throughout the course of the intervention by those who administered the intervention. Therefore, while we are confident that most studies were of sufficient quality because they used a research design involving random assignment, we still included a measure of whether there was substantial attrition reported in a particular study as a control measure (e.g., potential moderator) in the analysis that follows.

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Appendix A. Self-Control Meta-Analysis Coding Sheets

I. ELIGIBILITY CHECK SHEET

1. Document ID: _ _ _ _

2. First author last name: _____

3. Study Title: _____

4. Journal Name, Volume and Issue: _____

5. Document ID: _ _ _ _

6. Coder's Initials _ _ _

7. Date eligibility determined: _____

8. A study must meet the following criteria in order to be eligible. Answer each question with a "yes" or a "no"

8a. The study is an evaluation of a self-control improvement program. _____

8b. The study utilizes random assignment. _____

8c. The study reports on at least one outcome (self-control and/or delinquency). _____

8d. The study is written in English. _____

If the study does not meet the criteria above, answer the following question:

The study is a review article that is relevant to this project (e.g., may have references to other studies that are useful, may have pertinent background information) _____

9. Eligibility status:

____ Eligible

____ Not eligible

____ Relevant review

Notes:

II. CODING PROTOCOL

Reference Information

1. Document ID: _ _ _ _
2. Study author(s): _____
3. Study title: _____
- 4a. Publication type: _____
 1. Book
 2. Book chapter
 3. Journal article (peer reviewed)
 4. Thesis or doctoral dissertation
 5. Government report (state/local)
 6. Government report (federal)
 7. Police department report
 8. Technical report
 9. Conference paper
 10. Other (specify)
- 4b. Specify (Other) _____
5. Publication date (year): _____
- 6a. Journal Name: _____
- 6b. Journal Volume: _____
- 6c. Journal Issue: _____
7. Date range of research (when research was conducted):
Start: _____
Finish: _____
8. Source of funding for study: _____
9. Country of publication: _____
10. Date coded: _____
11. Coder's Initials: _ _ _

Sample Characteristics

The following questions are about the target population of the intervention (if the intervention is not targeting groups of problem people skip to question 38):

- 12a. What is the target population of the treatment? _____
1. Universal
 2. Low-income
 3. High-risk youth
 4. Other (specify)
- 12b. Specify (other) _____
13. What is the exact target population? _____
14. Total population of target population (if known): _____
15. Gender composition of target population:
1. Mostly male
 2. Mostly female
 3. Unknown/not mentioned
16. Age composition of target population
1. Mostly children
 2. Mostly adolescents
 3. Unknown/not mentioned
17. Socio-economic status of target population:
1. Mostly below poverty line
 2. Mostly above poverty line
 3. Unknown/not mentioned
18. Race/ethnicity of the sample
1. percentage White
 2. percentage African-American
 3. percentage Asian
 4. percentage Native American
 5. percentage White/Caucasian
19. What country did the intervention take place in: _____
20. What was the initial sample size recruited into the study and what was the final N (sample number related to outcomes examined in the review)? _____ (initial) / _____ (final)

Intervention Characteristics

21. What was the average age at the start of the intervention? _____years
22. How long was the intervention period (child's age)? _____months
23. What was the type of intervention?
1. Social skills development
 2. Cognitive Coping Strategies
 3. Immediate/Delayed Rewards
 4. Video Tape Role Playing/Modeling
 5. Relaxation Training
 6. Other
24. Treatment modality
1. Individual
 2. Group
 3. Both
25. Treatment setting
1. School/Daycare
 2. Home-based
 3. Clinic
 4. Other, please specify_____.

Methodology/Research design:

26. Type of study: _____
1. Randomized experiment
27. Was the program highly structured, that is, followed a set protocol?
- a. yes
 - b. no
 - c. cannot tell
- 28a. Did the program remain consistent over time?
- a. yes
 - b. no
 - c. cannot tell
- 28b. Were there adjustments for baseline differences?
- a. yes
 - b. no
 - c. cannot tell
- 28c. Were there adjustments for attrition?

- a. yes
- b. no
- c. cannot tell

28d. Were there adjustments for differential attrition?

- a. yes
- b. no
- c. cannot tell

Outcomes reported

29. How many outcomes are reported in the study? _____

30. What is the specific outcome recorded on this coding sheet?

31. Was it the primary outcome of the study? _____

- 1. Yes
- 2. No
- 3. Can't tell/researcher did not prioritize outcomes

32a. Was this initially intended as an outcome of the study? _____

- 1. Yes
- 2. No (explain)
- 3. Can't tell

32b. If no, explain why:

Dependent Variable

33a. What type of data was used to measure the outcome covered on this coding sheet?

- 1. Official data (from the police, court, etc.)
- 2. Parent report
- 3. Teacher report
- 4. Self-report surveys
- 5. Direct Observer Reports
- 6. Other (specify) (professional observation, assessment, or diagnosis)

33b. Specify (Other) _____

34a. If official data was used, what specific type(s) of data were used? (Select all that apply)

- 1. Police contacts

2. Arrests
3. Court records
4. Convictions
5. Other (specify)
6. N/A (official data not used)

34b. Specify (Other)_____

35a. Did the researcher assess the quality of the data collected?

1. Yes
2. No

35b. Did the researcher(s) express any concerns over the quality of the data?

1. Yes
2. No

35c. If yes, explain

36a. Does the evaluation data correspond to the initially stated problem? (i.e., if the problem is delinquency, does the evaluation data look at whether delinquency decreased)

1. Yes
2. No

36b. If no, explain the discrepancy:

Effect Size/Reports of statistical significance

Dependent Measure Descriptors

Sample size

37. Based on the unit of analysis for this outcome, what is the total sample size in the analysis? _____

38. What is the total sample size of the treatment group (group that receives the response)? _____

39. What is the total sample size of the control group (if applicable)? _____

40a. Was attrition a problem in the analysis for this outcome?

1. Yes
2. No

40b. If attrition was a problem, provide details (e.g., how many cases lost and why they were lost).

Effect Size Data

41. Raw difference favors (i.e., shows more success for):

1. Treatment group (or post period)
2. Control group (or pre period)
3. Neither (exactly equal)
9. Cannot tell (or statistically insignificant report only)/ Not Applicable (Pre-Post study)

42. Did a test of statistical significance indicate statistically significant differences between either the control and treatment groups or the pre and post tested treatment group? _____

1. Yes
2. No
3. Can't tell
4. N/A (no testing completed)

43. Was a standardized effect size reported?

1. Yes
2. No

44. If yes, what was the effect size? _____

45. If yes, page number where effect size data is found _____

46a. If no, is there data available to calculate an effect size?

1. Yes
2. No

46b. Type of data effect size can be calculated from:

1. Means and standard deviations
2. *t*-value or *F*-value
3. Chi-square (df=1)

47a. Did the evaluation control for validity by using multivariate methods (i.e., regression) to assess the impact of the program on the outcome? _____

47b. If yes, did this analysis find that the intervention reduced the outcome at a statistically significant level (p=.05)? _____

Means and Standard Deviations

48a. Treatment group mean _____

48b. Control group mean _____

49a. Treatment group standard deviation _____

49b. Control group standard deviation _____

Significance Tests

50a. *t*-value _____

50b. *F*-value _____

50c. Chi-square value (*df*=1) _____

Calculated Effect Size

51. Effect size _____