Effect Size and Juvenile Offender Treatment Programs on Recidivism:

A Meta-Analysis of 46 Studies

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The purpose of the research in the article, "The Effect of Juvenile Offender Treatment Programs on Recidivism: A Meta-Analysis of 46 Studies," (Roberts & Camasso, 1991) was to summarize and analyze the effect of treatment programs for juvenile offenders on recidivism. The approach used to summarize and analyze the effect of treatment programs for juvenile offenders on recidivism is the technique of meta-analysis. Several theorists (e.g. Hedges & Olkin, 1985; Glass, 1981; Hunter & Schmidt, 1990) note that meta-analysis provides a statistical alternative to the narrative discussion of research findings that fall under the rubric of content analyses and literature reviews. Garrett (1985) has used the method to assess the impact of juvenile offender programs. The principal advantage of meta-analysis over narrative summations is a capacity to estimate the amount of change in a research study's sample or population that can be linked to a treatment intervention. The core of meta-analysis is the computation of a common metric of treatment impact, a measure termed *effect size* or ES which shows the percentile at which the average individual in the treatment group is performing relative to his/her counterparts in a comparison group (Roberts & Camasso, 1991). Gautley and Peach (2016) describe effect size as an estimate of the magnitude of differences between means in terms of standard deviation or proportions of variance explained (p. 116).

Two factors that distinguish design strength in any outcome study, length of follow-up period and use of statistical controls, were included in this meta-analysis database. Whatever the statistical test base, ES measures go beyond simple expression of statistical significance and provide information about the degree to which the hypothesis of no difference between treatment and comparison groups is false (Hedges and Olken, 1985). Effect sizes can be calculated directly

from correlation coefficients, chi-squares, T or F ratios-statistics. If these statistics are not presented in a study, effect sizes can still be derived so long as means, variances, frequencies and/or percentage point differences are provided.

The most important factor influencing effect size of studies in this meta-analysis is the presence of statistical controls. Studies that employ simple bivariate correlations, Ttests, one-way analysis of variance (AOV) or tabular analysis, have an average overall effect size of .46. Conversely, studies employing a more rigorous statistical design such as multiple regression or factorial AOV designs show an average effect size of only .18. One approach to effect size translation is to report treatment effects as the percentage or percentile overlap between treatment and comparison groups. For example, if an effect size of .45 is found in a recidivism study, one merely looks up the percentile which corresponds to this size in one of the meta-analysis books cited earlier. In this case .45 corresponds to the 67.4th percentile. This means that treatment can be expected to increase the chances of non-recidivism from 50% to 67.4%o-a very substantial 17.47.3. The impact of study follow-up period is considerably more significant. Studies reporting a follow-up of less than six months exhibit an average effect size of .60; studies with a six to twelve month follow-up manifest an average effect size of .51 (Cohen 1988) .

The primary finding of this quantitative meta-analysis of 46 studies is that one treatment modality with adjudicated delinquents, family counseling, does appear to work. Rigorous studies of family treatment involving large groups of 200 or more juveniles demonstrated that this method of intervention was effective in reducing recidivism for at least one year post-treatment. While scientific rigor and methodologically sound research are critically needed, it is also important to recommend to juvenile justice administrators that they replicate family counseling programs in their respective jurisdiction (Roberts & Camasso, 1991).

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