

What works in young offender treatment: A meta-analysis

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Several meta-analytic reviews strongly support the clinically relevant and psychologically informed principles of human service, risk, need and general responsiveness. More recently, meta-analyses have demonstrated that these principles are applicable to female offenders² and are effective in reducing both general³ and violent⁴ recidivism. The current investigation provides an in-depth examination of the principles of human service, risk, need and general responsiveness for young offenders (younger than 18 years). Further analyses are conducted on the “more promising” and “less promising” treatment targets outlined by Andrews and Bonta.⁵ The results demonstrate that the mean effect size under conditions of adherence to each of the principles is significantly higher than for conditions of non-adherence. These results have important implications for both correctional administrators and front-line staff involved in delivering correctional treatment programs to young offenders.

Introduction

Several meta-analyses have revealed that correctional treatment programs have been effective for young offenders.⁶ Andrews, Zinger, Hoge, Bonta, Gendreau and Cullen⁷ conducted one of the most influential meta-analyses that presented the characteristics of the most effective correctional programs for both adult and juvenile offenders. They presented evidence that programs that adhere to the principles of risk, need and responsiveness yield the largest reductions in reoffending. However, their paper did not have separate tests for the principles of risk and need for the entire sample of studies. Therefore, the purpose of this paper is to conduct a meta-analysis on an expanded sample of studies using updated and more systematic coding procedures to explore the importance of the principles of risk, need and responsiveness in delivering effective correctional treatment for young offenders.

Methodology

Sample of studies: This study used the two samples of studies reported by Andrews, Dowden and Gendreau.⁸ The first sample ($k = 131$) contained the juvenile offender studies used in the Andrews, Zinger, Hoge, Bonta, Gendreau and Cullen meta-analysis. The second sample ($k = 98$) included additional studies collected by Andrews and his colleagues after the publication of their 1990 paper, as well as studies gathered by Dowden.⁹ **Procedure:** The coding manual used for the present study incorporated items taken directly from Andrews and colleagues, several items introduced by Lipsey,¹⁰ as well as new variables introduced by Dowden.

The measure of interrater reliability was determined by dividing the total number of correct classifications by the total number of coding classifications. The rates of agreement for the four main variables introduced in this meta-analysis were 100% (Any Treatment, $r = 1.00$) and 90% for each of

the remaining variables (Risk, Need and Responsivity, $r = .79$). The interrater agreement was 76% ($r = .88$) for the four-level Type of Treatment variable.

The measure of effect size used for this report was the Pearson product moment correlation coefficient and, more specifically, the Phi coefficient. The Phi coefficient was used because it can be readily translated into the binomial effect size display (BESD).¹¹ The BESD converts the Phi coefficient into a value that reflects the simple difference between the recidivism rates of the treatment and control groups. A correlation coefficient of .30, for example, translates into a recidivism rate of 35% for the treatment group and a recidivism rate of 65% for the control group (i.e., .30 becomes a 30 percentage point difference).

Overall results

The meta-analysis yielded 229 tests of the effectiveness of correctional treatment from 134 primary studies. Approximately 84% of the studies were composed predominantly or entirely of male offenders.

The overall mean effect size for the sample was +0.09 with a 95% confidence interval of +0.07 to +0.12. These results suggested that the effects of correctional interventions were mildly positive. Using the BESD, this value represented a recidivism rate of 45.5% for the intervention group and a 54.5% recidivism rate in the control group.

Further exploration of the data revealed that considerable variability existed within the effect sizes (from -.43 to +.83, $SD = .21$). Not surprisingly, the type of correctional intervention accounted for some of this variability. For example, the mean effect size for interventions based solely on criminal sanctions was -.02 ($n = 54$) compared with a significantly different mean effect size of +0.13 ($n = 175$) for human service programs, $F = 23.47$ ($n = 1,227$), $p < .001$, measure of association $Eta = .31$.

Clearly, the introduction of human service within a justice context is associated with strong reductions in the reoffending levels of young offenders. However, separate analyses were conducted on the principles of risk, need and responsivity to determine their relationship with reduced recidivism.

Table 1

Mean Effect Sizes and Number of Contributing Tests of Treatment for the Principles of Human Service, Risk, Need and Responsivity			
Variable label	Adheres to principle		
	No	Yes	Eta
Human service	-0.02 (54)	0.13 (175)	0.31***
Risk	0.03 (61)	0.12 (168)	0.20**
Criminogenic need	-0.01 (126)	0.22 (103)	0.55***
General responsivity: Behavioural	0.04 (169)	0.24 (60)	0.42***

Risk, need and responsivity

Both the within-sample and aggregate-sample approaches to coding risk were used. Note that the aggregate approach was used only when a primary study failed to differentiate the risk level of their clients. In the aggregate approach, a study was coded as high risk if the majority of its offenders had formally penetrated the judicial system at the time of the study and/or had a prior criminal record. The meta-analysis supported the risk principle of case classification because correctional interventions were associated with a significantly higher mean effect size when delivered to higher-risk (+.12) versus lower-risk (+.03) offenders, $F = 9.04$ ($n = 1,227$), $p < .01$ (see Table 1).

General responsivity was coded, in the same way used by Andrews and colleagues (1990), as being met if the program was behavioural or used several treatment methods such as modelling, graduated practice, role-playing and several other skill-building techniques. The results revealed that for young offenders, the mean effect size for behavioural programs (+.24, $k = 60$) was significantly larger than the mean effect size for non-behavioural programs (+.04, $k = 169$), $F = 47.73$ ($n = 1,227$), $p < .0001$ (see Table 1).

Programs were coded as appropriately adhering to the need principle if the majority of the treatment targets within the program were criminogenic needs. Programs that targeted an equal or greater number of noncriminogenic needs were coded as inappropriately adhering to the need principle.

Programs that had appropriately addressed the need principle yielded a significantly larger mean effect size (.22; $k = 103$) than programs that did not (-.01; $k = 126$), $F = 98.52$ ($n = 1,227$), $p < .0001$.

Type of treatment

The new approach to coding the Type of Treatment variable introduced by Andrews, Dowden and Gendreau was used. A simple count was conducted on the number of the principles of risk, need and responsivity that were appropriately addressed within the program and the coding was assigned based on this score. Criminal sanctioning approaches, however, were automatically placed in the Inappropriate Service category.

An analysis of variance revealed significant differences between the different levels of this variable, $F = 41.56$ ($n = 3,225$), $p < .001$, $\text{Eta} = .60$. Follow-up contrasts using the Scheffe correction demonstrated that Most Promising Service (.28; $k = 44$) yielded a significantly larger mean effect size than each of the remaining categories ($p < .05$). In addition, the Promising Service category (.21; $k = 44$) was associated with a significantly higher mean effect size than either the Weak Service (.08; $k = 111$) or Inappropriate Service (-.04; $k = 30$) categories, ($p < .05$). The Weak and Inappropriate Service categories were statistically indistinguishable. These findings demonstrate that the clinically relevant and psychologically informed principles of human service, risk, need and responsivity are key determinants

of the therapeutic potential of a treatment program.

Criminogenic versus noncriminogenic needs

Table 2 lists the percentage distributions for the most frequently targeted criminogenic needs, as well as the mean effect size for each need when it was and was not targeted in a particular program and its corresponding relationship with effect size; Table 3 lists these items for noncriminogenic needs. Inspection of Table 2 reveals that each of the criminogenic needs targeted in treatment was associated with a positive mean effect size. Clearly, criminogenic needs are the key when developing effective correctional treatment programs.

Table 2

Criminogenic Needs Targeted: Rank Ordered by Frequency and Their Correlation with Effect Size		
Targeted need	Frequency	r
Academic	51	0.23***
Other criminogenic needs	47	0.36***
Anger/antisocial feelings	41	0.28***
Self-control	40	0.29***
Family: affection	24	0.33***
Pro-social model	19	0.19**
Antisocial attitudes	17	0.13*
Family: Supervision	17	0.35***
Vocational skills	17	0.09
Barriers to treatment	12	0.30***
Substance abuse treatment: Any	11	0.04
Vocational skills + job	9	0.26***
Reduce antisocial peers	8	0.11
Relapse prevention	7	0.07
* p < 0.05; **p < 0.01; ***p < 0.001		

Inspection of Table 3 reveals that each of the noncriminogenic needs were negatively associated with effect size. In other words, targeting these needs in correctional treatment programs was associated with increased recidivism in the intervention group. Programs that used a “fear of official punishment” approach (i.e., shock incarceration), in particular, yielded a significant negative relationship with effect size.

Table 3

Noncriminogenic Needs Targeted: Frequency and Correlation with Effect Size		
Targeted need	Frequency	r
Vague emotional/personal problems	59	-0.06
Physical activity	36	-0.03
Family: Other interventions	22	-0.11
Fear of official punishment	15	-0.18**
Increase cohesive antisocial peers	15	-0.12
Target self-esteem	14	-0.09
Increase conventional ambition	12	-0.00
Respect antisocial thinking	7	-0.05
*p < 0.05; **p < 0.01; ***p < 0.001		

Conclusion

This meta-analysis provides strong empirical support for the applicability of the principles of human service, risk, need and responsivity for young offenders. In addition, increased adherence to these principles is associated with increased reductions in reoffending. These findings suggest that the clinically relevant and psychologically informed approaches to reducing recidivism, outlined by many of the scholars of the rehabilitation literature, are indeed effective for young offender populations.

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