

Reducing Recidivism Evidence from 26 Years of International Evaluations of Reasoning & Rehabilitation Programs

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Reviews of hundreds of evaluations of offender rehabilitation programs provide evidence that some programs can significantly reduce the recidivism of many offenders (Andrews & Bonta, 2010). Most effective rehabilitation programs are based on a cognitive/behavioral model (McGuire, 2002). Cognitive-behavioral programs are more likely to reduce re-offending than are non-cognitive behavioral programs and yield greater reductions in recidivism than other programs (Lipsey, Landenberger, & Wilson, 2007).

One of the earliest cognitive-behavioral programs is the *Reasoning and Rehabilitation* (R&R) program (Ross, Fabiano, & Ross, 1986). R&R teaches offenders cognitive, emotional and social skills and values that are required for pro-social competence and are antagonistic to antisocial behavior. It trains offenders in skills and values that enable them to withstand environmental and personal factors that engender antisocial behavior.

Offender rehabilitation programs, even the most effective programs, usually have a very short shelf-life (Ross & Hilborn, 2008). However, the R&R program has endured for more than a quarter century. The R&R program is one of the most frequently implemented offender rehabilitation programs. It has been delivered to more than 80,000 juvenile and adult offenders in 26 countries. The R&R program manuals have been translated into 16 languages. It has been implemented in jails and prisons, secure hospitals for mentally disordered offenders, institutions for delinquent youth, probation, group homes, social service agencies for at-risk youth, and community schools.

Based on research published since the original program was created in 1986, a number of new and shorter versions of the original program have been developed to target specific groups of offenders and antisocial individuals: **R&R2 for Youth** (Ross & Hilborn, 2004); **R&R2 for Adults** (Ross, Hilborn, & Liddle, 2007); **R&R2 for Girls & Young Women** (Ross, Gailey, Cooper, & Hilborn, 2007); **R&R2 for Families & Support Persons** (Ross & Hilborn, 2008b); **R&R2 for Youths & Adults With ADHD** (R&R2ADHD, Young & Ross, 2007a); **R&R2 for Youths & Adults With Mental Health Problems** (R&R2MHP, Young & Ross, 2007b). The R&R program requires 35 two-hour sessions whereas R&R2 programs require between 12 and 16, ninety minute sessions that can be taught in 5-6 weeks.

R&R programs are also among the most frequently evaluated programs in the criminal justice field. Their efficacy in reducing recidivism has been demonstrated in a remarkable number of evaluations. The present report presents the major findings of each of the independent controlled evaluations of R&R and R&R2 that have been conducted in many countries over more than 26 years since the program was first developed and evaluated in Canada. The report documents the success of many applications of the R&R/R&R2 model but also indicates several factors that have limited or prevented its success¹.

¹ Portions of this report were adapted with permission from Ross, R. R. & Hilborn, J. (2008a). *Rehabilitating Rehabilitation: Neurocriminology for prevention and treatment of antisocial behavior*. Ottawa: Cognitive Centre of Canada, www.cognitivecentre.ca. We have not included evaluations which did not examine behavior change or recidivism (e.g., Andersen, 1999; Danielson & Hansen, 1997; Gomez, 1995.)

R&R/R&R2 in Community-based Programs for Adults

1. Probation in Canada - 1988

The first evaluation of the R&R program in reducing recidivism was conducted with medium-high risk adult male probationers in Canada who were randomly assigned to either a regular probation group that also received R&R (n=22) group, or to another control group that received only regular probation (n=23), or to an attention control group that received regular probation plus life skills training (n=17). During a nine-month follow-up, **48%** of the life skills control group, **70%** of the regular probation only control group, but only **18%** of those trained in R&R were reconvicted. During the 12 month follow-up, the incarceration rate for the life skills group was **11%**, for the regular probation group it was **30%**, and for the R&R group it was **0%** (Ross, Fabiano, & Ewles, 1988).

Comment: to ensure program integrity, video recording and feedback was provided for every session delivered by each probation officer. Failure to ensure program integrity has been responsible for the failure of many otherwise successful offender rehabilitation programs including R&R as is indicated by several of the evaluations we describe below.

2. Probation in Texas - 1995

An abbreviated version of the R&R program was evaluated in a probation setting in Texas. Offenders were randomly assigned to either R&R (n=10) or to a control group (n=10). Recidivism examined at 6 months post-intervention revealed that there were fewer violation reports recommending probation revocation for the R&R group compared to the control group (Kownacki, 1995).

3. Substance Abusers on Probation in Colorado – 1995

The efficacy of R&R for adult probationers with severe substance abuse problems was tested in a randomized evaluation in Colorado. Offenders in the Specialized Drug Offender intensive probation project were randomly assigned to the R&R program (n=47) or received intensive probation without R&R training (n=51). A control group of randomly selected probationers (n=36) received only traditional probation service with no intensive supervision or R&R programming. An eight month follow-up found that loss rates (i.e., absconsions, arrest warrants, revocations and revocations pending) for the intensive supervision groups (both with and without R&R) were lower than for the regular probation group. More specifically, the loss rates for SDOP, R&R plus SDOP, and regular probation were **26%**, **29%**, and **42%**, respectively. The loss rate was substantially lower for probationers who received R&R training plus intensive probation, particularly for those who were at least 30 years old and had low to average psychiatric, sociopathic, or employment problems. Among offenders with extreme drug/alcohol problems, R&R training added to intensive supervision was found to yield the lowest loss rates: **18%** compared with **60%** for regular probation and **43%** for intensive probation without R&R. Moreover, R&R trained probationers achieved more positive results on measures of empathy, problem-solving, and anti-criminal attitudes. During a one year follow-up after the initial evaluation, the loss rate was substantially lower for probationers who received R&R training plus SDOP (**19%**) compared to the other two groups (**30%** for SDOP, and **35%** for regular probation (Johnson & Hunter, 1995).

4. Probation in Wales - 1996

An evaluation of R&R in Wales compared reconviction and incarceration rates for adult probationers (n=107) trained in R&R with those for three matched groups of offenders who did not receive R&R (n=548). Probationers who completed R&R had lower than predicted reconviction rates after 12 months of follow-up (**35%** vs. **42%**). Offenders who received regular probation, community service or incarceration but not R&R did not have lower than predicted

rates of reconviction. Probationers who completed R&R were much less likely over a 12 month period to commit a further serious offence (**8%**) than those who had been initially incarcerated (**21%**). A two year follow-up, found that the reduced reconviction effect found in the one year follow-up was not maintained long-term. However, the remarkably low re-incarceration effect was found to persist - upon reconviction, only **2%** of R&R completers received a custodial sentence. This low incarceration rate was nearly identical to that found in the first evaluation in Canada described above (Raynor & Vanstone, 1996).

Comment: as in the Canadian evaluation, video recording and feedback was provided to ensure program integrity. Follow-up R&R training may be required to ensure long-term benefits. Each of the new editions of R&R (R&R2 programs) is designed to facilitate "Booster" sessions.

5. Substance Abusers in California - 1997

Male substance-abusing federal offenders on probation, parole or supervised release in California were randomly assigned to either R&R (n=71) or a Drug Aftercare Program (DAC) involving substance abuse counseling, urine testing and individualized treatment without R&R (n=65). Re-arrest rates over a one year follow-up were **32.3%** for the DAC group but only **25.3%** for the R&R group. However, more R&R participants were rearrested for violent offences and drug related offences but fewer were rearrested for non-violent offences. (Austin, Robinson, Elms, & Chan, 1997).

*Comment: This is an example of failure to ensure program integrity: the evaluator noted that facilitators did not consistently follow the program procedures and were inadequately supported and drop-out rates were very high - **44.6%**.*

6. Probation in the Channel Islands - 2001

R&R has been implemented by probation officers in Jersey, Channel Islands for more than 12 years. An initial evaluation found that offenders on probation assigned to the R&R program were reconvicted significantly less frequently than offenders who were sentenced to young offender institutions even though the R&R group had a significantly higher level of risk (LSI-R: Andrews & Bonta, 1995) before intervention (Raynor & Miles, 2001).

7. Probation in the Channel Islands – 2004

A second evaluation in Jersey found that **77%** of offenders who completed the R&R program evidenced a significant reduction in their risk level (LSI-R) while on probation. They also evidenced positive changes in emotional/personal factors, employment status and use of leisure time. Furthermore, there was a **31%** reduction in attitudes that support law-breaking. Recidivism data at 12 months for R&R graduates (n=37) was **36%** compared to **88%** for R&R dropouts (n=21) (Miles & Raynor, 2004).

*Comment: The R&R completion rate was **64%**.*

8. Probation in England – 2005

An evaluation of adult probationers (n=105) trained in R&R at a probation center in London found that there were no statistically significant differences in two year reconvictions between program participants and a comparison group of offenders who had been given other sentences (i.e., probation, community service, or custody). However, similar to the findings of the Canada and Wales evaluations, it was found that in terms of the *seriousness* of their post-treatment offences, offenders who completed R&R were half as likely to be sentenced to custody after reconviction compared to program dropouts or the comparison group - **16%** versus **37%** and **35%** respectively (Wilkinson, 2005)

9. Spouse Abusers in Wisconsin – 2006

The recidivism of 200 court-referred spousal abusers in Wisconsin was examined. Thirty-four high-risk spouse abusers who completed R&R and a spouse abuse counseling program had a recidivism rate of only **23.5%** despite their high-risk status. The evaluators noted that “individuals referred to R&R had such a high probability of recidivating that being able to reduce it ... is in itself an achievement” (p. 714) (Hendricks, Werner, Shipway, & Turinetti, 2006).

10. Probation in Sweden - 2007

A study of long-term recidivism (36 months) of a Swedish version of R&R with 117 male probationer program matched to 349 controls found that program completers did not show lower relative risk of relapse (**32%**) than the control group (**31%**). A violent offender subsample evidenced a positive program effect; however, its significance could not be confirmed due to the small sample size (Svensson, 2007).

Comment: The evaluator noted that a selection bias may have occurred since unemployed probationers (who are more likely to recidivate) may have been over-represented in the R&R sample. No assessment of program integrity was provided.

11. Probation in England & Wales – 2007

A quasi-experimental evaluation examined the effect of R&R on reconviction among adult male offenders in the English and Welsh Probation Service between 2000 and 2001. The study found that offenders who had completed R&R (n=72) had a lower rate of reconviction (**54.17%**) compared to R&R Non-completers (n=288) (**80.21%**) and to a random sample of offenders sentenced to a Probation Order without a requirement to attend an offending behavior program (n=390) (**59.75%**) (Palmer, McGuire, Hounscome, Hatcher, Bilby, & Hollin, 2007).

12. R&R for Probationers in England & Wales – 2008

An evaluation of the effect of R&R on reconviction of adult male offenders in the English and Welsh Probation Service used a quasi-experimental design controlling for population factors. The sample was comprised of offenders sentenced during 2002. Offenders who completed a program (n=49) had a lower rate of reconviction (**34.7%**) compared to a comparison group (n=1,781) (**64.8%**). Moreover, R&R Completers were significantly less likely to be reconvicted than offenders in the Non-Completers group and Non-Starters group (Hollin, McGuire, Hounscome, Hatcher, Bilby, & Palmer, 2008).

13. Probation in the Channel Islands – 2009

A third evaluation of outcome in the Channel Islands found a statistically significant reduction in risk of offending (**75%**) for probationers completing the R&R program. These results support and extend the positive results of two previous evaluations (Miles, Raynor, & Coster, 2009).

14. R&R in Canary Islands – 2009

The efficacy of R&R with drug addicts was tested in a Day Treatment Centre in Tenerife in the Canary Islands. The program consisted of a Spanish translation of R&R with emphasis (consistent with all new R&R2 programs) on emotional control. Outcome was examined for 58 adult drug abusers who received the R&R program compared with 177 comparison subjects who did not. Significant differences were found in favor of the R&R group in improvements on tests of alternative thinking; causal thinking; consequential thinking; social perspective taking; and means - end reasoning. R&R participants also had better substance abuse outcomes (Martín Caballero, Bethencourt Pérez, García Medina, Fernández Valdés, & Ramírez Santana (2009).

15. R&R2 for Adults for Probationers in Connecticut – 2011

The State of Connecticut has been implementing R&R2 for Adults throughout the state since 2006 with medium and high-risk probationers attending “Alternative (to) Incarceration

Centers” in the community on a daily basis. An evaluation found that among the 550 probationers who completed the program, the majority (**64.5%**) successfully completed probation. In contrast, among the 172 probationers who did not complete R&R2, **68.7%** failed to successfully complete probation (Tarallo, 2011).

Comment: 76.2% of the 722 probationers referred to R&R2 completed the program – a remarkable accomplishment given the typically very high rate of drop-outs from most rehabilitation programs for probationers.

16. R&R2ADHD in Iceland - 2011

A substantial number of offenders evidence symptoms of attention deficit hyperactivity disorder that are functionally related to their antisocial behavior. A randomized controlled trial of the Reasoning and Rehabilitation for ADHD Youths and Adults (R&R2ADHD) program demonstrated its efficacy. Fifty-four adults with ADHD receiving psychopharmacological treatment were randomly allocated to R&R2ADHD treatment (n=27) or a ‘treatment as usual’ control condition (n=27). After R&R training, medium to large positive treatment effects were found for symptoms of ADHD and for antisocial behavior. The magnitude of the positive effects was even greater three months after R&R training. (Emilsson et al., 2011).

Comment: Adding R&R2ADHD can improve the outcome of pharmacological intervention. Several other studies we review have demonstrated that adding an R&R or R&R2 to various intervention programs can enhance their efficacy.

COMMUNITY- BASED R&R/R&R2 PROGRAMS FOR JUVENILES

17. R&R in Colorado - 1996

Juvenile offenders on probation in Colorado were randomly assigned to either R&R (n=20) or to a control group (n=20). Recidivism (arrest for a new crime or a technical violation) in a 12 month follow-up was **25%** for the control group but only **20%** for the R&R group. The differences were not statistically significant (Pullen, 1996).

Comment: Again the evaluation highlights the importance of program integrity - according to the evaluator, the implementation was inadequate: R&R procedures were not followed and many of the program delivery staff (who apparently resented the program being imposed as part of their routine workload) failed to adequately prepare to deliver the training.

18. R&R in Spain – 2007

Recidivism for a small group of male juvenile offenders (n=5) serving a community sentence in Valencia, Spain who were randomly assigned to a Spanish “adaptation” of **R&R2 for Youths** was compared with a control group of youths matched on risk-level (n=5). Recidivism for the control group was **80%** whereas for the R&R2 group it was only **20%**. (V. Garrido, personal communication, February 12, 2007).

R&R/R&R2 in INSTITUTIONS FOR JUVENILES

19. R&R in Spain – 1995

The effectiveness of a Spanish translation of R&R program was examined with juvenile offenders in an institution in Spain. There were initially 14 R&R participants but only 7 completed the program; a comparison group was comprised of 17 individuals who were recruited from alternative custodial centers. R&R participants improved to a greater extent than the comparison group on measures of role-taking and problem-solving and on staff ratings of several behavioral measures such as self-destruction, obsessive-compulsive symptoms, inattention and aggressive family relations (Garrido, 1995).

20. R&R in Georgia - 1996

Recidivism reduction associated with a shortened version of R&R was examined in two youth detention centers in Georgia. Juvenile offenders were randomly assigned to the R&R group (n=175) or to a control group (n=56). Before receiving the program, the R&R group had a higher number of prior arrests and a higher incidence of substance abuse. Analysis of a small portion of the original sample (R&R: n=33; Controls: n=16) found that **39%** of the R&R group had been rearrested compared with **75%** of the control group (Murphy & Bauer, 1996).

21. R&R in North Carolina 2002

A study of a small group of juvenile offenders incarcerated in a correctional facility for juvenile offenders convicted of adult crimes found that R&R training resulted in improvements in their use of aggressive behavior in solving problems. A significant difference on the Young Adult Behavior Checklist was also found for some of the offenders. However, only 5 offenders were studied (Smith, 2002).

22. R&R Revised in United Kingdom - 2004

A study of R&R Revised was conducted with an incarcerated sample of male juvenile offenders in England with convictions for violence, sexual or drug-related crime and/or educational, employment or relationship difficulties. Offenders who completed R&R between 1998 and 2000 (n = 31) were compared with a group (n = 31) who were retrospectively matched to the program group on relevant characteristics. Fewer R&R program offenders were reconvicted and re-incarcerated after an 18 month follow-up compared to controls. However, the differences were not statistically significant (Mitchell & Palmer, 2004).

Comment: The authors suggest that juvenile offenders may need programs that are specifically designed for them rather than for adults. The R&R2 for Youths and the R&R2MHP programs were specifically designed to address these needs as was R&R2ADHD.

23. R&R2 for Youth in Scotland - 2009

An evaluation of the R&R2 for Youth program with adolescent males in residential care in Scotland found that youths who completed the program made significant improvements in their problem solving ability, behavior and criminal attitudes and their level of risk of re-offending. In comparison, the control group had no improvement on any of the measures (Curran & Bull, 2009).

R&R/R&R2 in PRISONS

24. R&R in Canadian Penitentiaries 1989

A number of evaluations of the efficacy of R&R have been conducted by the Correctional Service of Canada (CSC) which is responsible for offenders serving sentences from two years to life. In an initial study, the outcomes for prisoners randomly assigned to R&R (n=50) were compared with those of prisoners who had been randomly assigned to a no-treatment (waiting list) comparison group (n=26). In an average follow-up of 32 months, **70%** of the offenders in the comparison group were *re-incarcerated* compared with only **57%** of the R&R group. Moreover, **35%** of offenders who had completed R&R were *reconvicted* compared to **55%** of the comparison group. In addition, offenders in the R&R group evidenced improvement on measures of social perspective taking, conceptual complexity, generation of solutions to interpersonal conflicts, attitudes toward the law, courts, and police, less tolerance for law violations, and less identification with criminal others. The R&R participants reported favorable assessment of the program's ability to assist them with problem solving, interpersonal relationships, goal-setting, controlling anger and other emotions, and handling stress (n (Fabiano, Porporino, & Robinson, 1991; Porporino, Robinson, & Fabiano, 1991).

25. R&R in Canadian Penitentiaries - 1995

A second evaluation compared the one year recidivism of a large number of offenders who had completed R&R (n=1,444) between 1989 and 1994 with offenders (n=379) who had been randomly assigned to a waiting list control group. The recidivism reduction effect was greater for offenders treated in community settings (community correctional centers) (**66%**) compared to those treated in prison (**16%**). The R&R recidivism reduction effect was lower for acquisitive offenders (e.g., break & enter; robbery) than for violent offenders (recidivism reduction (**19%**), drug offenders (**29%**), and sex offenders (**39%**) (Robinson, 1995).

Comment: It is ironic that a later study with prisoners in England indicated that cognitive skills training such as R&R was effective in improving cognitive skills and behavior ratings among both acquisitive and non-acquisitive offenders; however, the effects of R&R on recidivism was not examined (Wilson, Attrill, & Nugent, 2003). These studies highlight the possible differential effect of R&R for different types of offenders. The new R&R2 versions of R&R were designed to provide differential programming for different offender types.

26. R&R in Prison in Spain – 1995

A recidivism reduction study of R&R in a prison in Tenerife in Spain randomly assigned male prison inmates under the age of 30 (n=57) to either a group that received an abbreviated form of the R&R program or to a control group. Half of the R&R participants also received assistance from social workers following the R&R program. Success was defined as not committing a new offence, not being imprisoned, and demonstrating an acceptable degree of readjustment. The “success rate” in a two year post-release follow-up for the combined R&R and social work intervention group was the highest (**67%**) compared to **16%** for R&R alone, but only **5%** for the control group. (Martin & Hernandez, 1995).

27. R&R in Prisons in England & Wales –1992 to1996

Adult male prisoners serving sentences of two years or more who participated in R&R between 1992 and 1996 (n=667) were matched to individuals in a comparison group (n=1,801) on a number of relevant variables such as current offence and sentence length. In a two-year follow-up, there was a robust **55%** reduction in reconvictions among R&R participants (Friendship, Blud, Erikson, Travers, & Thornton, 2003).

28. R&R in Prisons in England & Wales – 1996 to1998

A new version of R&R (“R&R Revised”, Porporino & Fabiano, 1996) was introduced in prisons in England and Wales in 1996. A recidivism reduction study examined two year re-conviction rates for adult males who had participated in the program between 1996 and 1998. Program participants (n=649) were matched to a comparison group (n=1,947). In contrast to the earlier study of the original R&R, **no** significant differences were found (Falshaw, Friendship, Travers, & Nugent, 2003).

Comment: The evaluators noted that the study period involved a period of rapid expansion in the implementation of the program throughout prisons in the U.K. and suggested that a reason for the lack of significant findings was, inter alia, that treatment quality was compromised as is common in large-scale, system-wide expansion of various treatment programs (Gendreau, Goggin, & Smith, 1999).

29. Prisons in England & Wales – 2003

A third recidivism reduction study in the U.K. examined one and two year reconviction rates for male adult and young prisoners (age less than 21) completing R&R between 1995 and 2000 and a matched comparison group (2,195 adult offenders; 1,534 young offenders). Although there was a significant difference at the one-year time period for R&R program completers

compared to the comparison group, this difference was not maintained at the two-year period (Cann, Falshaw, Nugent, & Friendship, 2003).

30. R&R in Prison in Sweden – 2004

A study of 372 male Swedish prisoners conducted over a five year period examined the effectiveness of R&R. Positive results were found for R&R program completers in impulsiveness, venturesomeness, attitudes toward the law, courts and police, criminal identification, and reductions in tolerance of law violations. Survival analysis showed that R&R program completers (n=256) had a **25% lower** risk of reconviction than matched controls (n=430) during the 3 years after release from prison. In terms of reconviction rates, there was a significant difference between R&R program completers and controls (**48%** recidivism compared to **60%** for controls). These differences were not maintained after 3 years (Berman, 2004).

Comment: R&R program completion rate was 77% over a five year period.

31. R&R Revised in Prison in New York State - 2006

Project Greenlight was a short-term, prison-based re-entry program delivered during the eight weeks immediately preceding an inmate's release from prison in New York State. It provided not only "R&R Revised" programming but a host of other interventions including employment counseling, housing, drug education, relapse prevention, family counseling, life skills classes, community-based social support, and an individualized release plan. Prisoners were divided into three groups and followed for at least 1 year after release; 334 inmates received the Greenlight programming, one comparison group comprised 113 inmates who were released without any pre-release services, and a second comparison group comprised 278 inmates who participated in a transitional services program (TSP) already in existence in the prison. Recidivism for Project Greenlight participants was 10 percentage points higher after release than for the TSP group at 12 months post-release (**34%** versus **24%**) and 12 percentage points higher than the group who did not receive any pre-release services (**25%** versus **13%**) (Wilson & Davis, 2006).

32. Prisons for Women in England & Wales - 2006

An evaluation of R&R delivered to female prisoners between 1996 and 2000 (n=66) found no statistically significant differences in one- and two-year reconviction rates between female program participants and retrospectively matched comparison prisoners. However, the evaluator noted that program integrity may have been jeopardized by the inability of the tutors to deliver sessions regularly (Cann, 2006).

Comment: The R&R program evaluated in this study adapted R&R only in terms of the use of female pronouns and role-plays. As the evaluators point out, female offenders require interventions that target characteristics such as history of abuse and mental health problems that the original R&R does not address. A new edition of R&R ("R&R2 for Girls & Young Women") has been developed that is specifically responsive to the treatment needs of females. (www.cognitivecentre.ca).

33. R&R in Canadian Penitentiaries – 2009

Another evaluation report in Canadian penitentiaries examined offenders referred to R&R while serving initial terms of two years. Offenders demonstrated "changes in attitudes and beliefs that are consistent with the R&R program targets" (p. 134). Moreover, the male offenders receiving R&R were **27%** less likely than a comparison group to be readmitted for any reason (including technical violations); **31%** less likely to return to custody for a new offence; and **49%** less likely to be readmitted with a new violent offence (CSC, 2009).

34. R&R in Prison in Finland – 2010

An evaluation of R&R implemented in a prison in Finland found that the recidivism of the released prisoners after 2 years was **65%** for the control group compared to **49%** for the R&R group. R&R was associated with a **32%** recidivism reduction: the probability of recidivism for the average prisoner was **50.6%** whereas for the R&R group it was only **18.5%** (Keinanen, Honka, & Tyni, 2010).

35. R&R program in Prison in Iran - 2010

Offenders in a prison in Iran were randomly assigned to either an individual (n=60), or an individual + group R&R based program (n=60), or a non-treatment control group (n=60). Nearly a third had mental disorders prior to conviction. Both the individual and the group R&R based program reduced the participants' symptoms of mental disorder. The one year follow-up recidivism rate for the control group was **15%** whereas for the individual and combined groups it was **0%** (Khodayarifard, Shokoohi-Yekta, & Hamot, 2010).

Comment: a new edition of R&R(R&R2MHP) has been developed and successfully tested (www.cognitivecentre.ca)

36. R&R - Revised in Prison in New York State - 2012

A second evaluation of the Greenlight project in New York (described above) over a longer post-release period (minimum 30 months) found that low-risk participants evidenced small benefits but moderate and high-risk offenders participants performed *worse* than comparable offenders in the other two groups (Wilson & Zozula, 2012).

Comment: The Greenlight studies underscore the importance of program integrity. Wilson & Davies (2006) have pointed out that it is highly unlikely that the program was responsible for the negative results and that poor program implementation might have resulted in the negative outcomes. The original R&R program which had already been revised in "R&R Revised" was further and radically revised in Project Greenlight. For example, the recommended class size for R&R is 10 to 13 participants; the Project Greenlight class size was 26. R&R typically delivers services twice weekly for 4-6 months. The Project Greenlight program compressed the delivery of services into daily classes for 2 months. Prisoners were forced to attend programs (such as drug education) even when they had no history of such problems.

R&R/R&R2 in PAROLE

37. R&R in Georgia - Phase 1 - 2001

R&R's recidivism reduction effects in Georgia were evaluated with large samples of adult parolees half of which had at least one prior violent offence. Approximately 70% of the sample was comprised of African-Americans. Parolees were randomly assigned to either the R&R program (n=232) or to the control group (n=236) which received regular parole. Parolees who completed R&R performed better in the 30 month follow-up than either the controls or participants who did not complete R&R. More specifically, the percentage of returns to prison for the comparison group was **44%** and for dropouts it was **66%**, but it was only **27%** for R&R program completers (Van Voorhis, Spruance, Ritchey, Johnson-Listwan, & Seabrook, 2004; Van Voorhis, Spruance, Johnson-Listwan, Ritchey, Pealer, & Seabrook, 2001).

38. R&R in Georgia – Phase 2 - 2004

Significant and substantial effects were also found in a second randomized evaluation of the Georgia Cognitive Skills Experiment. A large sample (n=918) of male parolees was assigned to R&R or to regular parole supervision. In a 30 month follow-up, R&R graduates (n=280) had significantly lower rates of recidivism than controls (n=493) or dropouts (n=145). The felony

arrest/revocation rate for the control group was **36.0%** and for dropouts it was **35%**, but for R&R completers it was **24.8%**. Rates of return to prison were also significantly lower for the R&R graduates (**29%**) compared to the control group (**41%**) and dropouts (**43%**) (Van Voorhis, Spruance, Ritchey, Johnson-Listwan, Seabrook, & Pealer, 2003).

39. R&R in Georgia – 2007

An examination of individual differences in outcome from the Georgia Cognitive Skills Experiment found that a positive R&R recidivism reduction effect was found overall, however, it was statistically significant only for white but not African American parolees. Personality, employment status at incarceration, the gender of the parole officer, adherence to program integrity, and assessed relevance of the treatment program were found to explain the difference in outcome between White and African Americans (Spiropoulos, 2007).

40. R&R in Georgia - 2013

Differential effects were also examined for 940 male parolees randomly assigned to either R&R or regular parole. For the entire sample, the difference in recidivism rates (returns to prison up to 33 months) was not statistically significant. However, an analysis of the differential effects uncovered five interaction effects: R&R treated, high-risk of reoffending groups, aged 28 to 32 years, diagnosed as dependent, and White groups evidenced lower recidivism rates than the control group. High anxiety offenders in the R&R group evidenced a higher recidivism rate than their comparison group. (Van Voorhis, Spiropoulos, Ritchey, Seabrook, & Spruance, 2013)

Comment: this study indicates that interventions for offenders need to target their mental health problems as is done with R&R2 for Youths and Adults with Mental Health Problems.

MENTALLY DISORDERED OFFENDERS

41. R&R in Scotland - 1999

An evaluation of R&R with mentally disordered male offenders (n=12) in the State Hospital of Scotland who had committed at least one violent offence found that R&R program completers demonstrated significant improvement on two pre/post measures of social adjustment and problem-solving compared to a matched comparison group (Donnelly & Scott, 1999).

42. R&R in Germany - 2004

A study of R&R with mentally disordered offenders was conducted with male forensic patients in a maximum security psychiatric hospital in Germany. The R&R group (n=11) improved more than the comparison group (n=5) in their ability to recognize problems and in their motivation to change (Gretenkord, 2004).

43. R&R in New York State 2004

A New York City area state psychiatric hospital implemented a pre-release program including an “adaptation” of R&R combined with substance abuse programs and a behavioral incentive system that rewarded attainment of successive steps with rewards and increased privileges. One hundred eighty-one male and female offenders with persistent mental illness and histories of aggression, crime, or both and with a history of repeated incarcerations and hospitalizations participated in the project. In spite of extensive training for instructors, only 49.7% of the offenders completed the program. Evidence is presented that suggests that for patients to succeed in such a multifaceted program they must have a

minimum level of cognitive skills and have low levels of impulsivity (Yates, Kunz, Czobor, Rabinowitz, Lindenmayer, & Volavka, 2005).

44. R&R in New York State - 2004

Eighty-five offenders with persistent psychiatric illness who participated in the “adaptation” of R&R in the New York state psychiatric hospital program described in evaluation 43 were followed up for between six months and two years after discharge. Thirty-nine percent (**39%**) remained stable in the community, **42%** were re-hospitalized, and **20%** were arrested. A number of variables were associated with re-hospitalization or arrest rates: comorbid antisocial personality disorder, higher score on the Psychopathy Checklist, history of arrests for violent crimes, and history of a learning disability. Furthermore, patients who developed substance abuse problems or did not comply with medication treatment after discharge were more likely to be re-hospitalized or arrested. The reviewers concluded that “arrest rates were low compared with those observed in studies with similar populations” (p. 654) (Kunz, Yates, Czobor, Rabinowitz, Lindenmayer, & Volavka, 2004).

45. R&R in New York State - 2010

In a 6 to 60 month follow-up, 145 male and female offenders with persistent psychiatric disorders who had completed the “adapted R&R” program described in evaluation 42 were examined. The results indicated that **21.4%** remained stable and **46.2%** were re-hospitalized. Prior to the program, 120 patients had been arrested but only 47 were arrested during the follow-up. The number of arrests and hospitalizations as well as the days institutionalized in both prisons and hospitals after the program were significantly reduced in comparison with the same period of time preceding the program. Compliance with medication and attendance at psychiatric appointments were important mediating factors in the outcome (Yates, Kunz, Khan, Volavka, & Rabinowitz, 2010).

46. R&R in England – 2010

A quasi-experimental evaluation of R&R for male mentally disordered offenders with psychotic disorders was conducted in two forensic hospitals in England. Compared to the control group (n=17), offenders who completed the R&R program (n=18) evidenced significantly improved problem-solving and increased coping (Clarke, Cullen, Walwyn, & Fahy, 2010).

47. R&R2MHP in England - 2010

The efficacy of “R&R2 for Youths and Adults with Mental Health Problems” (R&R2MHP) in treating mentally disordered offenders was evaluated in two secure forensic hospital settings in England. Seventy patients were referred, 58 of them were allocated to R&R2MHP and 12 were waiting-list controls. In this study, program completers demonstrated significantly greater post-group improvements in attitudes toward violence and evidenced a significant decrease in disruptive behavior as rated by Primary nurses (Young, Chick, & Gudjonsson, 2010)

48. R&R2MHP in England - 2011

An analysis of the effects of R&R2MHP for seven patients at the Blackheath Hospital in London indicated that participants improved in several areas of social problem solving and their reactions to provocation. Their attitudes toward violence were also more pro-social and their acceptance of violence decreased. Some participants demonstrated a “reduction in negative problem solving, an increase in rational problem solving, improvement in how they make sense of a provocative situation, and an increased sense of having control over their lives” (p. 2). (Cygnet, 2011)

49. R&R2 for Adults in Switzerland – 2011

A multi-site forensic intervention study assessed the efficacy of the R&R2 for Adults program in the rehabilitation of violent adult offenders in secure forensic institutions in Switzerland (n=81). They were randomly assigned to (a) “R&R2 for Adults” + individual cognitive behavioral therapy, or (b) individual cognitive behavioral therapy only, or (c) a control group without any psychotherapeutic intervention. Moderate to medium effect sizes were found which were greater for the R&R2forAdults+CBT group: interpersonal problems were experienced as less prominent and improvements were found in affect regulation including a reduction of reported irritability, spontaneous and reactive aggression (Burkhard, Loretan, Steinbach, Emmert, & Peper, 2011).

50. R&R in England - 2012

A randomized control trial of R&R in six medium-secure forensic units in London with mentally disordered offenders with a primary diagnosis of psychotic disorder and a history of violence allocated them to receive R&R (n=44) or treatment as usual (n=40). Patients who completed R&R (50% of the sample) demonstrated a reduction in physical violence, verbal aggression and leave violations which persisted over 1 year. R&R training was associated with improvements in social-cognitive skills, thinking styles and criminal attitudes. R&R program completers also showed improvements in social problem-solving at the end of treatment and changes in criminal attitudes at 12 months post-treatment (Cullen et al., 2012a; Cullen et al., 2012b).

51. R&R in Scotland - 2012

A second evaluation of R&R in the State Hospital of Scotland found that mentally disordered patients who completed R&R showed significant improvements in impulsivity, coping responses, attitudes towards offending, social problem solving skills, and locus of control (Burnett, 2012).

Comment: R&R program completion rate was 88%

52. R&R2MHP in England – 2012

An evaluation of R&R2MHP was conducted with 121 adult male, mentally disordered offenders in 10 secure forensic mental health sites in England. The results for 67 patients who participated in R&R2MHP were compared with 54 waiting-list controls who received treatment as usual. Significant positive treatment effects were found on measures of violent attitudes, rational problem-solving and anger cognitions. Improvements were also found in informant ratings of social and psychological functioning, including disruptive behavior within the institutions. At a three month follow-up, significant positive treatment effects were found for both violent attitudes and locus of control (Rees-Jones, Gudjonsson, & Young, 2012).

Comment: R&R2MHP program completion rate was 78%.

53. R&R2ADHD in England – 2012

An evaluation of “Reasoning and Rehabilitation2 for Youths and Adults with ADHD” (R&R2ADHD) was conducted in the Dangerous and Severe Personality Disorder Unit in a secure forensic hospital in England with patients with severe personality disorder who had a history of violence or sexual violence. The most common comorbid conditions were borderline (48%), paranoid (39%) and narcissistic (26%) personality disorders. Other comorbid conditions included histrionic and avoidant personality disorder, pedophilia, Asperger’s syndrome and compulsive disorder. In contrast to waiting list controls who received treatment as usual (n=15), the R&R2ADHD group (n=16) showed significant improvements in improving problem-solving ability, emotional stability and reducing ADHD symptoms, violent attitudes and anger problems. These are key problem areas in terms of reducing future offending (Young et al., 2012).

Comment: The R&R2ADHD program completion rate was 76%

54. R&R for Violent Addicted Offenders in Germany - 2012

Violent addicted offenders (n=31) in a closed psychiatric setting at the Clinic of Forensic Psychiatry in Rostock, Germany were randomly assigned to R & R or a control group. Most of the study participants had committed homicide or other serious violent offenses. Prisoners with schizophrenia, organic mental disorders and mental retardation were excluded from the study. Assessments by treating psychotherapists, primary nurses and by the patients themselves found that problem-solving, awareness of consequences, social perspective-taking, cognitive style, the ability to learn by experience, and persistence were significantly improved in the R&R group (Wetterman, Schlafke, & Fegert, 2012).

55. R&R2MHP for Patients with Severe Mental Illness in England – 2013

A quasi-experimental evaluation of R&R2MHP was conducted with 30 adult high risk male patients with severe mental illness detained under the U.K. Mental Health Act (1983) in a high secure hospital setting. The study found significant improvements in violent attitudes, coping processes and social problem-solving that were endorsed by ratings of ward behaviour for individuals who completed R&R2MHP compared with 29 controls who received treatment as usual (C-Y Yip, Gudjonsson, Perkins, Doidge, Hopkin, & Young, 2013).

QUANTITATIVE REVIEWS & META-ANALYSES

The efficacy of R&R has also been confirmed by the following reviews and meta-analyses of its evaluations (e.g. Allen, MacKenzie, & Hickman, 2001; Tong & Farrington, 2006; 2008).

56. Maryland Scale for Scientific Rigor – 2001

Evaluations of recidivism reduction studies of R&R were analyzed by the Maryland Scale for Scientific Rigor to assess the program's success in reducing recidivism. The analysis indicated that the R&R program is successful in reducing recidivism (Allen, Mackenzie, & Hickman, 2001).

57. Cost-Benefit Analysis – 2001

The Washington State Institute for Public Policy identifies offender programs that evaluations using sound research methods indicate can reduce criminal offending in a cost-beneficial way. Standard economic outcome measures are calculated: net present values, benefit-to-cost ratios, and rates of return on investment. The Institute studied six evaluation studies on the R&R program and concluded: "the cost per participant is low, about \$300 per offender... effect sizes, coupled with the low cost of the program, produce attractive ... economic bottom lines of about **\$2,400** in net taxpayer-only benefits per participant and about **\$7,500** in net benefits per participant when the crime victim perspective is added (p. 30) (Aos, Phipps, Barnoski, & Lieb, 2001).

58. Meta-analysis - 2002

A meta-analysis of studies of the effectiveness of cognitive behavioral program in reducing recidivism concluded that R&R "met our criteria of verified effectiveness". (p. 490). Among seven evaluations they found **57.4%** success in the R&R groups compared to **42.7%** success in comparison groups. (Pearson, Lipton, Cleland, & Yee, 2002).

59. Meta-analysis - 2006

A meta-analysis of studies on the efficacy of R&R concluded: "Sixteen evaluations (involving 26 separate comparisons) were located in which experimental and control groups were compared. A meta-analysis showed that, overall, there was a significant **14%** decrease in recidivism for programme participants compared with controls... It was effective in community and institutional settings, and for low risk and high-risk offenders. Smaller and larger

evaluation studies, and older and newer studies, concluded that the programme was effective” (p. 3) (Tong & Farrington, 2006).

60. Meta-analysis - 2008

A second meta-analysis of nineteen evaluations (involving 32 separate comparisons) again found that “overall, there was a significant 14% decrease in recidivism for program participants compared to controls... It was effective in community and institutional settings, whether given on a voluntary basis or not, and for low risk and high risk offenders” (p. 20) (Tong & Farrington, 2008).

61. UK National Institute for Health Clinical Excellence Guidelines 2010

The National Institute for Health and Clinical Excellence (NICE) for England and Wales provides “guidelines based on the best available research evidence to inform patients, professionals and the public about appropriate treatment for specific conditions”. The NICE Guidelines for interventions to reduce offending among offenders with Antisocial Personality Disorder, Psychopathy, or dangerous and severe Personality Disorder identify "group-based cognitive and behavioral interventions such as Reasoning and Rehabilitation" as the "Key priorities for implementation" An analysis of the cost-benefits of R&R by NICE concluded that the reduction in the recidivism rates by providing R&R to adult offenders results in an overall net saving of **£232** per adult offender over 1 year. The Institute’s cost-benefit analysis also concluded that R&R can potentially lead to a reduction in “other costs, such as healthcare costs and emotional distress of victims, the financial and economic burden to the families of both victims and offenders, and the feelings of fear and insecurity at anticipation of crime” (p. 189) (National Institute Clinical Excellence Guidelines, 2010).

DISCUSSION

The foregoing evaluations demonstrate that the R&R program has been successful in reducing recidivism in many countries among a wide variety of different types of offenders in both community and institutional settings for more than 25 years. The reductions are not only statistically significant but fiscally significant in terms of the cost of criminal justice processing. They are also socially significant in terms of the suffering of potential victims. The magnitude of many of the recidivism reductions has been substantial. However, in others they have been small, and the program has failed in several applications. The evaluations have identified several factors that are associated with the failure or success of R&R and R&R2 in reducing recidivism.

Rx for Failure

Program Integrity: Failure to ensure program integrity is arguably the single most relevant factor that accounts for poor outcomes. Adherence to the well-articulated principles and practices that are detailed in the R&R program manuals is a basic requirement for success. Integrity has been so poor in some applications of R&R that the evaluators may actually have assessed not the R&R program but only some semblance of it – a program that is R&R in name only.

Program Revisions: Program integrity has too often been compromised by revisions and adaptations of the program which have not been field-tested before implementation.

A Program Too Far: The failure to ensure program integrity in some cases has been a consequence of attempting to implement the program on a large scale, system-wide basis in

which program managers have been unable to ensure that quality control is not compromised.

A Program Imposed: Too often the program has been *imposed* on correctional staff without ensuring that they are committed to it and motivated to deliver it. R&R requires that the program be delivered by enthusiastic, empathetic, appropriately trained staff who are both adequately monitored and adequately reinforced for their efforts. Too often this requirement has not been met - particularly in the U.K. correctional system where the requirement to fulfill unrealistic quotas led to such factors receiving short shrift.

A Program Not Wanted: The R&R program model and practices differ in many essential aspects from the service roles previously played by correctional staff who were 'recruited' to serve as program facilitators. Many have been unable, or unwilling, to discard their customary roles and adopt a new approach which may not jibe with their views as to how offenders should be treated.

A Program Too Long: The original R&R program includes 35, two-hour sessions that require delivery over several weeks. Several program facilitators and administrators have reported that the length of the original program can overtax an agency's human resources. Moreover, it can be overly demanding for facilitators resulting in a lack of enthusiasm and a compromise of program integrity. They also reported that the length of the program taxed the motivation of participants leading to high attrition rates. The length of the program precludes offenders serving short sentences from participating. Conducting the sessions in a compressed schedule (e.g. morning and afternoon every day) has not worked. Such concerns led Ross and his colleagues to develop the shorter R&R2 editions.

A Program Too Broad: The original R&R is a 'shot-gun' program that does not enable differential treatment appropriate to the characteristics of the offenders it treats. Few R&R projects have ensured that only those offenders are included who require the program, or are suited for the program. The new R&R2 editions of the program provide more specialized versions of the original program. They comprise a family of specialized programs appropriate to the needs and circumstances of specific groups depending on their age, the number of hours they are available for program participation, their risk of continuing in antisocial behavior, their gender, and their particular personal problems (e.g. ADHD; mental health problems).

A Program Too 'Mature': There is mixed support for the efficacy of the original R&R with juvenile offenders. These evaluations led to the development of R&R2 for Youths.

Rx for Success

Quality Trainers: The evaluations indicate that ensuring that facilitators are adequately trained, supervised and supported is essential to achieving positive program outcome. Each program is manualized and includes detailed, step-by-step instructions for the facilitators to follow in delivering each session. Quality control requires that facilitators deliver the program in a way that is consistent with the techniques and teaching principles articulated in the program manuals.

Supportive Context: Several studies have demonstrated that recidivism reduction can be enhanced by embedding R&R in a multifaceted service that responds to psychological, ecological, situational and/or cultural factors that are functionally related to the offenders' antisocial behavior. For example, attending to social, family and employment factors that can

contribute to the offenders' commitment to pro-social behavior can significantly augment its efficacy and is likely to be a good investment of taxpayers' dollars.

Program Follow-up: Program benefits may also be enhanced through the provision of post-program refreshers. Each of the new R&R2 programs has been designed to enable supplementing or extending the main program sessions through "Booster Sessions".

Individualized Programming: Each of the new R&R2 program also enables the program to target participant's individual problems and skill acquisition. For example, individualized mentoring is a key ingredient in R&R2ADHD and R&R2MHP programs in which each offender is paired with a "PAL" who regularly meets with participants and reinforces the offender's acquisition of the skills taught in each session, their motivation and their realization of how the acquired skills can aid in their rehabilitation.

Beyond Cognition: The new R&R2 editions were developed based not only on research of the relationship between cognitive skills and antisocial behavior, but also on 20 years of research on cognitive, emotional, social/environmental, and neurodevelopment factors associated with antisocial behavior, and on the observations of R&R trainers over 20 years of delivering R&R. The new R&R2 programs are based on a revised cognitive model – the "neurocriminology" model that integrates recent research not only on the relation between cognitive factors and crime, but also on neurodevelopment factors, social environmental factors, experiential factors, and emotional factors that are known to be associated with antisocial behavior.

Our executive functions monitor and can exert significant though limited control of our thoughts and actions. The development of cognitive skills enables some "top-down" control of our behavior and our feelings. However, research has made it clear that we do not always operate in a deliberative manner. Much of the time we function in an automatic mode that is neither deliberative nor even conscious. Antisocial behaviors may not be ameliorated by cognitive interventions alone. More than cognitive training is required to strongly influence the automatic antisocial thoughts and the automatic emotions that are triggered in brain areas deeper than the prefrontal cortex. The R&R2 programs are designed to foster pro-social neurodevelopment.

Many cognitive-behavioral programs emphasize thinking and reasoning and ignore emotion or view emotions as factors that oppose the rational part of our nature. Neuroscience has seriously challenged such a narrow view. It is not just how we think or what we think that should be the focus of interventions to change behavior. Emotional training is as essential as cognitive training to the growth process whereby people come to desist from an antisocial life-style. R&R2 programs include techniques to help participants acquire emotional competence - the ability to accurately identify and appropriately respond to feelings and emotional reactions in oneself and others. Rather than excluding emotions, they teach participants to attend to them, to identify them and to use them effectively.

Beyond Recidivism: Reducing recidivism is the traditional marker of the success of the offender rehabilitation movement. Whereas such a goal may be appropriate to one of the primary purposes of the criminal justice system, it fails to do justice to the many other problems of offenders. We may reduce their offending but we often leave them to continue to drain the social services system. Reduction in reoffending is not the only goal of R&R2 programs. R&R2 programs are designed not only for high-risk offenders (the targets of the original R&R) but also for low-risk offenders and for a variety of antisocial individuals who may have no criminal record, and little risk of acquiring one, but are at high-risk for other problems. Without effective intervention, they may become or remain socially inept, chronically unemployed, substance dependent, dependent on welfare, a burden to the health and social service systems, and a

model of antisocial behavior to their children. 'Low Risk' is not 'No Risk' (Ross & Hilborn, 2008a).

Attrition & Motivation: The evaluations indicate that the success of R&R/R&R2 programs clearly depends on the motivation of the participants. Many of the evaluations document that program completion is a prerequisite to success. Attrition is the *Achilles Heel* of all rehabilitation programs. R&R2 programs were designed to provide shorter, theoretically sound and practical ways to motivate reluctant, resistant and ambivalent clients. The foregoing evaluations document their efficacy.

CONCLUSION

R&R/R&R2 programs can significantly and substantially reduce recidivism when conducted with integrity by well-trained, enthusiastic staff and implemented in a social, political and economic environment that is supportive of their efforts.

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