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### The effectiveness of youth crime prevention

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# 6.

## **The Long-Term Effects of the Youth Crime Prevention Program 'New Perspectives' (NP) on Delinquency and Recidivism<sup>5</sup>**

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5 De Vries, L. A., Hoeve, M., Asscher, J. J., & Stams, G. J. J. M. (submitted for publication). The Long-Term Effects of the Youth Crime Prevention Program 'New Perspectives' (NP) on Delinquency and Recidivism.

**Abstract**

*New Perspectives (NP) aims to prevent persistent criminal behavior. We aimed to examine the long-term effectiveness of NP and whether the effects were moderated by demographic and delinquency factors. At-risk youth aged 12 to 19 years were randomly assigned to the intervention group (NP, n = 47), or care as usual (CAU, n = 54). Official and self-report data were collected to assess recidivism. NP and CAU did not differ in recidivism rates. NP only appeared to be effective in terms of time to re-arrest. Adolescents with prior offenses showed more improvement in NP than in CAU, whereas adolescents without prior offenses performed better in CAU than in NP. The overall null-effects are discussed, including further research and policy implications.*

## 6.1 Introduction

Although recent downward trends in juvenile offending are encouraging (OJJDP, 2011; Van der Laan & Blom, 2011), there is an increasing trend towards punitive responses to youth antisocial behavior (Artello, Hayes, Muschert, & Spencer, 2015). Many studies have shown that juvenile justice programs without a therapeutic foundation (e.g., probation, deterrence, incarceration without treatment) are ineffective in reducing juvenile delinquency (Andrews & Bonta, 2010; De Swart et al., 2012; Parhar, Wormith, Derkzen, & Beauregard, 2008). Young adolescents with disruptive and delinquent behavior, showing multiple risk factors, need constructive change-oriented treatment (Lipsey, 2009). Given that these youngsters are at risk of developing a chronic and serious criminal trajectory (Loeber, Burke, & Pardini, 2009), and are highly costly to society (Welsh et al., 2008), it is essential to invest in (early) preventive interventions.

Prevention programs have been developed in diverse settings with various degrees of impact on juvenile delinquency. In their narrative review, Mulvey, Arthur, and Reppucci (1993) concluded that well-implemented secondary prevention programs, including behavioral and family-based change components, produced reductions in reoffending rates, although not in self-reported delinquent behavior. A recent meta-analytic study (De Vries, Hoeve, Assink, Stams, & Asscher, 2015a) showed that the overall effect of preventive interventions was small, indicating that these programs had a modest effect on delinquency and recidivism reduction. The effectiveness of prevention programs increased if programs included components of training parenting skills, low intensity levels, individual- or family-based formats instead of group-based treatment. Finally, Andrews and Bonta (2010) have shown that interventions adhering to the *Risk-Need-Responsivity* principles (RNR model) could reduce offender recidivism up to 35%.

An evidence-based preventive intervention, based on the theoretical framework of the RNR model (Andrews, Bonta, & Hoge, 1990a), is New Perspectives (NP), an intensive ambulant program focusing on adolescents in early stages of delinquency. NP aims to prevent that adolescents will develop a persistent criminal trajectory (primary goal). In addition, improvements in the family domain (parenting behavior, adolescent-parent bonds), peers and leisure time (peer affiliations), and the individual domain (cognitive distortions) are considered as secondary program goals (Elling & Melissen, 2007). Previous evaluation studies found reductions in delinquency (Noorda & Veenbaas, 1997) and improvements in multiple life domains (Geldorp, Groen, Hilhorst, Burmann, & Rietveld, 2004). These studies lacked the use of a control group, and therefore possible confounding effects, such as maturation, cannot be ruled out (Clingempeel & Henggeler, 2002). To date, there is only one experimental study (De Vries, Hoeve, Wibbelink, Asscher, & Stams, 2015b), and that study showed that NP did not outperform other interventions ('care as usual') on delinquency and secondary outcomes (parenting behavior, attachment, peers and cognitive distortions) at post-intervention measurement.

Since changing behavior is a long-term and intensive process (Prochaska & Velicer, 1997), it is possible that NP will produce effects in the long-term (minimum of 12 months after program completion), which is also known as ‘ sleeper effects ’ or delayed effects of therapy (Bell, Lyne, & Kolvin, 1989). Therefore, the present study investigated the long-term effects of NP in preventing and reducing persistent criminal behavior. The central aim of the present study was to examine whether NP outperforms existing services (‘ care as usual ’) using a randomized control trial. First, we determined whether NP is effective in preventing and decreasing criminal (re)offending. Recidivism was assessed during 18 months after program start, 12 months after program completion, and at maximum available follow-up period per participant. We focused on percentages of re-offending, number of re-arrests, seriousness (violent re-offenses), and velocity in reoffending. Next to official judicial reports, we used self-report data in order to reach a more comprehensive view on adolescents’ criminal behavior.

A second aim was to examine potential moderators of NP effectiveness. This approach is in line with the shift in intervention research towards a focus on the question “ what works for whom ?”, instead of “ does it work ?” (Weisz, Jensen-Doss, & Hawley, 2006). Previous studies have indicated that boys and girls, adolescents from different ages, and diverse ethnic groups show specific risk factors related to delinquency and recidivism, and therefore have suggested specific interventions for these subgroups (Hipwell & Loeber, 2006; Loeber et al., 1993; Stevens & Vollebergh, 2008; Van der Put et al., 2011). However, there is limited information about which prevention programs are effective in treating specific problems of these subgroups (Kazdin, 1993; Kumpfer, Alvarado, Smith, & Bellamy, 2002; Zahn, Day, Mihalic, & Tichavsky, 2009). By examining ethnicity, age, and gender as moderators, we can determine whether the NP program is successful for all participants regardless of their specific demographic background.

Finally, a history of offending, severity of prior offending (a history of violent offenses), and age of first arrest are considered as the most important (static) risk factors of reoffending in delinquent youth (Andrews & Bonta, 2010; Cottle, Lee, & Heilbrun, 2001; Loeber & Farrington, 1998). Therefore, we included these risk factors as potential moderators of program effectiveness.

## **6.2 Method**

### **6.2.1 Participants**

Adolescents were included in the present study if they met the following criteria for NP according to the behavioral scientist: (1) age 12 to 23 years, (2) experiencing problems on multiple life domains, and (3) at risk for the development and progression of a deviant life style. Adolescents were excluded if they showed severe psychiatric problems, IQ below 70, a long history of delinquency, severe drugs-or alcohol use (dependency), absence of residence status in the Netherlands, and absence of motivation to stop committing criminal acts.

A total of  $N = 160$  adolescents were recruited for the study at baseline ( $n = 81$ , NP group;  $n = 79$ , CAU). Thirty-seven percent ( $n = 59$ ) of the adolescents dropped out at first assessment,

because they were unwilling to participate or were untraceable, resulting in a final sample of 101 adolescents. Despite extensive efforts, 12 adolescents were lost to follow-up, resulting in an attrition rate of respectively 7,5% of the original sample and in 89 adolescents (NP  $n = 40$ , CAU  $n = 49$ ) who completed both pre-test and follow-up (questionnaires). Details for attrition on pre-test and follow-up are presented in Appendix 6.A.

According to the self-reports, 80% of the adolescents reported having ever committed one or more of the delinquent acts before pre-test. According to official data, 47% of the adolescents had been arrested at least once before treatment. The majority of our final sample consisted of boys (67%), and the mean age at pre-test was 15.58 years ( $SD = 1.53$ ). A total of 83% ( $n = 84$ ) of the juveniles belonged to an ethnic minority group (at least one of the youth's parents was born abroad). The largest second generation groups had a Surinamese (27%,  $n = 27$ ), or a Moroccan (24%,  $n = 24$ ) background. The mean age of first police contact of participants was 15.12 years ( $SD = 1.46$ ). Table 6.1 presents additional information on the final sample ( $N = 101$ ).

Results of independent sample  $t$  tests for continuous variables and chi-square analyses for categorical variables showed no significant differences between the treatment conditions at pre-test ( $p > .05$ ).

**Table 6.1 Background Characteristics in NP and CAU at baseline, official records**

	NP ( $n = 47$ )	CAU ( $n = 54$ )	Total	$t$
	$M (SD)$	$M (SD)$	$M (SD)$	
Mean age (years)	15.66 (1.44)	15.51 (1.61)	15.58 (1.53)	-0.489
Age of police contact	15.07 (1.56)	15.15 (1.41)	15.12 (1.46)	-0.220
Number of prior offenses	0.81 (1.19)	1.06 (1.38)	0.94 (1.29)	-0.956
Number of prior violent offenses	0.28 (0.54)	0.13 (0.34)	0.20 (0.45)	1.660
	% ( $n$ )	% ( $n$ )	% ( $n$ )	$\chi^2$
Boys	63.8 (30)	70.4 (38)	67.3 (68)	0.489
Ethnic Minority Status	78.7 (37)	87.0 (47)	83.2 (84)	1.241
At least 1 prior arrest	40.4 (19)	52.9 (28)	46.5 (47)	1.319
At least 1 prior violent arrest	23.4 (11)	13.0 (7)	17.8 (18)	1.871

Note. NP, experimental group, CAU, control group.

### 6.2.2 Procedure

Participants living in Amsterdam were recruited after being referred to NP by one of the various youth care referral agencies and (secondary) schools. The inclusion period lasted from September 2011 until April 2013. Adolescents, meeting inclusion criteria for NP were randomly assigned to the experimental group (NP intervention) or control group (CAU). Self-report follow-up data of adolescents were collected 12 months after completion of the intervention. A more elaborate description of the recruitment and randomization process can be found in the study protocol of De Vries, Hoeve, Asscher, and Stams (2014b).

In order to establish whether participants had reoffended, the official records of the Judicial Information Service (JustID) were requested in January 2015. Two starting points of the observation period for reoffending were used. The first starting point of the observation period was the date on which a person entered treatment (NP/CAU) and the second starting point was the date on which a person completed treatment. The observation period ended on the day that the official records were released by JustID (January 2015). Formal consent for using official records was obtained from the Netherlands Ministry of Security and Justice. The official records were coded using the Recidivism Coding System (RCS) of the Research and Documentation Centre (WODC; Wartna, Blom, & Tollenaar, 2011; Wartna, El Harbachi, & Van der Laan, 2005).

To assess interrater agreement, 25% of the cases were randomly selected and coded by two trained junior researchers. Percentages of agreement were calculated for all variables of the coding form. The inter-rater reliability for categorical variables (Kappa) ranged from good (0.89) for classification of violent and non-violent offenses to perfect (1.00) for status registration (including cases as recidivism: yes or no). The inter-rater reliability for continuous variables was very good, with intraclass correlations ranging from 0.99 for date of the offense to 1.00 for the registration number of the case.

### **6.2.3 Conditions**

NP is a voluntary program divided in an intensive coaching phase of 3 months and a 3-month aftercare phase. Youth care workers with low caseloads are available 24 hours a day, seven days per week. During the intensive coaching phase, the youth care workers have 8 hours a week per client. The contact intensity of the program aftercare phase is low, ranging from a minimum of 4 hours to a maximum of 12 hours (in 12 weeks). More information regarding core components of the NP-program can be found in the study protocol of De Vries et al. (2014b).

Adolescents in the control group received various youth care interventions (mainly ambulant treatment, 63%). Adolescents receiving care as usual mainly received individual and/or family-based treatment. The specific treatment within care as usual consisted of individual counseling (20%), family counseling (9%), individual coaching (13%), academic service coaching (12%), and other programs, such as social skills training and Real Justice group conferencing. Notably, 35% of the juveniles ( $n = 19$ ) did not receive an intervention.

### **6.2.4 Measures**

*Demographic characteristics.* Participants reported their date of birth, place of birth, and place of birth of their parents in order to determine their age and ethnic background. In order to assess the influence of age on program effectiveness, the group was divided into a group of adolescents younger than 16 years of age ( $n = 54$ ) and in a group of adolescents that were 16 years or older ( $n = 47$ ). The division in age group was based on age criteria of NP, consisting of two different modalities for younger (NPP/NP Plus) and older adolescents (NP). The influence

of ethnicity was assessed by dividing adolescents into two groups: native Dutch adolescents ( $n = 17$ ), and second generation adolescents from ethnic minority groups ( $n = 84$ ). The age of first offense, total number of prior offenses (history of offending), and total number of prior violent offenses (history of violent offending), were coded from official records of JustID.

*Delinquent behavior.* To establish whether participants had reoffended, we used self-reports of the adolescents and requested official records from the Judicial Information Service. Prevalence of reoffending was assessed by the 'Self-report Delinquency Scale' (SRD) of the Research and Documentation Centre (Van der Laan & Blom, 2006; Van der Laan, Blom, & Kleemans, 2009). Three subscales of the SRD scale were used for examination of the program effectiveness: *violent crime (7 items)*, *vandalism (4 items)*, and *property crime (6 items)*. In the present study, sum scores were used, indicating how often the participant showed delinquent activities in 12 and 18 months before assessment. Cronbach's alpha for assessment of delinquent behavior was  $\alpha = .74$  (12 months) and  $\alpha = .92$  (18 months).

Prevalence, frequency, and seriousness of recidivism were assessed by official records of JustID. Recidivism was defined as the occurrence of any new conviction for any criminal offense after program start and after program completion (see also Asscher et al., 2014a; James, Asscher, Stams, & Van der Laan, 2015; Wartna et al., 2011). Recidivism was assessed in terms of percentage (dichotomous variable: at least one arrest), frequency (continuous variable: number of any reconviictions), velocity (time until first reconviiction), and seriousness of recidivism (number of violent offenses and at least one violent arrest). In addition, guidelines of the official Recidivism Coding System were used to code the seriousness of offenses into non-violent (0), and violent offenses (1).<sup>1</sup> Misdemeanors, such as traffic offenses, were taken into account, because the program examined in the present study is focused on prevention and on adolescents showing no or very low levels of delinquency before start of the intervention.

### 6.2.5 Analytic Strategy

First, we conducted univariate ANCOVA tests to examine the main intervention effects of self-reported delinquency at follow-up (12 months after program completion, and 18 months after program start), with the outcome measures at follow-up as dependent variables, treatment condition as factor, and pre-test scores of the outcome variables as co-variables. The effect size<sup>2</sup> was computed as Cohen's  $d$ , based on means and standard deviations of the treatment groups.

To take into account differences in duration of follow-up between conditions and to be able to compare assessment periods of official arrests with assessment periods of self-reports, the official judicial data were analyzed in two ways. First, we analyzed recidivism rates after start of the program (18 months) and after program completion (12 months). The two conditions were compared in terms of percentage of participants that re-offended, frequency (number) of re-arrests, time to re-arrest, and seriousness of re-offenses (violent re-offenses), using chi-square difference tests,  $t$  tests, and univariate ANOVA tests.



Next, we examined survival curves of the whole follow-up period (up to January 2015). The duration to follow-up was not the same for all participants due to the considerable length of the inclusion period ( $M = 875.50$  days,  $SD = 161.937$ ). Moreover, the time to follow-up was shorter for CAU ( $M = 841.41$  days) than for NP ( $M = 914.66$  days), ( $t(99) = 2.32$ ,  $p = .023$ ). Therefore, we controlled for differences in length of follow-up between conditions by centering the duration until follow-up period and including this in step 1 of the survival analysis following Asscher et al. (2014a). Cox regression analyses were applied to examine differences in survival curves between NP and CAU. The centered variable of follow-up duration was added at step 1 into the Cox regression analysis; condition (NP or CAU) was added in the second step. A chi-square difference test was used to assess whether condition would predict survival length over duration to follow-up.

Further, the same ANCOVAs were conducted for moderator analyses on the self-report delinquency data, with the moderator as factor, and including an interaction term of condition  $\times$  moderator. Gender, ethnicity (native Dutch vs. ethnic minorities), age group ( $< 16$  vs.  $\geq 16$ ), age of first crime, a history of offending (yes or no), and a history of violent offending (yes or no) were included as potential moderators. Post-hoc analyses for moderator effects were conducted by splitting the file according to the moderator and again applying an ANCOVA.

For the moderator analyses on the recidivism data (based on official judicial reports), Cox regression analysis was conducted: condition was entered in the first step, and the moderator and interaction between condition and the moderator were added in the second step. Chi-square difference tests were conducted to determine whether program effects (recidivism) were moderated by gender, ethnicity, age group, age of first crime, prior offenses, and prior violent offenses.

## **6.3 Results**

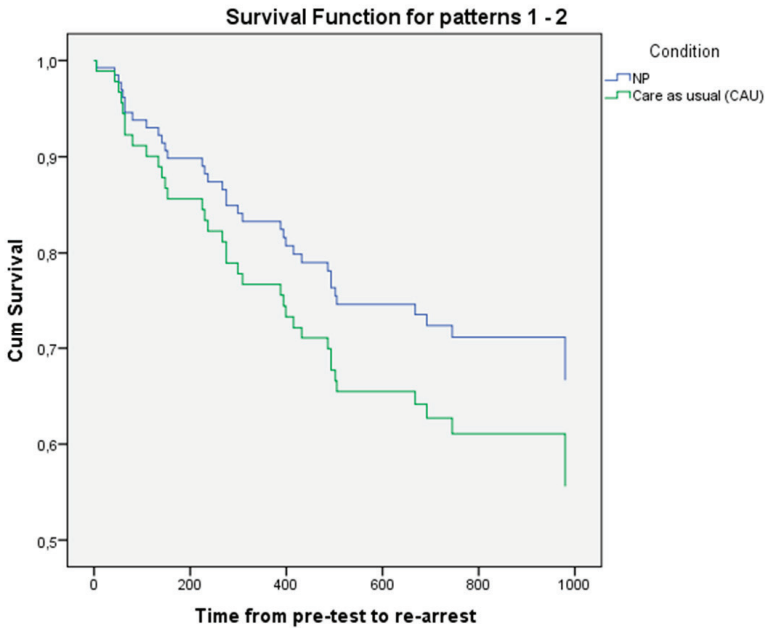
### **6.3.1 Intervention Effects**

Results of the univariate ANCOVA tests are presented in Table 6.2. Twelve months after the end of treatment and 18 months after program start, we found no significant differences between the experimental and control group on participation in self-reported general delinquency and specific types of delinquency (violence, theft, and vandalism).

Table 6.3 presents the results of percentage and velocity of recidivism, frequency, and seriousness of re-arrests, based on official records, for both conditions. The results show that there were no differences between NP and CAU in percentage, number of re-arrests (frequency), and seriousness of re-arrests at 12 months after program completion and 18 months after program start. However, a significant difference between the two conditions was found in time to re-arrest at 12 months follow-up,  $F(1, 99) = 6.694$ ,  $p = .011$ ,  $d = .52$ , indicating that the time to re-arrest was significantly shorter in CAU ( $M = 231.20$  days,  $SD = 108.74$ ) than in NP ( $M = 283.60$  days,  $SD = 92.47$ ). This significant difference in time to re-arrest was not found at 18 months follow-up (after program start).

Cox regression analyses were performed to compare the survival curves of NP and CAU for the whole follow-up period. At the end of the follow-up (on average 875.50 days,  $SD = 161.94$ ), 30% of the NP group and 41% of the CAU group had been rearrested at least once (see also Figure 6.1). This difference was not significant: the hazards ratio for condition was .691,  $p = 0.302$ , 95% CI (0.342 to 1.395), indicating no significant differences between the groups.

**Figure 6.1 Survival curve for recidivism for NP and CAU group separately**



Note. NP, experimental group, CAU, control group

**Table 6.2 Means, standard deviations and intervention effects of NP vs. CAU, self-reports**

Pre-test	12 months follow-up <sup>a</sup>						Fgroup	d follow-up (95%CI)	18 months follow-up <sup>b</sup>						Fgroup	d follow-up (95%CI)
	CAU			NP					CAU			NP				
	M	SD	n	M	SD	n			M	SD	n	M	SD	n		
Delinquency	0.830	1.291	1.130	1.760	0.850	1.477	0.939	1.519	0.087	0.06 (-0.35; 0.48)	1.651	2.213	2.327	3.677	0.551	0.15 (-0.25; 0.56)
Violent offenses	0.617	1.171	0.685	1.271	0.500	0.877	0.531	1.002	0.009	0.02 (-0.40; 0.44)	0.977	1.520	1.327	2.647	0.999	0.21 (-0.20; 0.61)
Property offenses	0.213	0.508	0.463	1.059	0.225	0.480	0.347	0.779	0.302	0.12 (-0.30; 0.54)	0.419	0.823	0.942	1.965	1.282	0.23 (-0.17; 0.64)
Vandalism	0.065	0.250	0.148	0.492	0.125	0.516	0.122	0.389	0.378	0.13 (-0.29; 0.55)	0.275	0.751	0.392	1.060	0.005	0.01 (-0.40; 0.43)

Note. NP, experimental group, CAU, control group.

<sup>a</sup>Due to missing values at follow-up: NP group (n = 40) and CAU (n = 49).

<sup>b</sup>Due to missing values at follow-up: NP group (n = 43) and CAU (n = 52).

**Table 6.3 Frequency, seriousness and velocity of recidivism (n = 47) vs. CAU (n = 54) by observation period, official records**

	12 months follow-up						18 months follow-up							
	NP			CAU			NP			CAU				
	M	SD	n	M	SD	n	M	SD	n	M	SD	n	M	SD
Number of re-arrests	0.34	1.01	0.70	1.36	2.28	2.87	0.30 (-0.69; 0.09)	0.53	1.54	0.98	1.87	1.71	0.26 (-0.65; 0.13)	
Number of violent re-arrests	0.04	0.20	0.17	0.47	2.86	2.86	0.34 (-0.73; 0.06)	0.11	0.38	0.22	0.60	1.29	0.23 (-0.62; 0.17)	
Time to first re-arrests <sup>a</sup>	283.60	92.47	231.20	108.74	6.69*	6.69*	0.52 (0.12; 0.91)	451.11	148.81	402.98	155.02	2.51	0.32 (-0.08; 0.71)	
	%	n	%	n	χ <sup>2</sup>		%	n	%	n	χ <sup>2</sup>			
At least 1 re-arrest	17.0	8	33.3	18	3.50	3.50	0.38 (-0.02; 0.78)	21.3	10	35.2	19	2.38	0.31 (-0.08; 0.71)	
At least 1 violent re-arrest <sup>b</sup>	25.0	2	38.9	7	0.47	0.47	0.14 (-0.25; 0.53)	40.0	4	42.1	8	0.01	0.02 (-0.37; 0.41)	

Note. NP, experimental group, CAU, control group. + p < .10, \* p < .05, \*\* p < .01, \*\*\* p < .001

<sup>a</sup> Time to first re-arrest is represented in days.

<sup>b</sup> Only for those adolescents who did recidivate.

### 6.3.2 Moderators of Effectiveness

Moderator tests were conducted to determine whether NP is more beneficial for specific participants. We found that program effects at 18 months follow-up on self-reported delinquency were significantly influenced by prior offenses,  $F(1, 90) = 6.410, p = .013, d = .50$  (medium effect). Post-hoc analyses revealed that adolescents with a history of offenses showed more improvement in the NP than in the CAU condition,  $F(1, 42) = 4.044, p = .051, d = .61$ , whereas adolescents without prior offenses improved more in the CAU than in the NP condition,  $F(1, 47) = 1.643, p = .206, d = .28$ . No significant moderating effect was present for the variables prior violent offenses,  $F(1, 90) = 0.058, p = .811$ , age of first arrest,  $F(1, 51) = 1.245, p = .270$ , ethnicity,  $F(1, 90) = 0.872, p = .353$ , age group,  $F(1, 90) = 0.049, p = .825$ , and gender,  $F(1, 90) = 0.001, p = .982$ . At 12 months follow-up, none of the tested variables significantly moderated program effects.

For the official judicial data, at 18 months follow-up, no moderator effects were found for prior offenses, hazard ratio = 1.075,  $p = 0.935$ , 95% CI (0.188 to 6.161), prior violent offenses, hazard ratio = 0.939,  $p = 0.945$ , 95% CI (0.135 to 6.532), age of first arrest, hazard ratio = 0.734,  $p = 0.279$ , 95% CI (0.420 to 1.284), ethnicity, hazard ratio = 0.466,  $p = 0.555$ , 95% CI (0.037 to 5.874) age group, hazard ratio = 3.700,  $p = 0.115$ , 95% CI (0.728 to 18.798), and gender, hazard ratio = 0.650,  $p = 0.769$ , 95% CI (0.036 to 11.632). Similar results were found at 12 months follow-up, indicating that program effects (survival length) were not significantly moderated by gender, ethnicity, age group, age of first crime, history of offenses, and history of violent offenses.

## 6.4 Discussion

In the present study, the long-term effects of NP were examined by the use of adolescent reports and official judicial data on delinquent behavior 12 months after program completion, 18 months after program start, and on average 2.40 years (for official judicial data). The program effectiveness was determined by the use of a randomized controlled trial. Results of the present study revealed that NP was not more effective in reducing delinquency levels and recidivism than care as usual (during various observation periods). On the basis of self-reports and official reports, we found no significant differences between the conditions in percentage, frequency, and seriousness of reoffending. Adolescents in NP and care as usual recidivated at a rate of 30-41% during the average follow-up period of well over 2 years. Despite these overall null-effects, the official judicial data revealed that NP was more effective than care as usual in terms of recidivism timing ( $d = .52$ , medium effect). During the observation period of 12 months after program completion, the time to re-arrest proved to be longer for NP-adolescents ( $M = 9.32$  months) compared to adolescents receiving care as usual ( $M = 7.60$  months). Notably, the program duration in care as usual ( $M = 54.08$  weeks) was longer than in the experimental condition ( $M = 39.48$ ). However, this timing effect of recidivism was not found in the observation period of 18 months after program start.

The present findings are not in line with the meta-analytic study on the effectiveness of preventive interventions (De Vries et al., 2015a), in which small positive results were found. However, our results concerning adolescent reports are consistent with findings of the review of Mulvey and colleagues (1993), indicating that (secondary) preventive interventions did not produce significant reductions in self-reported delinquency. Moreover, the general results of the present study are in line with other rigorous experimental studies, showing no long-term effects (with a minimum of one-year follow-up period) of prevention programs on delinquency and recidivism (e.g., Berry, Little, Axford, & Cusick, 2009; Cox, 1999; Lane, Turner, Fain, & Sehgal, 2005). Finally, the present study is consistent with previous findings on the short-term effectiveness study of NP, in which largely the same sample was used (by De Vries et al., 2015b), indicating that NP did not outperform CAU on self-reported delinquency.

There are several explanations why we did not find effects of NP. A first plausible explanation might be the focus and content of the NP program. Although NP can be considered as a theoretically grounded skill building program, NP lacks a focused, structured and clear therapeutic intervention approach that attempts to engage the youth in a supportive and constructive process of change (Lipsey, 2009). The general coaching style of the NP program (counseling and social work) is comparable to other preventive interventions, such as coaching communities programs, education programs, and probation programs, which have not been proven effective in reducing offending in the long-term (Berry et al., 2009; Cox, 1999; Lane et al., 2005; Wilson, Gottfredson, & Najaka, 2001). These preventive interventions do not include specialized effective components of behavioral modeling, contracting, and training parenting skills, which have been proven effective in the treatment of at-risk youth (De Vries et al., 2015a). Additionally, targeting the program at youth whose antisocial behavior is the product of poor bonds with (prosocial) peers, parents, and other important persons in the social network, the area where NP is thought to make a difference, seems advisable.

Another explanation of not finding evidence to support the effectiveness of NP is that NP was not entirely carried out as intended. Program integrity is an important factor influencing program effectiveness (Lipsey, 2009). A study of De Vries, Hoeve, Asscher, and Stams (2014a) examining program integrity levels in treatment of 76 NP-adolescents (meeting NP selection criteria), showed that treatment adherence was found to be too low in the aftercare program phase of NP. In 45% of the cases during the aftercare phase, less than 60% of standard services were carried out (De Vries et al., 2014a). Also, in 46% of the cases, the social network of NP-clients was not involved in the treatment process. Durlak and DuPre (2008) recommended minimum levels of program integrity of 60% in order to reach program effectiveness. Consequently, low levels of treatment adherence (in the aftercare phase) of NP may explain the null-effects of NP.

Furthermore, previous evaluation studies suggested a mismatch between program intensity and risk levels of adolescents (e.g., Buysse et al., 2008; Geldorp et al., 2004; De Vries et al., 2014a; 2015b; Loef, Nauta, & Abraham, 2011). De Vries et al. (2015b) concluded that 28% of the NP adolescents showed a very low risk of reoffending. Given that NP is primarily designed

for adolescents whose risk of developing a persistent criminal trajectory is significantly higher than average, the program may be too intensive for adolescents showing (very) low risk levels. According to the risk principle of the RNR model (Andrews et al., 1990a) and results of a meta-analytic study on preventive interventions (De Vries et al., 2015a), minimal intervention (low intensity levels) is needed for low-risk offenders. As a result, not adhering to the this dose-response principle could negatively influence program effectiveness.

Notably, findings of moderator analyses showed that a history of crime was associated with a likelihood of greater success in the NP group. Criminal history is an important predictor of general reoffending (Cottle et al., 2001; Heilbrun, Lee, & Cottle, 2005). It is well known that adolescents with higher levels of delinquency risk profit most from intensive programs (Andrews et al., 1990a; Lipsey, 2009), such as NP. However, the impact of criminal history on program effects was not found on the basis of official judicial reports and other delinquency factors (age of first crime and a history of violence) did not influence program effects of NP. Since the target group of NP also includes adolescents at onset of a criminal trajectory (predelinquents), future research should examine the influence of an inclusive risk profile, including dynamic criminogenic factors (such as antisocial peer affiliations and poor family circumstances), on the effectiveness of youth crime prevention.

Finally, results of the moderator analyses suggest that effects of NP were about the same for boys and girls, older and younger adolescents, and native Dutch adolescents and adolescents from ethnic minority groups, which is consistent with findings of previous meta-analytic studies (De Vries et al., 2015a; Wilson, Lipsey, & Soydan, 2003; Zahn et al., 2009).

#### **6.4.1 Limitations**

Several limitations of the present study should be mentioned. A first limitation is that the sample size of adolescents ( $N=101$ ) was relatively small to detect effects for subgroups. A larger sample size would have increased possibilities to further differentiate between the effects of NP for different subgroups, for example, adolescents from various ethnic backgrounds and various offending risk level groups (low, medium, and high risk of reoffending). Second, we could not assess the influence of program integrity on program effects, as there was no standardized monitoring system of treatment adherence implemented in the (clinical) practice of NP. Therefore, we were not able to include all NP-adolescents of the present effectiveness study into the study of program integrity. Third, we were not able to examine the influence of (static and dynamic criminogenic) risk levels on program effectiveness, while risk profiles were not available for all participants in the present study (only for participants in the NP group). Referral agencies lacked the use of valid risk assessment instruments. A final limitation involves the risk of selection bias, a common methodological problem in experimental (RCT) designs (Asscher, Decović, Manders, Van der Laan, & Prins, 2007b). Despite relatively high drop-out rates (37%) at first assessment, we found no pre-existing differences between participants and non-participants on demographic factors.

### 6.4.2 Conclusions and Recommendations

In summary, the present experimental study reports on the long-term effectiveness of NP. We conducted this study in a real-world treatment setting, which contributes to higher levels of external validity. Results of self-report data and official judicial reports provide no evidence of effectiveness of NP in preventing and reducing persistent (juvenile) delinquency. NP appeared to be effective for adolescents with a criminal history, whereas adolescents without a criminal history showed more improvements in CAU.

Given that we found no effects and that prior research only revealed small effects of (secondary) preventive interventions, it is important that research, policy and clinical practice focus on further testing the effectiveness of promising (theoretically grounded) prevention programs, and on implementation of standardized treatment adherence monitoring systems and reliable risk assessment instruments (in order to refer youth to the appropriate program). Finally, the effectiveness could be enhanced if youth crime prevention programs (such as NP) have a clear program focus, which is based on theoretical models explaining criminal behavior (e.g., targeting poor adolescent-parent bonds), and integrate effective components that are characterized by a strong therapeutic and (cognitive) behavior-oriented approach, such as training parenting skills. In order to gain more knowledge about effective youth crime prevention, government policy makers and purchasers of youth care services should support the continuation of experimental evaluations in naturalistic settings.

#### Footnotes

- <sup>1</sup> Examples of minor offenses were vandalism, nonviolent property offense, examples of serious offenses were theft and burglary, and examples of very serious offenses included rape and murder (Wartna et al., 2005; 2011). Violent offenses also included sexual offenses and property crimes with the uses of violence. Non-violent offenses included property crimes, public order offenses, drug offenses, traffic offenses and other crimes.
- <sup>2</sup> Effect sizes are categorized as small ( $d = .20$ ), medium ( $d = .50$ ), and large ( $d = .80$ ) group differences.

**Appendix 6.A Flow Diagram**

