Targeting recidivism : an evaluation study into the functioning and effectiveness of a prison-based treatment program

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4 Participation in a prison-based treatment program▪

4.1 Introduction to prison-based treatment programs

Each year, a large number of ex-prisoners return home after having spent time in the penitentiary system. Many studies have shown that recidivism rates of these ex-detainees are high, both in the United States and Europe. Research has shown that well over sixty percent of prisoners are re-arrested within three years after release (Hughes & Wilson, 2002), while re-incarceration rates for male ex-detainees are around 53 percent (Visher & Travis, 2003). A study conducted in the United Kingdom concluded that almost 58 percent of prisoners released in 1997 were re-convicted of another crime within two years and 36 percent were re-incarcerated in that same period of time (SEU, 2002). In The Netherlands, similar recidivism rates have been reported. Research has shown that within six years after release, over seventy percent of released prisoners were reconvicted and almost fifty percent were re-incarcerated (Wartna et al., 2010).

The large number of detainees re-entering society and their high recidivism rates call for effective offender rehabilitation programs. Until the 1970s, a widely accepted notion was that nothing works in correctional treatment (e.g. Lipton, Martinson & Wilks, 1975; Martinson, 1974). During the 1980s and 1990s, however, with the introduction of meta-analytic methods, several factors were identified that had a positive influence on recidivism reduction. Since then, there has been a shift in criminal justice thinking from *nothing* works to *what* works (see e.g. Andrews, 1995; Andrews & Bonta, 1994; Andrews et al., 1990; Gendreau, 1996; Gendreau, Little & Goggin, 1996; Lipsey & Wilson, 1993). Consequently, in an attempt to prevent or reduce recidivism, several prison-based offender rehabilitation programs have been implemented in Northern America en Western Europe (see Hannah-Moffat, 2005; Jolley & Kerbs, 2010; McSweeney, Turnbull & Hough, 2008).

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The many prison-based offender rehabilitation programs that have been developed typically adhere to the principles of the *Risk-Need-Responsivity* [RNR] model of crime prevention and correctional rehabilitation (Andrews, Bonta & Hoge, 1990). In this model, the *risk* principle advocates that treatment intensity should be adjusted to the extent to which there is risk for reoffending. The *need* principle suggests that correctional programs should address criminogenic needs – factors that have shown to be related to repeated offending (see Bonta, Law & Hanson, 1998; Hanson & Morton-Bourgon, 2004 & Gendreau, Little & Goggin, 1996). Instruments that measure criminogenic needs, such as the Level of Service Inventory (Andrews, Bonta & Wormith, 1995), the Offender Assessment System (Home Office, 2002) and the Dutch-language *Recidive Inschatting Schalen* (Adviesbureau van Montfoort en Reclassering Nederland, 2009) typically distinguish between several (dynamic) criminogenic need domains, such as drug or alcohol addiction, an offender's criminal history and psychological problems. Finally, the *responsivity* principle argues that interventions should match an offender's abilities, treatment readiness, and personality (see Andrews, 1995; Andrews & Bonta, 2010; Andrews, Bonta & Hoge, 1990; Andrews & Dowden, 1999; Lowenkamp & Latessa, 2005).

Prison-based treatment programs in The Netherlands

In an attempt to reduce reoffending rates in The Netherlands, the Dutch government has developed the *Prevention of Recidivism Program* (Dutch Prison Service & Dutch Probation Organizations, 2007), which was implemented nation-wide in 2007.[1] Detainees who have at least four months of a prison sentence left to serve are eligible for this voluntary rehabilitation program. Those who are serving a life sentence, who are sentenced to compulsory treatment on behalf of the state, who are detained in special observation (assessment) centers and who are considered illegal immigrant offenders are excluded from the program. Several additional (objective and subjective) contraindications were formulated and include: staying in a penitentiary hospital or psychological assessment facility, insufficient Dutch language abilities, high risk of violence and/or escape, and finally a lack of motivation to complete the program (Dutch Prison Service & Dutch Probation Organizations, 2007).

Following the aforementioned RNR principles, the Prevention of Recidivism Program aims to reduce reoffending by ex-detainees by: (1) proper assessment of risk for recidivism, (2) application of behavioral interventions which are known to be effective in reducing re-offending behavior (Van der Linden, 2004). To set up a system of evidence-based behavioral inter-

1 Note that the program was replaced by a new policy measure that was implemented in March 2014, which uses the same risk/need based approach, but in which offenders can only take part of they have earned the right to engage, by expressing their willingness to change their criminal ways, and by showing pro-social behavior for a minimum of 6-weeks straight.

ventions, in 2005 the Dutch Ministry of Justice and Safety has established the *Judicial Behavioral Intervention Accreditation Committee*. This committee assesses the potential effectiveness of behavioral interventions based on criteria derived from the *what works* literature (such as a adherence to risk and need factors, and treatment integrity).[2] All interventions imposed within the Prevention of Recidivism Program have to be accredited by this committee. Currently, four types of prison-based treatment modules have been evaluated as potentially effective, two of which are applied with a certain regularity. These are: *Cognitive Skills Training*; and *Lifestyle Training for Addicted Offenders*. Cognitive Skill Training aims to improve cognitive skills that are necessary in order to independently live, develop and function in society. Lifestyle Training helps offenders cope with addiction to alcohol or drugs. These criminogenic need-specific treatment modules are applied in line with risk and need scores. This means that some offenders, based on risk assessment outcomes, may not qualify for any of these behavioral programs. If this is the case, they can participate in the Prevention of Recidivism Program without being referred to further (specialized) treatment.

Offenders who qualify for program-entry based on inclusion criteria (see Chapter 3 for a study that has focused on program qualification) are informed about the program and are invited to participate in the program. Participation in the program is voluntary, but detainees who participate can be placed in prison facilities with a lower security level where they can be granted more freedom and have the ability to go on leave. Detainees who decide not to participate will have to spend the remainder of their detention period in a fully-guarded facility with limited options to go on leave (Dutch Prison Service & Dutch Probation Organizations, 2007). If an offender has decided to take part, the program starts with assessment of criminogenic needs (i.e., factors contributing to reoffending), overall likelihood of recidivism, expected responsivity to treatment and need for further (specialized) evaluation (if a recent risk assessment is already available, this can be used). Based on this assessment, a re-integration plan is then drawn up. Depending on the identified needs, criminogenic need specific treatment modules can be included in an offender's individual re-integration plan. After discussing it with the concerning detainee, the re-integration plan is then carried out during the remaining detention period.

Treatment participation

A previous study has shown that about half of the candidates who were eligible for participation in the Prevention of Recidivism Program, between 2008 and 2013, did not enter the program (Bosma, Kunst & Nieuwbeerta, 2013). Non-participation is a common problem in correctional rehabilitation practices. Currently, there is extensive knowledge on the potential effectiveness of prison-based treatment programs (Andrews & Bonta 2003; Cullen

2 Note that the *Judicial Behavioral Intervention Accreditation Committee* was replaced by the *accreditation committee interventions* in 2015 (Parliamentary Papers, 2014/15).

& Gendreau, 2000; Gendreau, 1996), treatment programs can however only be successful if offenders actually take part in treatment. Besides the obvious reason of not adequately targeting risk for recidivism and criminogenic needs if detainees do not want to participate in treatment, there are two other reasons to be concerned about treatment non-participation. First, if potential participants do not engage in treatment, expensive treatment places will be wasted. Second, non-engagement may be selective, which may form a problem for assessing the effectiveness of rehabilitation programs. When selective non-participation is not adequately taken into account, effectiveness of treatment programs may be overestimated in effect studies. Knowledge on determinants of treatment participation is therefore also important when assessing a treatment program's effectiveness.

Surprisingly, although (selection in) participation of prison-based rehabilitation treatment programs is of great scientific and societal importance, little is known about who is most likely to (not) participate in prison-based treatment programs. This study therefore examines factors associated with program participation. To guide research into determinants of prison-based treatment participation, the following theoretical framework may be used.

4.2 Theoretical framework

As mentioned, previous studies indicated that treatment programs can be effective in reducing future criminal behavior among offenders. Several theoretical perspectives were brought forward to explain the mechanisms through which treatment is believed to reach its goals, the most renowned of which is the aforementioned RNR-model (Andrews, Bonta & Hoge, 1990). Explaining treatment engagement (instead of effectiveness) may however be another matter. In order to explore the mechanisms associated with treatment program participation, we would therefore like to briefly discuss three theoretical models: the *General Personality and Cognitive Social Learning Perspective of Criminal Behavior* (Andrews & Bonta, 2006), the *Good Lives Model* of offender rehabilitation (Ward & Brown, 2004), and *Multifactor Offender Readiness Model* (Ward, Day, Howells & Birgden, 2004).

The *General Personality and Cognitive Social Learning Perspective of Criminal Behavior* (Andrews & Bonta, 2006) aims to explain criminal behavior, and is frequently brought forward to explain the mechanisms behind the RNR-model. According to this theory, criminal behavior represents a personality predisposition that is learned (or reinforced) in a social environment. The learning process of criminal behavior is governed by the expected and actual consequences of behavior. Behavior that is (expected to be) rewarded is likely to occur, and behavior that is (expected to be) punished is not likely to occur. The negative and positive consequences of criminal behavior can be delivered by others (such as partners or family members), can stem from within the person of the offender (for example feelings of pride or shame), or can be produced by the criminal behavior itself (such as a high after

injecting a drug; see Andrews & Bonta, 1998; 2006; Bonta, 2002; Bonta & Andrews, 2007). Criminal behavior can be expected when the rewards and costs for crime outweigh the rewards and costs for pro-social behavior. Risk factors are essentially characteristics that signal rewards for criminal behavior, and demote costs (Andrews, Bonta & Wormith, 2011). For example, if an offender has antisocial peers, these may reinforce criminal behavior, and if an offender does not have a job, this may also stimulate criminal behavior (in order to make ends meet). Following the General Personality and Cognitive Social Learning Perspective of Criminal Behavior, a correctional treatment program can be effective in reducing future re-offending if it is able to reduce or remove these risk factors.

As mentioned, the General Personality and Cognitive Social Learning Perspective of Criminal Behavior perspective was developed to explain criminal behavior, and is often marshalled to clarify how treatment programs can influence future criminal behavior. However, if an offender's risk and needs have a vital function in determining their cost-benefit analyses to take part in criminal behavior, these risk factors could perhaps also influence their perceptions on taking part in treatment to help them stop their criminal ways (Wormith & Olver, 2002). This can be explained as follows: Having (severe) risk factors means that an offender is in great need for treatment, which – following an RNR approach – indicates that the offender will have to attend an extensive program. However, these same risk factors may influence (alike they govern the deliberations to (not) engage in criminal behavior) the expected costs and rewards of engaging in treatment. For example, an addicted offender who is eligible for drug treatment may – influenced by risk factors such as addiction, an antisocial peer network and lack in pro-social bonds with family and friends – not see the benefits of participating in treatment, but will instead expect great difficulties and perhaps failure. Therefore, it is hypothesized that (severe) risk factors will negatively influence odds of treatment participation.

Modern risk assessment instruments (so-called fourth generation tools, see Andrews, Bonta & Wormith, 2004; 2006) usually take into account twelve risk domains, that were shown salient in predicting future re-offending; (1) offending history, (2) current offence and pattern of offences, (3) accommodation, (4) education; work; and training, (5) financial management and income, (6) relationships with partner and relatives, (7) relationships with friends and other acquaintances, (8) drug misuse, (9) alcohol misuse, (10) emotional well-being, (11) thinking and behavior, and (12) attitudes/orientation. Therefore, based on the General Personality and Cognitive Social Learning Perspective of Criminal Behavior, it is expected that offenders with higher risk assessment scores (concerning the twelve subscales abovementioned), will be less likely to participate in treatment programs that aim to help them desist from criminal behavior.

A second rehabilitation theory used to predict outcomes of correctional rehabilitation that is unquestionably gaining popularity is the *Good Lives Model* [GLM] of offender rehabilitation (Ward & Brown, 2004). The GLM

was formulated as an alternative to the RNR-model, and moves away from the RNR-model by stating that a focus on risk-reduction is not enough to get people motivated to alter their behavior (Ward & Gannon, 2006; Ward, Melser & Yates, 2007). While the risk centered RNR-model primary focuses on the detection and modification of risk factors, the more strength-based (Whitehead, Ward & Collie, 2007) approach of the GLM concentrates on creating competencies in offenders and by doing so, reduce risk more indirectly (Willis, Ward & Levenson, 2014). In a nutshell, the GLM proposes that an offender's risk for committing further crimes can be reduced by enhancing an offender's abilities to attain *primary human goods* (Ward & Steward, 2003). Ward and others have proposed a list of eleven areas of primary goods (life; knowledge; excellence in play; excellence in work; excellence in agency; inner peace; friendship; community; spirituality; happiness; and creativity; Ward & Brown, 2004; Ward & Gannon, 2006; Ward & Marshall, 2004; Ward, Melser & Yates, 2007), which are supposedly sought after by all humans to some degree, while the order of which are dependent on an individual's values and life priorities (Ward & Brown, 2004). *Secondary goods* are required to provide concrete ways to fulfill primary goods. For example, the primary good of excellence in work requires one to have a job. An offender's chances of attaining primary goods depends on the possession of internal capabilities (skills, attitudes, beliefs) and external conditions (opportunities, support) and can be frustrated or blocked by risk factors (Ward & Gannon, 2006; Ward, Melser & Yates, 2007; Ward & Stewart, 2003). Although the GLM, alike the RNR-model, deals with explaining correctional treatment effectiveness, it also prescribes the conditions required for an offender to effectively take part in treatment. These conditions are pooled in the concept of *treatment readiness*, which according to the GLM is a prerequisite for effective rehabilitation (Ward & Brown, 2004; Ward & Gannon, 2006; Ward, Melser & Yates, 2007).

A model that can be used to specify the concept of treatment readiness more clearly is the *Multifactor Offender Readiness Model* [MORM] (Ward, Day, Howells & Birgden, 2004). MORM is based on the notion that behavioral change is enlarged when an offender is ready for treatment (Casey, Day & Howells, 2005; McMurran & Ward, 2010; Ward et al, 2004). Treatment readiness, first conceptualized by Serin and Kennedy (1997) and Serin (1998), is believed to be a broader concept than treatment motivation, which exclusively deals with the will to engage. It can be defined as the presence of characteristics within the client and/or therapeutic situation which are likely to endorse therapeutic engagement and therefore, behavioral change. Offenders are ready for treatment if they (1) are motivated, (2) are able to respond to treatment, (3) find treatment meaningful and (4) have the capacities to successfully enter correctional treatment programs (Howells & Day, 2003).

Consequently, an offender that is not motivated, is not able to respond to treatment, does not find treatment meaningful and does not have the capacities to successfully enter a program, is expected to take part in treatment. Therefore, based on the Multifactor Offender Readiness Model, it can

be hypothesized that offenders with less treatment readiness will be less likely to participate in treatment programs that aim to help them desist from criminal behavior.

4.3 Previous research

The focus of this study is treatment participation in a prison-based treatment program; a subject that is vastly understudied by previous research. In order to provide some empirical underpinning to the current study on program participation we therefore had to draw inspiration from an adjacent research area: studies that have focused on prison-based treatment non-*completion*.

The lack of focus on treatment non-*participation* is perhaps unexpected, since treatment non-*completion* has been of growing concern in the broad range of mental health services, particularly among offender populations (Wortmith & Olver, 2002): As a result, a growing number of studies conducted have focused on treatment non-completion (attrition) in offender samples. These studies have however mainly focused on treatment engagement in *community*-based programs, and largely ignored *prison*-based programs. To exemplify: A systematic review conducted in 2011 identified 114 studies that have been published between 1982 and 2010 (Olver, Stockdale & Wormith, 2011). Only 25 of these studies have focused on attrition in prison-based treatment programs. These studies have confirmed our hypothesis that risk factors (characteristics associated with re-offending) were related to treatment engagement. For example, it was shown that offenders with a higher overall risk for re-offending (an overall score that incorporates both static and dynamic risk factors on several domains) were less likely to complete treatment (Berman, 2005; Nunes & Cortoni, 2006a; Nunes & Cortoni, 2006b; Nunes & Cortoni, 2008; Olver & Wong, 2009; Walters, 2004; Wormith & Olver, 2002). Additionally, it was shown that offenders with a more extensive criminal history and more severe current offence (i.e. offences for which they are detained) were less likely to complete correctional treatment programs (Berman, 2005; Geer, Becker, Gray & Krauss, 2001; McGrath, Cumming, Livingston & Hoke, 2003; Moore, Bergman & Knox, 1999; Nunes & Cortoni, 2008; Seager, Jellicoe & Dhaliwal, 2004). Results have also indicated that treatment readiness was shown to be related to treatment completion; offenders with less treatment readiness were shown less likely to successfully complete prison-based programs (Nunes & Cortoni, 2006a; Nunes & Cortoni, 2006b; Ogloff, Wong & Greenwood, 1990; Pelissier, 2007; Wormith & Olver, 2002).

In line with these findings, it would be worthwhile to explore if *participation* in prison-based treatment programs is influenced by comparable factors. To sum up the above, based on past empirical work in a different but adjacent research field, it is expected that lower risk assessment scores and more treatment readiness will be determinants of entry in a prison-based treatment program aimed to help offenders desist from future criminal behavior.

4.4 The current study

Given the aforementioned, the purpose of the current study was to examine determinants of treatment participation among correctional rehabilitation program candidates in The Netherlands. Three research questions were proposed: (1) How many offenders participated in the Prevention of Recidivism Program? (2) What were their characteristics? And (3) Which factors determined program participation? Based on theoretical grounds, it was expected that offenders with less treatment readiness would be less likely to participate in prison-based treatment programs. Additionally, based on research that has focused on prison-based treatment completion, it was expected that offenders with lower risk assessment scores would be less likely to participate in prison-based treatment programs.

4.5 Methods

Sample and Procedure
To address the research question proposed, data were analyzed from a sample of 886 male offenders who were candidate for the Prevention of Recidivism Program and were included in a longitudinal research project on the impact of imprisonment on Dutch detainees and their families – the *Prison Project*. The Prison Project's population-based sample comprises the total inflow of male detainees put in pre-trial detention between October 2010 and March 2011 in houses of detention in The Netherlands. Inclusion criteria were: aged between 18 and 65 and born in The Netherlands (N=3.981). The *Dutch Prison Service* provided data from prison registration systems on all respondents, including data on background characteristics, offence information, and data from the Prevention of Recidivism Program registration database. Data regarding treatment readiness, and risk for reoffending were provided by the *Dutch Probation Service*. The RISc-database contained risk assessment data on 787 (88.8%) of the total sample of 886 offenders. Unfortunately, risk assessment data was not available on all respondents. This could be caused by the fact that risk assessment was not conducted if offenders were not willing to participate, or if there was a lack in available staff-members that could administer risk assessment, or if an offender was released early (unexpectedly).

Measures
To determine program participation, our dependent variables of interest in this chapter, the Prevention of Recidivism Registration System was consulted. In this database, all activities about participation and completion of the Prevention of Recidivism Program, including in-depth treatment information, is gathered. This registration system provides exact information regarding the status of an offender's program participation, which means that information could easily be retrieved. The system also provides some basic information regarding reasons for non-participation. Therefore, using

of the non-participation coding scheme (in which a large variety of reasons for non-participation are incorporated), a distinction could be made between non-participation caused by organizational circumstances (non-participation in which the offender had no influence; such as a lack of treatment places available, staff shortages or not enough time to get an offender enrolled in treatment because of a remaining prison sentence that was not long enough) and offender instigated non-participation (non-participation instigated by the offender; refusal).

Background characteristics included were age, ethnic background (native vs. non-native) and current offence (violent, property, damage, drug-related and other). Age was calculated from the prison registration systems by date of birth and the date of their prison entry. Ethnic background (non-native vs. native; Statistics Netherlands defines a person as having a non-native background if at least one of his/her parents was born abroad) was obtained from municipal data, and if not available, was subtracted from risk assessment data. Offence type was drawn from the Prison Registration system and was recoded in violent (violent offences) and non-violent (property, damage, drug related and other offences).

Treatment readiness was determined by assessing an offender's motivation to change deviant behavior and his or her willingness to participate in treatment as estimated by an experienced probation service worker during a personal interview (as part of the risk assessment instrument described in the following paragraph). Ready for treatment was coded as 1 and not ready for treatment was coded as 0.

To estimate risk factors, scores on the Dutch-language Recidivism Assessment Scales (RISc) were used, an instrument based on and highly comparable to the British Offender Assessment System (OASys; Howard, Clark & Garnham, 2003). The *RISc* is based on the RNR principles and was designed to (a) assess an offender's likelihood of recidivism (defined as a new conviction), (b) identify and classify offending-related needs, (c) assess an offender's responsivity to treatment, and (d) indicate the need for further risk evaluation (Adviesbureau van Montfoort & Reclassering Nederland, 2004). The RISc consists of 12 sections, each relating to a different criminogenic risk domain: (1) offending history, (2) current offence and pattern of offences, (3) accommodation, (4) education; work; and training, (5) financial management and income, (6) relationships with partner and relatives, (7) relationships with friends and other acquaintances, (8) drug misuse, (9) alcohol misuse, (10) emotional well-being, (11) thinking and behavior, and (12) attitudes/orientation. The scores on domains 1 and 2 are combined into one score concerning past and current offences. The overall risk level and criminogenic needs scores are calculated by summing weighted item scores within each section, with higher scores corresponding to higher need levels (Adviesbureau van Montfoort & Reclassering Nederland, 2004; Bosker, 2009; Van der Knaap et al., 2012). The RISc is administered by trained probation service workers and is used to advise the prosecutor and the court and to formulate supervision and rehabilitation plans (Van der Knaap, Leenarts,

Born & Oosterveld, 2012). Research has demonstrated the intraclass-reliability, internal consistency and predictive validity of the RISc to be adequate (Van der Knaap, Leenarts & Nijssen, 2007; Van der Knaap & Alberda, 2009). The weighted scale scores were included in statistical analyses.

Statistical analyses

To describe our study sample, subjects were divided into three groups: (1) detainees who had entered treatment (program participants; n = 541), (2) detainees who could not participate in treatment due to organizational constraints (non-participants: organizational reasons; n = 279), and (3) detainees who refused to participate in treatment (non-participants: refused; n = 66). After defining groups, bivariate descriptive analyses were used to describe the characteristics of the research population and to examine the relation between these characteristics and program participation. Multinomial logistic regression analyses was then applied to determine if treatment readiness and risk factors served as predictors of program participation (program participation was coded as 0, n = 541). The independent variables included were background characteristics (age, ethnicity and type of offence), treatment readiness, and weighted risk assessment scores (offending history, current offence and pattern of offences, accommodation, education, work, and training, financial management and income, relationships with partner, family, and relatives, relationships with friends and acquaintances, drug misuse, alcohol misuse, emotional well-being, thinking and behavior and attitudes and orientation).

4.6 Results

Bivariate analyses

Table 1 summarizes relevant sample characteristics for program participants (group 1), detainees who could not participate in treatment due to organizational reasons (group 2), and detainees who refused to participate in treatment (group 3). As shown in Table 2, 541 detainees (61.1%) of 886 candidates entered the treatment program: the program participants. A number of 279 offenders (31.5%) could not participate due to organizational circumstances, while 66 detainees (7.4%) who were eligible refused to take part.

As shown, group differences were found regarding age, ethnicity, type of offence, treatment readiness and the risk scale emotional well-being. Concerning age, it was shown that offenders who could not take part for organizational reasons were a slightly older (M=32.1) compared to offenders who did participate (M=29.8). Regarding ethnicity it was shown that offenders who had decided to take part in the program were more often from a native ethnic background (57.5%), compared to offenders who could not take part for organizational reasons (53.8%), or who refused to participate (43.9%). With respect to type of offence, results indicated that offenders who participated in treatment, were more often incarcerated for having committed a violent offence (62.7%), compared to offenders who could not participate for

organizational reasons, who were less often incarcerated for having committed a violent offence (45.5%). Concerning treatment readiness it was shown that offenders who refused to participate in treatment were, less often compared to participants (59.9%) and those who could not take part (46.2%), treatment ready (33.3%). Finally, it was shown that our treatment groups differed on the risk domain emotional well-being; offenders who could not participate in treatment due to organizational constraints had reported a small but significantly higher score regarding emotion problems (*M*=2.7), compared to offenders who did participate (*M*=2.2).

So in general, it was shown that those who ended up participating in treatment were generally somewhat younger, of native ethnic background, more often had committed a violent offence, and were more often deemed treatment ready. However, few differences were observed on another set of variables on which we would expect to see the groups differ; risk factors.

Table 1. Group characteristics participating and non-participating detainees (N=886)

	1. Participation (*n*=541)	2. Non-participation: organizational reasons (*n*=279)	3. Non-participation: refused (*n*=66)	Total (*N*=886)	
	M(SD)/%	*M(SD)*/%	*M(SD)*/%	*M(SD)*/%	Sig.
Age	29.8 (10.4)	32.1 (10.2)	31.0 (12.1)	30.6 (10.5)	*1/2
Ethnicity (native vs. non-native or unknown)	57.5	53.8	43.9	55.3	*** 1/2 1/3
Type of offence (violent vs. non-violent)	62.7	45.5	53.0	56.5	*** 1/2
Treatment readiness (ready vs. not or unknown)	59.9	46.2	33.3	53.6	*** 1/2 1/3
Risk factors					
Offending history & current offence (0-50)	18.8 (12.9)	18.2 (12.9)	21.8 (14.0)	18.8 (13.0)	
Accommodation (0-12)	4.0 (4.2)	4.1 (4.2)	4.8 (4.2)	4.1 (4.2)	
Education, work & training (0-20)	9.4 (6.6)	9.4 (6.7)	11.1 (7.4)	9.7 (6.7)	
Financial management & income (0-12)	5.0 (3.8)	4.9 (3.7)	4.5 (3.6)	4.9 (3.8)	
Relationships with partner & relatives (0-6)	2.7 (1.7)	2.8 (1.8)	3.0 (1.8)	2.7 (1.8)	
Relationships with friends & acq. (0-15)	6.4 (4.4)	6.1 (4.4)	6.7 (4.9)	6.3 (4.4)	
Drug misuse (0-15)	5.7 (5.2)	6.5 (5.6)	6.1 (6.1)	6.0 (5.4)	
Alcohol misuse (0-5)	1.6 (1.9)	1.7 (1.9)	1.5 (1.7)	1.7 (1.9)	
Emotional well-being (0-6)	2.2 (1.7)	2.7 (1.9)	2.5 (1.7)	2.4 (1.8)	*1/2
Thinking & behavior (0-12)	7.9 (3.1)	7.8 (3.3)	8.7 (3.2)	8.0 (3.1)	
Attitudes & orientation (0-15)	6.4 (4.6)	6.3 (4.6)	7.8 (4.9)	6.5 (4.7)	

Note: Behind significant levels it is demonstrated which groups differed. For example: 1/2 means post-hoc analysis showed there was a significant difference between group 1 and group 2.
* $p < .05$ ** $p < .01$ *** $p < .001$

Multivariate analysis

The results of the multinomial regression analysis, testing the influence of background characteristics, treatment readiness and risk factors on program participation are presented in Table 2. As shown, program participation (versus program non-participation for organizational reasons) was significantly associated with age, ethnicity, type of offence and the risk factor emotional well-being. Concerning type of offence it was shown that offenders who had committed a violent offence, were more often among program participants (OR=1.71), than among those who could not participate for organizational reasons. It was also shown that more (severe) emotional problems, as measured by the risk scale emotional well-being, increased odds of program participant group membership (OR=1.22), versus program non-participation for organization reasons group membership.

Table 2. Logistic regression model on program participation

	Participation (ref) VS non-participation: organizational reasons			Participation (ref) VS non-participation: refused		
	OR	CI	Sig.	OR	CI	Sig.
Age	1.01	[1.00 – 1.03]		1.01	[0.98 – 1.05]	
Ethnicity (native (ref) vs. nonnative)	0.96	[0.89 – 1.04]		0.94	[0.84 – 1.06]	
Type of offence (non- violent (ref) vs. violent)	1.71	[1.21 – 2.41]	**	1.29	[0.70 – 2.39]	
Treatment readiness	1.30	[0.91 – 1.86]		2.68	[1.43 – 5.03]	**
Risk factors						
Offending history and current offence	0.99	[0.98 – 1.01]		1.02	[0.99 – 1.04]	
Accommodation	0.97	[0.93 – 1.02]		1.04	[0.96 – 1.14]	
Education, work and training	1.02	[0.99 – 1.05]		1.02	[0.97 – 1.08]	
Financial management and income	0.97	[0.92 – 1.02]		0.90	[0.82 – 0.99]	*
Relationships with partner and relatives	1.01	[0.90 – 1.14]		1.09	[0.88 – 1.35]	
Relationships with friends and acquaintances	0.99	[0.94 – 1.03]		1.00	[0.92 – 1.08]	
Drug misuse	1.03	[1.00 – 1.07]		1.00	[0.93 – 1.06]	
Alcohol misuse	1.01	[0.92 – 1.12]		0.89	[0.75 – 1.06]	
Emotional well-being	1.22	[1.08 – 1.38]	**	0.94	[0.75 – 1.18]	
Thinking and behavior	0.95	[0.88 – 1.03]		1.08	[0.93 – 1.25]	
Attitudes and orientation	0.99	[0.94 – 1.04]		0.98	[0.90 – 1.08]	

Note: Overall model Wald χ^2 (53.894, 16), p <..001, Cox and Snell R^2 = .064, Nagelkerke R^2 = .078.
* p <.05 ** p < .01 *** p < .001

Program participation (versus program non-participation: refused) was also significantly associated with treatment readiness and the risk scale financial management and income. Offenders who were considered treatment ready were more often among program participants (OR=2.68), than among those who refused to participate. Additionally, a higher score on the scale financial management and income, decreased odds (OR=0.90) of being among offenders participated (versus those who refused).

The results indicate that, as was expected, treatment readiness plays an important role in a detainee's participation in a prison-based rehabilitation program. However, most risk factor domains do not seem to determine program participation, except for the scale emotional well-being and financial management and income. These results show that treatment readiness among offenders eligible for rehabilitation programs may be an important aspect to take into account for correctional rehabilitation workers.

4.7 Discussion

The purpose of the current study was to examine to what extent treatment readiness and risk factors were related to participation in a prison-based rehabilitation program. To answer the research questions raised in this article, data were used from a large-scale, longitudinal research project, studying the effect of imprisonment on the life of detainees and their families in The Netherlands (the Prison Project).

Explaining participation

Based on theoretical and empirical considerations, this contribution proposed a theoretical model in which program participation was predicted by two (domains of) variables, namely *treatment readiness* and *risk factors*.

Results have shown that treatment readiness, in line with the suggested hypothesis, was related to program participation. Offenders who were ready for treatment showed a higher likelihood of being among the group of offenders that participated in treatment, then among those that refused to participate. Regarding risk factors, it was hypothesized that a higher score on risk domains would decrease chances of participating in correctional treatment programs. Based on results however, it has to be concluded that the current study does not provide evidence to support this statement. Only two risk domains correlated with treatment participation. Firstly, more (severe) emotional well-being problems was shown to be related to increased participation rates, where having more (severe) problems regarding financial management and income decreased participation rates.

In conclusion, the current study provided important evidence concerning the hypothesized relationship between *treatment readiness* and program participation. These findings are consistent with the premise made based on the Multifactor Offender Readiness Model [MORM] (Ward et al., 2004), stating that treatment readiness is an important predictor of treatment engagement. The results provided no considerable evidence that an offender's risk assessment outcomes strongly influenced program participation. This was not in line with expectations based on outcomes of previous studies, which found that risk factors were significantly correlated with program completion (see Olver, Stockdale & Wormith, 2011). The current study did however not focus on treatment completion, and perhaps it therefore has to be concluded that risk factors are not related to treatment program entry.

Alternatively, the fact that risk scores do not predict treatment participation may also be explained by the lack of variance in risk scores between program participants and non-participants. It seems that the research population was quite homogeneous, as risk factors did not seem to differ much between groups.

Limitations and implications

This study had some limitations. First, the sample used only involved male detainees, between the age of 18 and 65, who were born in The Netherlands and entered prison in pre-trial detention. Although the research sample was large, and in most respects represented the overall prison population in the Netherlands (in terms of gender, age and entry in pre-trial detention), the fact that offenders were only included if they were born in The Netherlands means that the findings cannot be generalized to detainees who were born in other geographic locations, which is roughly 45 percent of the Dutch inmate population (Linckens & de Looff, 2015), making replication of this study among a broader research population required. A second limitation was caused by the fact that this study relied on official registration data. Although this had great advantages, since we were able to include a large research population, on which a broad range of data was available, it also meant we had to cope with the challenges of working with data that were never collected for research purposes. The RISc database for example, which fortunately consisted of every relevant criminogenic need scale required, only included a limited measure of treatment readiness; the clinical judgment of a trained probation officer. This implied that we could quite well explore the influence of risk factors on treatment participation, a relation expected based on the General Personality and Cognitive Social Learning Perspective of Criminal Behavior (Andrews & Bonta, 2006) and Good Lives Model (Ward & Brown, 2004), but could not precisely test the premises brought forward based on the *Multifactor Offender Readiness Model* (Ward, Day, Howells & Birgden, 2004). In future studies it would be preferable to combine registration data with panel data, in which a validated instrument, based on the model's four-component structure, is used to measure treatment readiness.

Despite the aforementioned limitations, the current study represents a major advancement in the largely neglected field of prison-based rehabilitation program participation, and a relevant contribution in the area of correctional treatment research and practice. First of all, outcomes suggest that few risk domains seem to correlate to treatment participation. This may be seen as an indication that treatment necessity is equally high among all offenders. Therefore, the correctional system should aim to include every offender in treatment. The results have also made clear, quite convincingly, that treatment readiness was a determinant of treatment participation. This indicates the importance of both assessing and (perhaps prior to program entry) enhancing an offender's treatment readiness to improve the likelihood that offenders will agree to participate in correctional treatment.

And finally, the number of offenders that could not enter treatment due to various types of organizational circumstances was substantial. These offenders did not refuse to take part, and were deprived of the opportunity to engage in and benefit from treatment aimed to help them desist from future criminal behavior. Again, these offenders were, based on their risk and need assessment outcomes, in an equally high need for treatment, which makes their inability to engage even more problematic.