



UvA-DARE (Digital Academic Repository)

Differences in risk factors for violent, nonviolent, and sexual offending

van der Put, C.E.; Assink, M.; Gubbels, J.

DOI

[10.1080/24732850.2020.1735248](https://doi.org/10.1080/24732850.2020.1735248)

Publication date

2020

Document Version

Final published version

Published in

Journal of Forensic Psychology Research and Practice

License

CC BY-NC-ND

[Link to publication](#)

Citation for published version (APA):

van der Put, C. E., Assink, M., & Gubbels, J. (2020). Differences in risk factors for violent, nonviolent, and sexual offending. *Journal of Forensic Psychology Research and Practice*, 20(4), 341-361. <https://doi.org/10.1080/24732850.2020.1735248>

General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.



Differences in Risk Factors for Violent, Nonviolent, and Sexual Offending

Claudia E. van der Put, Mark Assink, and Jeanne Gubbels

Research Institute of Child Development and Education, University of Amsterdam, Amsterdam, Netherlands

ABSTRACT

Whether risk factors for recidivism are equally predictive in different offender groups and across recidivism types is a question of high clinical importance. Therefore, this study aimed to examine (a) differences in impact of general delinquency risk factors for three different recidivism types, and (b) differences in the presence of general delinquency risk factors between five different offender groups. The studied sample comprised 8,665 Dutch adult offenders, in which risk factors for recidivism were assessed with the Recidivism Risk Assessment Scales (RISc). Results showed that risk factors were generally stronger related to nonviolent than to violent recidivism, and only weakly or not at all related to sexual recidivism. The total prevalence of risk factors was highest in generalists (non-specialized offenders), followed by nonviolent, violent, sexual, and one-time offenders. In violent offenders, risk factors in the domains relationship with the partner/family, emotional well-being, antisocial personality patterns, and antisocial attitudes/cognitions were more prevalent than in nonviolent offenders, whereas in nonviolent offenders, risk factors in the domains education/work, financial management/income, antisocial friends/acquaintances, and drug abuse were more prevalent. In conclusion, risk factors differ in prevalence and impact across offender groups and recidivism types. Therefore, different treatment approaches are needed for successfully reducing different recidivism types across offender groups.

KEYWORDS

Violent offending; sexual offending; nonviolent offending; risk factor; specialist offender; generalist offender

Research has shown that recidivism is generally high among offenders. For example, Durose, Cooper, and Snyder (2014) showed that 67.8 percent of the US state prisoners released in 2005 were arrested within three years of release, and 76.6% were arrested within five years of release. High recidivism rates are also found in other Western countries. In the Netherlands, 2-year recidivism rates for adult offenders ranges from 34% to 47% depending on whether the sample included arrested, convicted, or imprisoned persons (Wartna, Blom, & Tollenaar, 2011). Given the detrimental effects of criminal recidivism for both victims, offenders, and society as a whole, it is highly

CONTACT Claudia E. van der Put  c.e.vanderput@uva.nl  Research Institute of Child Development and Education, University of Amsterdam, P.O. Box 15780, Amsterdam, NG 1001, The Netherlands

© 2020 The Author(s). Published with license by Taylor & Francis Group, LLC.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

essential to break this cycle of offending by addressing predictors of recidivism in interventions. In the past, many studies have been directed at identifying risk factors for general recidivism and showed that variables such as age, gender, number of committed offenses, mental health problems, substance abuse, and antisocial associates are associated with reoffending (see, for instance, Bonta, Law, & Hanson, 1998; Cottle, Lee, & Heilbrun, 2001; Gendreau, Little, & Goggin, 1996). Despite this body of research, far less is known about differences in risk factors for specific types of recidivism, such as nonviolent recidivism, violent recidivism, and sexual recidivism. It is important to increase this knowledge, as for any specific type of recidivism, some risk factors may be more important than other risk factors. Identifying differences in risk factors across recidivism types is not only important for a better understanding of why specific types of recidivism occur, but also for advancing the practical tasks of risk and needs assessment. Therefore, the aim of this study was to examine potential differences in risk factors across specific types of recidivism.

A substantial number of meta-analysis on the effects of static and dynamic risk factors for delinquent behavior has increased our knowledge of major, moderate, and minor risk factors in different groups of offenders (see, for instance, Assink et al., 2015; Bonta et al., 1998; Gendreau et al., 1996; Hanson & Morton-Bourgon, 2005; Lipsey & Derzon, 1998). Based on the results of these reviews, Andrews and Bonta (2010) formulated eight major risk factors for criminal conduct, to which they referred to as the “Central Eight” risk factors: (1) having a history of antisocial behavior, (2) antisocial associates, (3) antisocial attitudes and cognitions, (4) having an antisocial personality, (5) education/employment problems, (6) family/marital problems, (7) substance abuse, and (8) involvement in antisocial recreational activities. The first four, referred to as the “Big Four” risk factors, have the strongest impact on recidivism, and can be regarded as the four most important factors. Interventions that successfully address the central eight risk factors have been empirically associated with reduced recidivism (see, for instance, Andrews, Bonta, & Hoge, 1990; Andrews & Bonta, 2010; Smith, Gendreau, & Swartz, 2009). Further, because these eight risk factors substantially contribute to a proper estimate of the risk of future criminal behavior, they are often assessed in instruments for assessing the risk of recidivism, such as the Level of Service/Case Management Inventory (LS/CMI; Andrews, Bonta, & Wormith, 2004) and the Youth Assessment and Screening Instrument (YASI; Orbis Partner, 2007).

Although the predictive value of risk factors has been well studied for recidivism in general, much less attention has been paid to the predictive value of risk factors for specific types of recidivism, such as violent, property, and sexual recidivism. Bonta, Harman, Hann, and Cormier (1996) examined differences in the predictive value between static risk factors for general

recidivism and static risk factors for violent recidivism, and found that risk factors were more strongly related to general recidivism than to violent recidivism. On the other hand, Hanson (2009) concluded in his review that the predictive value of risk factors is similar for general, violent, and sexual recidivism, with the exception that having deviant sexual interests is only a risk factor for sexual recidivism. However, this conclusion was based on a comparison of results of various meta-analyses, in which studies examining different offender populations were included. In this review, risk factors for general recidivism in adult offenders, risk factors for violent recidivism in mentally disordered offenders, and risk factors for sexual recidivism in sexual offenders were synthesized together, limiting the inferences that can be drawn on possible differences in risk factors for general, violent, and sexual recidivism. Schmidt, Campbell, and Houlding (2011) examined the predictive validity of several risk assessment instruments in adolescents over a follow-up period of on average 10 years. They found that each of the examined instruments predicted general recidivism with moderate-to-large effect sizes. However, variation in predictive validity across recidivism types was found. For instance, the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge & Andrews, 2002) only weakly predicted sexual recidivism, whereas the youth version of the Psychopathy Checklist (PCL:YV; Forth, Kosson, & Hare, 2003) was strongly predictive of sexual, violent, nonviolent, and “technical” recidivism (e.g., dangerous driving, parole violations).

An important question that has not received much attention in research is how risk factors for recidivism differ in nature and impact across offender groups, such as violent offenders and property offenders. There is substantial research aimed at identifying variables as risk factors for specifically sexual offense recidivism (see, for instance, Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2005; Mann, Hanson, & Thronton, 2010; Prentky, Knight, & Lee, 1997), but only a small number of studies is available on differences in risk factors across offender groups. For instance, Craig, Browne, Beech, and Stringer (2006) examined characteristics of sexual, violent, and general (non-sexual and nonviolent) offenders and found that violent offenders have significantly more chaotic lifestyles, are more likely to have a history of substance abuse, and display greater psychopathology than both sexual offenders and general offenders. Seto and Lalumière (2010) conducted a meta-analysis of studies comparing characteristics of adolescent sexual offenders to characteristics of adolescent non-sexual offenders and found that male sexual offenders had a much less extensive criminal history, fewer antisocial associates, and fewer substance use problems than their non-sexual offending counterparts. Lai, Zeng, and Chu (2016) focused on juvenile nonviolent versus juvenile violent offenders and compared characteristics of nonviolent offenders, violent offenders, and violent plus offenders, of whom the latter had committed both violent and nonviolent offenses. They found that the violent plus offenders were younger, had more static and dynamic risk factors, and were therefore more likely to reoffend

than nonviolent offenders. These studies reveal that it cannot be assumed in general that the prevalence and importance of risk factors are equal across groups of offenders.

An important task in forensic clinical practice is to assess the risk of recidivism and to refer offenders to appropriate rehabilitative interventions after assessing the dynamic risk factors, or criminogenic needs, that must be targeted in these interventions (Andrews et al., 1990; Andrews & Bonta, 2010). In both types of assessment, it is essential that the appropriate risk factors are measured and properly weighed to reach valid assessments. This not only holds for preventing general recidivism, but also for preventing specific recidivism, such as violent and nonviolent recidivism. As differences in risk factors across recidivism types have not been studied extensively, the primary aim of this study was to examine differences in the prevalence and predictive value of risk factors for violent, nonviolent, and sexual recidivism in a sample of Dutch offenders who belonged to one of five offender groups: generalist offenders, specialized violent offenders, specialized sexual offenders, and specialized nonviolent offenders. As research showed that recidivism risks estimated by assessing the same set of risk factors may not be equally valid across recidivism types (Schmidt et al., 2011), a second aim was to examine to what extent a risk assessment instrument for general recidivism can be used to estimate risks for violent recidivism, nonviolent recidivism, and sexual recidivism. Pursuing these research aims is important for strengthening risk and need assessment procedures in clinical practice, in which not only generalist offenders, but also specialized offenders, need to be properly referred to the most appropriate interventions.

Method

Sample

The sample consisted of 8,665 Dutch adult offenders, of whom 7,816 (90.2%) were male and 849 (9.8%) were female. The mean age was 34.33 years ($SD = 11.91$) and ranged from 18 to 86 years. Both men and women were included in the sample, as no substantial gender differences were found in the impact of dynamic risk factors for recidivism according to previous research (Van der Knaap, 2012). All offenders had been referred to probation services by a Dutch court. The offenders were referred to probation services for violent offenses (51.0%), property offenses without violence (22.1%), property offenses with violence (6.8%), drug offenses (9.0%), sex offenses (6.2%), traffic offenses (1.4%), or other offenses (3.4%). The mean number of previous committed offenses was 9.70.

Differences in characteristics and risk profiles were examined between the following five offender groups: (1) generalists (offenders committing multiple

types of offenses): $n = 6,258$ (72.2%); (2) nonviolent specialists (offenders committing only nonviolent offenses, including property offenses without violence, public order offenses, drug offenses, traffic offenses, and other nonviolent offenses): $n = 1,030$ (11.8%); (3) violent specialists (offenders committing only violent offenses and/or property offenses with violence): $n = 169$ (2.0%); (4) sexual specialists (offenders committing only sexual offenses with or without violence): $n = 50$ (0.6%); and (5) one-time offenders (offenders who have committed any offense just once): $n = 1,158$ (13.4%).

Measures

Risk and needs assessment

The Dutch instrument *Recidive Inschattingsschalen* (RISc; Van der Knaap, Leenarts, & Nijssen, 2007 [Recidivism Risk Assessment Scales]), is used by the Dutch probation services to assess an offender's risk and needs for planning treatment and rehabilitation, and to advise the prosecutor and the court on appropriate measures. The RISc was specifically developed for probation services in the Netherlands, but is based on the British developed Offender Assessment System (OASys; Howard, Clark, & Garnham, 2003, 2006), which is used for diagnosis, needs assessment, and sanctions planning. Because the OASys is conceptually based on the internationally widely used Level of Service Inventory-Revised (LSI-R; Hollin & Palmer, 2006) and the Assessment Case management and Evaluation System (ACE; Gibbs, 1999), the RISc shows considerable similarities to the LSI-R and the ACE. The RISc is designed for the following purposes: (a) to assess an offender's likelihood of recidivism; (b) to map out offending-related (care) needs; (c) to assess an offender's responsibility; and lastly (d) to obtain an indication of the need for further specialized assessment. The instrument measures risk factors in the following domains: (1) criminal history; (2) accommodation/living situation; (3) education, work, and training; (4) financial management and income; (5) relationship with partner/family; (6) antisocial friends/acquaintances; (7) drug misuse; (8) alcohol misuse; (9) emotional well-being; (10) antisocial personality patterns; and (11) antisocial attitudes/cognitions (see Table A1 in Appendix A for sample items). In each domain, a varying number of factors is measured, adding up to an assessment of 61 risk factors in total. Most items are scored on a 3-point Likert scale with response categories 0 (no problems), 1 (some problems), and 2 (significant problems). The scores on the two items in the criminal history domain on recent and earlier committed offenses were combined into a single score for assessing an offender's criminal history. The likelihood to reoffend was expressed in a total RISc score by adding up the scores on all individual scale scores.

The RISc is administered by trained probation officers, and assessment of this instrument takes about four to five hours. In the administration

procedure, the probation officer first retrieves all available information on the offender from official files and records. Next, the offender is interviewed about all topics for which file information is unavailable, and finally, the RISC is filled out. Previous research on the psychometric properties of the RISC shows positive results on the inter-rater reliability, the internal consistency, the construct validity, and the predictive validity (Van der Knaap & Alberda, 2009; Van der Knaap et al., 2007). The RISC data that were currently analyzed were retrieved from the Dutch probation services between January 2010 and December 2011.

To determine the internal consistency of the RISC domain scales in the sample that was used in the current study, reliability analyses were performed for the total sample as well as for the five different offender groups (i.e., generalists, nonviolent specialists, violent specialists, sexual specialists, and one-time offenders). Table 1 shows McDonalds total coefficients for all subscales in the total sample and in the different offender groups. For the subscales “education, work, and training”, “drug misuse”, “alcohol misuse”, and “antisocial personality patterns” the value of McDonalds was $>.80$ in all subgroups. For the subscales “financial management and income”, “emotional wellbeing”, and “antisocial attitudes/cognitions”, the value of McDonalds was $>.70$ in all subgroups. For the subscale “accommodation” the value of McDonalds was $>.70$ in all offender

Table 1. Reliability analyses (McDonalds) for the different RISC subscales and in the different subgroups of offenders.

| Scale | Total sample (<i>n</i> = 8665) | Generalists (<i>n</i> = 6258) | Nonviolent (<i>n</i> = 1030) | Violent (<i>n</i> = 169) | Sexual (<i>n</i> = 50) | One-time (<i>n</i> = 1158) |
|---|------------------------------------|-----------------------------------|----------------------------------|------------------------------|----------------------------|--------------------------------|
| Criminal history (5 items) | .750 | .677 | .610 | .489 | .620 | .570 |
| Accommodation/Living situation (4 items) | .832 | .834 | .839 | .672 | .837 | .724 |
| Education, work, and training (7 items) | .872 | .863 | .854 | .844 | .847 | .856 |
| Financial management and income (4 items) | .759 | .750 | .762 | .751 | .757 | .769 |
| Relationship with partner/family (4 items) ^a | .659 | .656 | .696 | .529 | .710 | .615 |
| Antisocial friends/acquaintances (4 items) | .765 | .765 | .701 | .727 | .541 | .605 |
| Drug misuse (6 items) | .880 | .873 | .868 | .850 | -. ^b | .848 |
| Alcohol misuse (5 items) | .886 | .882 | .857 | .893 | .862 | .873 |
| Emotional well-being (5 items) | .789 | .775 | .801 | .819 | .688 | .830 |
| Antisocial personality patterns (8 items) | .860 | .850 | .829 | .873 | .816 | .820 |
| Antisocial attitudes/cognitions (5 items) | .847 | .845 | .824 | .837 | .860 | .762 |

^aThe scale “Relationship with partner/family” originally consisted of 5 items. However, because of the relatively low value of McDonalds (.623) and item-rest correlation (.143) we removed the item “family member has committed crimes in the past” from this scale.

^bThe item variance in this offender group for this particular subscale was too low to calculate McDonalds.

groups with the exception of the violent offender group ($r = .672$). For the subscale “antisocial friends/acquaintances”, the value of McDonalds was $> .70$ in most offender groups with the exception of the sexual ($= .541$) and one-time offender ($= .605$) groups. For the subscale “relationship with partner/family”, the value of McDonalds was $> .60$ in all offender groups with the exception of the violent offender group ($= .529$). Last, for the subscale “criminal history” a McDonalds larger than $.60$ was found in most offender groups except in the violent ($= .489$) and one-time offender ($= .570$) groups.

Recidivism

Recidivism was defined as any new conviction in a period of 3.5 years after the assessment of the RISC, and was coded as 0 (no new conviction) or 1 (at least one new conviction). The type of offenses committed in the follow up period was also noted. Nonviolent recidivism comprised property crimes without violence, public order offenses, drug offenses, traffic offenses, and other nonviolent offenses. Violent recidivism comprised violent offenses and property crimes with violence. Finally, sexual recidivism comprised sexual offenses, such as sexual assault and rape.

Recidivism data were obtained from the national government database of officially recorded information on convictions. The data used in this study were retrieved in anonymous form, as the RISC scores and the recidivism rate of each offender in the sample were merged using an anonymous identifier, meaning that data could not be linked to identifiable or individual offenders. Only the Dutch probation services could link the anonymous identifiers to individual offenders.

Analyses

The statistical analyses were conducted stepwise. First, partial point-biserial correlations (r_{pb}) between the RISC domain scores and the various types of recidivism were calculated to examine whether and how risk factors were associated with the different types of recidivism. These correlations were adjusted for gender and age, as preliminary results revealed significant associations between these variables and each recidivism type. Second, the correlation coefficients were transformed into Fisher z values, after which a series of z tests were conducted to examine differences in the (strength of the) association between a risk factor and the different types of recidivism. Third, area under the receiver-operating-characteristic curve (AUC) values were computed to examine the strength of the associations between the total RISC score and the different recidivism types, as AUC values – in contrast to correlations – are not sensitive to base rate differences. Fourth, bivariate Pearson correlation coefficients were calculated to examine the strength of the associations between the different RISC domain scores. Fifth, the relative

importance of the risk factors for each type of recidivism was determined by building three separate logistic regression models. In these models, the unique contribution of each RISC domain to the prediction of recidivism was analyzed for nonviolent, violent, and sexual recidivism, respectively. Fifth, chi-square tests were conducted to determine any differences in demographic characteristics between the offender groups. Cramer's V values were calculated to make inferences about the magnitude of differences. Last, to find out if there are differences in scores on each of the (static or dynamic) RISC domains between the five offender groups, a series of ANOVA's was performed in which was controlled for gender, origin, and age of offenders.

Ethical approval

Formal Institutional Review Board (IRB) approval for conducting this study was not required, as it concerned analyses of secondary and de-identified data, which does not pose harm to the participants, and therefore does not require IRB approval. Accordingly, this study was ethically conducted given the rules and guidelines of the Faculty Ethics Review Board (FMG-UvA) of the University of Amsterdam, the Netherlands.

Results

Table 2 shows the partial point-biserial correlations between the RISC domain scores and the different recidivism types, adjusted for gender and age. Significant positive correlations were found between all domain scores and recidivism for both nonviolent and violent recidivism. For sexual recidivism, the domain scores criminal history, antisocial friends/acquaintances, emotional well-being, antisocial personality patterns, and antisocial attitudes/cognitions were positively correlated. According to Rice and Harris (2005), the criteria for a small, medium, and large effect size at a 50% base rate are .10, .24, and .37, respectively. The recidivism rates for nonviolent recidivism, violent recidivism, and sexual recidivism were 42.8%, 21.8%, and 1.9% respectively. Therefore, adjusted criteria for small, medium, and large effect sizes were calculated using conversion formulae (Rosenthal, 1991; Swets, 1986). For a 42.8% base rate (of nonviolent recidivism), the criteria for small, medium, and large effect sizes are .10, .24, and .37, respectively. For a 21.8% base rate (of violent recidivism), these criteria are .08, .20, and .31, whereas for a 1.9% base rate (of sexual recidivism), these criteria are .03, .07, and .11. For nonviolent recidivism, medium effect sizes were found for the domains criminal history, education/work, antisocial friends, and drug misuse, whereas small effect sizes were found for the domains accommodation, financial management/income, alcohol misuse, emotional well-being, antisocial personality patterns, and antisocial attitudes. For violent recidivism, medium effect sizes were found for the domains criminal history, education/work, and

Table 2. Point-Biserial correlations between RISC scales and nonviolent, violent, and sexual recidivism, and differences in correlations between recidivism types (Expressed in Fisher's *z*).

| | Nonviolent recidivism (<i>n</i> = 3708) | Violent recidivism (<i>n</i> = 1888) | Sexual recidivism (<i>n</i> = 164) | Violent vs. Nonviolent | Sexual vs. Nonviolent | Sexual vs. Violent |
|--------------------------------------|--|---|---|---------------------------|--------------------------|--------------------------|
| Criminal history | .335** | .243** | .032** | 3.55*** | 3.93*** | 2.63** |
| Accommodation/Living situation | .208** | .135** | .011 | 2.66** | 2.49* | 1.52 |
| Education, work, and training | .257** | .203** | .021 | 2.02* | 3.00** | 2.25* |
| Financial management and income | .224** | .151** | -.004 | 2.68** | 2.88** | 1.90 ⁺ |
| Relationship with partner/family | .077** | .139** | -.003 | -2.22* | 1.00 | 1.74 ⁺ |
| Antisocial friends/ acquaintances | .268** | .170** | .029** | 3.64*** | 3.05** | 1.74 ⁺ |
| Drug misuse | .243** | .181** | -.006 | 2.30* | 3.15** | 2.30* |
| Alcohol misuse | .187** | .157** | -.001 | 1.09 | 2.36* | 1.94 ⁺ |
| Emotional well-being | .104** | .126** | .023* | -0.79 | 1.01 | 1.26 |
| Antisocial personality patterns | .222** | .230** | .041** | -0.30 | 2.29* | 2.35* |
| Antisocial attitudes/cognitions | .207** | .179** | .025* | 1.03 | 2.30* | 1.90 ⁺ |
| Total RISC score | .356** | .274** | .026* | 3.22** | 4.30*** | 3.11** |

All partial correlations were adjusted for gender and age.

⁺*p* < .10; **p* < .05; ***p* < .01; *** *p* < .001

antisocial personality patterns, whereas small effect sizes were found for all other domain scores. For sexual recidivism, small effect sizes were found for criminal history and antisocial personality patterns. The AUC value of the total RISC score was 0.723 (95% CI [0.712, 0.733]) when predicting nonviolent recidivism, 0.704 (95% CI [0.692, 0.717]) when predicting violent recidivism, and 0.585 (95% CI [0.546, 0.625]) when predicting sexual recidivism.

To examine differences in the strength of the correlations between RISC domains and the three recidivism types, Fisher's *z* tests were performed. Table 2 reveals that most significant differences in correlations were found between sexual and nonviolent recidivism. The domains criminal history, accommodation/living situation, education/work/training, financial management/income, antisocial friends/acquaintances, drug misuse, alcohol misuse, antisocial personality patterns, and antisocial attitudes/cognitions were all more strongly related to nonviolent recidivism than to sexual recidivism. Further, the domains criminal history, accommodation/living situation, education/work/training, financial management/income, antisocial friends/acquaintances, and drug misuse were more strongly related to nonviolent recidivism than to violent recidivism. Finally, the domains criminal history, education/work/training, drug misuse, and antisocial personality patterns were more strongly related to violent recidivism than to sexual recidivism. To examine the strength of the associations between the different domain scores, Pearson correlation coefficients were calculated (see Table 3). The

Table 3. Pearson correlation coefficients between the RiSc domain scores.

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |
|--|------|------|------|------|------|------|------|------|------|------|------|
| 1. Criminal history | 1.00 | | | | | | | | | | |
| 2. Accommodation/Living situation | .34 | 1.00 | | | | | | | | | |
| 3. Education, work, and training | .47 | .41 | 1.00 | | | | | | | | |
| 4. Financial management/income | .37 | .50 | .47 | 1.00 | | | | | | | |
| 5. Relationship with partner/family | .26 | .28 | .33 | .23 | 1.00 | | | | | | |
| 6. Relationship with friends/ acquaintances | .48 | .38 | .48 | .43 | .19 | 1.00 | | | | | |
| 7. Drug misuse | .44 | .39 | .46 | .46 | .24 | .48 | 1.00 | | | | |
| 8. Alcohol misuse | .28 | .21 | .21 | .20 | .21 | .20 | .26 | 1.00 | | | |
| 9. Emotional well-being | .21 | .28 | .39 | .23 | .40 | .25 | .32 | .24 | 1.00 | | |
| 10. Antisocial personality patterns | .50 | .38 | .56 | .36 | .43 | .49 | .40 | .31 | .49 | 1.00 | |
| 11. Antisocial attitudes/cognitions | .47 | .33 | .44 | .31 | .25 | .44 | .31 | .21 | .24 | .70 | 1.00 |

All correlation coefficients are significant ($p < .001$)

strength of the association between most domain scores was medium to large. In addition, multivariate logistic regression analyses were performed, separately for the three recidivism types (see Table 4). The regression analyses showed only very small to small odds ratios ranging between 0.92 and 1.13 for most domain scores, meaning that the unique predictive value of the domain scores (above all other domain scores) was (very) small.

As for the demographic characteristics of offenders, Table 5 reveals that significant differences in multiple characteristics were found between offender groups. In specific, the percentage of males was significantly higher in sexual offenders (100.0) and generalists (94.2) than in violent offenders (89.9), and the percentage of males was significantly higher in violent offenders (89.9) than in nonviolent (78.3%) and one-time offenders (78.9%). Further, sexual offenders consisted of significantly more native Dutch offenders (90.0%) than generalists (72.4%), nonviolent offenders (73.5%), violent offenders (60.4%), and one-time offenders (72.4%). The highest percentage of non-Western offenders was found in violent offenders (35.5). As for the mean age of offenders, sexual offenders were the oldest ($M_{\text{age}} = 44.32$) compared to the other groups of offenders. Except for the gender differences, all differences were only small in magnitude according to the criteria of Cohen (1988).

Last, Table 6 reveals differences in RiSc domain scores between the five groups of offenders. The results revealed that the total RiSc score was highest for generalist offenders ($M = 62.45$), followed by nonviolent offenders ($M = 43.80$), violent offenders ($M = 36.92$), sexual offenders ($M = 34.60$), and one-time offenders ($M = 23.63$). In general, the results showed that generalists scored highest on all domains followed by nonviolent offenders, violent offenders, sexual offenders, and one-time offenders. Nonviolent offenders scored on average significantly higher than violent offenders on the domains criminal history, education/work/training, financial management/income, relationship with friends/acquaintances, and drug misuse,

Table 4. Multiple logistic regression analyses predicting three recidivism types from the different RISC domains with age and gender as control variables.

| | Nonviolent recidivism (n = 3708) | | | | Violent recidivism (n = 1888) | | | | Sexual recidivism (n = 164) | | | |
|---|-------------------------------------|-----|-------------------|------|----------------------------------|-----|---------------|------|--------------------------------|-----|---------------|------|
| | B | SE | Wald χ^2 | OR | B | SE | Wald χ^2 | OR | B | SE | Wald χ^2 | OR |
| Criminal history | .13 | .01 | 252.69*** | 1.13 | .09 | .01 | 109.09*** | 1.10 | .05 | .03 | 4.45* | 1.05 |
| Accommodation/ Living situation | .05 | .01 | 14.89*** | 1.05 | -.01 | .01 | .31 | .99 | .03 | .04 | .43 | 1.03 |
| Education, work, and training | .05 | .01 | 29.60*** | 1.05 | .04 | .01 | 13.75** | 1.04 | .00 | .03 | .00 | 1.00 |
| Financial management and income | .03 | .02 | 2.76 ⁺ | 1.03 | .01 | .02 | .16 | 1.01 | -.09 | .05 | 3.01 | .92 |
| Relationship with partner/family | -.04 | .01 | 11.30** | .96 | .04 | .01 | 9.08** | 1.04 | -.08 | .04 | 3.39 | .96 |
| Relationship with friends and acquaintances | .09 | .02 | 30.32*** | 1.09 | -.01 | .02 | .23 | .99 | .05 | .05 | 1.10 | 1.05 |
| Drug misuse | .04 | .01 | 20.96*** | 1.04 | .03 | .01 | 11.47** | 1.03 | -.06 | .03 | 5.28* | .94 |
| Alcohol misuse | .07 | .01 | 65.48*** | 1.07 | .06 | .01 | 35.65*** | 1.06 | -.03 | .03 | 1.04 | .97 |
| Emotional well- being | -.04 | .01 | 11.54*** | .96 | -.02 | .01 | 3.30 | .98 | .04 | .04 | 1.04 | 1.04 |
| Antisocial personality patterns | .00 | .01 | .02 | 1.00 | .08 | .01 | 35.32*** | 1.08 | .11 | .04 | 8.67** | 1.11 |
| Antisocial attitudes/ cognitions | .01 | .01 | .11 | 1.01 | -.01 | .02 | .85 | .99 | -.05 | .04 | 1.17 | .95 |
| Gender | .17 | .09 | 3.46 | 1.18 | .49 | .12 | 15.61*** | 1.63 | 1.97 | .72 | 7.49** | 7.15 |
| Age | -.03 | .00 | 134.19*** | .97 | -.03 | .00 | 110.05*** | .97 | -.03 | .01 | 14.26*** | .97 |
| Constant | -.92 | .13 | 52.47*** | .40 | -2.45 | .17 | 216.69*** | .09 | -5.54 | .78 | 50.05*** | .00 |
| $\chi^2(13)$ | 1702.74*** | | | | 997.49*** | | | | 77.54*** | | | |

B = Unstandardized regression weight; SE = Standard error; OR = Odds ratio; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5. Demographic characteristics of offenders in different offender groups.

| Variable | Generalists | | Nonviolent | | Violent | | Sexual | | One-time | | χ^2 | p | V |
|--------------|-------------|--------------------|------------|---------------------|---------|----------------------|--------|--------------------|----------|--------------------|----------|------|----------|
| | N | % | n | % | n | % | n | % | n | % | | | |
| Gender | | | | | | | | | | | 450.95 | <.01 | .23 |
| Male | 5894 | 94.2 _a | 806 | 78.3 _b | 152 | 89.9 _c | 50 | 100.0 _a | 913 | 78.9 _b | | | |
| Female | 364 | 5.8 _a | 224 | 21.7 _b | 17 | 10.1 _c | 0 | 0.0 _a | 244 | 21.1 _b | | | |
| Origin | | | | | | | | | | | 44.97 | <.01 | .05 |
| Native Dutch | 4526 | 72.4 _a | 755 | 73.5 _a | 102 | 60.4 _b | 45 | 90.0 _c | 835 | 72.4 _a | | | |
| Non-Western | 1502 | 24.0 _a | 225 | 21.9 _{a,b} | 60 | 35.5 _c | 4 | 8.0 _d | 245 | 21.2 _b | | | |
| Western | 227 | 3.6 _a | 47 | 4.6 _{a,b} | 7 | 4.1 _{a,b} | 1 | 2.0 _{a,b} | 74 | 6.4 _b | | | |
| Continuous | N | M | n | M | n | M | n | M | n | M | F | p | η^2 |
| Age | 6258 | 33.06 _a | 1030 | 34.64 _b | 169 | 35.24 _{abd} | 50 | 44.32 _c | 1158 | 37.01 _d | 39.14 | <.01 | .02 |

Generalists = Offenders committing multiple types of offenses; Nonviolent = Offenders committing only nonviolent offenses including property offenses without violence, public order offenses, drug offenses, traffic offenses, and other nonviolent offenses; Violent = Offenders committing only violent offenses and/or property offenses with violence; Sexual = Offenders committing only sexual offenses; One-time = Offenders who have committed any offense just once.

Percentages with the same subscript letter do not differ significantly from each other at the .05 level of significance.

Table 6. Differences in mean RIsc domain scores between the five offender groups.

| RIsc Domain | Generalists (n = 6258) | | Nonviolent (n = 1030) | | Violent (n = 169) | | Sexual (n = 50) | | One-time (n = 1158) | |
|----------------------------------|----------------------------|----------------------------|----------------------------|--------------------------------|----------------------------|-----------|-----------------|--------|---------------------|-----|
| | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | M (SD) | F † |
| Criminal history | 7.05 (3.62) _a | 4.69 (3.13) _b | 3.60 (2.77) _c | 4.14 (2.70) _{b,c} | 1.21 (1.75) _d | 701.06*** | | | | |
| Accommodation/Living situation | 1.79 (2.29) _a | 1.37 (2.10) _b | 0.93 (1.45) _{b,c} | 0.84 (1.69) _{b,c} | 0.67 (1.33) _c | 73.09*** | | | | |
| Education, work, and training | 5.69 (3.90) _a | 4.39 (3.70) _b | 3.46 (3.32) _c | 2.72 (3.43) _{c,d} | 2.49 (3.15) _d | 192.86*** | | | | |
| Financial management and income | 2.65 (2.28) _a | 2.52 (2.26) _a | 1.43 (1.74) _b | 0.88 (1.60) _b | 1.23 (1.74) _b | 111.17*** | | | | |
| Relationship with partner/family | 3.37 (2.26) _a | 2.06 (2.01) _b | 3.81 (2.06) _a | 3.10 (2.07) _{a,b} | 2.07 (2.64) _b | 96.45*** | | | | |
| Antisocial friends/acquaintances | 2.42 (2.07) _a | 2.13 (1.84) _b | 0.92 (1.47) _c | 1.16 (1.49) _c | 0.89 (1.32) _c | 141.77*** | | | | |
| Drug misuse | 3.44 (3.57) _a | 2.31 (3.13) _b | 1.25 (2.27) _c | 0.24 (1.02) _c | 0.77 (1.90) _c | 157.53*** | | | | |
| Alcohol misuse | 2.82 (3.12) _a | 1.59 (2.47) _b | 1.46 (2.42) _{b,c} | 1.12 (2.16) _{b,c} | 0.87 (1.97) _c | 137.82*** | | | | |
| Emotional well-being | 3.72 (2.66) _a | 3.12 (2.73) _b | 3.39 (2.85) _{a,b} | 4.38 (2.27) _a | 2.86 (2.77) _b | 57.99*** | | | | |
| Antisocial personality patterns | 8.05 (3.72) _a | 5.42 (3.41) _b | 7.33 (3.92) _a | 6.92 (3.57) _a | 4.86 (3.43) _c | 237.42*** | | | | |
| Antisocial attitudes/cognitions | 3.81 (2.61) _a | 2.64 (2.37) _b | 3.09 (2.44) _b | 3.34 (2.32) _{a,b} | 1.89 (2.00) _c | 149.49*** | | | | |
| Total RIsc score | 62.45 (31.46) _a | 43.80 (26.09) _b | 36.92 (20.58) _c | 34.60 (21.17) _{b,c,d} | 23.63 (17.36) _d | 445.35*** | | | | |

Generalists = Offenders committing multiple types of offenses; Nonviolent = Offenders committing only nonviolent offenses including property offenses without violence, public order offenses, drug offenses, traffic offenses, and other nonviolent offenses; Violent = Offenders committing only violent offenses and/or property offenses with violence; Sexual = Offenders committing only sexual offenses; One-time = Offenders who have committed any offense just once.

Values with the same subscript do not differ significantly from each other.

† The ANOVA's were controlled for gender, origin, and age of offenders.

* $p < .05$; ** $p < .01$; *** $p < .001$.

whereas violent offenders scored on average significantly higher than nonviolent offenders on the RISC domains relationship with partner/family and antisocial personality patterns. The results further showed that nonviolent offenders scored on average significantly higher than sexual offenders on the domains education/work/training, financial management/income, antisocial friends/acquaintances, and drug misuse, whereas sexual offenders scored on average higher than nonviolent offenders on the domains emotional well-being and antisocial personality patterns. No significant differences were found between violent and sexual offenders in the average domain scores and RISC total score.

Discussion

The aims of the present study were: (1) to examine differences in the predictive value of general delinquency risk factors in predicting nonviolent, violent, and sexual recidivism, and (2) to examine differences in the prevalence of risk factors between generalist, violent, sexual, nonviolent, and one-time offenders. In general, the results revealed that risk factors measured with the RISC were more strongly related to nonviolent than to violent recidivism, and only weakly, or not at all, related to sexual recidivism. In addition, differences were found in the unique contribution of risk factors to the prediction of the different recidivism types. The total prevalence of risk factors was highest in generalists (non-specialized offenders), followed by nonviolent, violent, sexual offenders, and one-time offenders. In violent offenders, risk factors in the domains relationship with the partner/family, emotional well-being, antisocial personality patterns, and antisocial attitudes/cognitions were more prevalent than in nonviolent offenders, whereas in nonviolent offenders, risk factors in the domains education/work, financial management/income, antisocial friends/acquaintances, and drug abuse were more prevalent. Between violent and sexual offenders no differences were found in the prevalence of risk factors.

Previous research showed that risk factors are more strongly related to general recidivism than to violent and sexual recidivism (e.g., Hanson, 2009; Olver, Stockdale, & Wormith, 2014), but differences in risk factors for violent and nonviolent recidivism have been far less studied. Our results indicate that different risk factors are more strongly associated with nonviolent than with violent recidivism, and that risk factors were least associated with sexual recidivism. This implies that nonviolent recidivism can be better predicted by general delinquency risk factors than violent recidivism, and that sexual recidivism cannot be predicted adequately by general delinquency factors. Given these results, it may be reasoned that the threshold for committing a new violent offense may be higher than committing a new nonviolent offense, because the former

often have more serious consequences for victims and offenders. Therefore, there may be other specific risk factors that substantially contribute to the risk of violent recidivism, which were not measured in the instrument (RISc) that was used in the present study for assessing general delinquency risk factors. This may be in particular the case for sexual recidivism, as it is more difficult to determine risk factors for sexual recidivism than for other types of criminal recidivism given the low base-rate (e.g., Spice, 2012).

The bivariate associations between the domain scores and nonviolent or violent recidivism were small to medium in magnitude for most domain scores. However, the regression analyses produced only very small odds ratios for most domain scores. This means that the unique predictive value of the domain scores (above all other domain scores) was (very) small, which may be due to the medium to high correlation coefficients that were found for the associations between the different domain scores. Further, we found that the predictive value of the total RISc score corresponded with a high effect size for predicting nonviolent recidivism ($AUC = .723$), with a medium effect size for predicting nonviolent recidivism ($AUC = .704$), and with a small effect size for predicting sexual recidivism (.585) (given the criteria of Rice & Harris, 2005). Previous research also showed that risk assessment instruments for general recidivism are only weak predictors for sexual recidivism (e.g., Schmidt et al., 2011; Seto & Lalumière, 2010; Viljoen, 2009). A specific risk assessment instrument seems to be needed for predicting sexual reoffending to an acceptable degree, in which specific risk factors, such as deviant sexual interests, prior sexual offenses, and deviant victim choices are assessed (Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2005).

The results revealed that the total prevalence of risk factors was higher in nonviolent offenders than in violent offenders. In violent offenders, we found that risk factors in the domains relationship with the partner/family, emotional well-being, antisocial personality patterns, and antisocial attitudes/cognitions were more prevalent than in nonviolent offenders, whereas in nonviolent offenders, risk factors in the domains education/work, financial management/income, antisocial friends/acquaintances, and drug abuse were more prevalent. To a more general extent, it seems that individual risk factors (emotional well-being, antisocial personality patterns, and antisocial attitudes/cognitions) are more prevalent in violent offenders, whereas environmental risk factors (education/work, financial management/income, antisocial friends/acquaintances) are more prevalent in nonviolent offenders. Lai et al. (2016) who studied differences in risk factors between nonviolent and violent youth offenders found no significant difference between nonviolent and violent offenders in the total prevalence of risk factors. Nonviolent offenders had higher risk scores than violent offenders in the

criminal history, family circumstances/parenting, substance abuse, and attitudes/orientation domains, whereas violent offenders had higher risk scores in the peer relation and personality/behavior domains. The results of our study are therefore only partly in line with the results of Lai and colleagues, which may be due to differences in the populations studied (youth versus adult offenders, and Asian versus European offenders).

We did not find any significant differences in risk domain scores between violent and sexual offenders, but this may be due to insufficient statistical power in detecting differences given the relatively low number of violent ($n = 169$) and sexual offenders ($n = 50$). Seto and Lalumière (2010) conducted a meta-analysis on differences between adolescent sexual and non-sexual offenders and found that sexual offenders had much less extensive criminal careers, fewer affiliations with antisocial peers, and fewer substance use problems than non-sexual offenders. In addition, Craig et al. (2006) found that violent offenders were more problematic than sexual offenders in terms of having a chaotic lifestyle, suffering from psychopathology, and abusing substances. In the present study, we did find differences in levels of risk factors in sexual than in violent offenders, but these differences were non-significant.

Several limitations need to be discussed. First, we analyzed a sample of Dutch adult offenders, which raises the question to what degree the current findings can be generalized to non-Dutch populations. However, previous studies found that the impact of risk factors for delinquency was equivalent in American and Dutch samples (Esbensen & Weerman, 2005; Van der Put, 2012), so we expect that our results can at least to some extent be generalized to populations in other Western countries. Second, we only focused on the predictive value of risk factors and not protective factors. Previous studies showed that protective factors may buffer or mitigate the impact of risk factors, or decrease the likelihood of violent recidivism and the development of youth violence (Lodewijks, de Ruiter, & Doreleijers, 2010; Lösel & Farrington, 2012; Ullrich & Coid, 2011). Furthermore, some evidence is found for the predictive value of a number of protective factors for sexual reoffending (De Vries Robbé, 2015). Therefore, it is interesting to direct future research on examining differences in the impact of protective factors between recidivism types as well as offender groups, and on unraveling how protective factors interact with risk factors. Third, recidivism was defined as any new conviction registered in official court records in a 3.5 year follow up period. Using official records may imply an underestimation of the true recidivism prevalence, as, for instance, minor offenses have not (always) been recorded. On the other hand, both officially registered offenses and self-reports on committed offenses have their limitations in analyzing recidivism data (Breuk, 2007), and this should be taken into account when interpreting results of studies on recidivism. Fourth, the majority of the total sample of

offenders comprised generalist offenders, whereas smaller numbers of sampled offenders comprised the three specialized offender groups. Especially the sexual offender group was small ($n = 50$), which has an effect on the statistical power to detect significant results. Other studies also found that most offenders are generalists rather than specialists (Seto & Lalumière, 2010; Simon, 1997). However, it may be possible that offenders, who were initially identified as specialists, turned out to be generalists, which may in particular be the case for relatively young offenders who just started their offending career. A final limitation is that the data were retrieved from the Dutch probation services. These data were collected for clinical purposes and not specifically for scientific research, which may have affected the accuracy of the data collection.

Conclusion

The present results contribute to our knowledge of differences in risk factors for various types of recidivism between offender groups. Several implications for clinical practice can be derived from our results. First, we found differences in levels of risk factors between different offender groups as well as differences in the impact of risk factors across recidivism types. For violent offending, risk factors in the domains relationship with the partner/family, emotional well-being, antisocial personality patterns, and antisocial attitudes/cognitions seem relatively important, whereas the risk domains education/work/training, financial management/income, antisocial friends/acquaintances, and drug misuse seem relatively important for non-violent offending. This indicates that in clinical practice, different approaches are needed to treat offenders so that specific types of recidivism can be prevented successfully. According to the Risk Need Responsivity (RNR) model for effective offender rehabilitation, offender therapy should focus on those criminogenic needs that are most strongly related to criminal behavior (e.g., Andrews & Bonta, 2010). Our findings provide more insight into the variety of these criminogenic needs across offender groups, which is important to take into account in both assessment procedures and referral of offenders to the most appropriate interventions. These interventions should not only target an offender's criminogenic needs – which may differ across offender types –, but should also be delivered with the right intensity as prescribed by the risk principle of the RNR model (Andrews & Bonta, 2010).

Consistent with findings of previous studies (Schmidt et al., 2011; Viljoen et al., 2009), we found that sexual recidivism could not be predicted by the general risk assessment instrument that we used in the present study. This indicates that different and more specialized risk assessment instrument are needed to successfully predict sexual reoffending. However, sexual offenders

are approximately three times more likely to reoffend by committing a non-sexual offense than a sexual offense (e.g., Langström & Grann, 2000; McCann & Lussier, 2008; Rasmussen, 1999; Vandiver, 2006). Therefore, in sexual offenders, it is not only important to assess the risk of sexual recidivism with a specialized instrument, but also to assess the risk of recidivism in other offense types with a more general risk assessment instrument.

Authors' contributions

CvdP designed the study, performed the statistical analyses, helped drafting the manuscript and critically reviewed the manuscript. MA helped drafting the manuscript and critically reviewed the manuscript. JG searched and reviewed previous literature and drafted the manuscript. All three authors contributed to and approved the final version of the manuscript.

Disclosure Statement

No potential conflict of interest was reported by the authors.

References

- Andrews, D. A., & Bonta, J. (2010). *The psychology of criminal conduct* (5th ed.). New Providence, NJ: LexisNexis Matthew Bender.
- Andrews, D. A., Bonta, J., & Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior*, 17, 19–52. doi:10.1177/0093854890017001004
- Andrews, D. A., Bonta, J., & Wormith, S. J. (2004). *The Level of Service/Case Management Inventory (LS/CMI)*. Toronto, Canada: Multi-Health Systems.
- Assink, M., Van der Put, C. E., Hoeve, M., De Vries, L. A., Stams, G. J. J. M., & Oort, F. J. (2015). Risk factors for persistent delinquent behavior among juveniles: A meta-analytic review. *Clinical Psychology Review*, 42, 47–61. doi:10.1016/j.cpr.2015.08.002
- Bonta, J., Harman, W. G., Hann, R. G., & Cormier, R. B. (1996). The prediction of recidivism among federally sentenced offenders: A re-validation of the SIR scale. *Canadian Journal of Criminology*, 38, 61–97. doi:10.3138/cjcrim.38.1.61
- Bonta, J., Law, M., & Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. *Psychological Bulletin*, 123, 123–142. doi:10.1037/0033-2909.123.2.123
- Breuk, R., Clauser, C., Stams, G. J. J. M., Slot, W., & Doreleijers, T. H. (2007). The validity of questionnaire self-report of psychopathology and parent-child relationship quality in juvenile delinquents with psychiatric disorders. *Journal of Adolescence*, 30, 761–771. doi:10.1016/j.adolescence.2006.10.003
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York, NY: Routledge Academic.
- Cottle, C. C., Lee, R. J., & Heilbrun, K. (2001). The prediction of criminal recidivism in juveniles: A meta-analysis. *Criminal Justice and Behavior*, 28, 367–394. doi:10.1177/0093854801028003005

- Craig, L. A., Browne, K. D., Beech, A., & Stringer, I. (2006). Differences in personality and risk characteristics in sex, violent and general offenders. *Criminal Behaviour and Mental Health*, 16, 183–194. doi:10.1002/cbm.618
- De Vries Robbé, M., Mann, R. E., Maruna, S., & Thornton, D. (2015). An exploration of protective factors supporting desistance from sexual offending. *Sexual Abuse: A Journal of Research and Treatment*, 27, 16–33. doi:10.1177/1079063214547582
- Durose, M. R., Cooper, A. D., & Snyder, H. N. (2014). *Recidivism of prisoners released in 30 states in 2005: Patterns from 2005 to 2010*. Washington, DC: US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Esbensen, F. A., & Weerman, F. M. (2005). Youth gangs and troublesome youth groups in the United States and the Netherlands: A cross-national comparison. *European Society of Criminology*, 2, 5–37. doi:10.1177/1477370805048626
- Forth, A. E., Kosson, D. S., & Hare, R. D. (2003). *The psychopathy checklist: Youth version*. Toronto, ON: Multi-Health Systems.
- Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism. *What Works! Criminology*, 34, 575–607. doi:10.1111/j.1745-9125.1996.tb01220.x
- Gibbs, A. (1999). The assessment, case management and evaluation system. *Probation Journal*, 46(3), 182–186.
- Hanson, R. K. (2009). The psychological assessment of risk for crime and violence. *Canadian Psychology*, 50, 172–182. doi:10.1037/a0015726
- Hanson, R. K., & Bussiere, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, 66, 348–362. doi:10.1037/0022-006X.66.2.348
- Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology*, 73, 1154–1163. doi:10.1037/0022-006X.73.6.1154
- Hoge, R. D., & Andrews, D. A. (2002). *The youth Level of Service/Case Management Inventory*. Toronto, ON: Multi-Health Systems.
- Hollin, C. R., & Palmer, E. J. (2006). Criminogenic need and women offenders: A critique of the literature. *Legal and Criminological Psychology*, 11, 179–195. doi:10.1348/135532505X57991
- Howard, P., Clark, D., & Garnham, N. (2003). *Evaluation and validation of the Offender Assessment System (OASys)*. London, U.K.: OASys Central Research Unit.
- Howard, P., Clark, D., & Garnham, N. (2006). *An evaluation of the Offender Assessment System (OASys) in three pilots 1999–2001*. London, U.K.: Prison and Probation Services.
- Lai, V., Zeng, G., & Chu, C. M. (2016). Violent and nonviolent youth offenders: Preliminary evidence on group subtype. *Youth Violence and Juvenile Justice*, 14, 313–329. doi:10.1177/1541204015615193
- Langström, N., & Grann, M. (2000). Risk for criminal recidivism among young sex offenders. *Journal of Interpersonal Violence*, 15, 855–871. doi:10.1177/088626000015008005
- Lipsey, M. W., & Derzon, J. H. (1998). Predictors of violent or serious delinquency in adolescence and early adulthood: A synthesis of longitudinal research. In R. Loeber & D. P. Farrington (Eds.), *Serious and violent juvenile offenders: Risk factors and successful interventions* (pp. 86–105). Thousand Oaks, CA: Sage.
- Lodewijks, H. P., de Ruiter, C., & Doreleijers, T. A. (2010). The impact of protective factors in desistance from violent reoffending: A study in three samples of adolescent offenders. *Journal of Interpersonal Violence*, 25, 568–587. doi:10.1177/0886260509334403

- Lösel, F., & Farrington, D. P. (2012). Direct protective and buffering protective factors in the development of youth violence. *American Journal of Preventive Medicine*, 43, 8–23. doi:10.1016/j.amepre.2012.04.029
- Mann, R. E., Hanson, K., & Thronton, D. (2010). Assessing risk for sexual recidivism: Some proposals on the nature of psychologically meaningful risk factors. *Sexual Abuse*, 22(2), 191–217. doi:10.1177/1079063210366039
- McCann, K., & Lussier, P. (2008). Antisociality, sexual deviance, and sexual reoffending in juvenile sex offenders: A meta-analytical investigation. *Youth Violence and Juvenile Justice*, 6, 363–385. doi:10.1177/1541204008320260
- Olver, M. E., Stockdale, K. C., & Wormith, J. S. (2014). Thirty years of research on the Level of Service Scales: A meta-analytic examination of predictive accuracy and sources of variability. *Psychological Assessment*, 26(1), 156. doi:10.1037/a0035080
- Orbis Partners. (2007). *Long-term validation of the Youth Assessment and Screening Instrument (YASI) in New York State Juvenile probation*. Retrieved from <http://www.criminaljustice.ny.gov/opca/pdfs/YASI-Long-Term-Validation-Report.pdf>
- Prentky, R. A., Knight, R. A., & Lee, A. F. S. (1997). Risk factors associated with recidivism among extrafamilial child molesters. *Journal of Consulting and Clinical Psychology*, 65, 141–149. doi:10.1037/0022-006X.65.1.141
- Rasmussen, L. (1999). Factors related to recidivism among juvenile sexual offenders. *Sexual Abuse*, 11, 69–85. doi:10.1023/A:1021332929575
- Rice, M. E., & Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC Area, Cohen's *d*, and *r*. *Law and Human Behavior*, 29, 615–620. doi:10.1007/s10979-005-6832-7
- Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Newbury Park, CA: Sage.
- Schmidt, F., Campbell, M. A., & Houlding, C. (2011). Comparative analyses of the YLS/CMI, SAVRY, and PCL:YV in adolescent offenders: A 10-year follow-up into adulthood. *Youth Violence and Juvenile Justice*, 9, 23–42. doi:10.1177/1541204010371793
- Seto, M. C., & Lalumière, M. L. (2010). What is so special about male adolescent sexual offending? A review and test of explanations through meta-analysis. *Psychological Bulletin*, 136, 526–575. doi:10.1037/a0019700
- Simon, L. M. J. (1997). Do criminal offenders specialize in crime types? *Applied and Preventive Psychology*, 6, 35–53. doi:10.1016/S0962-1849(05)80064-2
- Smith, P., Gendreau, P., & Swartz, K. (2009). Validating the principles of effective intervention: A systematic review of the contributions of meta-analysis in the field of corrections. *Victims & Offenders*, 4, 148–169. doi:10.1080/15564880802612581
- Spice, A., Viljoen, J. L., Latzman, N. E., Scalora, M. J., & Ullman, D. (2012). Risk and protective factors for recidivism among juveniles who have offended sexually. *Sexual Abuse*, 25(4), 347–369. doi:10.1177/1079063212459086
- Swets, J. A. (1986). Indices of discrimination or diagnostic accuracy: Their ROCs and implied models. *Psychological Bulletin*, 99, 100–117. doi:10.1037/0033-2909.99.1.100
- Ullrich, S., & Coid, J. (2011). Protective factors for violence among released prisoners—Effects over time and interactions with static risk. *Journal of Consulting and Clinical Psychology*, 79, 381–390. doi:10.1037/a0023613
- Van der Knaap, L. M., & Alberda, D. L. (2009). *De predictieve validiteit van de Recidive Inschattingsschalen (RISC)* [Predictive validity of the Recidivism Risk Assessment Scales (RISC)]. Den Haag, the Netherlands: Ministerie van Justitie, WODC.
- Van der Knaap, L. M., Alberda, D. L., Oosterveld, P., & Born, M. P. (2012). The predictive validity of criminogenic needs for male and female offenders: Comparing the relative impact of needs in predicting recidivism. *Law and Human Behavior*, 36, 413–422. doi:10.1037/h0093932

- Van der Knaap, L. M., Leenarts, L. E. W., & Nijssen, L. T. J. (2007). *Psychometrische kwaliteiten van de Recidive Inschattingsschalen (RISc). Interbeoordelaarsbetrouwbaarheid, interne consistentie en congruente validiteit* [Psychometric qualities of the Recidivism Risk Assessment Scales (RISc). Inter-rater reliability, internal consistency, and convergent validity]. Den Haag, the Netherlands: Ministerie van Justitie, WODC.
- Van der Put, C. E., Deković, M., Stams, G. J. J. M., Hoeve, M., & Van der Laan, P. H. (2012). Het belang van vroegtijdig ingrijpen bij jeugdcriminaliteit [The importance of early intervention in juvenile crime]. *Kind & Adolescent*, 33(1), 2–20. doi:10.1007/s12453-012-0001-9
- Vandiver, D. (2006). A prospective analysis of juvenile male sex offenders: Characteristics and recidivism rates as adults. *Journal of Interpersonal Violence*, 21, 673–688. doi:10.1177/0886260506287113
- Viljoen, J. L., Elkovitch, N., Scalora, M. J., & Ullman, D. (2009). Assessment of reoffense risk in adolescents who have committed sexual offenses: Predictive validity of the ERASOR, PCL: YV, YLS/ CMI, and Static-99. *Criminal Justice and Behavior*, 36, 981–1000. doi:10.1177/0093854809340991
- Wartna, B. S. J., Blom, M., & Tollenaar, N. (2011). *De WODC-Recidivemonitor*. Retrieved from https://www.wodc.nl/binaries/de-wodc-recidivemonitor-2011-20110803_tcm28-78142.pdf

Appendix A

Table A1. RISC domains, examples of domain items, and response options.

| Domain | Example of item | Response options |
|---|---|---|
| Criminal history | Number of previously committed offenses | 0 = no committed offenses, 1 = 1 to 3 committed offenses, 2 = more than 3 committed offenses |
| Accommodation/ Living situation | Accommodation track record (in terms of periods of homelessness) | 0 = no, 1 = some experience with homelessness, 2 = more than 6 months of homelessness |
| | Quality of the living environment | 0 = living environment does not contribute to criminal behavior, 1 = living environment contributes somewhat to criminal behavior, 2 = lives in criminal neighborhood/in close proximity to victims |
| Education, work, and training | Work experience and employment track record | 0 = employed and does not quit job before a new job is found, 1 = is in general employed, but quits before a new job is found, 2 = not employed, or unclear employment track record |
| | Attitude toward education, work, or training | 0 = motivated, 1 = somewhat motivated, 2 = not motivated |
| Financial management and income | Current financial situation | 0 = stable and appropriate, 1 = not always stable and appropriate, 2 = no insight in financial situation |
| | Gambling addiction or other addiction | 0 = no, 2 = yes |
| Relationship with partner/ family | Quality of current relationship with partner, family, and other relatives | 0 = mutual relationships, 1 = problems with relationships, 2 = destructive, harmful relationships |
| | Family member has police record | 0 = no, 2 = yes |
| Antisocial friends/ acquaintances | Friends and acquaintances | 0 = rejects criminal behavior, 1 = is partly involved in other's criminal behavior, 2 = mostly criminal friends |
| | Negative influence of friends | 0 = no, 1 = is being used by friends, 2 = totally dependent on friends |
| Drug misuse | The offender's criminal behavior is linked to his or her drug use | 0 = no, 1 = connections with criminal behavior, 2 = connections with criminal behavior and violence |
| | Drug use | 0 = no, 1 = yes |
| Alcohol misuse | Current alcohol use is problematic | 0 = does not drink, 1 = drinking has some influence, 2 = problematic drinker |
| | The offender's criminal behavior is linked to his or her alcohol use | 0 = no, 1 = connections with criminal behavior, 2 = connections with criminal behavior and violence |
| Emotional well- being | Self-destructive behavior | 0 = no, 2 = current or past self-destructive behavior |
| | Mental problems | 0 = no, 1 = no link with criminal behavior, 2 = long term mental health problems |
| Antisocial personality patterns | Impulsivity | 0 = not impulsive, 1 = somewhat impulsive, 2 = very impulsive |
| | Dominant behavior | 0 = not dominant, 1 = somewhat dominant, 2 = very dominant |
| Antisocial attitudes/ cognitions | Pro-criminal attitudes | 0 = accepts guilt, 1 = ambivalent feelings, 2 = feels that crime pays off |
| | Motivation to change | 0 = motivated, 1 = somewhat motivated, 2 = not motivated |