



UvA-DARE (Digital Academic Repository)

Risk and needs assessment for juvenile delinquents

van der Put, C.E.

Publication date
2011

[Link to publication](#)

Citation for published version (APA):

van der Put, C. E. (2011). *Risk and needs assessment for juvenile delinquents*. [Thesis, fully internal, Universiteit van Amsterdam].

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.

Chapter 8

Assessing risk of general recidivism in juvenile sex offenders: Validation of the WSJCPA for various groups of juvenile sex offenders

Van der Put, C.E., Vugt, E.S., Stams, G.J.J.M., Deković, M., & Van der Laan,
Submitted.

Abstract

Risk assessment instruments developed for juvenile sex offenders are often unable to predict sexual recidivism or general recidivism. As juvenile sex offenders are much more likely to reoffend with a non-sexual offense rather than a sexual offense, it is important to investigate whether general risk assessment instruments can be applied to juvenile sex offenders. This study therefore examined the extent to which the Washington State Juvenile Pre-Screen Assessment (WSJCPA) can be used to assess the general risk of recidivism among juvenile sex offenders. The predictive validity of the WSJCPA was studied separately among misdemeanour sex offenders ($n = 381$), felony sex offenders ($n = 282$), child abusers ($n = 521$) and female adolescent sex offenders ($n = 71$), and compared with a group of juvenile non-sex offenders (15,155 boys and 5,811 girls). In general, the relationship between risk factors and recidivism was stronger for the different groups of sex offenders than among the non-sex offenders. As a result, the predictive value of the WSJCPA was significantly higher for the misdemeanour and felony sex offenders. The predictive validity for child abusers and female adolescent sex offenders was not significantly different from that of non-sex offenders. This means that the WSJCPA is a suitable instrument for estimating the general risk of recidivism among various groups of juvenile sex offenders.

8.1 Introduction

In the research literature on juvenile sex offenders there is much attention for the prediction of the risk of *sexual* recidivism. There is much less focus on the question to what extent the risk of *general (any)* recidivism can be effectively predicted among these juveniles. However, this is a highly relevant question, as sex offenders are much more likely to reoffend by committing a non-sexual offense. McCann and Lussier (2008) conducted a meta-analysis on recidivism rates for juvenile sex offenders and showed sexual offense recidivism to be generally low, with an average of 12.2%, ranging from 1.6% to 29.9%, with a much higher average for non-sexual offense recidivism of 41.7%, ranging from 5.2% to 66.3%. These results are in line with research performed on adult sex offender samples (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2005). As non-sexual offense recidivism among sex offenders is significantly higher than sexual offense recidivism, it is also important to predict general offense recidivism. The aim of the present study was, therefore, to examine the extent to which the risk of general recidivism among sex offenders can be estimated in the same way as among non-sex offenders. More specifically, we examined whether a general risk assessment instrument developed for non-sex offenders can also be applied to sex offenders.

Risk assessment provides insight into the level of recidivism risk for juveniles who have come into contact with the law as well as into the risk factors that determine the level of risk. Risk assessment is important for establishing the appropriate intensity of an intervention. If the recidivism risk is low, a low-intensity intervention – or even no intervention at all – will be sufficient, whereas an intensive approach will work better for high-risk juveniles (Andrews & Bonta, 2003; Andrews, Bonta, & Hoge, 1990). Matching the intensity of an intervention to the recidivism risk – also referred to as the *risk principle* – is an important condition for the effectiveness of penal interventions. If the intensity of an approach is not properly matched to the recidivism risk, its effect can be counterproductive. If the intervention on juveniles with a high risk of recidivism is not intensive enough or is too intensive in the case of low-risk juveniles, it can actually increase the likelihood of recidivism (Andrews, 1995; Lösel, 1993; Lowenkamp & Latessa, 2005).

In the past, many risk assessment instruments were developed and validated primarily for the adult population. In recent years, a number of instruments have also been developed for estimating the risk of general recidivism among juveniles, but only limited validation research has been conducted on these instruments (Welsh, Schmidt, McKinnon, Chattha, & Meyers, 2008). This means that there is often no information as to whether these instruments provide a good prediction for different groups of young people, such as boys and girls, different age groups and different ethnic groups. Whether

the instruments are effective in assessing recidivism risk among juvenile sex offenders is also unknown. For juvenile sex offenders, a number of risk assessment instruments have been developed for estimating the likelihood of sexual recidivism. Examples of these include the Juvenile Sex Offender Assessment Protocol-II (J-SOAP-II; Prentky & Righthand, 2003), the Estimate of Risk of Adolescent Sexual Offense Recidivism (ERASOR; Worling & Curwen, 2001) and the Juvenile Sexual Offense Recidivism Risk Assessment Tool-II (J-SORRAT-II; Epperson, Ralston, Fowers, & DeWitt, 2005). These instruments are often used to estimate the risk of sexual recidivism as well as the risk of general recidivism. However, the limited validation research that is available reveals that these instruments are not capable of providing a significant prediction of sexual recidivism and even less so of general recidivism (Viljoen, Elkovitch, Scalora, & Ullman, 2009; Viljoen et al., 2007).

It is, therefore, important that research is conducted into the extent to which risk assessment instruments developed for non-sexual offenders are suitable for use with juvenile sex offenders. This will depend on the question to what extent the same risk factors for recidivism are relevant to both groups of offenders. Earlier research has revealed that there are differences between the risk factors for sexual recidivism and those for general recidivism (Hanson & Bussière, 1998; Långström & Grann, 2000). The risk factors for general recidivism among juvenile sex offenders appear to be the same as those for juvenile non-sex offenders (Hanson & Bussière, 1998). This would seem to suggest that risk assessment instruments for general offenders may also be of use for sex offenders. However, the question remains to what extent the *relative* importance of risk factors for sex offenders is the same as for non-sex offenders. For example, it is questionable whether a history of sexual abuse is equally important for sex offenders as it is for non-sex offenders. This question is of relevance when assessing whether the weightings and cut-off scores applied in risk assessment instruments are usable for sex offenders or whether separate ratings and cut-off scores need to be used. Furthermore, account must be taken of the fact that juvenile sex offenders form a heterogeneous group (e.g., Barbaree, Marshall, & Hudson, 2006; Hunter, Figueredo, Malamuth, & Becker, 2003). For example, there are important differences in the prevalence of risk factors between juvenile sex offenders who have committed child abuse and juvenile offenders who have committed other felony sex offenses, such as sexual assault and rape (e.g., Hunter, et al., & Becker, 2003; Hunter, Hazelhood, & Slesinger, 2000). Compared to juvenile felony offenders, child abusers are more likely to suffer from internalising problems, social isolation and socially inadequate behavior and are also more likely to have a history of sexual victimization.

The aim of this study was to examine the extent to which the Washington State Juvenile Court Pre-Screen Assessment (WSJCPA) is useful for making an effective estimation of the general recidivism risk among different groups of sexual offenders. The

WSJCPA is a risk-assessment instrument that enables a relatively quick assessment of the risk of recidivism because only the main predictors of recidivism are part of the instrument (Barnoski, 2004b). The area under the receiver-operating-characteristic curve (AUC) is considered to be the most appropriate measure of an instrument's effectiveness in making predictions (Rice & Harris, 2005). The AUC indicates what percentage of correct classifications the instrument will yield overall (Hanley & McNeil, 1982). Earlier research has shown that the WSJCPA's AUC of .64 (Barnoski, 2004b) is broadly equivalent to the average AUC for risk assessment instruments for juveniles (Schwalbe, 2007).

This study investigated the AUC value of the WSJCPA for different groups of juvenile sex offenders. A distinction was made between the following groups: boys who had committed a misdemeanor sexual offense, such as exhibitionism or voyeurism (misdemeanour sex offenders), boys who had committed a felony sexual offense, such as sexual assault and rape (felony sex offenders), boys who had been found guilty of abusing children who are at least five years younger (child abusers), girls who had committed a sexual offense (female adolescent sex offenders). It was examined to what extent there are differences between these groups of juvenile sex offenders and non-sex offenders in terms of the level of general recidivism, background characteristics, the impact of risk factors on general recidivism and in terms of the predictive validity of the WSJCPA.

8.2 Method

8.2.1 Sample

For this study, secondary data from the Washington State Juvenile Court Pre-Screen Assessment (WSJCPA) validation study were used (Barnoski, 2004b). This dataset consisted of 21,810 American juveniles, aged 12 to 18, who appeared before the courts for a criminal act in the period from January 1999 to January 2000 and for whom the WSJCPA was completed. A distinction was made between the following research groups:

- (a) *Female adolescent sex offenders*: all girls who committed a sexual offense ($n = 71$). For 25 girls, this was child abuse, for 15 girls a felony offense and for 31 girls a misdemeanor offense.
- (b) *Misdemeanour sex offenders*: all boys whose most serious sexual offense was a misdemeanor offense and the victim was a person of a similar age or an adult woman ($n = 136$). Misdemeanour offenses include the following offenses: public indecency, indecent exposure, obscene phone calls, obscenity or pornography.
- (c) *Felony sex offenders*: all boys from who committed a felony offense in which the

victim was a person of similar age or an adult woman ($n = 116$). Felony sex offenses include the following offenses: assault to rape, incest and indecent liberties.

(d) *Child abusers*: all boys who committed a sexual offense against a (pre-pubertal) child who was at least five years younger than the offender ($n = 521$). The age difference of five years was selected because this is generally used in the research literature.

(e) *Adolescent female non-sex offenders*: girls who committed an offense other than a sexual offense ($n = 5,811$)

(f) *Adolescent male non-sex offenders*: boys who committed an offense other than a sexual offense ($n = 15,155$)

8.2.2 Measures

Washington State Juvenile Court Pre-Screen Assessment (WSJCPA). The WSJCPA is a risk-assessment instrument developed and validated in the United States (Barnoski, 2004a). The WSJCPA comprises the most important predictors of recidivism from two domains: the criminal history domain and the social history domain (Barnoski, 2004a). The items from the criminal history domain are: 'age at first referral', 'misdemeanour referrals', 'felony referrals', 'weapon referrals', 'against-person misdemeanour referrals', 'against-person felony referrals', 'detention dispositions', 'probation dispositions', 'escapes' and 'failure-to-appear warrants'. The items from the social history domain are: 'male gender', 'school problems', 'peer relationships', 'out-of-home placements', 'runaway history', 'criminal family member', 'parental rule enforcement', 'alcohol/drug problem', 'victim of abuse', 'victim of neglect', 'mental health problem'.

The criminal history score is the sum of items from the criminal history domain and ranges from 0 to 31, and the social history score is the sum of items from the social history domain and varies from 0 to 18. The two scores, criminal and social history, are brought together in a matrix, determining the youth's overall risk to re-offend (see Table 1).

Table 1 WSJCPA Scoring Matrix

		Social history score	
Criminal history score	0 to 5	6 to 9	10 to 18
	0 to 5	Low	Moderate
	6 to 8	Moderate	High
	9 to 11	Moderate	High
	12 to 31	High	High

8.2.3 Outcome measure

Recidivism was defined as the occurrence of one or multiple new convictions within 18 months after completing the WSJCPA. Data on recidivism were based on official records, both juvenile and adult records, from Washington State. Recidivism was treated as a dichotomous variable (whether or not convicted for any new offense).

8.2.4 Procedure and analyses

Pearson correlation coefficients were calculated to determine the strength of the relation between the risk factors and recidivism in the various groups of sex offenders. To assess the significance of the differences between the correlations for the different groups of sex offenders, Fisher's z was calculated.

The prediction value of the WSJCPA in the different groups of sex offenders was investigated by means of the 'area under the ROC curve' (AUC). The AUC indicates what percentage of correct classifications the instrument will yield overall (Hanley & McNeil, 1982). With a value of 0.50, the instrument is no better at predicting than a random assessment. A value of 1.00 indicates a perfect positive prediction, and a value of 0.00 indicates a perfect negative prediction.

8.3 Results

8.3.1 Demographic factors for each offender group

Table 2 provides details of the average age at the time of the assessment and ethnicity of the different groups of sex and non-sex offenders.

Table 2 Background characteristics of the different groups of sex and non-sex offenders

	Male adolescent non-sex offenders ($n =$ 15.155)	Female adolescent non-sex offenders ($n =$ 1.680)	Female adolescent sex offenders ($n =$ 71)	Misdemeanor sex offenders ($n =$ 381)	Felony sex offenders ($n =$ 282)	Child abusers ($n =$ 521)	F
Ethnicity							
European Americans	60%	62%	72%	55%	71%	65%	7.4**
African Americans	9%	9%	7%	13%	6%	9%	2.3*
Hispanic Americans	11%	9%	4%	7%	6%	7%	10.2**
Other	7%	10%	3%	4%	3%	3%	13.7**
Average age	15.53	15.45	15.47	15.34	15.27	15.27	6.7**

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

The groups differed significantly from each other in terms of age and ethnicity. In general, the groups of sex offenders were more frequently European Americans compared to the non-sex offenders (with the exception of the group of misdemeanour sex offenders). Among the girls, there was no age difference between the sex offenders and the non-sex offenders, but for the boys, the sex offenders were on average younger than the non-sex offenders.

8.3.2 General recidivism rate for each offender group

Table 3 provides details of general recidivism rates for the different groups of sex offenders and non-sex offenders.

Table 3 Recidivism rates for the different groups of sex and non-sex offenders

	Male adolescent non-sex offenders (<i>n</i> = 15.155)	Female adolescent non-sex offenders (<i>n</i> = 1.680)	Female adolescent sex offenders (<i>n</i> = 71)	Misdemeanor sex offenders (<i>n</i> = 381)	Felony sex offenders (<i>n</i> = 282)	Child abusers (<i>n</i> = 521)	$\chi^2(5)$
Totaal	41%	29%	30%	32%	24%	21%	361.8**
Seriousness recidivism	<i>n</i> = 6.256	<i>n</i> = 1.680	<i>n</i> = 21	<i>n</i> = 123	<i>n</i> = 68	<i>n</i> = 111	
Misdemeanor	50%	66%	52%	49%	43%	34%	154.7**
Felony	50%	34%	48%	51%	57%	66%	154.7**

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

For the girls, general recidivism among the sex offenders (30%) was approximately equal to that of the non-sex offenders (29%). The girls who committed a sexual offense were relatively more likely to reoffend with a felony offense compared to the girls who committed a non-sexual offense. For the boys, general recidivism was relatively high for the non-sex offenders (41%) and relatively low for the felony sex offenders (24%) and the child abusers (21%). Felony sex offenders and child abusers were relatively more likely to reoffend by committing a felony offense compared with the other groups of offenders.

8.3.3 Risk categorisation for each offender group

Table 4 provides details of the WSJCPA risk categorisation for the different groups of sex offenders and non-sex offenders. It shows the percentage of juveniles in the low-risk, medium-risk and high-risk categories together with the average level of recidivism for each category.

Table 4 Recidivism rates per risk score for the different groups of sex and non-sex offenders

	Male adolescent non-sex offenders (n = 15,155)		Female adolescent non-sex offenders (n = 1,680)		Female adolescent sex offenders (n = 71)		Misdemeanor sex offenders (n = 381)		Felony sex offenders (n = 282)		Child abusers (n = 521)	
	%	p	%	p	%	p	%	p	%	p	%	p
Low	37%	.26	39%	.17	31%	.09	46%	.16	26%	.07	27%	.12
Moderate	31%	.44	29%	.32	40%	.35	25%	.35	43%	.18	46%	.17
High	32%	.58	32%	.41	28%	.45	29%	.55	31%	.48	27%	.38

The offender groups differed from each other in terms of the percentages of low, medium and high risk and in terms of the level of recidivism in each risk group.

8.3.4 Relationship between risk factors and recidivism for each offender group

For each offender group, Table 5 shows the correlations with recidivism for the individual items of the WSJCPA and for the criminal history score, the social history score and the overall risk score.

For most groups of offenders, the strongest predictors from the criminal history domain were: misdemeanor referrals, detention dispositions, probation dispositions and failure-to-appear warrants. The strongest predictors from the social history domain were: school problems, peer relationships, runaway history and parental rule enforcement. In this, the correlations with most factors in the sex offender groups were generally higher than the correlations in the non-sex offender groups.

Compared to female non-sex offenders, for the female sex offenders the following risk factors had a significantly stronger correlation with recidivism: misdemeanor referrals ($F = 1.68, p < .05$), against-person misdemeanor referrals ($F = 2.04, p < .05$), probation dispositions ($F = 2.05, p < .05$), failure-to-appear warrants ($F = 1.72, p < .05$), criminal family member ($F = 1.71, p < .05$), parental rule enforcement ($F = 1.90, p < .05$) and alcohol/drug problems ($F = 2.35, p < .01$).

Table 5 Correlations between the risk factors and recidivism for the different groups of sex and non-sex offenders

	Male adolescent non-sex offenders (n = 15.155)	Female adolescent non-sex offenders (n = 5.811)	Female adolescent sex offenders (n = 71)	Misdem. sex offenders (n = 381)	Felony sex offenders (n = 282)	Child abusers (n = 521)
Criminal history domain						
Age at first referral	.15**	.13**	-.08	.15**	.18**	.07
Misdemeanor referrals	.18**	.17**	.36**	.32**	.27**	.29**
Felony referrals	.09**	.09**	.09	.30**	.12*	.17**
Weapon referrals	.05**	.03**	.02	.17**	.05	.11*
Against-person misdemeanor referrals	.13**	.15**	.38**	.09	.17**	.22**
Against-person felony referrals	.03**	.04**	-.22	.09	-.04	-.05
Detention dispositions	.19**	.18**	.25*	.33**	.36**	.27**
probation dispositions	.09**	.07**	.31**	.19**	.22**	.17**
Escapes	.04**	.02	.18	.02	-.05	.12**
Failure to appear warrants	.14**	.11**	.31**	.15**	.30**	.15**
Social history domain						
School problems	.16**	.14**	.20	.13*	.23**	.23**
Peer relationships	.20**	.17**	.13	.31**	.29**	.21**
Out-of-home placements	.08**	.11**	.06	.12*	.20**	.10*
Runaway history	.18**	.18**	.15	.31**	.26**	.29**
Criminal family member	.12**	.09**	.28*	.08	.23**	.10*
Parental rule enforcement	.21**	.19**	.40**	.28**	.28**	.20**
Alcohol/drug problem	.10**	.09**	.36**	.21**	.22**	.22**
Victim of physical abuse	.10**	.09**	.14	.07	.02	.07
Victim of sexual abuse	.03**	.08**	.17	.08	-.01	.01
Victim of neglect	.10**	.07**	.10	.10*	.16**	.12**
Mental health problem	.06**	.08**	.15	.06	.07	.10*
Criminal history score	.23**	.23**	.25*	.37**	.31**	.28**
Social history score	.25**	.25**	.32**	.30**	.35**	.30**
Overall risk score	.26**	.26**	.31**	.35**	.37**	.23**

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

Compared to the male non-sex offenders, for the misdemeanor sex offenders the following risk factors had a significantly stronger correlation with recidivism: misdemeanor referrals ($F = 2.87, p < .01$), felony referrals ($F = 4.21, p < .001$), weapon referrals ($F = 2.34, p < .001$), detention dispositions ($F = 2.89, p < .05$), probation dispositions ($F = 2.28, p < .05$), runaway history ($F = 2.66, p < .01$) and alcohol/drug problems ($F = 2.17, p < .05$).

Compared to the male non-sex offenders, for the felony sex offenders the following risk factors had a significantly stronger correlation with recidivism: misdemeanor referrals ($F = 1.66, p < .05$), detention dispositions ($F = 3.05, p < .01$), probation dispositions ($F = 2.21, p < .05$), failure-to-appear warrants ($F = 2.79, p < .05$), out-of-home placements ($F = 2.03, p < .05$), criminal family member ($F = 1.88, p < .05$) and alcohol/drug problems ($F = 2.04, p < .05$).

Compared to the male non-sex offenders, for the child abusers the following risk factors had a significantly stronger correlation with recidivism: misdemeanor referrals ($F = 2.61, p < .01$), felony referrals ($F = 1.82, p < .01$), against-person misdemeanor referrals ($F = 2.08, p < .05$), detention dispositions ($F = 1.89, p < .05$), probation dispositions ($F = 1.82, p < .05$), escapes ($F = 1.80, p < .05$), runaway history ($F = 2.61, p < .01$) and alcohol/drug problems ($F = 2.76, p < .01$).

8.3.5 Predictive validity of the WSJCPA for each offender group

Table 6 shows the AUC values of the criminal history score, the social history score and the overall risk score from the WSJCPA for the different offender groups.

Table 6 AUC-values of the WSJCPA risk scores for the different groups of sex and non sex offenders

	Social history score	Criminal history score	Overall Risk level
Male adolescent non-sex offenders ($n = 15.155$)	.652 (.644 - .661)	.633 (.624 - .642)	.649 (.640 - .658)
Female adolescent non-sex offenders ($n = 5.811$)	.639 (.623 - .654)	.640 (.624 - .655)	.638 (.623 - .654)
Female adolescent sex offenders ($n = 71$)	.714 (.584 - .844)	.624 (.477 - .772)	.681 (.552 - .811)
Misdemeanor sex offenders ($n = 381$)	.688 (.632 - .744)	.718 (.662 - .773)	.706 (.650 - .762)
Felony sex offenders ($n = 282$)	.727 (.656 - .798)	.705 (.631 - .778)	.734 (.667 - .801)
Child abusers ($n = 521$)	.685 (.629 - .741)	.652 (.589 - .716)	.651 (.592 - .710)

For all male adolescent sex offender groups, the AUC values were higher than those of the male adolescent non-sex offenders; for the group of misdemeanor sex offenders the difference was significant for the criminal history score and the overall risk score, and for the felony sex offenders group the difference was significant for the social history score and the overall risk score. For girls, there were no significant differences between the sex offenders and the non-sex offenders in the AUC values of the risk scores.

8.4 Discussion

Risk assessment instruments developed for juvenile sex offenders are often unable to predict sexual recidivism or general recidivism (Viljoen, et al., 2009; Viljoen et al., 2007). As juvenile sex offenders are approximately three times more likely to reoffend by committing a non-sexual offense than a sexual offense (e.g. Långström & Grann, 2000; McCann & Lussier, 2008; Rasmussen, 1999; Vandiver, 2006), it is important to investigate whether general risk assessment instruments can be applied to juvenile sex offenders. So far, it remained unclear to what extent the general risk assessment instruments developed for general juvenile offenders are usable for juvenile sex offenders. For this reason, this study examined the predictive validity of the Washington State Juvenile Pre-Screen Assessment (WSJCPA) among a number of different groups of juvenile sex offenders, namely female adolescent sex offenders, misdemeanor sex offenders, felony sex offenders, and child abusers. These groups of juveniles were compared with juvenile non-sex offenders.

Firstly, the extent to which these groups differed from each other in terms of age and ethnicity was examined. Compared to non-sex offenders, European Americans appeared to be overrepresented in the different groups of sex offenders (with the exception of the group of misdemeanor sex offenders). Other studies have also found that European Americans are overrepresented in the group of sex offenders (Veneziano, Veneziano, LeGrand & Richards, 2004; Van Wijk, Van Horn, Bullens, Bijleveld & Doreleijers, 2005). However, there are also studies in which no differences in terms of ethnicity have been found between sex offenders and non-sex offenders (Bischof, Stith & Whitney, 1995; Van Wijk, Vreugdenhil & Bullens, 2004; Van Wijk et al., 2005) or in which ethnicity minority groups are overrepresented in the group of sex offenders (e.g., Awad & Saunders, 1991; Van der Put, Stams, Deković, Hoeve, & Van der Laan, 2011). With regard to age, among the girls no difference was identified between sex offender and non-sex offender groups, but for the boys, the sex offenders were on average younger than the non-sex offenders. Previous research findings with regard to age differences are contradictory. A review of the literature from 1995 to 2005 (Van Wijk et al., 2006) showed that some studies found that sex offenders were younger

than non-sex offenders (Bischof, et al., 2005; Van Wijk, Van Horn, Bullens, Bijleveld & Doreleijers, 2005; Van Wijk, et al., 2004), while other studies found that sex offenders were older than non-sex offenders (Jacobs, Kennedy & Meyer, 1997; Jonson-Reid & Way, 2001; Van Wijk et al., 2005) or found no differences between the ages of sex offenders and non-sex offenders (Burton, Miller & Shil, 2002; Butler & Seto, 2002; Ford & Linney, 1995; Veneziano et al., 2004). These contradictory results may have resulted from methodological shortcomings of the studies, including ignoring the heterogeneity of juvenile sex offenders, small sample sizes and biased sampling (Van Wijk, et al., 2005).

With regard to general recidivism rates, no significant difference was found between sex offenders and non-sex offenders among the girls, but female sex offenders re-offended relatively more frequently with a felony offense compared to female non-sex offenders. For the boys, general recidivism was relatively high for the non-sex offenders and relatively low for the felony sex offenders and the child abusers. Felony sex offenders and child abusers reoffended relatively frequently with a felony offense compared to other groups of offenders. The recidivism period in the current research of 18 months is relatively short. As a result, the recidivism rates identified are difficult to compare with recidivism rates from other studies, as most studies involved a longer follow-up period (McCann & Lussier, 2008).

Subsequently, the extent to which the risk factors relate to recidivism was examined for the different groups. For most risk factors, this relationship appeared to be stronger among sex offenders than among non-sex offenders. This applied both for risk factors from the criminal history domain and risk factors from the social history domain. The effect of risk factors on recidivism is therefore greater among sex offenders than among non-sex offenders. In terms of the relative importance of the risk factors, there were few differences between the groups. For most groups, the strongest predictors of general recidivism from the criminal history domain were the total number of misdemeanour referrals, detention dispositions, probation dispositions and failure-to-appear warrants and the strongest predictors from the social history domain were school problems, peer relationships, runaway history and parental rule enforcement. As far as we know, no research has yet shown that risk factors for general recidivism have a significant greater effect among sex offenders than among non-sex offenders. There is little research available in which a comparison is made of the *strength* of the relationship between risk factors and general recidivism among sex and non-sex offenders. Research of this kind is only possible if samples sizes are sufficiently large. From the previously mentioned review by Van Wijk and colleagues (2006), it appears that the average size of sex offender groups is 105, which is on the low side for the purpose of being able to detect actual differences between correlations. However, a meta-analysis by Hanson and Bussière (1998) has shown that there are few differences between sex and non-sex of-

fenders in the *type* of risk factor that is predictive of general recidivism. In other words, it has actually already been shown that the same factors are predictive of recidivism in the case of sex and non-sex offenders, but not that these factors are more closely related to recidivism among sex offenders than is the case with non-sex offenders.

The risk factors that relate to a negative family background (victim of physical abuse, sexual abuse and neglect) and mental health problems appeared to be relatively weak predictors of recidivism, both for sex offenders and non-sex offenders. A meta-analysis of recidivism studies has previously shown that these risk factors have a weak relationship with both sexual and general recidivism (Hanson, Morton-Bourgon, 2005). So in spite of the fact that these risk factors are considered essential in the etiology of sex offending (e.g., Barbaree, Marshall, & McGormick, 1998; Knight & Sims-Knight, 2003; Malamuth, 2003; Ward & Siegert, 2002), they are of subordinate importance for recidivism.

The risk factors whose relative importance was significantly higher for sex offenders than for non-sex offenders were: alcohol/drugs problems (all groups), runaway history (misdemeanour sex offenders and child abusers), criminal family member (female sex offenders and felony sex offenders), out-of-home placements (felony sex offenders) and parental rule enforcement (female sex offenders). A comparison of these results with the findings from previous research is difficult because studies primarily focused on the impact of risk factors on sexual recidivism rather than on general recidivism. In addition, previous studies often involved small samples, making it difficult to compare different groups of sex and non-sex offenders.

Because for many risk factors, the relationship with recidivism was stronger among sex offenders than among non-sex offenders, the predictive validity of the WSJCPA was higher for sex offenders than for non-sex offenders. The AUC value of the WSJCPA is significantly higher in the groups of misdemeanour and felony sex offenders. For child abusers and female adolescent sex offenders, the difference from non-sex offenders was not significant.

To summarize, the WSJCPA is a suitable instrument for estimating the general risk of recidivism among different groups of juvenile sex offenders. Because risk assessment instruments developed especially for juvenile sex offenders are incapable of making a significantly useful prediction of both sexual recidivism and general recidivism (Viljoen et al., 2009; Viljoen et al., 2007), it is strongly recommended that clinical practice uses the WSJCPA when assessing the general risk of recidivism in sex offenders. It is likely that other general risk assessment instruments are more suitable as well for predicting general recidivism among juvenile sex offenders than the instruments developed especially for this group. It is therefore recommended that the predictive validity of other general risk assessment instruments also be examined for juvenile sex offenders in order to further improve the risk assessment of juvenile sex offenders.