



**Administrative Office of the United States Courts  
Office of Probation and Pretrial Services**

Federal Post Conviction Risk Assessment Research Compendium

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## Overview of Research Using the PCRA

Since the development and deployment of the PCRA, there have been multiple research studies conducted using this instrument. This research encompasses a wide range of topical areas including efforts to revalidate the PCRA's predictive validity, investigate the PCRA's dynamic risk characteristics, examine the PCRA for race, gender, and age bias, evaluate the predictive value of the criminal thinking styles section of this instrument (i.e., Offender Section of the PCRA), and research the PCRA's usefulness in understanding special federal offender populations such as sex offenders and white-collar criminals. In addition, the PCRA has provided a foundation for other research topics involving the federal supervision system, including the use of supervision overrides, the implementation of the low-risk supervision policy, and the exploration of long-term recidivism patterns. Furthermore, recent research efforts have investigated modifying the PCRA to enhance its capacity to predict violent recidivism. This section will summarize key findings from these studies to provide the reader with an understanding of the depth and breadth of research conducted using this risk tool.

### *Revalidation of the PCRA's Predictive Validity*

There have been two major efforts to revalidate the PCRA's predictive validity (Lowenkamp, Holsinger, & Cohen, 2015; Luallen, Radakrishnan, & Rhodes, 2016). The first study conducted by Lowenkamp et al. (2015) used assessments completed by U.S. probation officers on 113,281 offenders during the course of supervision to assess the PCRA's validity in predicting rearrest for any new criminal conduct and rearrest for violent offenses at 6, 12, 18, and 24 month intervals. Overall, this research showed that the PCRA is a valid predictor for rearrests involving both any offenses or violent offenses. For example, results show offenders classified in the low-risk category having a 12-month rearrest rate (any) of 4%, followed by low/moderate at 12%, moderate at 23%, and high at 35% (Lowenkamp et al., 2015). These results were in the anticipated direction (i.e., higher failure rates with each increasing risk categorization). Moreover, these findings were supported by the area under the receiver operating characteristic curve (AUC-ROC) values, which ranged between 0.70 and 0.77 depending on the subsample, outcome being predicted, and follow-up time.

The second PCRA revalidation study was conducted by a team of outside researchers at Abt Associates (Luallen et al., 2016). In findings mirroring those reported by Lowenkamp et al. (2015), this study found that the PCRA, as currently designed, was an effective tool for classifying offenders and that this instrument achieved a level of predictive validity comparable to other instruments such as the LSI-R. In addition, Luallen et al. (2016) explored the PCRA's predictive effectiveness by the type of recidivism offense. Overall, these researchers found that the PCRA performed well in predicting commonly occurring offenses, including drug, violent, and property offenses, but was less effective in predicting rarer offenses, such as immigration or public order crimes (Luallen et al., 2016).

In addition to these revalidation studies, a recent research effort by Cohen and Bechtel (2017) investigated whether incorporation of the 15 non-scored items currently rated by officers into the PCRA's risk algorithm could significantly enhance the instrument's predictive accuracy. In general, findings show that inclusion of the non-scored items resulted in relatively negligible

improvements in the PCRA's capacity to predict recidivism involving any or violent forms of criminal conduct. In other words, the enhancements in prediction garnered by incorporating the non-scored items were not substantive enough that the Administrative Office of the U.S. Courts (AOUSC) should consider integrating these items into the risk prediction tool (Cohen & Bechtel, 2017).

#### *Investigating the PCRA's dynamic characteristics*

The next set of studies explored the PCRA's capacity to measure changes in an offender's recidivism risk characteristics over time and investigated whether changes in risk were correlated with recidivism outcomes. Cohen and VanBenschoten's (2014) study examined which of the dynamic criminogenic factors measured by the PCRA changed for the better or worse between assessments. Results showed that many of the higher (e.g., high or moderate) risk offenders improved by moving to a lower risk classification category by their next assessment. Cohen and VanBenschoten (2014) also investigated which of the dynamic PCRA risk domains were most amenable to change between assessments. In general, they found that the offender's employment and substance abuse-related risk factors were most likely to decrease by the second assessment (Cohen & VanBenschoten, 2014).

Cohen, Lowenkamp, and VanBenschoten (2016a) followed up their PCRA change work with another study exploring the relationship between changes in an offender's risk characteristics and recidivism outcomes. This study tracked a population of 64,716 offenders placed on federal supervision who received at least two PCRA assessments. In findings similar to those of Cohen and VanBenschoten (2014), the study found that nearly two-fifths of high- and a third of moderate-risk offenders were reassessed into lower risk levels by their next assessment. Most important, changes in offender risk were associated with changes in rearrest rates. Specifically, high-, moderate-, and low/moderate-risk offenders with decreases in either their risk classifications or overall PCRA scores had lower recidivism rates compared to their counterparts whose risk levels or scores either remained unchanged or increased, while increases in offender risk were associated with higher rates of rearrests. This study also generated crucial evidence in support of the low-risk principle. Specifically, offenders in the lowest risk category saw no recidivism reduction if they had a decrease either in their overall PCRA score or in any of their risk domains (Cohen et al., 2016a; Cohen et al., 2016b).

#### *Studies investigating the PCRA for race/gender/age bias*

Recent studies by Skeem and Lowenkamp (2016), Skeem, Monahan, and Lowenkamp (2016), and Monahan, Skeem, and Lowenkamp (2017) have investigated the PCRA for potential race/gender/age biases. The Skeem and Lowenkamp research empirically tested the predictive accuracy of the PCRA across offender race categories (that is, blacks and non-Hispanic whites). Specifically, it examined the relationships among race, risk assessment (PCRA), and future rearrests using a sample of 34,794 black and non-Hispanic white federal offenders. While the study found that black offenders obtained higher average PCRA scores than white offenders, most of the racial differences in the PCRA scores (about 69%) were attributable to the criminal history domain (Skeem & Lowenkamp, 2016). Importantly, results showed no evidence of race-based test bias for the PCRA. The instrument strongly predicted rearrests for both black and white offenders across the instrument's risk levels. Stated differently, a given PCRA score had essentially the same meaning—i.e., the same probability of recidivism—across the two race groups (Skeem & Lowenkamp, 2016).

Skeem et al. (2016) also empirically tested the predictive fairness of the PCRA across offender gender categories. When the PCRA was constructed, gender was omitted as a potential risk factor. Based on a study population of 14,310 offenders, results showed that the PCRA strongly predicted arrests for both genders—but overestimated a woman’s likelihood of recidivism. In other words, for a given PCRA score, the predicted probability of arrest is too high for women. In regard to score differences across gender, the study found that women obtained slightly lower mean scores on the PCRA than men and that this difference was wholly attributable to men’s greater criminal history (Skeem et al., 2016).

Last, Monahan et al. (2017) tested the PCRA for potential age biases. Specifically, it explored whether the PCRA overestimated recidivism for older offenders and whether older offenders had higher or lower PCRA scores compared to their younger counterparts. In general, these researchers found that the strength of the association between PCRA scores and future arrests was similar across Younger (i.e., 25 years and younger), Middle (i.e., 26-40 years), and Older (i.e., 41 years and older) age groups (AUC values .70 or higher). That is, a one-unit increase in an offender’s given PCRA score was associated with an increase in the likelihood of recidivism, and this pattern held regardless of an offender’s age. However, it is important to note that the rates of arrest within each PCRA risk category were consistently lower for Older than for Younger offenders. Despite its inclusion of age as a risk factor, PCRA scores overestimated rates of recidivism for Older offenders and underestimated rates of recidivism for Younger offenders. Last, this research found that Older offenders had lower PCRA scores than their Younger counterparts, but that the differences in the mean scores were relatively small.

#### *Evaluating the predictive value of the PICTS criminal thinking styles*

The PCRA research has also encompassed studies examining the predictive value of criminal thinking information generated from the Offender Section of the PCRA (Walters & Lowenkamp, 2016; Walters & Cohen, 2016). To reiterate, the Offender Section of the PCRA is based primarily on the Psychological Inventory of Criminal Thinking Styles (PICTS) and is used to assess whether an offender has any elevated styles of criminal thinking measured by this tool (e.g., general, reactive, or proactive forms of criminal thinking). The study by Lowenkamp and Walters (2016) sought to determine whether the PICTS predicted general recidivism in a sample of 81,881 male and 14,519 female offenders on federal probation or supervised release. Results showed that the PICTS General Criminal Thinking, Proactive, and Reactive scores and all but the super-optimism criminal thinking style scale predicted recidivism in follow-ups of 6 or more months, 12 or more months, and 24 or more months, with effect sizes in the low-moderate to medium range (Walters & Lowenkamp, 2016). This study also demonstrated that the PICTS General Criminal Thinking score contributed significantly to recidivism prediction in both males and females above and beyond the information provided by the PCRA.

Another study by Walters and Cohen (2016) examined whether an increase in criminal thinking predicted a heightened risk for recidivism in a sample of offenders under federal supervision. Using a 1-year change on the General Criminal Thinking (GCT) score of the PICTS, the effect of an increased GCT score on subsequent recidivism was tested in 35,147 male and 5,254 female federal probationers and supervised releasees. The results revealed that a rise in GCT was an incrementally valid predictor of time until first rearrest in both men and women after controlling for age, criminal history, and race/ethnicity and predicted the presence of a subsequent rearrest during a 1-year follow-up in men, regardless of initial GCT score. Although these effect sizes were relatively small, they were still statistically significant; hence, they

supported the assumption that criminal thought process, as measured by the PICTS GCT score, is a dynamic risk predictor (Walters & Cohen, 2016).

### *The PCRA and special offender populations and other research*

A couple of recently published studies have delved into using the PCRA to inform the system about the risk characteristics and recidivism outcomes of special offender populations. Recently, Cohen and Spidell (2016) used the PCRA to examine the risk characteristics of 7,416 male sex offenders placed on post-conviction supervision for the following offenses: child pornography, transporting minors for illegal sexual activities, sexual assault, and violation of the Sex Offender Registration and Notification Act (SORNA). It also compared the risk levels of sex and non-sex offenders. The study found that sex offenders, with the exception of those convicted of sexual assault and violation of SORNA laws, had lower risk levels and recidivism rates than the non-sex offender population. Child pornography offenders were especially likely to be considered low risk, with nearly all of these offenders initially being assessed in the low- or low/moderate-risk categories. In terms of recidivism outcomes, offenders convicted of child pornography exhibited lower general and violent rearrest rates and supervision revocations compared to offenders convicted of SORNA or sexual assault.

Another special population examined through the PCRA risk prism was white-collar offenders on post-conviction supervision (see Harbinson, 2017). In a doctoral dissertation examining the risk and recidivism characteristics of white-collar offenders, the researcher showed that while white-collar offenders manifested lower PCRA scores compared to the general population, the instrument performed well in terms of predicting the likelihood that these offenders would recidivate. This analysis supports the use of risk assessment with white-collar offenders and provides further support for applying the risk and needs principles to what is considered a unique population (Harbinson, 2017).

In addition, PPSO staff have used the PCRA as a basis for other research topics, including supervision overrides, responsivity issues, the low-risk supervision policy, and long-term recidivism patterns. The supervision override study provided an overview of professional overrides for 58,524 offenders under federal supervision, with initial PCRA assessments conducted between August 31, 2012, and December 30, 2013 (Cohen, Pendergast, & VanBenschoten, 2016c). In general, officers used the override option infrequently, with almost 10% of the study population being overridden. Two-thirds of adjustments involved policy rather than discretionary overrides. Among the policy overrides, nearly three-fourths were because the offender is a sex offender, while the remainder involved rationales for persistently violent behavior or severe mental illness. Almost all overrides were an upward adjustment, with the offender being placed into a risk level higher than that designated by the PCRA. Last, this research shows offenders with overrides recidivating at rates consistent with their initial as opposed to adjusted risk levels.

Another study relied on the PCRA to examine the presence of responsivity factors (e.g., treatment barriers) for nearly 20,000 federally supervised offenders, with an initial PCRA assessment between November 1, 2013, and March 30, 2014 (Cohen & Whetzel, 2014). Overall, this study found that 28% of these offenders had a responsivity problem that hindered an offender's success on supervision. Issues involving the ability to obtain adequate transportation and problems associated with mental health were the most common treatment barriers. In general, offenders classified on the higher end of the risk continuum were more likely to face

barriers of inadequate transportation, lack of interest in program participation, mental health, and residential issues compared to their lower-risk counterparts.

Another PCRA-related study provided a preliminary analysis on the implications of the low-risk policy for the federal supervision system (Cohen, Cook, & Lowenkamp, 2016d). This study examined the relationship between the low-risk policy and officer/offender contact patterns and explored whether the recidivism rates for low-risk offenders had changed after enactment of this policy. In general, it showed that low- and low/moderate-risk offenders in the post-policy group had fewer officer/offender contacts compared to their pre-policy counterparts (Cohen et al., 2016d). Importantly, the policy of supervising low-risk offenders less intensively has not compromised community safety. Post-policy low-risk offenders were no more likely to recidivate than their pre-policy counterparts (Cohen et al., 2016d).

Last, Flores, Holsinger, Lowenkamp, and Cohen (2017) used the PCRA to examine whether offender recidivism rates begin to converge across risk categories over time and ascertain the predictive validity between multivariate models using fixed (logistic regression and AUC-ROC) and variable (Cox regression and Harrell's C) follow-up approaches. Using a sample of 27,156 offenders and a 10-year follow-up, results showed that the risk of recidivism declined as a function of the time the person was offense free for all but low-risk offenders, and that the recidivism risk probability for high, moderate, and low/moderate offender risk converged at about seven years (Flores et al., 2017). In addition, this study demonstrated little substantive difference in prediction between the Cox and logistic regression analyses, along with their related Harrell's C and AUC-ROC validity estimates.

#### *The next iteration of the PCRA: modifying the PCRA to enhance its violence predictive capacities*

While the original PCRA predicted general recidivism, overrides frequently occurred for offenders with persistently violent histories because the PCRA did not properly assess an offender's propensity towards violence. In recognition of this limitation, PCRA 2.0 was created, which incorporates a violence risk assessment. PCRA 2.0 allows for better accuracy in identifying individuals at an elevated risk of committing a violent act based on a combination of static risk factors and criminal thinking scales as measured by the Offender Section of the PCRA (see Serin, Lowenkamp, Johnson, & Trevino, 2016). The PCRA 2.0 violence trailer was deployed in early 2017, and subsequent research efforts will focus on validating this instrument on actual officer assessments. Now that officers can for the first time empirically assess an offender's likelihood of committing a violent offense during supervision, PCRA 2.0 should result in better decision-making in the case planning and risk management process, mitigation of the risk of harm to the community, and enhancement of officer safety.

#### *Overall conclusions about PCRA research*

In summary, this research highlights several key findings about the PCRA risk tool. Specifically, these studies show that the PCRA is highly effective in classifying offenders into different risk categories and predicting their probability of recidivism; in addition, they show that this tool is dynamic, meaning it can measure change in an offender's recidivism risk characteristics over time, and that change in risk is correlated with rearrest outcomes. Moreover, this research has shown that the PCRA is race neutral in terms of recidivism prediction and that the predictive value of this instrument can be enhanced by using information gleaned from the criminal thinking styles component of this instrument. In addition to these major findings, other

research has demonstrated the PCRA's importance in understanding special offender populations, supervision overrides, the low-risk supervision policy, and long-term recidivism patterns. Last, research delving into violence prediction has resulted in the enhancement of this tool's capacity to predict violence. The PCRA, with its added violence prediction trailer, will now provide officers with a means of identifying potentially violent offenders and hence serve as a mechanism for protecting the community.

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