How Dangerous Are They? An Analysis of Sex Offenders Under Federal Post-Conviction Supervision

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SEX OFFENSES ARE among the crimes that provoke serious public concern (Hanson & Morton-Bourgon, 2005, 2009). An especially acute concern involves the growing exploitation of children by online sex offenders who use the Internet and related digital technologies to possess, distribute, or produce child pornography or contact children for sexual purposes (Seto, Hanson, & Babchishin, 2011). Though accounting for a relatively small portion of all sex crimes against children, evidence shows substantial increases in the number of arrests involving online sexual offenses over the past ten years (Motivans & Kyckelhan, 2007; Wolak, Finkelhor, & Mitchell, 2005, 2009). Societal concern over the online sexual exploitation of children, along with evidence showing that many of these online offenders have self-reported histories of contact sexual offenses (Lam, Mitchell, & Seto, 2010; Seto et al., 2011), has produced aggressive law enforcement responses aimed at targeting sex offenders at the state and federal levels.

The federal response to the problem of sex offenders, and especially Internet child pornographers, manifests through both increased resources directed at law enforcement efforts and enhanced sentencing provisions (Faust & Motivans, 2015). Two primary federal legislative responses aimed at sex offenders are the Prosecutorial Remedies and Other Tools to End the Exploitation of Children Today Act of 2003 (The PROTECT Act) and the Adam Walsh Child Protection and Safety Act of 2006 (The Adam Walsh Act). The PROTECT Act primarily increased mandatory minimum penalties for child pornography and sexual abuse offenders and provided federal judges with discretion to impose life supervision terms on federal sex offenders (Faust & Motivans, 2015; U.S. Sentencing Commission [USSC], 2012). The Adam Walsh Act gave the U.S. Attorney General authority to create a national registry of convicted sex offenders, authorized federal civil commitment for those certified as sexually dangerous, and permitted the imposition of search conditions for sex offenders sentenced to federal probation or supervised release (Faust & Motivans, 2015; USSC, 2012).[1] In addition to these legislative enactments, the U.S. Department of Justice has established numerous regional task forces and funded specialized units within federal law enforcement agencies to investigate and prosecute offenders engaging in Internet child sex crimes (Wolak et al., 2005).

As a result of these changes, the number of sex offenders prosecuted, incarcerated, and placed under federal post-conviction supervision has risen exponentially since the mid-1990s. (Faust & Motivans, 2015; USSC, 2012). In an examination of major trends, Faust and Motivans (2015) reported a nearly 1,400 percent increase in the number of sex offenders on post-conviction federal supervision, from 321 offenders in 1994 to 4,714 offenders in 2013, and much of this increase can be attributed to the prosecution of offenders charged with possession, receipt, distribution, or production of child pornography.[2] In addition, federal sex offenders are increasingly being sentenced to lengthy post-conviction supervision terms; for example, the United States Sentencing Commission (USSC) reported that in fiscal year 2010, the average terms of supervised release sentences imposed ranged from 220 months for offenders convicted of child pornography possession to 323 months for offenders convicted of child pornography production (USSC, 2012). By contrast, the average term of supervised release imposed on federal offenders generally in 2010 was about 43 months (USSC, 2012).

As the number of sex offenders, particularly online child pornographers, under federal post-conviction supervision has

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[1] For additional details about the Walsh and PROTECT Acts, see 42 USC §16911 and 18 USC §2252.

[2] Faust and Motivans also noted substantial increases from the early 1990s in the number of offenders convicted of sexual abuse, sex trafficking, and violation of the Adam Walsh Act sexual registry mandates; however, by 2013, child pornography offenders accounted for the largest portion of sex offenders incarcerated within federal prisons.

increased, so too have concerns regarding whether these offenders have histories of, or are likely to engage in, offline contact sexual behavior with children. A recent meta-study of child pornography offenders conducted by Seto et al. (2011) found that about 12 percent of child pornography offenders had an official arrest or conviction record of contact sexual behavior, but 55 percent disclosed through self-reporting conducted through treatment programs, background investigations, or polygraphs that they had prior sexual contact with children.[3] A study of federal child pornography offenders conducted by the U.S. Sentencing Commission showed about 33 percent of these offenders engaging in some prior form of criminally sexually dangerous behavior (USSC, 2012).

These studies indicating that many online child pornography offenders are involved in contact offending, coupled with substantial caseload growth, raise important questions about the overall characteristics of federal sex offenders. Key questions have only begun to be explored, including what are the most common offense types (e.g., distribution of online child pornography, sexual assault) under post-conviction supervision, how many have an official arrest or conviction record of offline contact sexual behavior, what are their general recidivism risk characteristics, and how frequently do these offenders reoffend or get revoked (Bourke & Hernandez, 2009; DeLisi et al., 2016; Faust, Bickart, Renaud, & Camp, 2014; Faust & Motivans, 2015; USSC, 2012). Moreover, there have been no empirical assessments of the extent to which the current actuarial instrument used by federal probation officers to predict general recidivism—the Post-Conviction Risk Assessment (PCRA)—can predict general recidivism or revocations for federal sex offenders.

In the sections below, we discuss the federal judiciary's policy for supervising sex offenders, briefly summarize prior research on federal sex offenders, and detail the data and methods used in this study. Afterwards, principal findings will be highlighted, and we conclude by discussing policy implications and directions for future research.

[3] Studies examining rates of contact sexual behavior through offender self-reporting have been criticized on the grounds that they could overinflate the contact rates because they rely on offenders participating in treatment programs "who have strong incentives to admit to sexual contacts, even if untrue, as a sign of their progress in treatment" (Seto et al., 2011: 126).

Federal Policy on Supervising Sex Offenders

The Administrative Office of the U.S. Courts—Probation and Pretrial Services Office (AOUSC-PPSO) has responded to the growing number of sex offenders under federal post-conviction supervision and the concerns that many online child pornography offenders might be involved in offline contact sexual offending by issuing guidance for federal officers charged with supervising these offenders.

Under current policy, the potential threat that sex offenders pose to the community requires them to begin supervision at the "highest" levels until the officer has performed a thorough assessment using all information available. All offenders placed on supervised release after incarceration or sentenced to straight probation[4] have their risk to recidivate for any offense assessed using the PCRA.[5] The PCRA is a dynamic actuarial risk assessment instrument developed for federal probation officers that classifies offenders into the risk levels of low, low/moderate, moderate, or high (AOUSC, 2011).[6] These categories provide crucial information about an offender's likelihood of committing any offense or being revoked (AOUSC, 2011; Johnson, Lowenkamp, VanBenschoten, & Robinson, 2011; Lowenkamp, Johnson, VanBenschoten, Robinson, & Holsinger, 2013). Importantly, however, the PCRA was not constructed to specifically measure an offender's sexual deviance or predict sexual recidivism (Lowenkamp et al., 2013).

The policies provide guidance regarding the intensity of supervision. The policies specifically state that all sex offenders should begin their supervision terms being supervised as high risk regardless of the PCRA's classification. This provides officers with the time to conduct investigations into the extent of an offender's sexually deviant background, observe their responses to treatment, and identify any protective factors, all while ensuring that the offender is being supervised at levels intensive enough to protect the community. The policies, however, guide officers to appropriately lower the supervision levels of sex offenders if, after this initial investigation, the officer determines that less intensive supervision can address risk while maintaining protection of the community.

[4] Supervised release refers to offenders sentenced to a term of community supervision following a period of imprisonment within the Federal Bureau of Prisons (18 U.S.C. §3583). Probation refers to offenders sentenced to a period of supervision without any imposed incarceration sentence (18 U.S.C. §3561). Of the 135,142 federal offenders under supervision in fiscal year 2015, 86 percent were on supervised release and 13 percent were on probation.

[5] See Johnson, Lowenkamp, VanBenschoten, and Robinson (2011); Lowenkamp, Johnson, VanBenschoten, Robinson, and Holsinger (2013); and Lowenkamp, Holsinger, and Cohen (2015) for information about the construction, validation, and implementation of the PCRA in the federal supervision system.

[6] It should be noted that the PCRA is currently undergoing a revision which will involve the integration of a violence assessment into the instrument and result in offenders being placed into 12 different risk groups. At the time of this study, the revised PCRA had not yet been implemented; hence, we continue anchoring our offender population into the four risk groups discussed above.

Prior Research on Federal Sex and Child Pornography Offenders

Some recently published studies that examined recidivism of those convicted of child pornography and contact sex offenses against children in the U.S. include studies by the U.S. Sentencing Commission (2012) and Faust et al. (2014). In 2012, the USSC published a report to the U.S. Congress on the prosecution, sentencing, incarceration, and supervision of offenders convicted of federal non-production child pornography offenses. Part of this report examined the rearrest rates for 610 offenders sentenced to non-production child pornography offenses in 1999 and 2000. These offenders were tracked for an average of eight and a half years and counted as recidivists if they were arrested for any felony or misdemeanor offenses or had a technical violation leading to an arrest or revocation (USSC, 2012, pp. 295-296). The USSC reported a general recidivism rate of 30 percent and a sexual recidivism rate of 7 percent during the follow-up period. Through the presentence reports, the USSC found that about 33 percent of these offenders had a history of engaging in criminal sexually dangerous behavior (USSC, 2012).

Another study conducted by Faust et al. (2014), compared 428 offenders convicted of non-contact child pornography offenses to 210 offenders convicted of contact sex offenses involving children on several risk and recidivism-related factors. Overall, Faust et al. (2014) found that child pornography offenders had less substantial criminal histories and lower substance abuse rates than contact sex offenders; conversely, child pornography offenders tended to have higher

rates of pre-incarceration employment and education levels than offenders convicted of child-related contact sex offenses. These researchers reported overall arrest rates nearly three times higher for the contact (25.7 percent) compared to the child pornography (9.1 percent) offenders. The differences in arrest rates held even when controlling for other recidivism-related characteristics such as criminal history and substance abuse.[7]

Data and Methods

Participants and Sex Offender Types

Data for this study were obtained from 94 federal judicial districts and comprised 7,416 male sex offenders released from federal prison and placed on supervision during fiscal years 2007 through 2013. In a method similar to that used by Faust & Motivans (2015), we identified sex offenders and placed them into broader categories by using the title and section of the U.S. Criminal Code associated with their instant conviction offense. The U.S. Criminal Codes was extracted from the Probation and Pretrial Services Automated Case Tracking System (PACTS), the case management system used by federal probation and pretrial officers. Through this process, we were able to categorize the 7,400 sex offenders into the following groups of sexual offenses involving either children or nonconsenting adult victims.[8]

Child pornography (N = 4,462)

18 U.S.C. § 1470: Transfer of obscene material to minors
18 U.S.C. § 2251: Sexual exploitation of children
18 U.S.C. § 2251A(a)(b): Selling or buying of children
18 U.S.C. § 2252: Certain activities relating to material involving the sexual exploitation of minors
18 U.S.C. § 2252A: Certain activities relating to material constituting or containing child pornography
18 U.S.C. § 2260(a)(b): Production of sexually explicit depictions of a minor for importation into the United States

Transportation for illegal sexual activity (N = 800)

18 U.S.C. § 1591: Sex trafficking of children or by force, fraud, or coercion
18 U.S.C. § 2422: Coercion and enticement
18 U.S.C. § 2423(a)(b): Transportation of minors
18 U.S.C. § 2425: Use of interstate facilities to transmit information about a child relating to illicit sexual activity

Sexual abuse or assault (N = 1,030)

18 U.S.C. § 2241: Aggravated sexual abuse
18 U.S.C. § 2242: Sexual abuse
18 U.S.C. § 2243: Sexual abuse of a minor or ward
18 U.S.C. § 2244: Abusive sexual contact
18 U.S.C. § 2245: Sexual abuse resulting in death

Sex Offense Registration and Notification Act (SORNA) (N = 874)

18 U.S.C §2250: Failure to register as sex offender

There was also a category of sex offenders (N= 250) that we were unable to classify according to their convicted offenses, as the statute codes in PACTS were labelled "other sex" offenses. We included these "other" offenders in the totals but excluded them from most of the analyses comparing sex offender conviction types. Last, those convicted of child pornography were further categorized by whether they had any official arrest or conviction record of contact sexual behavior prior to or concomitantly with their current offense.

Identifying Sex Offenders with an Official Arrest or Conviction Record of Contact Sexual Behavior

We further classified those on federal supervision for a sex offense according to whether they evidence any contact sexual behavior in their official records. In this study, having an official record of contact sexual behavior means that the offender was either arrested for or convicted of an offense involving contact sexual offenses (e.g., sexual assault, child molestation, child pornography production, child trafficking, etc.) before or for the current offense. We were unable to measure incidences of self-reported contact behavior that might have arisen through polygraphs or other investigative means for this study.

Being able to measure the presence of an official record of contact sexual behavior is especially important when examining Internet child pornography offenders, because research shows that offenders who commit child pornography and contact sex crimes tend to have higher risk levels and recidivism rates compared to child pornography-only offenders (Babchishin, Hanson, & VanZuylen, 2015). We used a combination of Static-99 data from the Federal Bureau of Prisons (BOP) and arrest history data to identify offenders with past or present evidence of contact criminal sexual behavior. The Static-99 is an actuarial risk prediction instrument that estimates the probability of sexual and/or violent reconviction for adult males who have already been charged with or convicted of at least one contact sexual offense against a child or nonconsenting adult (Harris, Phenix, Hanson, & Thornton, 2003). This instrument is scored on all sex offenders incarcerated within the U.S. federal prison system with an official current or prior arrest or conviction record of contact sexual offending. It is used by the BOP to screen for potential civil confinement.

The Static-99 scoring rules preclude this instrument from being used on offenders who have only been arrested for or convicted of non-violent sexual offenses including prostitution, consensual sexual activity, or online non-production child pornography (Harris et al., 2003). Hence, the Static-99's scoring rules allowed us to deduce that, if the offender was scored on this instrument, they had an official arrest or conviction record of contact sexual behavior. In addition to those with a Static-99, any offender whose criminal history indicates a prior arrest for sexual assault or sexual exploitation was classified as having an official record of contact sexual behavior.

The decision to use the Static-99 for the purpose of identifying sex offenders with an official record of contact sexual behavior necessitated that we exclude certain offenders from our analysis. Specifically, the 7,400 sex offenders were extracted from a larger database containing 9,583 offenders with an instant conviction for a sex offense between fiscal years 2005 through 2013. We excluded all female sex offenders (*n* lost = 215 offenders) and offenders sentenced to probation-only sentences (*n* lost = 522 offenders), as neither of these groups would be scored on the Static-99 by the BOP. We also removed all

[7] Other studies focused on the key trends taking place in the prosecution, incarceration, or supervision of federal sex offenders (see Faust & Motivans, 2015) or examined the frequency with which sex offenders self-reported contact sexual behavior either during polygraph (see DeLisi et al., 2016) or in treatment (see Bourke & Hernandez, 2009).

[8] It's important to note that the number of sex offenders analyzed in the current study will not approximate the numbers under active federal supervision reported by PPSO's internal systems (i.e., Decision Support Systems). This discrepancy is partially explained by the fact that DSS includes under its sex offender definition any offender with a current sex offense conviction or with a history of engaging in sexually criminal behavior.

offenders received onto federal supervision before 2007, as the BOP was not uniformly applying this instrument before that year (*n* lost = 1,304). Last, since we wanted to track offender recidivism patterns, we removed all offenders without criminal history information from the file (*n* lost = 126).

Offender Recidivism Outcomes

We defined recidivism as any arrest for new crimes (excluding arrests for technical violations of the conditions of supervision) that took place between the offender's release from federal custody date and the last date these arrest data were assembled (i.e., 3/17/2015). New arrest events encompassed the following major offense categories: arrests for any felony or misdemeanor offenses, arrests for violent nonsexual offenses (e.g., homicide and related offenses, kidnapping, robbery, and assault), and arrests for any sexual offenses violent or nonviolent (e.g., child pornography, sexual assault, and sexual exploitation).[9] We combined violent and non-violent sexual arrest activity because, as will be shown, the base rates for sexual recidivism were fairly low. We also examined the rates at which offenders were revoked during their supervision term. Revocation information was retrieved from PACTS and included any revocation that took place from the start of active supervision until the last date of revocation information retrieval (i.e., 10/30/2014).

Analytical Plan

The current study primarily uses descriptive statistics to provide an overview of the general (i.e., non-sexual) risk characteristics and recidivism rates for offenders convicted of federal sex offenses. Specifically, this study categorizes the 7,400 federal sex offenders by their instant conviction offenses, assesses how many have an official record of contact sexual behavior, details their demographic profiles, and describes their risk characteristics as measured by the PCRA. We then examine the recidivism and revocation rates within a fixed period while under post-conviction supervision. In addition, we compare the 7,416 male sex offenders with a group of 179,812 male non-sex offenders placed on post-conviction supervision during the same time period.

The final component of this study uses multivariate techniques (i.e., logistic regression) to investigate the PCRA's power at predicting general recidivism and revocation outcomes. As will be shown, the overall recidivism and revocation rates for those with instant offense convictions for sexual assault or violations of the Sex Offender Registration and Notification Act (SORNA) are significantly higher than those of the child pornography offenders. Multivariate logistic regression techniques were employed to examine whether these differences in recidivism and revocation rates still held when the PCRA was included as a statistical control. In addition, we employed an AUC-ROC (area under curve - receiver operating characteristics) analysis to assess the PCRA's ability to predict specific recidivism events including arrests for any, violent (non-sexual), or sexual offenses or revocations from supervision.

Results

Most Common Instant Conviction Sex Offenses

Table 1 examines the most common instant conviction offenses for sex offenders received into federal supervision between fiscal years 2007 through 2013 and the percentage of these offenders with an official record of arrests or convictions for contact sexual behavior. Offenders convicted of possession, receipt, distribution, or production of online child pornography accounted for the largest numbers of sex offenders under post-conviction supervision. Three-fifths (60 percent) of the 7,416 federal sex offenders had an instant offense conviction for online child pornography offenses, while the remainder were convicted of sexual abuse or assault (14 percent), SORNA violations (12 percent), or transporting minors for illegal sexual activity (hereafter illegal transportation) (11 percent). Three percent of the sex offenders in our study population were unclassifiable.

We also used the presence of a Static-99 score and criminal history data to determine the percent of sex offenders with an official record of past or present contact sexual behavior.[10] Half of the sex offenders under post-conviction supervision had an official record of engaging in contact sexual behavior, meaning that they were either scored on the Static-99 or had a prior arrest for sexual assault or exploitation. Over 90 percent of offenders convicted of sexual assault (91 percent), illegal transportation (91 percent), or SORNA (95 percent) offenses evidenced an official record of contact sexual behavior. Conversely, 24 percent of online child pornography offenders had been arrested for or convicted of contact sexual offenses.

Some caution should be used in interpreting these results on the presence of contact sexual behavior. First, the column identifying

TABLE 1.
Percent of federal sex offenders with official record of contact sexual behavior

Instant sex offense at conviction	Number	Percent of offenders with — Any official contact behavior	Static-99	Prior arrest for sex assault or exploitation
All sex offenders	7,416	49.5%	43.6%	25.0%
Child pornography	4,462	23.6%	18.6%	12.0%
Other-not classifiable[a]	250	54.4%	45.6%	28.4%
Sexual assault	1,030	90.6%	86.0%	28.9%
SORNA[b]	874	94.6%	82.0%	75.1%
Transportation for illegal sexual activity	800	90.9%	85.9%	36.0%

Note: Includes federal offenders placed on supervised release between fiscal years 2007 through 2013.

Percentages will not sum to totals as offenders can have both a Static-99 and prior arrest for sexual assault or exploitation. The prior sex assault/exploitation arrest variable excludes offenses that resulted in the offender being placed on federal supervision.

[a]The non-classifiable sex offenders are excluded from subsequent analyses as a specific offense category but included in totals.

[b]Includes offenders convicted of violating the Sexual Offender Registration and Notification (SORNA) act.

[9] Prostitution offenses were excluded from the sexual recidivism events.

[10] See methods section on how we used the Static-99 to assess whether the offender had an official background of contact sexual behavior.

"any evidence of contact offending" is based on an official record of an arrest or conviction and does not include self-reported behavior. Previous research has found about half of online child pornography offenders admitting to some form of prior sexual contact with children (Seto et al., 2011). Moreover, while it might seem surprising that 14 percent of offenders convicted of sexual assault did not have a Static-99, this offense category also includes offenders convicted of consensual (e.g., statutory rape) as well as forcible sexual assault. We were unable to identify offenders convicted of consensual sexual acts through the PACTS offense coding scheme.

Table 2 shows the sex offense conviction categories included in the study. For the 36 percent of offenders convicted of sexual assault, violation of SORNA laws, or illegal transportation, no information on their contact backgrounds was integrated into the analysis because as previously shown (see Table 1), nearly all of these offenders had a record of contact sexual behavior. For most offenders convicted of sexual assault, SORNA violations, or illegal transportation, their past or present conduct would inherently involve some form of contact sexual behavior necessitating a Static-99. For those convicted of child pornography offenses, we used information from the Static-99 and criminal history data to place them into (1) an online child pornography-only group and (2) a group containing child pornography offenders with arrest or conviction records for contact sexual behavior. Table 2 also shows the offense distributions for sex offenders with PCRA assessments. Since the study includes sex offenders placed on supervised release between fiscal years 2007-2013, not all had PCRA assessments, because implementation of this risk instrument did not begin until mid-2010.

Demographic Characteristics of Federal Sex Offenders

Table 3 shows the demographic characteristics of federal sex offenders based upon their instant conviction offense. Whites accounted for 81 percent of the general sex offender population; among non-sex offenders, whites comprised 57 percent of the total population. Nearly all offenders (95 percent) convicted of child pornography offenses were white, while minorities accounted for higher portions of the non-child pornography sexual offenses. American Indians and Alaska Natives, for example, comprised 71 percent of the sexual assault offenders and African Americans accounted for 26 percent of the SORNA offenders. Sex, and especially child pornography offenders, skewed older. At the time of being placed on post-conviction supervision, the average sex offender was 45 years old, while child pornography offenders averaged 46 years in age.

PCRA Risk Characteristics of Federal Sex Offenders

Figure 1 provides information on the initial PCRA risk classifications for federal sex offenders by their instant conviction offense.[11] In general, sex offenders, with the exception of those convicted of sexual assault and SORNA laws, had lower risk levels than the non-sex offender population. For example, 12 percent of the sex offenders with PCRA assessments were classified as either moderate or high risk; in comparison, 26 percent of the non-sex offenders were grouped into the moderate- or high-risk categories. Child pornography offenders were especially likely to be considered low risk, with nearly all (97 percent) of these offenders initially being assessed in the low or low/moderate risk categories. A slightly higher percentage of child pornography offenders with official records of contact sexual behavior garnered a moderate- or high-risk PCRA classification (8 percent) compared to child pornography offenders without contact histories (2 percent). Among offenders convicted of non-child pornography offenses, almost half the SORNA (47 percent) and about a fourth of those convicted of sexual assault (27 percent) were classified moderate or high risk by the PCRA.

Table 4 depicts the average total PCRA scores as well as the average PCRA domain scores in criminal history, education/employment, substance abuse, social networks, and supervision attitudes for sex offenders and compares them to the average PCRA scores for non-sex offenders. In contrast to non-sex offenders, sex offenders averaged lower scores in the PCRA domains of criminal history, education/employment, and substance abuse; however, sex offenders manifested higher average scores in the PCRA domains of social networks and supervision attitudes. Within the specific sex offender categories, offenders convicted of child pornography scored consistently lower in most of the PCRA domains than the sexual assault or SORNA offenders. Not surprisingly, child pornography offenders with contact records of sexual offending received higher PCRA criminal history scores than their child pornography counterparts without contact records. For those offenders convicted of illegal transportation, their average PCRA scores, with the exception of criminal history, were similar to those of child pornography offenders.

Recidivism Outcomes of Federal Sex Offenders

Table 5 depicts the three-year recidivism

TABLE 2.
Instant conviction sex offense for federal sex offenders including subset with Post Conviction Risk Assessments (PCRA)

Instant sex offense at conviction	All offenders		Subset with PCRAs	
	Number	Percent	Number	Percent
All sex offenders	7,416	100%	5,284	100%
Any child pornography offense	4,462	60.2%	3,420	64.7%
No record of contact behavior	3,411	46.0%	2,651	50.2%
Official record of contact behavior	1,051	14.2%	769	14.6%
Other-not classifiable	250	3.4%	75	1.4%
Sexual assault	1,030	13.9%	548	10.4%
SORNA	874	11.8%	674	12.8%
Transportation for illegal sexual activity	800	10.8%	567	10.7%

Note: Includes federal offenders placed on supervised release between fiscal years 2007 through 2013 with and without PCRA assessments. Federal offenders began receiving PCRA assessments in mid-2010s. The non-classifiable sex offenders are excluded from subsequent analyses as a specific offense category but are included in totals.

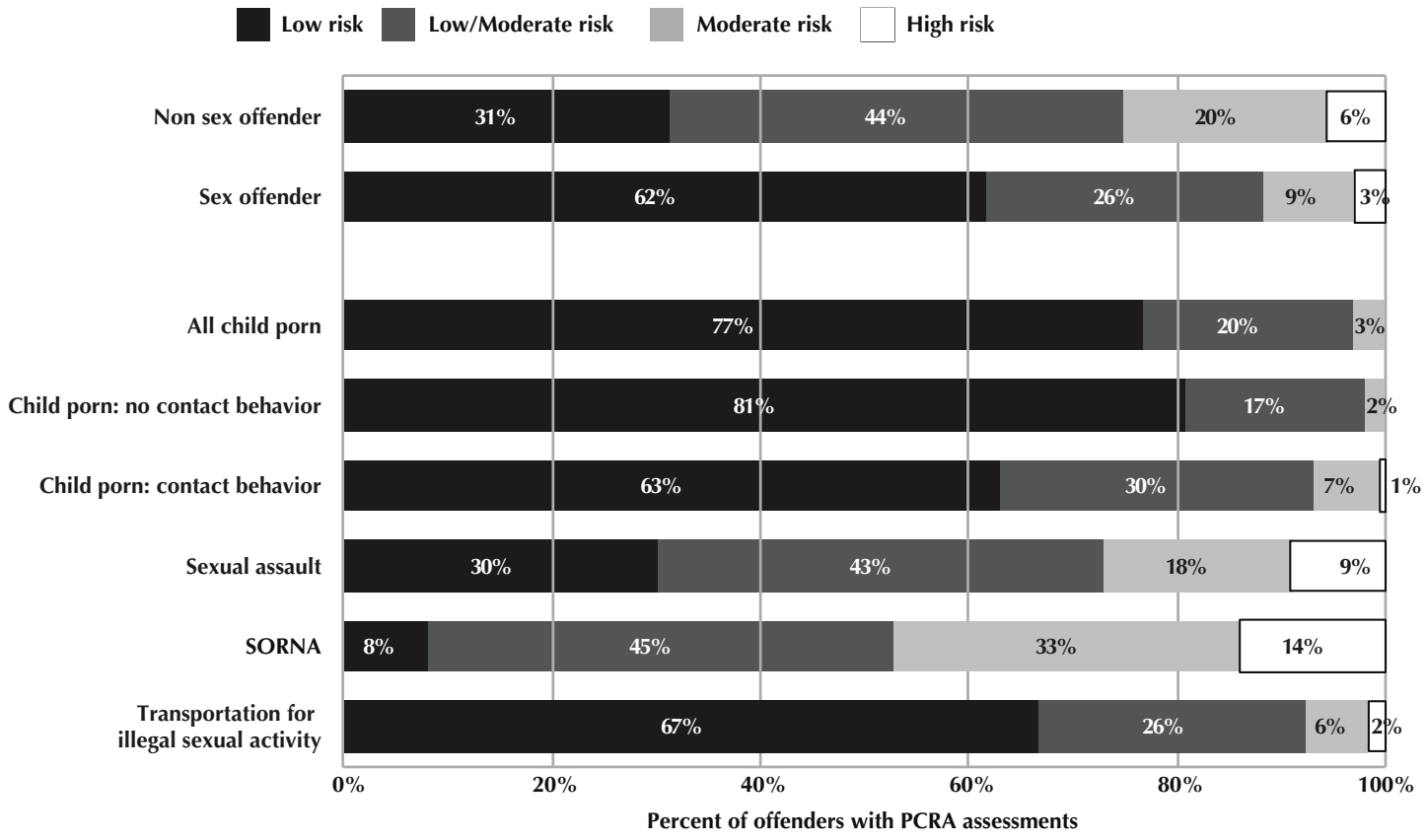
[11] Figure is limited to subsample of 5,284 offenders with PCRA assessments. Adjusted supervision levels not shown.

TABLE 3.
Demographic characteristics for federal sex offenders, by instant conviction sex offense

Demographic characteristics	Instant conviction sex offense					All offenders	
	Child pornography						
	No record of contact behavior	Official record of contact behavior	Sexual assault	SORNA	Transportation for illegal sexual activity	Sex	Non-sex
Race							
Asian	1.6%	1.2%	1.0%	0.3%	4.3%	1.5%	2.6%
Black	2.9%	3.0%	6.8%	25.5%	8.9%	6.9%	38.8%
American Indian	0.5%	0.7%	71.0%	2.8%	0.5%	10.7%	1.8%
White	95.0%	95.1%	21.2%	71.4%	87.4%	80.9%	56.8%
Hispanic ethnicity	5.8%	5.3%	5.8%	10.9%	6.4%	6.4%	25.6%
Average age (yrs.)	45.8	46.3	38.7	43.4	44.2	45.1	38.7
Number of offenders	3,411	1,051	1,030	874	800	7,416	179,812

Note: Table includes sex offenders received into federal supervision between 2007 through 2013.

FIGURE 1.
Post conviction risk assessment (PCRA) risk categories for federal sex offenders, by instant conviction sex offense



Note: Includes subset of offenders with PCRA assessments

TABLE 4.
Average Post Conviction Risk Assessment (PCRA) domain scores for federal sex offenders by instant sex conviction offense

Instant sex offense at conviction	Number of offenders	Average total PCRA score	Average PCRA domain scores				
			Criminal history	Education/ Employment	Substance abuse	Social networks	Supervision attitudes
All offenders							
Non-sex offender	97,537	7.17	4.59	1.12	0.28	1.08	0.11
Sex offender	5,284	5.08	2.60	0.98	0.12	1.23	0.15
Convicted sex offense							
All child pornography	3,420	3.92	1.74	0.83	0.07	1.15	0.14
No record of contact behavior	2,651	3.62	1.53	0.79	0.07	1.10	0.13
Official record of contact behavior	769	4.95	2.48	0.95	0.07	1.29	0.15
Sexual assault	548	7.44	4.28	1.30	0.31	1.38	0.17
SORNA	674	9.36	5.64	1.59	0.25	1.64	0.24
Transportation for illegal sexual activity	567	4.64	2.43	0.83	0.07	1.15	0.15

Note: Includes subset of federal sex offenders with PCRA assessments.

rates for sex offenders during their post-conviction supervision term. To be included in this table, the offender's recidivism event had to be observable for a minimum of three years and their court-ordered supervision terms had to be three years or more (Baber, 2015). Offenders, for example, were counted as having recidivated if at any time during the three years in which they were sentenced to supervised release they were either arrested or revoked. Using this approach, offenders sentenced to less than three years of supervised release or whose recidivism event could not be followed for a minimum of three years were excluded from this analysis. Recidivism events occurring after the supervision term or outside the three-year follow-up period were also omitted.

Table 5 generally shows persons convicted of sex offenses being arrested or revoked less frequently than those convicted of non-sex offenses. For example, nearly a fifth (18 percent) of sex offenders were arrested for any offense during their first three years of supervision, while about a third (31 percent) of non-sex offenders had any arrest during the same time period. The percentage of sex offenders arrested for non-sexual violent offenses (2 percent) was also lower in comparison to non-sex offenders (8 percent). Sex offenders, however, were three times more likely to be arrested for sexual offenses (3 percent) than non-sex offenders (1 percent).

Among the sex offense types, those offenders under supervision for SORNA or sexual assault were arrested or revoked at the highest rates, while those under supervision for child pornography offenses had lower recidivism rates. For example, 42 percent of the SORNA and 23 percent of the sexual assault offenders were arrested for any offense within three years of their supervision start dates, compared to 13 percent of child pornography offenders. The percentage of offenders arrested for non-sexual violent offenses was also higher for the SORNA (8 percent) and sexual assault (4 percent) offenders than for offenders on supervised

TABLE 5.
Three-year recidivism rates for federal sex offenders while under supervision, by instant conviction offense

Instant offense at conviction	Number	Recidivism outcomes				
		Any arrest	Major arrest[a]	Non-sexual violent arrest	Any sex arrest	Probation revocation
All offenders						
Non-sex offender	89,615	31.4%	23.0%	7.9%	0.5%	22.6%
Sex offender	3,909	17.5%	7.8%	1.8%	2.8%	19.2%
Conviction sex offense						
All child pornography	2,287	13.0%	4.9%	0.5%	2.6%	11.6%
No record of contact behavior	1,722	12.5%	4.3%	0.4%	2.2%	9.5%
Official record of contact behavior	565	14.7%	6.9%	0.7%	4.1%	18.2%
Sexual assault	605	23.1%	9.9%	3.6%	2.2%	38.5%
SORNA	299	41.8%	26.1%	8.0%	7.7%	47.2%
Transportation for illegal sexual activity	550	17.3%	7.8%	1.6%	2.4%	14.4%

Note: Sub-sample used for 3-year arrest rates is restricted to actively supervised TSR cases for which the offender was sentenced to at least 3 years of supervision.

[a]Excludes minor offenses including breaches against public peace, invasion of privacy, prostitution, obstruction of justice, liquor law violations, and traffic offenses.

release for child pornography (1 percent). There was less variation between the instant offense categories in regards to recidivism for sex offenses; child pornography offenders, for example, were arrested for sexual offenses at rates (3 percent) similar to that of sexual assault (2 percent) or illegal transportation (2 percent) offenders.

For offenders convicted of child pornography offenses, having an official record of contact sexual behavior was generally not associated with significantly higher recidivism rates. The general rearrest rates for child pornography offenders with contact sexual records (15 percent) was nearly the same as child pornography offenders without any records of contact sexual offending (13 percent). Officers, however, were more likely to revoke child pornography offenders with contact sexual records (18 percent) compared to their counterparts with no official record of contact sexual behavior (10 percent).

Predictive Efficacy of PCRA for Federal Sex Offenders

We examined whether the differences in arrest rates across the convicted sex offense categories reported in Table 5 still hold when the offender's PCRA scores are introduced as statistical controls. We conducted this examination by calculating the predicted probabilities of arrest or revocation after initial PCRA assessment for each of the major sex offense categories used in this study. These predicted probabilities were generated through a statistical technique (i.e., logistic regression) that allows us to examine the relationship between the instant conviction offenses and recidivism/revocation outcomes while holding constant the offender's PCRA scores at their means. We compare arrest/revocation probabilities for those convicted of child pornography offenses with no record of contact sexual behavior to those convicted of child pornography with an official record of contact sexual behavior, illegal transportation, sexual assault, or SORNA offenses. Significant differences between the child pornography (non-contact) and other offense types are noted by an asterisk.[12]

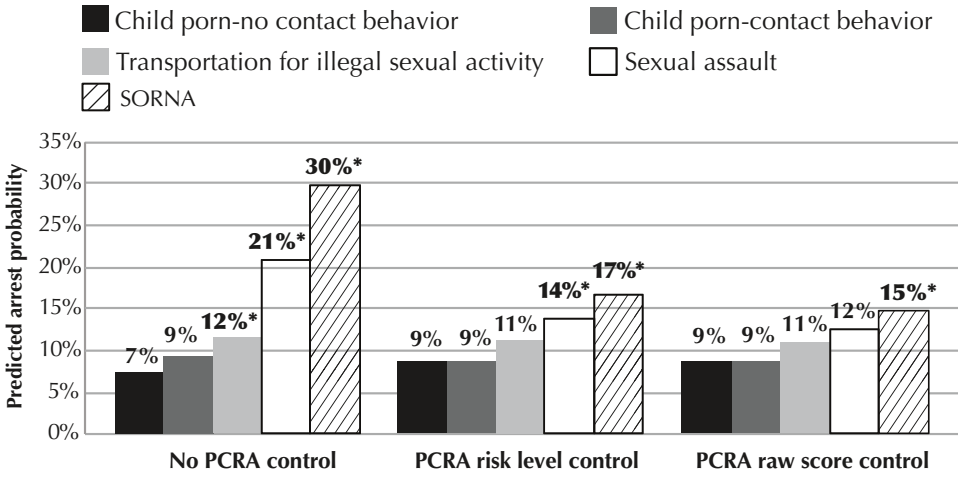
Figure 2 shows the predicted probability of any arrest across the sex offender offense categories initially without any controls and then adjusts these probabilities by statistically controlling for an offender's PCRA risk levels and raw scores. The model without any PCRA controls produces predicted arrest patterns similar to the bivariate analysis shown in Table 5. Specifically, the estimated arrest probabilities for the illegal transportation (12 percent), sexual assault (21 percent), and SORNA (30 percent) offenses are significantly higher compared to the estimated arrest probability for child pornography offenders with no record of contact sexual behavior (7 percent). Once the estimated arrest probabilities have been adjusted for an offender's PCRA risk level or raw score, they are less substantial across the sex offense categories. For example, adjusting the probability of arrest to take into account an offender's raw PCRA risk score generates estimated arrest probabilities between those convicted of child pornography offenses with no official record of contact sexual behavior (9 percent) that were not significantly different from those convicted of child pornography with official records of contact sexual behavior (9 percent), illegal transportation (11 percent), and sexual assault (12 percent). Only the SORNA offenders continued to manifest predicted arrest probabilities that are significantly higher (15 percent) than the non-contact child pornography offenders.

We also generated predicted revocation probabilities taking into account an offender's PCRA risk level or raw score, which are shown in Figure 3. In results similar to the prior analysis, we initially show significant differences in the predicted revocation probabilities between the non-contact child pornography offenders and the other sex offender types; however, when the PCRA is used to statistically control for the risk of revocation, the differences in the likelihood of revocation diminish across the sex offender categories.

Last, we focus on the PCRA's utility to predict recidivism outcomes for persons convicted of federal sex offenses through an AUC-ROC (area under curve - receiver operating characteristics) analysis and by examining the recidivism rates across the four PCRA risk categories (e.g., low, low/moderate, moderate, and high). The AUC-ROC score is frequently used to assess risk assessment instruments and is often preferred over a correlational analysis because it is not impacted by low base rates (Lowenkamp et al., 2013). Essentially, the AUC-ROC measures the probability that a score drawn at random from one sample or population (e.g., offenders with a rearrest) will be higher than that drawn at random from a second sample or population (e.g., offenders with no rearrest) (Lowenkamp et al., 2013; Rice & Harris, 2005). Values for the AUC-ROC range from .0 to 1.0, with values of .70 or greater indicating that the

[12] Estimated arrest/revocation probabilities reported in Figures 2 and 3 will differ from percentages reported in Table 5 because these probabilities are estimated for shorter time periods (e.g., date of PCRA assessment) and are not restricted to arrests during supervision terms.

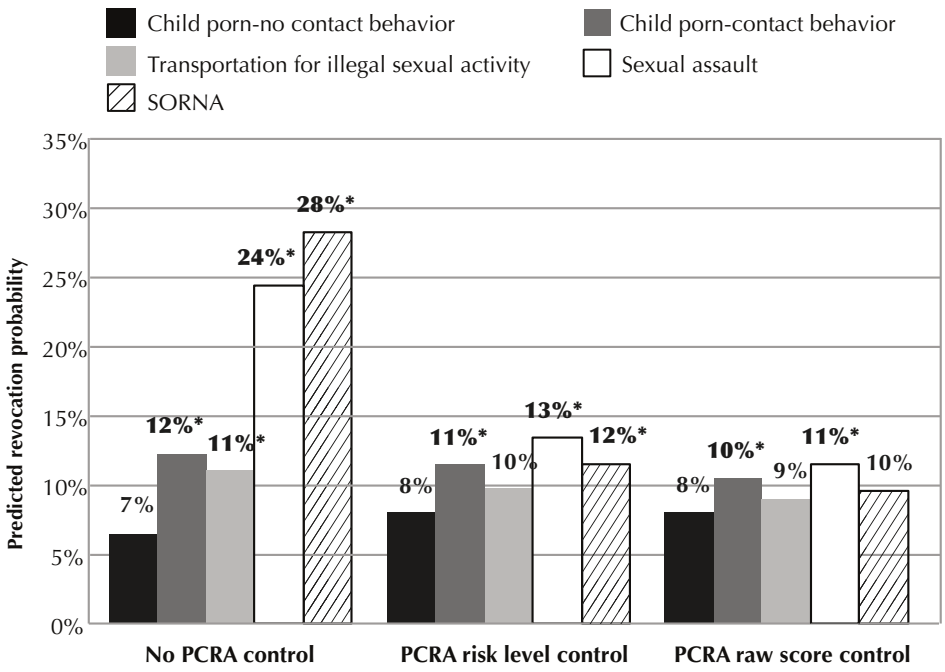
FIGURE 2.
Predicted probabilities of any arrest for federal sex offenders controlling for Post Conviction Risk Assessment (PCRA), by instant conviction offense



Note: Includes 5,284 federal sex offenders with PCRA assessments. Bold denotes significance difference between child porn offender with no contact behavior and the other sex offender offense categories. Arrest probabilities will differ from percentages reported in Table 5 as they track arrests for shorter time periods (e.g., date from PCRA assessment) and are not restricted to arrests during supervision terms.

* $p < .05$

FIGURE 3.
Predicted probabilities of revocation for federal sex offenders controlling for Post Conviction Risk Assessment (PCRA), by instant conviction offense



Note: Includes 5,284 federal sex offenders with PCRA assessments. Bold denotes significance difference between child porn offender with no contact behavior and the other sex offender offense categories. Revocation probabilities will differ from percentages reported in Table 5 as they track revocations for shorter time periods (e.g., date from PCRA assessment).
* $p < .05$

actuarial instrument does fairly well at prediction (Andrews & Bonta, 2010). Figure 4 shows the AUC-ROC scores for offenders in this study exceeding the .70 threshold for most of the recidivism outcomes, including any arrests (.72), violent arrests (.79), and probation revocations (.77). The AUC-ROC scores fell under the .70 threshold for only those outcomes associated with sexual recidivism (.63).

In addition to an AUC-ROC analysis, Figure 4 also shows the failure rates involving any arrests, non-sexual violent arrests, any sex arrests, and probation revocations by PCRA risk category for offenders with sex offense convictions. Among the non-sexual recidivism outcomes, the failure rates followed the anticipated pattern of increasing incrementally by each PCRA risk category. The recidivism rates for any arrest activity, for instance, increased from 7 percent for low-risk offenders to 15 percent for low/moderate, 33 percent for moderate, and 46 percent for high-risk offenders. Similar patterns of monotonically increasing failure rates also occurred for recidivism outcomes involving probation revocations and non-sexual violent arrests. The sexual recidivism outcome, however, manifested a weaker relationship with the PCRA risk groupings. The percentage of offenders rearrested for sexual offenses did not differ significantly for the low/moderate (4 percent), moderate (4 percent), and high (5 percent) PCRA risk categories (χ^2, 2 = .9017, p = .637).

Discussion and Conclusion

Summary of Major Findings

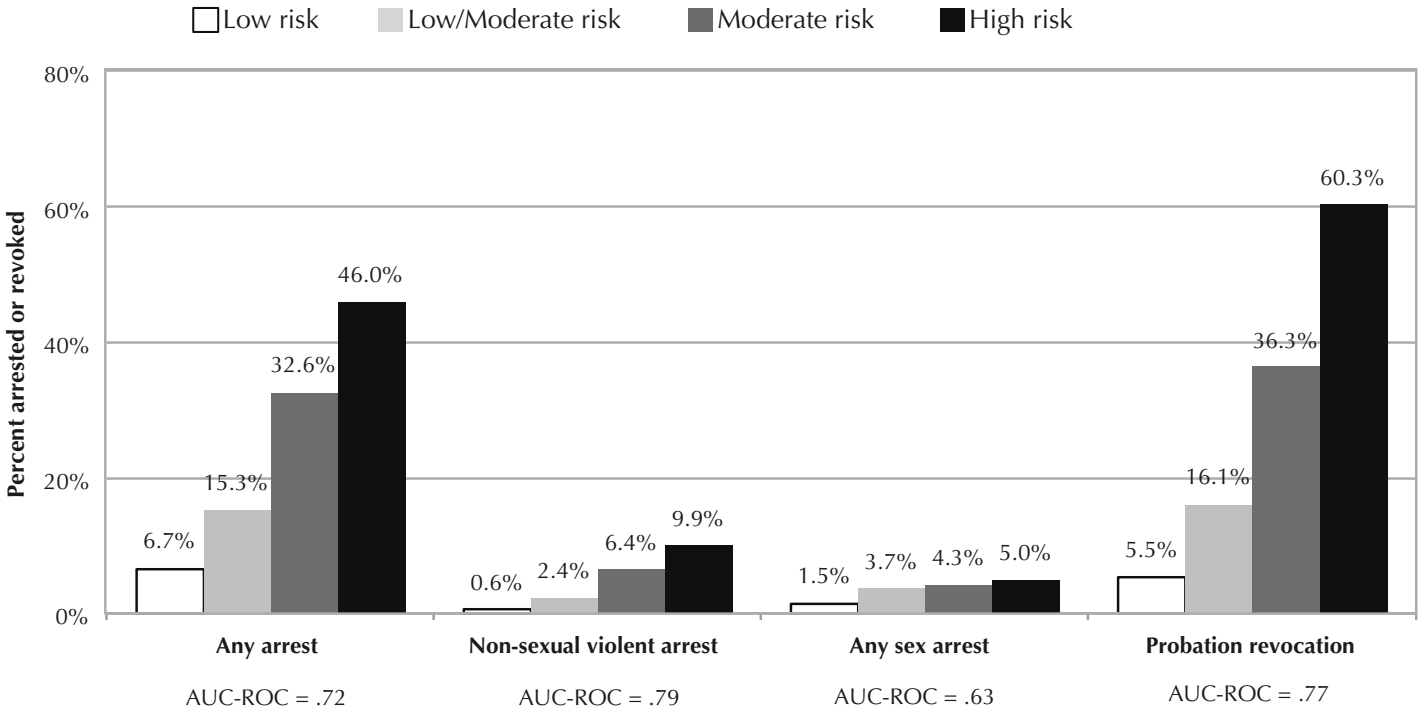
This study produced several key findings about persons convicted of sex offenses under federal post-conviction supervision. First, it shows those convicted of child pornography offenses accounting for the majority of sex offenses (60 percent), with the other offense types of sexual assault, illegal transportation, and SORNA accounting for 36 percent of federally supervised sex offenders. An examination of the official contact sexual backgrounds of these offenders shows that over 9 out of 10 of the non-child pornography offenders have an official conviction for, or arrest history of, engaging in contact sexual offenses. For those convicted of child pornography offenses, about a fourth of them had an official record of contact sexual offenses.

While those convicted of sex offenses in general scored lower on the PCRA and recidivated less frequently than those convicted of non-sex offenses, there was substantial heterogeneity in the recidivism rates and PCRA risk measures among the instant sex offense types. Specifically, those convicted of child pornography offenses had less serious criminal history backgrounds, attained higher levels of education and employment, suffered less frequently from substance abuse problems, and had stronger social support networks than those convicted of sexual assault or SORNA offenses. In fact, almost all the child pornography offenders were classified as either low or low/moderate risk by PCRA. Conversely, those convicted of sexual assault or SORNA offenses manifested general risk characteristics that were either similar to those of people convicted of non-sex offenses or, in the case of the SORNA, substantially higher.

Similar to the PCRA analysis, the recidivism patterns also varied across the conviction types. Offenders convicted of child pornography exhibited lower general and violent rearrest rates and supervision revocations compared to offenders convicted of SORNA or sexual assault. The recidivism activity for the SORNA offenders was particularly high, with about two-fifths of these offenders being rearrested within the three-year follow-up period. For the sexual recidivism outcome, however, there was less variation in arrest rates by conviction offense. It is also notable that those convicted of illegal transportation were rearrested or revoked at rates more similar to the child pornography than to the sexual assault and SORNA offenders. In a finding mirroring other studies, our analysis showed sex offenders being rearrested more frequently for non-sexual than sexual offenses (USSC, 2012; Hanson & Morton-Bourgon, 2009). Last, within the child pornography offense category, those offenders with an arrest or conviction record for contact sexual behavior evidenced only slightly higher-risk characteristics and reoffending behavior compared to child pornography offenders without any official background of contact sexual offenses.

The logistic regression and AUC-ROC analysis showed the PCRA performs well in predicting general rearrest and revocation outcomes for the 5,284 federal sex offenders with PCRA assessments analyzed in this study. Logistic regression results showed little to no significant differences among the arrest odds by the specific sex offender conviction types when controlling for the PCRA scores. Moreover, the AUC-ROC scores of .70 or above for the any arrest, violent arrest,

FIGURE 4.
Post Conviction Risk Assessment (PCRA) failure rates for any arrest, non-sexual violent arrests, any sex arrests, or probation revocations for federal sex offenders



Note: Includes 5,284 federal sex offenders with PCRA assessments. Arrest and revocation percentages will differ from percentages reported in Table 5 as they track recidivism activity for shorter time periods (e.g., date from PCRA assessment) and are not restricted to recidivism during supervision terms. Includes any arrests or revocations that occurred after the intial PCRA assessment.

and revocation outcomes, combined with the anticipated pattern of incrementally increasing failure rates for these recidivism, measures by risk category, indicate that the PCRA can be used to predict general (non-sexual) recidivism outcomes for offenders with instant convictions for sex offenses. The crucial exception is the PCRA's ability to predict sexual recidivism, as the AUC-ROC analysis and an examination of arrest patterns across the PCRA risk groups show that the PCRA is less effective at predicting this type of recidivistic behavior. This finding is not too surprising, however, because the PCRA was never constructed to predict sexual recidivism nor was it designed to measure sexual deviance (Lowenkamp et al., 2013).

Most of the findings in this paper align with prior research on federal sex offenders and are consistent with the general empirical work focusing on recidivism prediction for the sex offender population. Specifically, prior research has shown that child pornography is the most common type of sex offense within the federal system and that offenders convicted of child pornography have fewer risk characteristics and recidivate less frequently compared to contact sex offenders (Babchishin et al., 2015; Faust & Motivans, 2015; Faust et al., 2014; USSC, 2012; Babchishin, Hanson, & Herman, 2011). Although the recidivism rates reported in this paper do not exactly match those reported by the USSC, this discrepancy is attributed to the longer follow-up periods and different methodologies for measuring recidivism used by the U.S. Sentencing Commission. However, the recidivism rates for child pornography offenders reported by Faust et al. (2014) of 9 percent are fairly close to the 13 percent arrest rate reported in this study. In addition, the overall pattern of sex offenders being rearrested at higher rates for non-sexual rather than sexual offenses is consistent with the above-cited studies and other meta-analytic reviews of sex offender recidivism (Faust et al., 2014; USSC, 2012; Hanson & Morton-Bourgon, 2009).

This research is also supportive of using general risk assessments for recidivism prediction on sex offenders. Nearly all of these studies have shown that risk assessments designed to predict general or violent recidivism among the overall offender population should perform equally well in predicting these outcomes for sex offenders (Wormith, Hogg, & Guzzo, 2012; Hanson & Morton-Bourgon, 2009; Hanson & Bussiere, 1998). The prediction capacities of generalized or violent risk assessment instruments, however, are less effective in predicting sexual recidivism compared to risk assessment instruments such as the Static-99 that are specifically designed to predict sexual rearrest outcomes (Hanson & Morton-Bourgon, 2009; Hanson & Bussiere, 1998). Our research showing the PCRA's efficacy at predicting general and violent recidivism, and being less effective in predicting sexual recidivism, is consistent with these prior research efforts.

Last, in a somewhat surprising finding, this research shows that child pornography offenders with backgrounds of contact sexual offending exhibit only slightly higher risk characteristics and recidivism rates compared to child pornography offenders with no records of contact sexual offending. This finding is at odds with some studies showing offenders who commit child pornography and contact crimes having significantly higher risk levels and recidivism rates compared to child pornography-only offenders (Babchishin et

al., 2015). It is interesting to note, however, that the USSC also found similar rates of general recidivism between child pornography offenders with and without histories of criminally sexual dangerous behavior (USSC, 2012). Clearly more research is needed to discern whether offenders convicted of federal child pornography offenses can be disaggregated into more useful risk typologies.

Limitations and Areas for Future Research

This current study has several limitations that could be addressed by subsequent research. First, we did not consider self-reported contact offending behavior revealed through polygraphs or other investigative techniques. Prior research has shown about half of child pornography offenders admitting to a history of contact sexual offending (Seto et al., 2011). Subsequent research could assess the frequency of self-reported contact sexual behavior identified in a sample of offenders convicted of federal child pornography offenses. Another issue is the relatively short follow-up period of three years used in the current study. Sex offender recidivism studies typically reference the need to engage in long-term follow-ups involving periods of 5 to 20 years (Hanson, Morton, & Harris, 2003). Since our study covered only three years of offender recidivism activity, subsequent work should consider extending the recidivism follow-up terms. The decision to lengthen the follow-up period, however, should be informed by the fact that even studies tracking contact sex offenders for time periods of 20 to 30 years have shown about a third of these offenders eventually being arrested for new sexual offenses (Seto et al., 2011; Hanson, Steffy, & Gauthier, 1993).

Implications for Federal Probation Officers

The policy and procedures currently in place for the investigation and supervision of sex offenders were informed by the body of empirical knowledge available at that time. In general, the findings produced by this study align with this research used to inform federal sex offender policy and hence support the general framework of federal procedures on sex offender management.

This research supports the procedural guidance advising officers to use the PCRA to assess the risk of general recidivism and criminogenic needs for sex offenders and then augment this generalized risk picture with information pertaining to an offender's sexually deviant characteristics through an extensive investigation involving polygraphs, interviews, and discussions with treatment personnel. Moreover, it advises officers to use risk instruments such as the Static-99/2002 or Stable & Acute 2007 that are constructed to predict sexual recidivism to further understand an offender's propensities toward sexual deviance. The importance of supplementing the PCRA is supported by this research showing that the PCRA does not specifically assess an offender's risk of sexual recidivism or target those behaviors related to sexual deviance.

This research also highlights areas for further examination and potential enhancements in federal sex offender policies. Currently, federal policy recommends that all sex offenders begin supervision at the "highest" risk levels and then recommends that supervision intensity be adjusted downwards if and when an investigation of the offender's background indicates they are not at risk of committing contact sex offenses. With the availability of Static-99 scores from the BOP for those sex offenders with arrests or convictions for contact sexual offenses, officers can more accurately apply the risk principle to that group of sex offenders. Utilizing the Static-99, and supplementing it with information gleaned from polygraphs and other sources, may provide officers with the details required to thoroughly understand offenders' risk to sexually recidivate and classify them into appropriate supervision levels.

This research further supports federal policy that not all sex offenders have the same risk of recidivism generally and sexual offending specifically. Among the sex offender types, those offenders under supervision for SORNA or sexual assault were arrested or revoked at the highest rates, while the child pornography offenders exhibited lower recidivism rates. Hence, this research suggests that the sexual assault and particularly the SORNA offenders are of high concern for federal probation officers. Officers should consider assessing the SORNA offenders more closely beginning with their entrance into the criminal justice system as they evidence higher rates of general and violent recidivism compared to child pornography offenders.

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