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myths & facts

Using Risk and Need Assessments to Enhance Outcomes and Reduce Disparities in the Criminal Justice System

Community Corrections Collaborative Network

The Community Corrections Collaborative Network (CCCN) is comprised of the leading associations representing 90,000-plus probation, parole, pretrial, and treatment professionals around the country, including the American Probation and Parole Association (APPA), the Association of Paroling Authorities International (APAI), the Federal Probation and Pretrial Officers Association (FPPOA), the International Community Corrections Association (ICCA), the National Association of Drug Court Professionals (NADCP), the National Association of Pretrial Services Agencies (NAPSA), and the National Association of Probation Executives (NAPE).

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Introduction

Risk and need assessments have been an integral component of criminal justice decision making for decades. The evolution of risk and need assessments can be categorized into four distinct generations. The first generation of risk assessments consisted of unstructured professional judgments made about the likelihood of justice-involved individuals committing future crimes. The second generation of risk assessments added empirically based, actuarial items to predict risk. However, this generation typically lacked a theoretical base and consisted mainly of static items. The third generation of risk assessments introduced a theoretical base and dynamic factors (or criminogenic needs) along with static factors to produce a more accurate picture of the risk to reoffend. Currently, the field has entered into the fourth generation of risk and need assessments. These assessments are no longer used for the sole purpose of predicting crime. Instead, fourth generation assessments now commonly include case-management and intervention strategies designed to target criminogenic need areas and reduce overall risk. (Andrews et al., 2006; Andrews & Bonta, 2010).

Along with different generations, risk and need assessments also focus on different salient risk factors to predict varying outcomes at multiple decision points within the criminal justice system. Law enforcement may use a risk assessment to determine whether to arrest and jail an individual or issue a citation. A pretrial risk assessment seeks to measure the likelihood that a person will fail to appear for court or commit an offense while released. A presentence risk assessment addresses the likelihood that a person will reoffend or violate the conditions of supervision. While a post-adjudication risk assessment may determine the level of supervision and what dynamic risks factors (or criminogenic needs), if properly targeted, will reduce an individual's likelihood of future criminal conduct.

While major strides in the development and use of risk and need assessments have provided decision makers more objective and validated risk information, their use is not without controversy. This paper seeks to identify and dispel three specific myths regarding the use of risk and need assessments within the criminal justice system. A description and relevant research to dispel each myth will be provided.

Myth

1

Myth 1: Professional judgment is more effective than standardized risk and need assessments for predicting criminal justice outcomes.

Since the inception of assessing and predicting risk, two distinct approaches have emerged: professional judgment versus a data-driven, actuarial approach. The use of professional judgment was integral to developing the first generation of risk assessment: professionals, typically trained in the social sciences, interviewed individuals under court supervision and made predictions of the risk to reoffend using "expert knowledge," clinical experience, intuition, or simply "gut" instinct. In contrast, actuarial assessments are structured, quantitative, and empirically linked to relevant criteria (Bonta, 2002). Evolving versions of an actuarial approach have defined the second (use of validated static risk factors), third (use of validated static and dynamic risk factors), and fourth (use of validated static and dynamic risk factors with a case management component) generations of risk assessments.

Though the use of professional judgment as the sole basis for risk assessment is hard to defend given advancements in the field, many continue to rely on it. Andrews and Bonta (2010) suggest two distinct reasons for its unreliability. First, professional judgment relies on informal prediction criteria that cannot be observed, measured, or replicated by others. Second, professional judgment results in decisions that favor factors that are empirically unrelated to criminal behavior (e.g., mental health).

The first myth is easily dispelled when examining the large body of research comparing professional judgment to structured, actuarial approaches. However, before comparing the use of actuarial methods versus professional judgment, it is necessary to identify the statistic commonly used to report predictive accuracy. An important measure to determining predictive accuracy is the Receiver Operating Characteristic, or ROC (Andrews and Bonta, 2010). A ROC analysis yields the preferred and most common statistic used to report the predictive accuracy of risk assessments across studies: Area Under the Curve, or AUC. (Mossman, 1994). Using the AUC is advantageous when used to compare predictive accuracy as its values are not influenced by base rates of offending that differ across groups (Skeem & Lowenkamp, 2016). The AUC statistic measures how close a risk assessment is to achieving perfect prediction, with a perfect assessment achieving an AUC of 1 and an assessment achieving an AUC score .5 demonstrates an assessment predicts no better than chance.

The finding that actuarial risk and need assessments outperform professional judgment has been replicated across multiple meta-analyses, different populations of justice-involved individuals, and varied measures of recidivism. Bonta et al. (1998) examined the predictive accuracy of clinical

methods (i.e., professional judgment alone) versus statistical methods in a meta-analysis designed to compare recidivism predictors of individuals with and without mental health disorders in the criminal justice system. The researchers concluded that statistical methods of predicting general recidivism (*AUC = .73*) and violent recidivism (*AUC = .67*) were consistently more accurate than clinical methods (*AUC = .50, .55,* respectively). This conclusion applied to participants with and without a mental illness. These results have also been replicated with a sex offending population. Hanson and Bussiere (1998) found that actuarial assessments outperformed professional judgment when predicting sex offense recidivism (*AUC = .74 vs .56*). This result was later replicated by Hanson and Morton-Bourgon (2009). Actuarial assessments were found to outperform professional judgment for sex offense, violent, and general recidivism. In a review of the overall state of risk and need assessments, Andrews et al. (2006) reported that on average, actuarial risk assessments were more predictive than professional judgment for both general (*AUC= .75 vs .56*) and violent recidivism (*AUC = .73 vs .57*).

Meta-analytic evidence of this trend is not limited to the criminal justice field. Grove et al. (2000) and Ægisdóttier et al. (2006) examined the predictive accuracy of professional judgment when compared to actuarial methods across several policy fields. Grove et al. (2000) reviewed 136 studies from the fields of psychology and medicine that included a wide range of prediction types, such as diagnosis of a specific disease, college academic performance, criminal recidivism, and probation success. Ægisdóttier et al. (2006) used 67 studies from the counseling psychology field to examine the prediction of a wide range of outcomes that included criminal offense or violence, academic performance, and suicide attempts. In both meta-analyses researchers found that statistical prediction methods were generally more accurate than relying solely on professional judgment and both found an overall 13% increase in predictive accuracy when using statistical methods. This means that the likelihood of a successful prediction can go up 13% when using a statistical rather than a professional judgment only approach to prediction.

While professional experience within the criminal justice field is valuable, it has consistently been less accurate than actuarial approaches when predicting risk. Given that assessments of risk and need are used for critical decisions within the criminal justice field, including allocation of valuable resources, it is vital that professionals are relying on the most accurate procedure available.

Myth

2

Myth 2: The use of risk and need assessments increases the likelihood that justice-involved individuals will be imprisoned.

Once used almost exclusively in probation and parole settings, risk and need assessments are now being used to inform other decision points within the criminal justice system. In fact, research demonstrates that the use of objective assessments enhances decision-making at multiple phases within the criminal justice system (Harris, 2006; Taxman, 2006). Despite these positive findings, one growing and controversial use of risk and need assessments has been their application to post-plea presentence decisions. Specifically, concerns have been raised that the use of risk and need assessments will increase the likelihood that a defendant receives a more punitive sentence based on a higher level of risk.

The myth that risk and need assessments increase the likelihood that defendants will be incarcerated is one that is concerning given the current state of mass incarceration within the United States. However, jurisdictions that have implemented validated risk and need assessments to make presentence decisions are not using them to send elevated numbers of defendants to prison. Instead, in an effort to unravel the impact of mass incarceration, jurisdictions are requiring the use of validated risk and need assessments to identify defendants who can be safely diverted from prison and matched to alternative sanctions or treatment services. Virginia is among the most notable states to explicitly build the use of risk and need assessments into the sentencing process for this purpose. The Virginia Criminal Sentencing Commission created a risk instrument to identify 25% of the nonviolent, low-risk drug and property individuals bound for prison to divert to non-prison sanctions (Kleiman et al., 2007). The authors reported that Virginia was able to implement the risk assessment successfully and divert the identified individuals without an associated rise in crime.

While evidence to demonstrate the effectiveness of recent initiatives is in its infancy, several other examples from jurisdictions across the county demonstrate the growing popularity of using risk and need assessments for presentence decisions and how they are used to safely divert appropriate justice-involved individuals away from sentences of incarceration. In Utah, judges consider sentencing guidelines and the results of the LSI-R to tailor supervision level and treatment services to reduce the risk to recidivate. In Kansas, individuals that have nonviolent felony drug offenses that score moderate-high on the LSI-R and high on substance abuse assessments are eligible to be diverted from prison into community-based drug treatment programs (Kansas Sentencing Commission, 2015). In Yamhill County, Oregon, risk assessment is used to help the court identify justice-involved individuals that can safely and effectively be managed in the community. Efforts to release incarcerated individuals from prison also use risk and needs assessments to guide decisions (also called

"back-end" decisions). For example, individuals incarcerated in Washington State are eligible to reduce their prison time by up to 50% when they participate in programs outlined in their individual re-entry program that was created based off a risk and needs assessment.

Additionally, because even short periods of incarceration can adversely affect justice-involved individuals, the use of risk assessments at even earlier decision points should be explored. Research has shown that 1) defendants incur significant costs while being detained awaiting the conclusion of a case; and 2) detainment can result in lengthier sentences during the sentencing phase (Cadigan & Lowenkamp, 2011). Therefore, it is necessary to investigate the use standardized risk assessments to inform preadjudication release decisions. The National Institute of Justice (2001) found that when courts used a subjective pretrial process, rather than an objective pretrial risk assessment instrument, jail population doubled. Cadigan and Lowenkamp (2011) reported a similar finding. Based on a major research recommendation from the Office of Federal Detention Trustee, the Pretrial Risk Assessment (PTRA) was constructed for use with federal defendants. Nebraska and the Western District of North Carolina served as the pilot implementation sites for the tool. Cadigan and Lowenkamp (2011) found that in the first year of operation, both districts showed significant increases in their recommended and actual releases. The Western District of North Carolina increased recommendations for release 13.5% and increased actual releases by 6.1% and the District of Nebraska increased recommendations for release 2% and actual releases by 1.4%.

Additionally, the implementation and use of the Public Safety Assessment (PSA) in state and local jurisdictions across the county have shown similar results. Application of the PSA in Kentucky resulted in a 15% reduction in crime among defendants on pretrial release while still increasing the number of defendants that were released before trial (Laura and John Arnold Foundation, 2014). Application of the PSA in Lucas County, Ohio resulted in the number of releases without the need for bail increasing from 14% to 28% and a reduction in pretrial crime from 20% to 10% for general crime and 5% to 3% for violent crime (Laura and John Arnold Foundation, 2016).

In conclusion, a review of the research and current use of risk and needs assessments in front-end and presentence decision-making show that the instruments are being used to find alternatives to incarceration, the appropriate level of supervision, and to match justice-involved individuals with treatment services to reduce the risk to reoffend. Additionally, risk and need assessments used in post imprisonment release, or back-end decisions are being used to identify reductions in risk that indicate an inmate is appropriate for release into the community.

Lastly, it is important to note that while using a risk and need assessment can help inform front and back-end decisions geared towards reducing risk and keeping appropriate individuals in the community, it could result in the misuse of assessments. While Virginia systematically uses risk and need

assessment to identify nonviolent, low-risk offenders for the purposes of diversion, an additional law in Virginia requires the use of an actuarial assessment on sex offenders to identify and increase sentences by up to 300% for those who score as high risk. It is important to remember that risk and need assessments were not designed to provide decision makers with certainties. When using and implementing risk and need assessments in the field, practitioners must remember they are designed to predict risk, identify areas of criminogenic need, and guide decisions for treatment in an effort to reduce that risk. While risk and need assessments provide practitioners with the most accurate picture of risk the field can currently offer, using them to declare a certainty about future behavior for punitive purposes is irresponsible. This point is best summarized in the following excerpt from a 2010 address at the University of Albany Symposium on Sentencing by Kelly Hannah Moffat:

In practical terms, correlation becomes causation and potential risk is translated into an administrative certainty. When used at the pre-sentence stage, the courts may assume that a "high-risk" offender poses a greater danger to society and sentence accordingly. Risk scores, however, merely identify who is more likely to reoffend and, in the case of third-generation tools, identify treatment targets for correctional programming that may reduce the likelihood of recidivism.

Myth

3

Myth 3: Use of standardized risk and need assessments increases racial and ethnic disparities within the criminal justice system.

Another common myth is that the use of risk and need assessments increases the potential for racial and ethnic bias in criminal justice decision making. However, the body of research on this subject tells a different story. In the largest study to date examining racial bias in risk and need assessments, Skeem and Lowenkamp (2016) tested the federal Post Conviction Risk Assessment (PCRA) using data from 35,000 federal prisoners. The researchers found that the PCRA predicted post-release arrests similarly across both African-American and Caucasian offending populations.

Additionally, in a meta-review of forensic risk assessments, Singh and Fazel (2010) found 8 meta-analyses that examined the relationship between race and ethnicity and the predictive accuracy of risk and need assessments. Five meta-analyses found that the predictive accuracy did not vary by the race or ethnicity of the sample (Edens & Campbell, 2007; Guy et al., 2005; Olver et al., 2009; Schwalbe, 2007; Skeem et al., 2004). Three remaining meta-analyses in the review found that the predictive accuracy was increased as the number of Caucasian justice-involved individuals in the sample increased, suggesting that the predictive accuracy was higher for this group. However, Singh and Fazel (2010) caution that these reviews did not conduct pairwise comparisons between ethnic groups and that post hoc analyses would be necessary to clarify these findings.

While studies on risk and need assessments have generally shown that tools predict equally well across racial groups, the bias myth was recently bolstered by a 2016 article published by ProPublica in which Angwin et al. (2016) concluded that the Northpointe COMPAS is racially biased and generalized that bias is inherent in all actuarial risk assessment instruments. In a rebuttal to the conclusions drawn by Angwin et al. (2016), Flores et al. (2016) conducted an independent study of the COMPAS using the same dataset from the original analysis by Larson et al. (2016). Flores and colleagues highlighted several flaws that invalidate the bias assertion. First, Angwin et al. (2016) conducted their study of the COMPAS on pretrial defendants even though the instrument was not designed to be used with this population. The COMPAS is designed to predict general and violent recidivism post-adjudication. Second, the original authors forced a success or failure dichotomy on the COMPAS even though the tool is meant to predict probabilities across three categories (low, medium, high). Last, the authors incorrectly equate racial differences in mean scores on the assessment with test bias and failed to use a test for bias that meets existing standards in the field.

In their subsequent analysis, Floret et al. (2016) found there were no significant differences in the functional form of the relationship between the COMPAS and recidivism for Caucasian and African-American individuals. This demonstrates that a COMPAS score translates to the same likelihood of recidivism whether a defendant is Caucasian or African-American. The authors also went further to challenge Angwin et al.'s understanding of the COMPAS itself, how it is meant to be utilized within the criminal justice system, understanding of research methods used to examine accuracy of risk and need assessments, and the ethical decision to report a finding that was not supported by the data.

While there is a body of evidence to support that risk and need assessments can predict without inherent racial or ethnic bias, two important points must be clarified when examining the relationship between these assessments and race/ethnicity. First, any risk and need assessment should still be validated on the target population to ensure that it predicts accurately across groups and that it does not contribute to disparities in criminal justice decision-making. The application of a risk and need assessment, even with good intentions, can have adverse effects on minority groups if this step is ignored or overlooked. For example, Hennepin County, Minnesota began using a pretrial tool to guide defendant release decisions in 1992, but did not validate the tool or evaluate it for potential bias until 2006. During the 2006 evaluation, researchers found that three of nine variables included on the scale were correlated with race, but were not significant predictors of pretrial offending or failure to appear. Based on the evaluation, Hennepin County removed the variables and adjusted the scale to only include factors that predicted pretrial offending or failure to appear. With the previous 1992 scale, judges had a 47% override rate and held 66% of defendants for bail/further review. Under the adjusted and validated 2007 tool, judges had a 3.4% override rate and lowered the rate of defendants held for bail/further review to 50% (Podkopacz, 2010).

Second, while risk and need assessments may not be inherently biased, their results reflect the reality that bias exists within the criminal justice system. Skeem and Lowenkamp (2016) found that while the PCRA predicts equally well for African-American and Caucasian populations, on average, African-American individuals scored higher on the tool due to their likelihood of having more serious criminal histories. The authors concluded that criminal history is a moderator variable that explains this relationship between race and elevated risk score and while they caution that this is not evidence of unfair bias in the assessment itself, it is indicative of bias at other decision points within the system.

Although results such as overall higher risk scores based on lengthier criminal histories do point to bias in criminal justice decision-making, the elimination of risk and need assessments would not result in a system that is less biased against racial and ethnic minorities. Risk and need assessments do not possess the power to mitigate issues such as higher arrest rates for minorities or bias in previous criminal justice processing, sentencing, or management, but they have consistently been shown to be more accurate and objective than predictions of risk made using professional judgment alone. Elimination of the use of risk and need assessments would increase bias due to the exclusion of objective, empirically-based measures to predict risk. Instead, the use of validated risk and need assessments has been suggested as a way to decrease racial disparities at multiple points within the criminal justice system (The Sentencing Report, 2008). Recently, Skeem and Lowenkamp (2016) concluded that risk and need assessments can actually reduce racial biases in criminal justice decisions if objectively used as designed and are specifically validated in the jurisdictions where they are applied.

Conclusion

This paper explored three common myths about the use of risk and need assessments within the criminal justice system. First, while risk and need assessment have progressed tremendously within the past 30 years, the myth that professional judgment is superior to actuarial assessment still exists. This myth is easily dispelled by summarizing the large amount of meta-analytic research showing that actuarial assessments are consistently more accurate than the use of professional judgment alone. Second, the myth that the use of risk assessment at the presentence and sentencing phases makes it more likely a justice-involved individual is sent to prison was explored. Dispelling this myth is relevant due to the current state of mass imprisonment within the United States. Practitioners in the criminal justice field should feel comfortable implementing and validating risk assessment tools for presentence decisions with the purpose of safely diverting appropriate justice-involved individuals out of prison and matching them to alternative supervision or treatment options. Third, and at the forefront of recent debates, is the myth that risk and need assessments exacerbate racial or ethnic bias within the criminal justice system. However, this myth is not based on a body of reliable research. Instead, research shows that common risk and need assessments predict accurately across racial groups and can potentially help to reduce racial and ethnic bias in criminal justice decision-making.

In closing, risk and need assessments can be used to guide practitioners in the field towards more accurate and equitable decisions: in fact, research shows substantial gains in predictive validity with continued re-assessment of justice involved individuals (Brown, 2003; Law, 2004). However, no risk tool predicts with perfect accuracy and there is still work to be done to improve them. Specifically, choosing the most appropriate tool for the identified decision-point and implementing it correctly are vital in ensuring the most accurate predictions in risk. Gottfredson and Moriarty (2006) observed that fundamental requirements for developing, cross-validating, and applying risk assessment tools are “routinely ignored or violated” by criminal justice agencies. Therefore, those currently using or deciding to implement risk assessments are encouraged to choose an appropriate assessment, devote the time and resources necessary to validating it on the population for which it will be used, and committing to periodic revalidation to ensure continued efficacy.

5 Facts, 1 Bottom Line

1	**Actuarial risk and need assessments have consistently been found to be more accurate than professional judgment alone in risk prediction.**
2	**Risk and need assessments can reduce racial bias in criminal justice decisions if objectively used as designed and are specifically validated in the jurisdictions where they are applied.**
3	**Eliminating actuarial risk and need assessments would decrease accuracy in risk prediction and increase bias by relying solely on professional judgment.**
4	**Risk and need assessments used to make front-end decisions are typically used to identify and safely divert individuals who are more appropriate for supervision and treatment in the community.**
5	**Actuarial risk and need assessments were designed to predict risk, identify areas of criminogenic need, and guide decisions for treatment, not for punitive purposes.**

The bottom line:

Risk and need assessments currently provide the most accurate, objective prediction of the risk to recidivate. While risk and need assessments do not predict with perfect accuracy, they guide practitioners in the field towards the most accurate and equitable decisions available for safely managing justice-involved individuals.

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