ARE REHABILITATION PROGRAMS EFFECTIVE AT REDUCING RECIDIVISM? THE ANSWER IS NOT SO SIMPLE

by

ADELINE LEMANN

A THESIS

Presented to the Department of Psychology
and the Robert D. Clark Honors College
in partial fulfillment of the requirements for the degree of
Bachelor of Science

October 2025

An Abstract of the Thesis of

Adeline Lemann for the degree of Bachelor of Science
in the Department of Psychology to be taken October 2025

Title: Are Rehabilitation Programs Effective at Reducing Recidivism?
The Answer Is Not So Simple

Approved: *Dr. Ahmar Zaman*
Primary Thesis Advisor

The United States has extremely high incarceration rates considering its population size, which has resulted in an estimated 1.97 million people held in correctional facilities annually (Sawyer & Wagner, 2025). One of the goals of the incarceration system is to reduce recidivism and promote future public safety (Shelley, 2024). The incarceration system should use rehabilitative programs to achieve this goal because such programs address root causes, apply evidence-based practices, and use scientific research to continuously improve (Cullen & Jonson, 2012). Current methods of analysis of rehabilitation programs can make it challenging for researchers and administrators to discover how the incarceration system should effectively and efficiently rehabilitate people (Latessa, et al., 2020). Improving administrative data, standardizing recidivism measures, incorporating additional measurement variables, studying fidelity of program administration, and using rigorous scientific methods can aid researchers in discovering the best ways to rehabilitate people (Taylor, 2017; Hope, 2005; Rosenfeld & Grigg, 2022). Ultimately, this literature review shows that rehabilitative programs are effective at reducing recidivism because their variety of methods, range of focus areas, and diversity of structure and design allows for specialized treatment that leads to meaningful behavioral change (Cullen & Jonson, 2012).

Acknowledgements

I would like to thank Dr. Ahmar Zaman for introducing me to the world of forensic psychology and teaching me all the wonders it holds. I would also like to thank him for his patience, encouragement, and knowledge which has helped me complete my thesis. I would like to thank Dr. Robert Mauro for making me a critical thinker and better writer. I thank both Dr. Mauro and Dr. Zaman for giving me their time and energy.

I would like to thank my Yana and Arthur Lemann for inspiring me to attend the University of Oregon and their unconditional support over the last four years. Yana, I am so grateful for the countless phone calls, persistent feedback, and unwavering motivation throughout my thesis project; I truly would not have been able to finish it without you. Maddison, thank you for being my ally throughout our time in the Clark Honors College.

Table of Contents

List of Figures

List of Tables

Introduction

The goal of the United States' criminal justice system is to maintain public order and safety by upholding the rule of law, ensuring justice, and preventing future crimes (Shelley, 2024). To achieve this, the U.S. criminal justice system incarcerates individuals (Shelley, 2024). The incarceration system utilizes retribution, incapacitation, deterrence, and rehabilitation to administer justice and facilitate the goal of reducing crime (Kifer, et al., 2003). The relationship between incarceration and crime reduction is very complex (Enns, 2016). While statistics show a general decline in various crimes over the last 30 years, incarceration rates have continued to grow (Pettit & Gutierrez, 2018). Currently, the United States is in a state of mass incarceration, which is defined as a large proportion of the population being imprisoned because of the criminal justice system's policies, laws, policing, and judicial practices (Pettit & Gutierrez, 2018).

In 2020, the United States' population represented less than 5% of the world's population, but the U.S.'s incarcerated population represented 20% of the world's incarcerated population (Wagner & Bertram, 2020). In 2024, The United States had the fourth highest incarceration rate in the world (Widra, 2024). It incarcerated 614 of every 100,000 people (Widra, 2024). In comparison, the U.K. incarcerated 146 of every 100,000 people and Canada incarcerated 88 of every 100,000 people (Widra, 2024). The result of the U.S.'s high incarceration rates is that 1.97 million people are held in federal, state, and local correctional facilities (Sawyer & Wagner, 2025).

Mass Incarceration is a Problem

Mass incarceration is extremely costly. The United States spends over $80 billion annually on public prisons and jails, which does not include the additional cost of private prisons

(McLaughlin, et al., 2016). The Vera Institute (2015) calculated that the average cost to house imprisoned people ranges between $14,000 and $69,000 per person depending on the state and facility.

In addition to the fiscal cost, mass incarceration carries a huge societal cost by perpetuating a cycle of poverty, inequality, and crime. Involvement in the criminal justice system and being convicted of a crime can damage financial stability, reduce political participation, destroy social relationships, and impair health. Individuals who are imprisoned often incur additional financial burdens from bail, restitutions, parole and attorney fees (Pettit & Gutierrez, 2018). For example, a Washington study found that felony offenders had an average of $2,500 and median of $1,100 in court ordered fees (Pleggenkuhle, 2018). Actual legal financial obligations cost more than this estimation due to unincluded child support, nonpayment penalties and interest (Pleggenkuhle, 2018). Prisoners are unable to earn strong wages while incarcerated due to limited prison jobs and wages that are reduced to compensate for the cost of room and board (Payne, 2023). Following release, it is difficult for convicts to find employment due to requirements to disclose felony convictions on job applications (Pettit & Gutierrez, 2018). A 2014 study found that over one third of offenders never find employment during the five years after release (Newton, et al., 2018).

In addition to experiencing economic strains, incarcerated people are deprived of political rights. By law, convicted felons are prohibited from voting. Using 2018 incarceration rates, an estimated 30% of the next generation of black men are expected to lose their right to vote due to having been convicted of a felony (Pettit & Gutierrez, 2018). However, incarcerated people in jails on misdemeanor charges or held awaiting trial are allowed to vote, but they rarely do

because jails fail to facilitate voting (The National Academy of Science, Engineering, and Medicine, 2022).

During incarceration, social relationships are strained due to physical isolation from families, friends, and communities (Asencio & Burke, 2011). Negative social labels, derived from incarceration, can be internalized, leading to further deviant behavior (Asencio & Burke, 2011). Additionally, these labels cause social isolation and diminish social support structures, further increasing the risk of criminality upon release (Pettit & Gutierrez, 2018).

Lastly, imprisoned people having a mortality rate 3.5 times higher than the average population (The National Academy of Science, Engineering, and Medicine, 2022). Incarceration worsens physical health because it forces people to live in chronic stress and high exposure to infectious diseases (Pettit & Gutierrez, 2018).

A crucial characteristic of mass incarceration is its disproportionate effect on marginalized communities, specifically people of low socio-economic status and color (Pettit & Gutierrez, 2018). People who are impoverished prior to incarceration are incarcerated at higher rates than the general population (Looney & Turner, 2018). Those of low socio-economic status are more likely to have longer jail time during pre-trial detention than their high socio-economic status counterparts because they are unable to pay their bail, despite having the same likelihood to appear for trial and risk to public safety (Manzano, 2024). In 2019, the incarceration rate of black Americans was six times larger than that of white Americans (Robey, et al., 2023). These discrepancies are attributed to black people, especially men, being over surveilled and severely affected by punitive laws (Cook, 2015; Pettit & Gutierrez, 2018). Due to these systematic disparities, mass incarceration is extremely detrimental to marginalized communities.

Reducing Recidivism is a Solution

A significant component of mass incarceration is recidivism, defined as the likelihood for an incarcerated individual to re-offend (King & Elderbroom, 2014). Recidivism is regarded as a key metric for measuring the effectiveness of the U.S. criminal justice system's goal of reducing crime and promoting public safety (King & Elderbroom, 2014). The U.S. Department of Justice followed 408,300 prisoners released in 2012 and found that over the course of five years, this sample accounted for 1.1 million arrests (Durose & Antenangeli, 2021). The same report found that 46% of this sample were reincarcerated in the same five-year period (Durose & Antenangeli, 2021).

Mass incarceration directly impacts recidivism rates because incarceration increases prisoners' criminality and ratchets risk factors (Harding, et al., 2017). Social interaction with highly criminal prisoners leads to learning skills and attitudes that encourage criminal behavior (Akers & Jennings, 2015). Forming intimate and personal social relationships with highly criminal peers enables shared perspectives that rationalize and normalize criminal behavior (Akers & Jennings, 2015). This results in internalization of a criminal identity that continues well beyond incarceration (Akers & Jennings, 2015).

Incarceration may create new criminogenic influences or exacerbate pre-existing risk factors (Cook, 2015). For example, if a prisoner has a prison job, but the job does not earn wages that cover legal fees or the cost of supporting a family, then the individual and their family's financial stability will continue to weaken during incarceration. Once released, the prisoner may have additional parole fees that if left unpaid can cause revocation of parole and additional debt, but they may still be unable to attain a job due to their prior conviction (Pettit & Gutierrez, 2018; Deitch, 2022). These compounding stressors increase the risk of re-offending, especially for

financially driven crimes (McLaughlin, et al., 2016). Once reincarcerated, the individual's social, political, economic and health outcomes worsen even further, making rearrest and re-conviction upon release more likely (Struhl, 2017). At each cycle of this "revolving door," life outcomes for the individual worsen (Struhl, 2017). For example, the U.S. Department of Justice reported that of a sample of prisoners released in 2012, 54.5% with four or fewer prior arrests were rearrested, 70% with 5 to 9 prior arrests were re-arrested, and 81% with 10 or more prior arrests were re-arrested, all within10 years following release (Durose & Antenangeli, 2021).

Rehabilitation and the Four Goals of Incarceration

Of the four goals of the incarceration system ―rehabilitation, retribution, incapacitation, and deterrence ―rehabilitation shows the most promise at reducing recidivism. Retribution does not improve recidivism rates because it focuses on punishing the perpetrators and vindicating the victims of crime rather than correcting criminal behavior (Kifer, et al., 2003). Incapacitation simply delays whether someone has the opportunity to recidivate, which affects current crime rates, not the lifelong likelihood to recidivate (Loeffler & Nagin, 2022). Deterrence attempts to reduce recidivism by administering punishment that discourages future offenses (Loeffler & Nagin, 2022). Deterrence is effective when an individual decides that the risk of punishment outweighs the likely rewards from committing crimes (Loeffler & Nagin, 2022). However, the incarcerated population often has learning disabilities, external factors that tend to encourage criminal behavior (such as substance abuse, unemployment, gang involvement, etc.), or pro-criminal attitudes that lead to the perception that the possible reward of a crime outweighs the potential punishment (Loeffler & Nagin, 2022).

Modern rehabilitation programs use evidence-based practices to attempt to permanently mitigate a wide variety of risk factors for criminal behavior and offer a promising solution for the

reduction of recidivism rates (Cullen & Jonson, 2012; Phelps, 2011). As opposed to the other three goals, rehabilitation uses the scientific method to continuously improve itself (Cullen & Jonson, 2012). As an example, in the 1950s, rehabilitation in the correctional system sought to diagnose and treat criminality as a singular, internal factor that led to criminal behavior, similar to how psychopathology is diagnosed and treated (Phelps, 2011). However, through empirical research, rehabilitation has now grown to target internal and external factors that increase the propensity for criminal behavior (Phelps, 2011). Currently, rehabilitation is pursued through a multitude of evidence-based rehabilitative programs, each focusing on serving a specific risk factor (Cullen & Jonson, 2012).

Rehabilitation Programs in the Corrections System

Rehabilitation in prisons is defined as the process of re-educating and reforming individuals who have committed crimes (Polaschek, 2012). Rehabilitation acknowledges that most imprisoned people will re-enter society (Spruit, et al., 2017). Without interventions that address the root causes of their criminal behavior, they are likely to reoffend (Lipsey & Cullen, 2007). Therefore, rehabilitation programs provide educational, vocational, and cognitive-behavioral services so that once released, participants have more success re-integrating into society (Cullen & Jonson, 2012). Successful programs focus on eliminating or mitigating the effects of root causes of criminality and equipping individuals with the skills and knowledge required to navigate the most significant reentry challenges (Spruit, et al., 2017). Ultimately, rehabilitation programs aim to decrease recidivism rates, which would help decrease crime rates and enhance public safety (King & Elderbroom, 2014). Rehabilitation programs quantify their success by measuring recidivism rates (King & Elderbroom, 2014). Gannon, et al., (2019) conducted a meta-analysis that compared specific types of offenders (sexual, domestic violence, or general violence) who participated in rehabilitation programs targeted to their offenses, to those who did not receive any treatment. They found that over a 5 year follow up period, recidivism was 30% for those who received specialized treatment and 37.7% for those who received no treatment, across all types of offenses (Gannon, et al., 2019).

Due to the immense variability of rehabilitation programs, researchers have developed tools to provide a framework for identifying risk of recidivism and determining the interventions required to achieve optimal outcomes (Polaschek, 2012). Tools such as actuarial risk assessments and the Risk Need Responsivity Model use criminogenic needs to inform the type and amount of intervention needed (Prins, 2019). Criminogenic needs or criminogenic variables are economic,

social, and psychological risk factors that contribute to criminal behavior and therefore are useful in predicting criminality (Schlager & Pacheco, 2011). To reduce recidivism rates, rehabilitation programs are designed to address criminogenic variables that the program designers believe are able to be effectively implemented and most likely to reform offenders (Spruit, et al., 2017).

Criminogenic Factors

A great deal of research has been conducted to understand the risk factors that best predict criminality and likelihood of reoffending. Though there are many factors that are correlated with criminality, criminogenic factors are those that predict criminality (Latessa, et al., 2020). For example, mental illness is more prevalent in the incarcerated population than the general population, and it is relevant to rehabilitation (Skeem, et al., 2013). However, mental illness alone does not significantly or independently predict criminal behavior and is therefore not considered a criminogenic factor (Skeem, et al., 2013). Peterson, et al., (2014) found that only 4% of criminal offenses were directly related to psychosis, 3% of criminal offenses were directly related to depression, and 10% of criminal offenses were directly related to bipolar symptoms (three forms of severe mental illness found in 4% of the general population). While 14% to 16% of incarcerated have some form of severe mental illness, researchers found that severe mental illness co-existed with other factors such as criminal cognition, drug abuse, and anti-social associates —which are all stronger predictors of criminality than severe mental illness (Peterson, et al., 2014; MacPhail & Verdun-Jones, 2013). Some specific criminological variables that have established themselves over time as strong predictors are criminal history, education level, employment status, history of substance abuse, antisocial tendencies, social associations, and how someone uses their leisure and recreational time (Fazel, et al., 2024; Skeem, et al., 2013).

People with a criminal history —which encompasses prison terms served, arrests, probation sentences, or involvement in the juvenile justice system —are more likely to engage in additional criminal behavior (Pompoco, et al., 2017). For example, the United States Sentencing Commission (USSC) quantifies criminal history by summing points that correspond to the number and severity of previous criminal incidents (Kyckelhahn & Cooper, 2017). In the USSC's report, 30% of those who had 0 criminal history points (no criminal history) were re-arrested within 8 years of release, 63.3% of those who had 5 criminal history points were re-arrested within 8 years of release, 77.3% of those with 10 criminal history points were re-arrested within 8 years of release, and 85.7% of those with 15 or more points were re-arrested within 8 years of release (Kyckelhahn & Cooper, 2017). Like criminal history, education levels predict recidivism rates (Stickle & Schuster, 2023). As educational levels increase, rates of reincarceration decrease (Stickle & Schuster, 2023). Within a sample of incarcerated people held in federal prisons who were younger than 30 and released in 2005, 62.9% of those with a high school degree were rearrested within eight years following release, and 74% of those without a high school degree were rearrested in the same eight-year period (Hunt & Easley, 2017). Within the same report, 33.1% of those with a high school degree were reincarcerated, and 43.6% of those without a high school degree were reincarcerated in the same eight-year period (Hunt & Easley, 2017). The report also found that recidivism rates of incarcerated people with college degrees were lower (27% rearrested and 11.7% reincarcerated) than incarcerated people with high school degrees or no degrees (Hunt & Easley, 2017). Similar to education, employment decreases the likelihood of committing non-violent crimes (Stickle & Schuster, 2023). Moreover, non-violent criminal behavior is negatively correlated with quality of employment (Stickle & Schuster, 2023). One study sampled previously incarcerated people and found that 18% of full

time employed versus 48% of unemployed people recidivated within one year of release (Bunting, et al., 2018). Substance abuse increases risk of criminal behavior in two ways. First, many addictive substances are illegal; being addicted to them increases the propensity to engage in illegal activity to obtain them (Bureau of Justice Statistics, 2021). Second, substance abuse can lead to poor decision making and drain financial resources, leading to criminal behavior (Latessa, et al., 2020). One poll found that 17% to 18% of incarcerated people claimed they committed their offense to obtain funding for drugs (Bureau of Justice Statistics, 2021). Property and drug trafficking offenses (both of which result in financial gain) are more common than violent offenses for people with drug use issues (Bureau of Justice Statistics, 2021). Antisocial behavior, antisocial personality, and antisocial cognition each increase the risk of criminal behavior (Hsieh, et al., 2022). Antisocial behavior is when someone's actions break social norms and rules in a problematic way (Skeem, et al., 2013). Examples of antisocial behavior are bullying, physical fights, stealing, and vandalism (Fisher, et al., 2024). Antisocial personality is when someone has maladaptive traits, like disregarding or harming others (Fisher, et al., 2024). Extreme forms of antisocial personality can result in pathological diagnosis (Fisher, et al., 2024). Antisocial cognition is thoughts, attitudes, or beliefs that support and maintain antisocial behavior (Wooditch, et al., 2014). The more intense one's antisocial behavior, antisocial personality or antisocial cognition is, the higher the risk that they will commit crimes (Hemphill, et al., 2011). Lastly, leisure time that is spent doing deviant activities or with deviant people can contribute to a person's likelihood to commit crimes (Link & Williams, 2015; Haynie & Kreager, 2013). Deviant activities can be both criminal (like public sex, shoplifting, or vandalism) or non-criminal (like bullying, truancy, or lying) (Link & Williams, 2015). Social

bonds with people who frequently participate in deviant activities also can increase someone's tendencies to participate in delinquent activities (Haynie & Kreager, 2013).

Criminogenic variables can be either static or dynamic in nature (Schlager & Pacheco, 2011). For example, history of substance abuse or crime is static, but ongoing substance abuse or antisocial cognition is dynamic (Schlager & Pacheco, 2011). Because static factors cannot be changed, rehabilitation programs target dynamic factors (Schlager & Pacheco, 2011).

Types of Rehabilitation Programs

A myriad of rehabilitation programs address the dynamic criminogenic variables of incarcerated people. Education is directly addressed in educational programs, employment is directly addressed in vocational programs, and any remaining dynamic criminogenic needs are addressed through a variation of counselling programs.

Education

Education programs intend to reduce recidivism rates by providing education and increasing qualifications for employment (Stickle & Schuster, 2023). Guerrero (2011) estimates that 41% of incarcerated people have insufficient credits for a high school diploma or General Equivalency Diploma. Only 11% of the prison population, compared to 48% of the general population, have attended some college (Guerrero, 2011). Educational programs span across different levels from adult based elementary education (ABE) to secondary education, to higher education (Stickle & Schuster, 2023). Stickle and Schuster (2023) conducted a meta-analysis and found that prison education programs decrease recidivism and increase employment and wages. Furthermore, the higher the level of education someone receives, the less likely they are to commit crimes (Stickle & Schuster, 2023). Re-imprisonment within 5 years following release decreased by 2.9% points for those who participated in adult based elementary education

programs, by 3.3% points for those who participated in secondary education programs, and by 12.74% points for those who participated in college (higher) education programs (Stickle & Schuster, 2023). Though higher education levels are the most effective at reducing recidivism, higher education programs are underutilized because 68% of prisoners have not achieved education levels required for higher education and prisoners must fund their own participation over an extended period of time (Cullen & Jonson, 2012; Stickle & Schuster, 2023).

Vocation

Vocational programs provide work experience and skills that increase employment opportunity following release (Newton, et al., 2016). Research has widely supported that unemployment contributes to the propensity to commit crimes, both before and after incarceration (Newton, et al., 2016). Maruschak and Snell (2023) found that in the 30 days leading up to incarceration, 39% of state prisoners and 36% of federal prisoners were unemployed. Vocational programs, like typical prison labor, provide technical training and job experience that make participants more marketable within a specific trade (Freiburger, et al., 2025). In addition, vocational programs promote learning and development of prosocial behaviors which help prisoners maintain employment once released (Freiburger, et al., 2025). Specifically, rehabilitative vocational programs can help with resolving workplace conflict, creating a work identity, and discovering career goals (Freiburger, et al., 2025). Vocational programs can also include career counseling, which helps with finding and applying for jobs once released (Freiburger, et al., 2025). Classroom-based and prison industries are two types of vocational programs that are available within prisons (Cullen & Jonson, 2012). Classroom based programs involve apprenticeship training in building maintenance, custodial maintenance, electrical trades, welding, and agriculture (Cullen & Jonson, 2012). Prison industries programs

simulate real-world work environments for jobs like woodworking, license plate manufacturing, electronics recycling, and optics (Cullen & Jonson, 2012). Studies have found vocational programs to be effective at reducing recidivism; however, their findings do not always have statistical significance (Wilson, et al., 2000). For example, Milwaukee Safe Streets Prisoner Release Initiative (PRI) is a vocational program that reduced re-arrest rates by 9% (Newton, et al., 2018; Cook et al., 2015). Additionally, PRI found differences in re-imprisonment rates, but when they controlled for other covariates, this difference was not statistically significant (Cook et al., 2015). In comparison, Wilson, et al., (2000) conducted a meta-analysis that found vocational and education programs on average reduced reincarceration by 11%, but any evidence that solely vocational programs reduced recidivism was statistically insignificant because the included studies had weak research methodology.

Counselling Programs

Counselling programs encompass a wide array of focus areas by addressing and mitigating psychological and behavioral risk factors of criminality, with the goal of enabling successful re-entry (Polaschek, 2012). Tadros (2024) estimated that 65% of the incarcerated population has substance abuse disorders. While 18% of the general population is estimated to have a history of mental illness, 37% of the prison population and 44% of the jail population is estimated to have a history of mental illness (Bronson & Berzofsky, 2017). Studies have found trauma prevalence ranged from 21% to 61% (Adams, et al., 2017). To solve for these and other prominent issues facing the incarcerated population, the correctional system has established rehabilitative programs such as substance abuse treatment, cognitive restructuring and reasoning therapies, mental health services, parenting classes, financial literacy programs, restorative justice sessions, and arts and recreational workshops (Polaschek, 2012; Taylor, 2017).

Of the various rehabilitative methods utilized by counselling programs, Cognitive Behavioral Therapy (CBT) is the most prominent in the field of psychology because it is evidence based and widely applicable (Tadros, 2024). CBT follows the three principles of cognition, behavior, and learning to re-construct someone's perspective and change their behaviors (Tadros, 2024). The cognitive principle holds that problems arise from dysfunctional and inaccurate ways of thinking (also called negative schemata) (APA Division 12, 2017). These negative thoughts can cause psychological problems, harm relationships, disrupt emotions, and influence decisions (Tadros, 2024). Techniques used in CBT for addressing cognitive issues are reframing thoughts, building cognitive skills, and problem solving (APA Division 12, 2017). The behavioral principle holds that maladaptive behaviors are learned patterns (APA Division 12, 2017). Techniques used in CBT for addressing behavioral issues are behavior modification, behavior rehearsal, and modeling (Tadros, 2024). Lastly, the learning principle holds that cognitive and behavioral problems can be improved through learning coping mechanisms and healthier behaviors (APA Division 12, 2017). Additionally, the learning principle emphasizes developing autonomy and self-held responsibility to ensure success is achieved outside of program lessons and beyond program completion (Tadros, 2024). Techniques used in CBT for addressing learning issues are reinforcement, observational learning, and homework exercises (Tadros, 2024). Landenberger and Lipsey (2005) found that CBT could reduce recidivism rates between 25% to 50% depending on the CBT program's quality and implementation. Furthermore, the specific effect varied depending on the specific rehabilitative program. In "Forever Free," a CBT program for substance abuse, 48% of sampled participants were reincarcerated a year after release; however, 73% of non-participants were reincarcerated a year after release (Hall, et al., 2004). Comparatively, in "Thinking for a Change," a CBT program

aimed at criminogenic belief systems, 28% of sampled participants in the program returned to prison and 30% of non-participants returned to prison within three years of being released between 2018 and 2019 (Caldeira, et al., 2023). The differences in effect between these two programs can be attributed to numerous factors such the criminogenic needs the programs target, the demographics the programs serve, and the quality of how the programs are administered.

Risk Need Responsivity Model

Researchers developed the Risk Need Responsivity (RNR) to reduce recidivism and maximize rehabilitative programs' effects by focusing on the individual prisoner's criminogenic needs and matching them to the most appropriate rehabilitative program (Fazel, et al., 2024). The three principles of the RNR model are risk, need, and responsivity (Fazel, et al., 2024). The risk principle states that the amount of rehabilitation someone requires should match the magnitude of their risk, and those with the greatest risk should be prioritized for rehabilitation (Makarios, et al., 2014). Thus, someone with less criminogenic risk should participate in less rehabilitation than someone who is more at risk (Makarios, et al., 2014). Incarcerated people across risk levels should not participate in the same amount of rehabilitation programming because this is less effective at reducing recidivism and because those with the greatest risk improve the most (Makarios, et al., 2014). The need principle states that rehabilitation programs should focus on specific criminogenic needs, especially those that are dynamic and can be changed (Fazel, et al., 2024). The responsivity principle states that the ability for the prisoner to learn, engage, and participate in the program can be maximized by tailoring the program to the offender's learning style, motivation, abilities, and strengths (Fazel, et al., 2024). The responsivity principle can be divided into general responsivity and specific responsivity (Fazel, et al., 2024). The general responsivity principle states that rehabilitation programs should use

cognitive behavior or cognitive social learning methods (Fazel, et al., 2024). The specific responsivity principle states that treatment should be tailored to the individual person, not just their criminogenic needs. This means that the treatment should be designed to help mitigate the individual's non-criminogenic barriers that inhibit receiving rehabilitation as well as address their criminogenic factors (Fazel, et al., 2024). For example, although trauma is not a criminogenic need, incarcerated people with a history of trauma may need trauma-informed care to increase engagement in prison rehabilitation programs (Adams, et al., 2017). Or, someone who has poor literacy should receive adult-based education prior to engaging in counselling programs that require reading and writing.

The RNR model leverages actuarial risk assessments to quantify an individual's risk and identify which criminogenic needs must be rehabilitated (Fazel, et al., 2024). There are various types of actuarial risk assessments that compute different types of risk or use different calculation methods (Fazel, et al., 2024). Actuarial risk assessments quantify individual needs across multiple dimensions and produce a composite score, which can be categorized into different risk levels (Schlager & Pacheco, 2011). As an example, the Levels of Service and Case Management Inventory's (LS/CMI), a type of actuarial risk assessment, is composed of 8 dimensions: criminal history, education/employment, family/marital, leisure/recreation, companions, alcohol/drug problem, pro-criminal attitude/orientation, and antisocial pattern (Skeem, et al., 2013). The actuarial risk assessment generates a score for each dimension which guides the type of rehabilitation program someone should seek, fulfilling the need principle of the RNR model (Schlager & Pacheco, 2011).

> Officer Alft (a senior probation officer in Lane County Department of Corrections with a bachelor's degree in psychology and religion) explains, "The treatment needs to be crime appropriate but at the same time there's domains on the LS/CMI that can point to whether they need drug and alcohol treatment. [Or]

> whether they need domestic violence treatment because there is a family-marital component on the LS-CMI. [For example] someone [who] doesn't have issues with alcohol and drugs, they don't score high on family and marital, but they are still high in criminal history… [then] those guys can be appropriate for more cog[nitive] criminal thinking programs." (Personal communication, 2025).

In addition, actuarial risk assessments produce a composite score that can be categorized into various risk levels (Schlager & Pacheco, 2011). Table 1 is an example of the LS/CMI's composite scores categorized between very low and very high-risk levels (Multi-Health System, 2019).

Table 1: LS/CMI's Risk Level Coordinating to Test Scores

Risk Level	**Score**
Very Low	0-4
Low	5-10
Medium	11-19
High	20-29
Very High	30-43

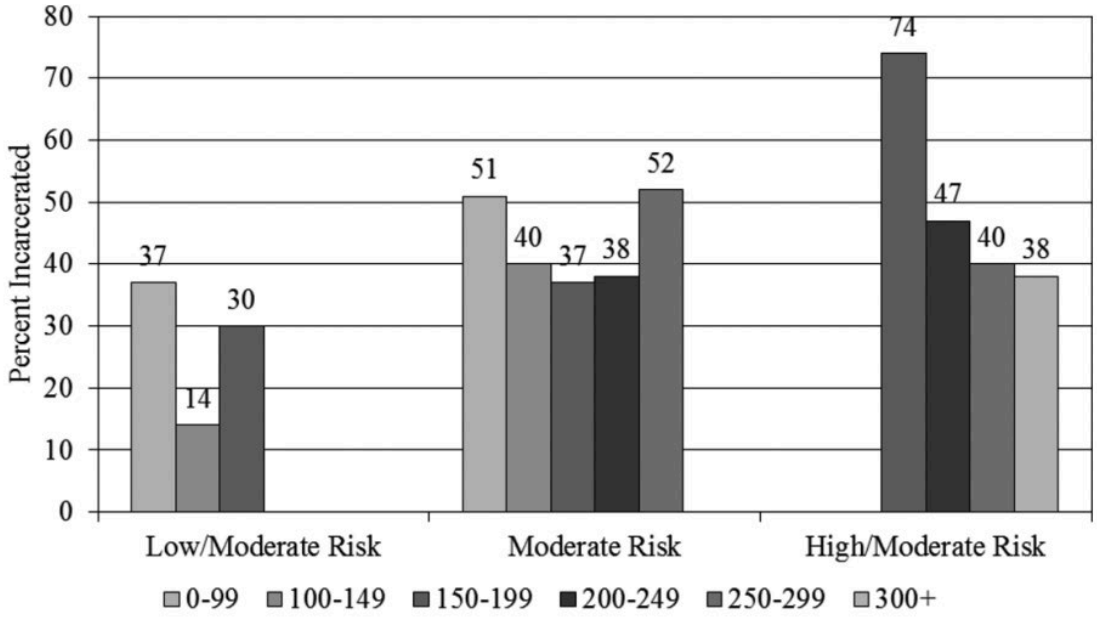
Multi-Health System Inc. (2019). Level of Service /Case Management Inventory: Re-Offender Assessment System Booster Training. Global Institute of Forensic Research. https://gifrinc.com/wp-content/uploads/sites/6/2023/01/LSCMI-Booster_PowerPoint-Handout-1.pdf

Rehabilitation programs are most effective in reducing recidivism when the intensity of rehabilitation someone participates in increases as their risk level increases, which aligns to the risk principle of the RNR model (Makarios, et al., 2014).

> Officer Alft states, "Low people put on reduced supervision […] moderate guys […] we usually look for cog[nitive] programs for them [that] are 100 to 200 hours long and you're supposed to deliver that in less than a year, 9 months is usually the goal. […] High risk guys we look at 200 plus sometimes up to 300 hours of cog[nitive] behavioral therapy. With trying to get them within less than a year." (Personal communication, 2025).

However, within low and moderate risk levels, participating in too much rehabilitation can be counterproductive, although the exact threshold is unknown (Makarios, et al., 2014). Makarios, et al., (2014) used the Levels of Service Inventory- Revised (an actuarial risk assessment) to categorize incarcerated participants into risk levels, and they assessed how the number of rehabilitation hours (one aspect of program intensity) correlated to recidivism rates over a 45-month period. Their results are displayed in Figure 1, which demonstrates the relationship between rehabilitation hours, risk levels, and reincarceration rates (Makarios, et al., 2014). Low and moderate risk prisoners benefited when the amount of programming received fell into a "sweet spot"; less or more hours yielded worse results (Makarios, et al., 2014). High risk prisoners benefited more as the amount of programming increased (Makarios, et al., 2014). However, this "sweet spot" can be attributed to incorrectly categorizing risk scores into risk levels. Furthermore, the number of rehabilitative hours is a weak measurement of rehabilitation because it does not describe the quality of the rehabilitation program or the quality of program participation (Sperber, et al., 2013). Thus, the better pattern to follow is program intensity increasing as risk increases, and the best practice is to use hours as an estimation rather than a direct measurement.

Figure 1: Rates of Recidivism by Refined Dosage Categories and Risk Level



Amount of Rehabilitation ranged from: 0 to 99 hours, 100 to 149 hours, 150 to 199 hours, 200 to 249 hours, 250 to 299 hours, and 300+ hours. Risk level was determined by Levels of Service Inventory-Revised composite scores. Scores 14 to 23 were assigned low/moderate risk, 24 to 33 were assigned moderate risk, 33 to 40 were assigned high/moderate risk.

Makarios, M., Sperber, K. G., & Latessa, E. J. (2014). Treatment Dosage and the Risk Principle: A Refinement and Extension. *Journal of Offender Rehabilitation*, *53*(5), 334–350. https://doi.org/10.1080/10509674.2014.922157

Actuarial risk assessments vary in precision and accuracy, reflecting their differences in the manner and types of risk factors they analyze (Sjöstedt & Grann, 2002). Actuarial risk assessments are used to both predict overall risk of recidivism and quantify individual criminogenic needs (Sjöstedt & Grann, 2002). However, these assessments rarely accomplish both goals equally because it requires measuring two different variables (risk v. need) (Sjöstedt & Grann, 2002). For instance, criminal history is commonly used in actuarial risk assessments because it is good at predicting risk; however, this criminogenic factor is of limited use for determining the type of treatment that should be used (Losel, 2001).

Additionally, actuarial risk assessments can aim to measure recidivism in general, for specific types of offenses, or for specific types of offenders. For example, the LS/CMI measures general recidivism (Skeem, et al., 2013). The Static-99, another actuarial risk assessment, is used to predict sexual reoffending and measure factors related to sexual offenses, like an offender's relationship history or the offender's relationship to the victim (Helmus, 2018). In comparison, Women's Risk/Need Assessment (WRNA) incorporates criminogenic needs that relate to women's pathways to crime and captures factors like relationship dysfunction and role as a primary caregiver (Latessa, et al., 2020). It is important for the most appropriate actuarial risk assessment to be used on each offender, so the RNR model is accurately applied and prisoners participate in the most applicable rehabilitation program (Fazel, et al., 2024). However, which actuarial risk assessment is used is usually determined by the jurisdiction an incarcerated person is in. For example, the Prisoner Assessment Tool Targeting Estimated Risk and Needs (PATTERN) is the actuarial risk assessment tool used by federal prisons (Hamilton, et al., 2022). Whereas, California uses the California Static Risk Assessment and the Correctional Offender Management Profiling for Alternative Sanctions, and Oregon uses the Public Safety Checklist (Taylor, 2017; Oregon Criminal Justice Commission, 2023).

Variability in Rehabilitation

Rehabilitation programs are highly variable as demonstrated by different types of programs catering to different criminogenic needs. Rehabilitation programs are also variable in two additional ways: their target population and the design of the programs (Latessa, et al., 2020). It is common for rehabilitative programs to target specific demographics (e.g. gender and age) or types of offenses (e.g. sexual and violent) (Latessa, et al., 2020). For example, women have different pathways to crime and criminogenic needs than men (Hall, et al., 2004). Similarly,

pathways associated with adolescents differ from those associated with adults (Latessa, et al., 2020). Sexual offenders, violent offenders, and drug offenders all have unique criminogenic needs and require different combinations of rehabilitation programs (Latessa, et al., 2020). An example of a rehabilitation program for woman is "Forever Free," which has helped women achieve less drug use, fewer arrests, and more employment once released from prison, compared to their untreated counterparts (Hall, et al., 2004). Anger management courses, like "Cage Your Rage", are rehabilitative programs used to help violent offenders learn how to handle triggers (Novaco, 2020). Beyond variability in the targeted focus area and population, rehabilitation programs vary in structural design (Latessa, et al., 2020). Rehabilitation programs can utilize group therapy, individual therapy, or a hybrid approach, and they can vary in the frequency and duration of program meetings (Lipsey & Cullen, 2007; Latessa, et al., 2020).

When rehabilitative programs have varying focus areas, target populations, and designs they are more easily leveraged by the RNR model because a wider variety of prisoners' criminogenic needs, risk levels, and responsivity factors get addressed (Lipsey & Cullen, 2007). The incarceration system should use rehabilitative programs that are easily leveraged by the RNR model and utilize the RNR principles because research has consistently found these programs to have better recidivism reduction than programs that are not leveraged by the model (Lipsey & Cullen, 2007). Furthermore, incarceration facilities should offer diverse rehabilitative programs so that rehabilitation is better tailored to the individual and a broader range of the prison population is served (Lipsey & Cullen, 2007). Thus, research should focus on discovering program characteristics that are most effective at reducing recidivism instead of a singular, "golden bullet" program (Lipsey & Cullen, 2007). However, for rehabilitation programs to be continuously administered, they must have research that proves their efficiency, which means

helping as many incarcerated people as possible while reducing recidivism to the greatest degree (Gannon, et al., 2019). In other words, for programs to be effective they need to be individualized, but for programs to be efficient they need to be generalizable (i.e. “one size fits most”) (Olver, et al., 2011). However, programs cannot maximize efficiency and effectiveness simultaneously because these are two distinct goals. Furthermore, the duality of rehabilitation programs serving both the individual and the incarceration system makes an analysis of rehabilitation programs complex (Olver, et al., 2011).

Challenges and Proposed Solutions in Analyzing the Effectiveness of Rehabilitation Programs in Reducing Recidivism

A crucial step in implementing rehabilitation programs in the incarceration system is to analyze the programs' effectiveness and ensure that they reduce recidivism in practice and not just in theory (Gannon, et al., 2019). However, this analysis often produces vague and potentially inaccurate conclusions because of four reasons: the programs lack fidelity to their evidence-based model, recidivism is an undescriptive outcome variable, rehabilitation programs are inconsistently measured as an independent variable, and research studies vary in scientific rigor (Latessa, et al., 2020; King & Elderbroom, 2014; Hope, 2005).

Program Fidelity to Proven Model

For rehabilitation programs to be implemented within prisons and jails, they must begin as proven, small-scale trials, which closely control the administration of the program (Latessa, et al., 2020). Once rehabilitative programs are administrated across multiple incarceration systems, there can be a loss in integrity or fidelity to the program's initial execution or model, which can compromise program effectiveness (Landenberger & Lipsey, 2005). Andrews and Dowden (2005) stated programs had strong integrity and better recidivism reduction when they closely followed their initial design, were administered by skilled practioners, and were continuously managed and monitored. Losel (2001) found that programs monitored by researchers were more effective at reducing recidivism but were very uncommon.

Alterations to the original program can occur in a myriad of ways. When rehabilitative programs are implemented into other facilities, their structure may alter to meet the new safety criteria (Latessa, et al., 2020). These changes can be radical for rehabilitative programs that were originally designed outside of the prison setting (Latessa, et al., 2020). For example, Alcohol

Anonymous is an interactive 12-step rehabilitative program that was not originally designed for the incarcerated population and is currently used within prisons despite showing no effect on recidivism (Doyle, et al., 2019; Latessa, et al., 2020). Access to resources will also alter a rehabilitative program's design and quality level, in turn changing its effectiveness (Landenberger & Lipsey, 2005). Often, a program's access to financial, staff, and space resources is diminished when "scaled up" because it must share resources with other programs (Landenberger & Lipsey, 2005). Gannon, et al. (2019) found that rehabilitation programs were more successful when they were administered by a qualified, registered psychologist who provided hands-on input; however, in this study only one in five programs used qualified psychologists.

Furthermore, program integrity can be worsened by deviating from the RNR model. Prisoners undergo assessments and interviews by correctional professionals to inform their rehabilitative programming (Edwards, 2021). However, analysis of imprisoned people and their subsequent program assignment often fulfills the incarceration system need to process and manage prisoners rather than addressing the individual's risk factors (Shockley, 2023). Any additional participation in rehabilitation programs is at the prisoner's own volition, which is in stark contrast to small-scale studies that control for self-selection and program attrition (Shockley, 2023). As a result, the risk principle and need principle are abandoned or loosely followed at best; this decreases the potential for programs to reduce recidivism (Polaschek, 2012). Research widely supports that programs that closely align with the RNR model and its principles result in more recidivism reduction than programs that lack alignment (Olver, et al., 2011). Andrews & Bonta's (2010) meta-analysis found that programs that adhered to all three RNR principles could reduce recidivism up to 30%, while programs that did not adhere to any of

the RNR principles had no effect on recidivism. For example, programs that disregard high risk offenders by passing them off as "psychopaths who cannot change" or programs that make violent offenders ineligible to participate do not align with the risk principle because these types of offenders should be prioritized for participation over lower risk offenders (Andrews & Bonta, 2010). Another example is a program not using cognitive-behavioral techniques, which is against the responsivity principle (Andrews & Bonta, 2010).

There are many proposed solutions to ensure that when programs are administered on the wider scale, they maintain fidelity. Losel (2001) proposes program delivery should be continuously monitored through research analysis. This type of research should focus on capturing more of the program's content, staff characteristics, participation, use of actuarial assessment tools, and implementation, rather than just the program's outcomes (Losel, 2001). Such research would serve as "feedback" measures to inform administrators on which aspects of the program need more improvement or support (Caldeira, et al., 2023). For example, Taylor (2017) proposes ongoing testing of actuarial risk assessments to ensure that they are accurate and reliable tools so that the imprisoned are being helped in alliance with the RNR model. This oversight is especially important because actuarial risk assessments rely on the prison population's historical data to make accurate and precise predictions, and this data may not be accurate due to the prison population continuously changing (King & Elderbroom, 2014). Additionally, research which evaluates how a program is implemented on a wider scale should be conducted by an independent agent (Taylor, 2017). Ultimately, such research would provide insight into the degree to which a rehabilitative program matches the initial, evidence-based model and give information on how fidelity affects program effectiveness.

Another solution proposed by Taylor (2017) recommends that incarceration facilities should calculate the minimum number of resources they need to implement programs effectively. These calculations should incorporate the total number of inmates, number of inmates with certain needs, number of rehabilitation program slots used, the facility's current resources, and program attendance and attrition rates to inform which programs are being over or underutilized (Taylor, 2017). From this information, incarceration facilities can determine which programs best meet the criteria that fulfill their recidivism goals and allocate adequate funding to these programs, thereby increasing the program's likelihood of aligning with the program's initial model (Taylor, 2017).

Defining and Measuring Recidivism

Recidivism is a flawed measurement for rehabilitation success because it is a singular, non-standardized metric (King & Elderbroom, 2014). The inconsistency in recidivism definitions makes it difficult to accurately analyze effectiveness of and draw comparisons among individual rehabilitation programs (Rosenfeld & Grigg, 2022). Re-arrest, re-conviction, re-incarceration and violation of parole are rates that can all be used to measure recidivism (Landenberger & Lipsey, 2005). However, each outcome describes a different aspect of recidivism (Rosenfeld & Grigg, 2022). To illustrate, someone who violated probation or parole may not have committed an actual crime. Re-conviction only measures those who have been caught and found guilty of a criminal act, while re-arrest measures those who are suspected, but may not have committed a crime.

For recidivism to be a measurable variable, the measured outcomes must be calculated across a period of time, which is also not standardized in length or onset (Landenberger & Lipsey, 2005). The longer the follow up period, the more accurate the measurement is at

representing recidivism tendencies because there is more opportunity to reoffend (Durose & Antenangeli, 2021). For example, if a research study measured recidivism rates three years following its sample's release, then it would not capture recidivism that occurs within five or ten years. Though longer studies are more descriptive of true recidivism patterns, they also require more resources (Losel, 2001). Additionally, the longer the follow up period, the less the effect on recidivism can be attributed to program participation because there are more environmental factors and changes in risk factors that confound or lead to recidivism (Losel, 2001). For example, Cohen, et al. (2016) found criminogenic needs significantly changed in the 6-month period following release and these changes continued over the 12-month study. Studies that use long follow up periods are also more likely to be analyzing old programs methods which may have already been modified (Losel, 2001). Lastly, follow up periods that begin at prison release may include people who are released to parole, which will increase the sample's recidivism rates (Skeem, et al., 2011). Samples that include parolees will include parole violations and higher re-arrest rates since parolees are surveilled (Deitch, 2022). Due to the irregularity in measuring recidivism, it falls onto the consumer to understand what the reported recidivism rate is capturing.

Variations in how to measure recidivism make it difficult to compare rehabilitation outcomes (Landenberger & Lipsey, 2005). To illustrate, one rehabilitation program can report having higher recidivism rates than another, making it seemingly less effective. However, upon inspection the difference in recidivism rates may be attributed to one program measuring re-arrest (which occurs at a higher rate) and the other measuring re-conviction (which occurs at a lower rate). Furthermore, recidivism rates are a dichotomous measure that characterizes any involvement with the incarceration system as a "failure" and does not capture gradual

improvement, which truly describes how the incarcerated rehabilitate (King & Elderbroom, 2014). Furthermore, recidivism rates disproportionately represent repeat offenders because they account for more of the data due to being continuously re-arrested, re-convicted, or re-incarcerated (King & Elderbroom, 2014; Lewis, 2020). Over representation also occurs because first time offenders are often diverted away from incarceration and excluded from measurement (Lewis, 2020). Ultimately, it is crucial for the consumer to understand these characteristics of recidivism rates to draw accurate comparison or conclusions. However, consumers are only able to make accurate conclusion by utilizing additional, informative variables —which are not always reported. For example, if a consumer wants to understand a repeat offender's path to recidivism after participating in a rehabilitation program, they can track their re-arrest rates. The consumer would also need information on the repeat offender's race and the crime rate of the re-entry neighborhood, as these factors can increase risk of arrest.

Researchers should either improve recidivism measures or use additional measures of program success to supplement recidivism measures (King & Elderbroom, 2014). Recidivism rates can be improved by developing protocols for data collection that ensure recidivism rates are consistent, accurate, and timely (King & Elderbroom, 2014). To standardize measuring recidivism rates, it is important that protocols and subsequent data are linked across agencies so that informative comparisons can be drawn (Rosenfeld & Grigg, 2022). An example of implementing this solution is seen in the Uniform Crime Reporting Program creating a National Incident-Based Reporting System to achieve uniformity on arrest data across policing agencies (Rosenfeld & Grigg, 2022).

A second solution to improving outcome measures is to supplement recidivism rates with more descriptive measures of success, like desistance. Desistance captures the gradual process of

improvement and includes relapse (Rosenfeld & Grigg, 2022). Specifically, desistance tracks the time between offenses (also known as time to failure), the frequency of re-offending (deceleration), and the severity of the re-offenses (de-escalation) (King & Elderbroom, 2014). Improvement is qualified as more time elapses between offenses and decrease of crime severity with the goal of having fewer instances of involvement with the incarceration system (Rosenfeld & Grigg, 2022). Some researchers use "subjective desistence," which compares an individual's criminal engagement to their previous criminal activity (Rosenfeld & Grigg, 2022). Desistance also incorporates other domains of re-entry which affect success, like housing, employment, relationships, physical health, mental health, education, voting and civic engagement, and neighborhoods of re-entry (Rosenfeld & Grigg, 2022).

Desistence could potentially use actuarial risk assessments during post-incarceration follow-up periods to track how incarcerated peoples' risk changes, which would provide more insight on how re-offending occurs (Davies, et al., 2023). For example, Cohen, et al., (2016) tracked changes in Post Conviction Risk Assessment (PCRA) scores of released federal offenders and compared changes in risk scores to re-arrest rates in a 1-year period. They found that 18% of previously incarcerated people change risk levels before recidivating, and high-risk offenders change risk scores more than offenders with other risk levels (Cohen, et al., 2016). Additionally, they found that the most recent risk level is the best at predicting recidivism rates (Cohen, et al., 2016). So, someone who moved from high risk to moderate risk had a re-arrests rate (33%) closer to those who maintained moderate risk level (30%) than to those who maintained a high-risk level (49%) (Cohen, et al., 2016). Larger decreases or increases in risk were (non-linearly) associated with (respectively) larger decreases or increase in re-arrest rates (Cohen, et al., 2016). However, changes in re-arrest rates were more sensitive to increases in risk

scores than decreases (Cohen, et al., 2016). For instance, high risk offenders who increased their risk scores by 3 points had a 27.4%-point increase in re-arrest rates, while those who decreased their risk scores by 3 points had a 17%-point reduction in re-arrest rates (Cohen, et al., 2016). Ultimately, this study shows how actuarial risk assessments can quantify incremental changes, and continuous assessment can be more informative than simply using the most recent score to predict recidivism (Cohen, et al., 2016; Davies, et al., 2023).

Rehabilitation Measured as an Independent Variable

Research studies measure rehabilitation programs as an independent variable by categorizing the incarcerated population into those who participated and those who did not participate in the rehabilitation program (Latessa, et al., 2020). This is the most common way to measure exposure to rehabilitation programs because general participation can be easily found in administrative data (Pompoco, et al., 2017). However, participation is an undescriptive measurement because it is common for incarcerated people to "drop out" or not complete programming due to switching facilities, being released, or losing motivation (Losel, 2001; Edwards, 2021). Furthermore, participation fails to capture that offenders who are most likely to drop out of programs are those that could benefit the most (Olver, et al., 2011).

Other studies categorize rehabilitation programming by completion or by the number of hours prisoners participated in a program (Pompoco, et al., 2017). Pompoco, et al. (2017) measured rehabilitation programs through three treatment groups: completed program, started but did not complete program, and never participated in program. They found that program completion was the most effective in reducing return to prison rates (within three years of release) (Pompoco, et al., 2017). Furthermore, starting but not completing programs had the same results as never participating in the programs because they did not receive the full services

(Pompoco, et al., 2017). Program completion is also included in most administrative data, making it an accessible measurement to researchers (Pompoco, et al., 2017). However, program completion is an inconsistent measure of rehabilitation because program supervisors (who collect administrative data) and researchers vary in how they quantify program completion and incompletion (Gannon, et al., 2019). For example, non-completion criteria can range from missing more than 25% of meetings to not having 100% attendance (Gannon, et al., 2019). Taylor (2017) recommends using attendance rates as a more descriptive measure than completion because attendance rates can give insight into how frequently prisoners are participating in the rehabilitation programs. Taylor (2017) further advises that incarceration systems should require rehabilitation programs to record attendance rates so that attendance becomes part of administrative data and more accessible to researchers.

The number of hours the incarcerated population participates in (also referred to as dosage) provides more specific information than program completion or attendance because it captures the actual amount of time someone participates in a program (Sperber, et al., 2013). For example, Makarios, et al., (2014) categorized rehabilitation programming into six "dosage"-based groups; the lowest category was 0 to 99 hours of participation, and the proceeding categories increased by 50-hour increments. They found that as dosage increased, recidivism rates improved when controlled by risk level (Makarios, et al., 2014). There is potential for hours of participation to be additionally useful for meta-analysis because these studies must include programs of varying frequency and length (referred to as intensity) (Andrews & Dowden, 2005). However, Andrews & Dowden (2005) found that in their meta-analysis it was difficult to use the hours prisoners participated in because this information is missing in most of the data. Furthermore, Sperber, et al., (2013) highlighted that reporting on the number of hours is only a

sufficient measure when the program has good quality implementation. Thus, it is important for researchers to first test that program dosage is a reliable independent variable (Sperber, et al., 2013).

Controlling for Confounding Variables

There is a large body of research studies on the effectiveness of rehabilitation programs with varying degrees of quality. For a research study to achieve high quality, it must also control for confounding variables, which is especially important in the incarceration system where preferred randomized control studies are rarely used (Losel, 2001). Confounding variables that should be controlled for in statistical analysis or study design include selection bias, jurisdiction, age, gender, type of offense, risk level, and joint effect.

When participation is based on self-selection, there is increased risk for selection bias (Hamilton, et al., 2018). This bias (also referred to as volunteer bias) occurs when participants' underlying characteristics affect the measured outcomes more than the treatment does (Hegedus & Moody, 2010). For instance, all prisoners who chose to participate in a rehabilitation program may share strong motivation to change and avoid criminal behavior. Once released, this sample has lower recidivism rate because of the sample's strong motivation. Thus, if this study was replicated in a different, unmotivated group, recidivism rates would not change despite participating in the rehabilitation program. Ultimately, selection bias is unavoidable without changing the incarceration system's procedural practices, so selection bias must be accounted for in research studies' statistical analysis (Hamilton, et al., 2018).

The physical location of a treatment program and its subsequent study can affect recidivism rates (Riep, 2019). Each jurisdiction handles prisoners differently because they each prioritize the principles of incarceration (deterrence, incapacitation, punishment, and

rehabilitation) differently (Riep, 2019). The overall experience of being incarcerated in a certain jurisdiction may have a stronger effect on recidivism than the actual rehabilitation program (Losel, 2001). For instance, Scandinavian countries have lower recidivism rates (estimated 20%) compared to the United States' recidivism rates (estimated 70%) (Riep, 2019). These lower rates can be attributed to Norway prioritizing prison conditions, experience, and rehabilitation treatment (Riep, 2019). Poor prison conditions, such as intense supervision and frequent use of sanctions or punishment, can have a detrimental effect on rehabilitation and can worsen recidivism outcomes (Losel, 2001). Thus, when rehabilitation programs are compared between very different prison environments, it is difficult to deduce if recidivism outcomes are solely due to the rehabilitative program or prison culture (Riep, 2019).

As age increases, one's propensity for criminal behavior (including recidivism) decreases, so age can be a confounding variable (Spruit, et al., 2017). Durose and Antengali (2021) found that within 5 years of being released in 2012, 56.8% of incarcerated people 24 years or younger were arrested, 48.8% of incarcerated people between ages 25 and 39 were arrested, and 36.3% of incarcerated people 40 or older were arrested. In prison populations, where the most prevalent age group is 24 to 39 and not all age groups are equally represented, it is especially important to control for age (Pettit & Gutierrez, 2018; Spruit, et al., 2017).

Some rehabilitation programs are designed specifically for women or men to help with gender-specific criminogenic needs; however, rehabilitation programs can also be applied across genders (Mears, et al., 2012). For such programs, it is important that research of subsequent recidivism rates still considers gender differences (Mears, et al., 2012). Durose and Antenangeli (2021) looked at released prisoners who returned to prison during a five year follow up and found a 13.2% difference between recidivism rates of men (47.2%) and women (34.0%). Gender

differences in recidivism occur because men and women have different pathways to criminal behavior, they are sanctioned differently, and they tend to commit different types of crimes. Men and women's pathway to criminal behavior diverge due to differences in their societal roles and how they experience external risk factors (Mears, et al., 2012). For example, women are more discouraged from engaging in risky behavior than men, and they are more likely to experience abuse and sexual violence (Mears, et al., 2012). Additionally, men historically have received more punitive sanctions than women, even after controlling for the severity of their crime (Mears, et al., 2012). Lastly, each gender is susceptible to committing different types of crimes, and each type of crime is associated with different recidivism rates (Mears, et al., 2012). For instance, women are less likely to commit violent offenses than men, but when they do commit homicide, their victims are more likely to be an intimate partner (Mears, et al., 2012).

Furthermore, recidivism rates can change based on the type of crime measured for the initial offense as well as the type of post-conviction re-offense (Staudt, 2025). To illustrate, a report measured the most serious offenses of prisoners released across 34 states in 2012 and found that 27.5% were initially incarcerated for violent offenses, 28.3% for property offenses, 25.5% for drug offenses, and 18.7% for public order offenses (Durose & Antenangeli, 2021). Additionally, the report followed the incarcerated sample five years after release and recorded all types of re-offenses (Durose & Antenangeli, 2021). It found that of this sample, 70.8% were re-arrested within 5 years, and of those who were re-arrested, 28.3% were arrested for violent offenses, 35.7% for property offenses, 32.6% for drug offenses, and 54.1% for public order offenses (Durose & Antenangeli, 2021). When a rehabilitation program is designed for a specific offense and all the participants have committed that offense, there is no need to control for differences between offense specific recidivism rates. However, when a rehabilitation program is

designed for multiple offense types, the sample of participants must be representative of all offense types (Latessa, et al., 2020). Otherwise, recidivism measures may be due to the type of offense committed rather than the actual effectiveness of the program (Latessa, et al., 2020).

Risk Level is the measurement of someone's likelihood to re-offend; thus, it is a confounding variable (Schlager & Pacheco, 2011). For instance, if a program is ineffective and it only treats high risk offenders, recidivism rates will be worse than the same ineffective program treating low risk offenders. In comparison, if a program is highly effective and it only treats high risk offenders, then the reduction in recidivism will be greater than the same program treating low risk offenders. This outcome is attributed to high-risk offenders having more "room for improvement" (Landenberger & Lipsey, 2005). It is important to report recidivism rates for each risk level or have risk-adjusted recidivism rates for studies of programs that treat across risk level, especially in rehabilitation programs that closely align with risk principle of the RNR model (King & Elderbroom, 2014). In order to achieve risk-adjusted measurements, it is crucial to have an empirically valid actuarial risk assessment used uniformly as a core measure to create comparable groups (Losel, 2001).

Joint effect confounding occurs when the incarcerated participate in multiple rehabilitation programs (Hsieh, et al., 2022). It can be common for prisoners to participate in multiple programs and program types throughout their surveillance (Hsieh, et al., 2022). When researchers do not control for joint effects, it is difficult to attribute recidivism outcomes to a singular program (Hsieh, et al., 2022). Hsieh, et al., (2022) proposes that the joint effect outperforms the singular effect because a wide variety of treatments can address a variety of criminogenic needs. Furthermore, participating in multiple programs results in more opportunities to practice and normalize prosocial behaviors (Hsieh, et al., 2022). Hsieh, et al.,

(2022) discusses that future research may discover that program sequencing (the order in which prisoners participate in rehabilitative programs) can maximize and confound recidivism reduction. Sperber, et al., (2013) further postulates that joint effects might occur from experiencing various correctional settings (like prisons, halfway homes, or post-release supervision), and sequencing across correctional settings could confound with recidivism reduction as well.

When confounding variables are left uncontrolled (either through research design or analysis) it is difficult to infer if recidivism rates are the result of solely the rehabilitation program or are additionally influenced by other confounded variables (Lipsey & Cullen, 2007). Thus, studies should utilize scientifically rigorous methods to produce evidence-based results (Hope, 2005). When rehabilitation and recidivism research is conducted through meta-analysis, it can be additionally helpful to use tools like the Maryland Scientific Method Scale (SMS), which evaluates and ranks studies' methods by rigor (Hope, 2005). In other words, the SMS tries to approximate how closely a study's design and methods align with random-controlled trial experiments, which are the gold standard (Hope, 2005). Prominently, SMS focuses on a study's control over third variables, measurement error, and statistical power (Hope, 2005).

Ultimately, studies on the effectiveness of rehabilitation programs aim to discover which programs are effective and what makes these programs effective (Losel, 2001). That is, these studies seek to answer: "what mode of program for what type of offenders delivered by which personnel in which setting under which contextual circumstances show what kind of effect?" (Losel, 2001). Currently, there is little systematic research that analyzes how rehabilitation programs are used in the incarceration system (Lipsey & Cullen, 2007). Such conclusions can help justify the implementation and continuation of rehabilitation programs that produce real

change and achieve the criminal justice system's goal of crime reduction (Taylor, 2017). To draw accurate conclusions, studies must consider how programs change when implemented on a wider scale and control for confounding variables (Landenberger & Lipsey, 2005). Additionally, they must consistently measure accurate variables that capture rehabilitation programs and recidivism rates (Lipsey & Cullen, 2007).

Conclusion

It is unnecessary to find the "golden bullet" of rehabilitation programs because it is impossible for one program to properly serve the entire incarcerated population and all their needs (Lipsey & Cullen, 2007). Rather, researchers should investigate what characteristics of rehabilitation programs make the programs effective at reducing recidivism (Losel, 2001). Additionally, researchers should identify effective ways to implement diverse, evidence-based programming, so that the incarcerated population can be helped in an individualized way (Gannon, et al., 2019). However, it is difficult to draw meaningful conclusions from such research due to the myriad of ways rehabilitation programs are constructed, implemented, and analyzed (Lipsey & Cullen, 2007).

Proposed solutions focus on improvements that rehabilitation program administrators and researchers can make. Administrators should create a system that evaluates program fidelity to initial models and that analyzes the minimum resources needed to emulate the evidence-based model for challenges associated with wide-scale implementation (Losel, 2001). Additionally, the incarceration system should incentivize rehabilitation program facilitators to improve the quality and consistency of the program's administrative data, so that researchers have an accessible and valid independent variable (Taylor, 2017). Researchers should standardize recidivism measures and include desistance variables to improve measurements of program success (Rosenfeld & Grigg, 2022). Researchers should always utilize statistical analysis to account for confounding variables when research design cannot control for these variables (Hope, 2005). Lastly, researchers can use tools like actuarial risk assessments and the SMS to improve their analysis (Cohen, et al., 2016; Hope, 2005).

Although these modifications are new to the field of recidivism research, they have the potential to improve research and strengthen findings on the relationship between rehabilitation and criminality. With these findings, rehabilitation in the incarceration system can enhance their effectiveness by optimizing program characteristics that best service prisoners' risk level, criminogenic need, and responsivity factors (Lipsey & Cullen, 2007). Thus, effective rehabilitation programs that provide personalized care during incarceration improve re-entry (Cullen & Jonson, 2012). Successful reintegration is the desired outcome of rehabilitation because it reduces incarceration rates by specifically reducing the amount of people who continuously cycle between committing crimes and being incarcerated (Polaschek, 2012). Thus, rehabilitation in the incarceration system helps the criminal justice system achieve its goal of reducing crime and ensuring public safety (Polaschek, 2012).

Bibliography

Adams, S., Houston-Kolnik, J., & Reichert, J. (2017). Trauma-informed and evidence-based practices and programs to address trauma in correctional settings. *Illinois Criminal Justice Information Authority*, *1*(1).

Akers, R. L., & Jennings, W. G. (2015). Social Learning Theory. In *The Handbook of Criminological Theory* (pp. 230–240). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118512449.ch12

Andrews, D. A., & Bonta, J. (2010). Rehabilitating criminal justice policy and practice. *Psychology, Public Policy, and Law*, *16*(1), 39–55. https://doi.org/10.1037/a0018362

Andrews, D.A. and Dowden, C. (2005), Managing correctional treatment for reduced recidivism: A meta-analytic review of programme integrity. Legal and Criminological Psychology, 10: 173-187. https://doi.org/10.1348/135532505X36723

APA Division 12, (2017). What is Cognitive Behavioral Therapy? Retrieved from https://www.apa.org/ptsd-guideline/patients-and-families/cognitive-behavioral

Asencio, E. K., & Burke, P. J. (2011). Does incarceration change the criminal identity? A synthesis of labeling and identity theory perspectives on identity change. *Sociological Perspectives*, *54*(2), 163-182.

Bronson, J., & Berzofsky, M. (2017). *Indicators of Mental Health Problems Reported by Prisoners and Jail Inmates, 2011-12* (Special Report NCJ 250612; p. 17). U.S. Department of Justice. https://bjs.ojp.gov/content/pub/pdf/imhprpji1112.pdf

Bunting, A. M., Staton, M., Winston, E., & Pangburn, K. (2018). Beyond the Employment Dichotomy: An Examination of Recidivism and Days Remaining in the Community by Post-Release Employment Status. *International Journal of Offender Therapy and Comparative Criminology*. https://doi.org/10.1177/0306624X18808685

Bureau of Justice Statistics. (2021). Drug use and crime. Retrieved from https://bjs.ojp.gov/drugs-and-crime-facts/drug-use-and-crime#drug-related

Caldeira, L., Bagdon-Cox, C., & Sharp, B. A. (2023). Evaluating the efficacy of Thinking for a Change (T4C) in Reducing Recidivism

Cohen, T. H., Lowenkamp, C. T., & VanBenschoten, S. W. (2016). Does Change in Risk Matter? *Criminology & Public Policy*, *15*(2), 263–296. https://doi.org/10.1111/1745-9133.12190

Cook, A. P. (2015). *Capital and punishment: Examining prison's revolving door*. Mississippi State University. https://www.proquest.com/docview/1679463763?fromopenview=true&pq-origsite=gscholar&sourcetype=Dissertations%20&%20Theses

Cullen, F. & Jonson, C. (2012). Rehabilitation and Treatment Programs. In Wilson, J. & Petersilia, J.(Eds). *Crime and Public Policy* (pp 293-343). Oxford University Press.

Davies, S. T., Lloyd, C. D., & Polaschek, D. L. L. (2023). Does Risk Change Simply Indicate Current Risk for Recidivism or Something More? A Review of the Predictive Value of Intraindividual Change. *Criminal Justice and Behavior*, *50*(8), 1102–1119. https://doi.org/10.1177/00938548231174905

Deitch, B. L. (2022). Rehabilitation or Revolving Door: How Parole Is a Trap for Those in Poverty. GLJ Online (Georgetown Law Journal Online), 111, 46–76.

Doyle, M. F., Shakeshaft, A., Guthrie, J., Snijder, M., & Butler, T. (2019). A systematic review of evaluations of prison-based alcohol and other drug use behavioural treatment for men. Australian and New Zealand Journal of Public Health, 43(2), 120–130. https://doi.org/10.1111/1753-6405.12884

Durose, M., & Antenangeli, L. (2021). *Recidivism of Prisoners Released in 34 States in 2012: A 5-Year Follow-Up Period (2012–2017)*. Bureau of Justice Statistics. https://bjs.ojp.gov/library/publications/recidivism-prisoners-released-34-states-2012-5-year-follow-period-2012-2017

Edwards, K. (2021). Prisoners' Perspectives on Limited Rehabilitative Program Opportunities. *Qualitative Report*, *26*(4), 1128–1149. https://doi.org/10.46743/2160-3715/2021.4495

Enns, P. K. (2016). Wonder why prisons stay full when crime goes down? Here's the real reason. *The Washington Post*. https://www.washingtonpost.com/news/monkey-cage/wp/2016/05/06/wonder-why-prisons-stay-full-when-crime-goes-down-heres-the-real-reason/

Fazel, S., Hurton, C., Burghart, M., DeLisi, M., & Yu, R. (2024). An updated evidence synthesis on the Risk-Need-Responsivity (RNR) model: Umbrella review and commentary. *Journal of Criminal Justice*, *92*, 102197-. https://doi.org/10.1016/j.jcrimjus.2024.102197

Fisher, K. A., Torrico, T. J., & Hany, M. (2024). Antisocial Personality Disorder. In *StatPearls*. StatPearls Publishing

Freiburger, T. L., Konkel, R. H., & Kaberlein, J. (2025). The Impact of Participation in Computer Numerical Control (CNC) Machining Technical Education Certificate Programs on Rates of Recidivism. *International Journal of Offender Therapy and Comparative Criminology*, 0306624X251327426. https://doi.org/10.1177/0306624X251327426

Gannon, T. A., Olver, M. E., Mallion, J. S., & James, M. (2019). Does specialized psychological treatment for offending reduce recidivism? A meta-analysis examining staff and program variables as predictors of treatment effectiveness. *Clinical Psychology Review*, *73*, 101752. https://doi.org/10.1016/j.cpr.2019.101752

Guerrero, G. (2011). Prison Based Educational and Vocational Training Programs. In Gideon, L., & Sung, H.E. (Eds.). (2011). *Rethinking corrections : rehabilitation, reentry, and reintegration*. SAGE Publications.

Hall, E. A., Prendergast, M. L., Wellisch, J., Patten, M., & Cao, Y. (2004). Treating Drug-Abusing Women Prisoners: an Outcomes Evaluation of the Forever Free Program. *The Prison Journal*, *84*(1), 81-105. https://doi.org/10.1177/0032885503262456

Hamilton, Z., Duwe, G., Kigerl, A., Gwinn, J., Langan, N., & Dollar, C. (2022). Tailoring to a Mandate: The Development and Validation of the Prisoner Assessment Tool Targeting Estimated Risk and Needs (PATTERN). *Justice Quarterly*, *39*(6), 1129–1155. https://doi.org/10.1080/07418825.2021.1906930

Hamilton, B., Rosenfeld, R., & Levin, A. (2018). Opting out of treatment: Self-selection bias in a randomized controlled study of a focused deterrence notification meeting. *Journal of Experimental Criminology*, *14*(1), 1–17. https://doi.org/10.1007/s11292-017-9309-z

Harding, D. J., Morenoff, J. D., Nguyen, A. P., & Bushway, S. D. (2017). Short- and long-term effects of imprisonment on future felony convictions and prison admissions. *Proceedings of the National Academy of Sciences of the United States of America*, *114*(42), 11103–11108. https://doi.org/10.1073/pnas.1701544114

Haynie, D. L., & Kreager, D. A. (2013). Peer networks and crime. In Cullen, F. & Wilcox, P (Eds.) *The Oxford handbook of criminological theory*

Hegedus, E. J. & Jennifer Moody. (2010). Clinimetrics corner: The many faces of selection bias. *The Journal of Manual & Manipulative Therapy*, *18*(2), 69–73. https://doi.org/10.1179/106698110X12640740712699

Helmus, L. M. (2018). Sex Offender Risk Assessment: Where Are We and Where Are We Going? *Current Psychiatry Reports*, *20*(6), 46. https://doi.org/10.1007/s11920-018-0909-8

Hemphill, J. F., Hare, R. D., & Wong, S. (2011). Psychopathy and recidivism: A review. *Legal and Criminological Psychology*, *3*(1), 139–170. https://doi.org/10.1111/j.2044-8333.1998.tb00355.x

Hope, T. (2005). Pretend It Doesn't Work: The 'Anti-Social' Bias In The Maryland Scientific Methods Scale. *European Journal on Criminal Policy and Research*, *11*(3), 275–296. https://doi.org/10.1007/s10610-005-9000-1

Hunt, K., & Easley, B. (2017). *The Effects of Aging on Recidivism Among Federal Offenders*. United States Sentencing Commission. https://www.ussc.gov/research/research-reports/effects-aging-recidivism-among-federal-offenders

Hsieh, M., Chen, K., Choi, P., & Hamilton, Z. (2022). Treatment Combinations: The Joint Effects of Multiple Evidence-Based Interventions on Recidivism Reduction. *Criminal Justice and Behavior*, *49*(6). https://doi.org/10.1177/00938548211052584

Kifer, M., Hemmens, C., & Stohr, M. K. (2003). The Goals of Corrections: Perspectives from the Line. *Criminal Justice Review*, *28*(1), 47-69. https://doi.org/10.1177/073401680302800104 (Original work published 2003)

King, R., & Elderbroom, B. (2014). *Improving Recidivism as a Performance Measure*. Urban Institute. https://bja.ojp.gov/sites/g/files/xyckuh186/files/media/document/UI-ImprovingRecidivism.pdf

Kyckelhahn, T., & Cooper, T. (2017). The Past Predicts the Future: Criminal History and Recidivism of Federal Offenders. United States Sentencing Comission. https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2017/20170309_Recidivism-CH.pdf

Landenberger, N. A., & Lipsey, M. W. (2005). The positive effects of cognitive–behavioral programs for offenders: A meta-analysis of factors associated with effective treatment. *Journal of Experimental Criminology*, *1*(4), 451–476. https://doi.org/10.1007/s11292-005-3541-7

Latessa, E. J., Listwan, S. J., & Koetzle, D. (2020). *What works (and doesn't) in reducing recidivism* (Second edition.). Routledge. https://doi.org/10.4324/9780429341366

Lewis, C. (2020). The paradox of recidivism. *Emory LJ*, *70*, 1209

Link, A. J., & Williams, D. J. (2015). Leisure Functioning and Offender Rehabilitation. *International Journal of Offender Therapy and Comparative Criminology*. https://doi.org/10.1177/0306624X15600695

Lipsey, M. W., & Cullen, F. T. (2007). The Effectiveness of Correctional Rehabilitation: A Review of Systematic Reviews. *Annual Review of Law and Social Science*, *3*(1), 297–320. https://doi.org/10.1146/annurev.lawsocsci.3.081806.112833

Loeffler, C. E., & Nagin, D. S. (2022). The Impact of Incarceration on Recidivism. *Annual Review of Criminology*, *5*, 133–152. https://doi.org/10.1146/annurev-criminol-030920-112506

Looney, A., & Turner, N. (2018). Work and opportunity before and after incarceration. *The Brookings Institution*. https://www.brookings.edu/wp-content/uploads/2018/03/es_20180314_looneyincarceration_final.pdf

Losel, F. (2001). Evaluating the effectiveness of correctional programs: bridging the gap between research and practice. In Bernfeld, G. A., Farrington, D. P., & Leschied, A. W. *Offender rehabilitation in practice : implementing and evaluating effective programs*. J. Wiley & Sons.

MacPhail, A., & Verdun-Jones, S. (2013). *Mental illness and the criminal justice system*. International Centre for Criminal Law Reform and Criminal Justice Policy, University of British Columbia.

Makarios, M., Sperber, K. G., & Latessa, E. J. (2014). Treatment Dosage and the Risk Principle: A Refinement and Extension. *Journal of Offender Rehabilitation*, *53*(5), 334–350. https://doi.org/10.1080/10509674.2014.922157

Manzano, N. (2024). *Both Parties Agree: Bail is Broken.* The Bail Project. https://bailproject.org/policy/both-parties-agree-bail-is-broken/

Maruschak, L. M., & Snell, T. L. (2023). *Employment of State and Federal Prisoners Prior to Incarceration, 2016* (NCJ 305983; p. 4). Bureau of Justice Statistics. https://bjs.ojp.gov/sites/g/files/xyckuh236/files/media/document/esfppi16.pdf

Mears, D. P., Cochran, J. C., & Bales, W. D. (2012). Gender differences in the effects of prison on recidivism. *Journal of Criminal Justice*, *40*(5), 370-378.

McLaughlin, M., Pettus-Davis, C., Brown, D., Veeh, C., & Renn, T. (2016). *The Economic Burden of Incarceration in the United States*. https://ijrd.csw.fsu.edu/sites/g/files/upcbnu1766/files/media/images/publication_pdfs/Economic_Burden_of_Incarceration_IJRD072016_0_0.pdf

Multi-Health System Inc. (2019). Level of Service /Case Management Inventory: Re-Offender Assessment System Booster Training. Global Institute of Forensic Research. https://gifrinc.com/wp-content/uploads/sites/6/2023/01/LSCMI-Booster_PowerPoint-Handout-1.pdf

Newton, D., Day, A., Giles, M., Wodak, J., Graffam, J., & Baldry, E. (2018). The Impact of Vocational Education and Training Programs on Recidivism: A Systematic Review of Current Experimental Evidence. *International Journal of Offender Therapy and Comparative Criminology*, *62*(1), 187–207. https://doi.org/10.1177/0306624X16645083

Novaco, R. W. (2020). Anger Treatment with Violent Offenders. In Wormith, S., Craig, L., & Hogue, T., Editors. *The Wiley Handbook of What Works in Violence Risk Management* (pp. 385–397). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781119315933.ch19

Olver, M. E., Stockdale, K. C., & Wormith, J. S. (2011). A meta-analysis of predictors of offender treatment attrition and its relationship to recidivism. *Journal of Consulting and Clinical Psychology*, *79*(1), 6–21. https://doi.org/10.1037/a0022200

Oregon Criminal Justice Commission (2023). Risk tool: Public Safety Checklist. (n.d.). Retrieved from https://www.oregon.gov/cjc/risktool/Pages/default.aspx

Payne, S. (2023). The Economic Impact of Prison Labor for Incarcerated Individuals and Taxpayers. The Princeton Legal Journal. 2(1)

Peterson, J. K., Skeem, J., Kennealy, P., Bray, B., & Zvonkovic, A. (2014). How often and how consistently do symptoms directly precede criminal behavior among offenders with mental illness? *Law and Human Behavior*, *38*(5), 439–449. https://doi.org/10.1037/lhb0000075

Pettit, B., & Gutierrez, C. (2018). Mass Incarceration and Racial Inequality. *American journal of economics and sociology*, *77*(3-4), 1153–1182. https://doi.org/10.1111/ajes.12241

Phelps, M. S. (2011). Rehabilitation in the Punitive Era: The Gap between Rhetoric and Reality in U.S. Prison Programs. *Law & Society Review*, *45*(1), 33. https://doi.org/10.1111/j.1540-5893.2011.00427.x

Polaschek, D. (2012). An appraisal of the Risk-Need-Responsivity (RNR) model of offender rehabilitation and its application in correctional treatment. *ResearchGate*. https://www.researchgate.net/publication/230492408_An_appraisal_of_the_Risk-Need-Responsivity_RNR_model_of_offender_rehabilitation_and_its_application_in_correctional_treatment

Pompoco, A., Wooldredge, J., Lugo, M., Sullivan, C., & Latessa, E. J. (2017). Reducing Inmate Misconduct and Prison Returns with Facility Education Programs. *Criminology & Public Policy*, *16*(2), 515–547. https://doi.org/10.1111/1745-9133.12290

Prins, S. J. (2019). Criminogenic or criminalized? Testing an assumption for expanding criminogenic risk assessment. *Law and Human Behavior*, *43*(5), 477–490. https://doi.org/10.1037/lhb0000347

Pleggenkuhle, B. (2018). The Financial Cost of a Criminal Conviction: Context and Consequences. *Criminal Justice and Behavior*, *45*(1), 121–145. https://doi.org/10.1177/0093854817734278

Robey, J. P., Massoglia, M., & Light, M. T. (2023). A Generational Shift: Race and the Declining Lifetime Risk of Imprisonment. *Demography*, *60*(4), 977–1003. https://doi.org/10.1215/00703370-10863378

Rosenfeld, R., & Grigg, A. (Eds.) (with Committee on Evaluating Success Among People Released from Prison, Committee on Law and Justice, Division of Behavioral and Social Sciences and Education, & National Academies of Sciences, Engineering, and Medicine). (2022). *The Limits of Recidivism: Measuring Success After Prison*. National Academies Press. https://doi.org/10.17226/26459

Riep, A. (2019). The Effects of Culture and Punishment Philosophies on Recidivism: Comparing Prison Systems in the United States and Scandinavia.

Sawyer, W., & Wagner, P. (2025). *Mass Incarceration: The Whole Pie 2025*. Prison Policy Initiative. https://www.prisonpolicy.org/reports/pie2025.html

Schlager, M. D., & Pacheco, D. (2011). An Examination of Changes in LSI-R Scores Over Time: Making the Case for Needs-Based Case Management. *Criminal Justice and Behavior*, *38*(6), 541–553. https://doi.org/10.1177/0093854811402300

Shelley, S. (2024). *What is the Criminal Justice System? Insights for Aspiring Legal Minds*. https://www.ucumberlands.edu/blog/what-is-the-criminal-justice-system

Shockley, J. (2023). Why Prisons Fail to Rehabilitate People. *Prison Journalism Project*. https://prisonjournalismproject.org/2023/06/22/why-prisons-fail-to-rehabilitate-people/

Sjöstedt, G., & Grann, M. (2002). Risk assessment: What is being predicted by actuarial prediction instruments?. *International journal of forensic mental health*, *1*(2), 179-183

Skeem, J. L., Winter, E., Kennealy, P. J., Louden, J. E., & Tatar, J. R. (2013). Offenders With Mental Illness Have Criminogenic Needs, Too: Toward Recidivism Reduction. *Law and Human Behavior*, *38*(3), 212–224. https://doi.org/10.1037/lhb0000054

Sperber, K. G., Latessa, E. J., & Makarios, M. D. (2013). Examining the Interaction between Level of Risk and Dosage of Treatment. *Criminal Justice and Behavior*, *40*(3), 338–348. https://doi.org/10.1177/0093854812467942

Spruit, A., van der Put, C., Gubbels, J., & Bindels, A. (2017). Age differences in the severity, impact and relative importance of dynamic risk factors for recidivism. *Journal of Criminal Justice*, *50*, 69–77. https://doi.org/10.1016/j.jcrimjus.2017.04.006

Staudt, S. (2025). *The myth of the revolving door: Challenging misconceptions about recidivism*. Prison Policy Initiative. https://www.prisonpolicy.org/trainings/recidivism.html

Stickle, B., & Schuster, S. S. (2023). Are Schools in Prison Worth It? The Effects and Economic Returns of Prison Education. *American Journal of Criminal Justice*, *48*(6), 1263–1294. https://doi.org/10.1007/s12103-023-09747-3

Struhl, B. (2017). *Stopping the Revolving Door: What we know—and still need to learn—about reducing recidivism in the United States*. The Abdul Latif Jameel Poverty Action Lab (J-PAL). https://www.povertyactionlab.org/blog/5-5-17/stopping-revolving-door-what-we-know-and-still-need-learn-about-reducing-recidivism

Tadros, E. (2025). Culturally Responsive CBT and Mindfulness: Minimizing Suicidality in Correctional Settings. *Clinical Social Work Journal*, *53*(2), 180–193. https://doi.org/10.1007/s10615-024-00928-z

Taylor, M. (2017). Improving in-prison rehabilitation programs. *Legislative Analyst's Office*. from https://lao.ca.gov/Publications/Report/3720

The National Academy of Science, Engineering, and Medicine. (2022). *The Limits of Recidivism: Measuring Success After Prison*. https://doi.org/10.17226/26459

Vera Institute of Justice. (2015). *The Price of Prisons—The Price of Prisons—Prison spending in 2015*. Retrieved August 20, 2025, from https://www.vera.org/publications/price-of-prisons-2015-state-spending-trends/price-of-prisons-2015-state-spending-trends/price-of-prisons-2015-state-spending-trends-prison-spending

Wagner, P., & Bertram, W. (n.d.). *"What percent of the U.S. is incarcerated?" (And other ways to measure mass incarceration)*. Prison Policy Initiative. Retrieved August 20, 2025, from https://www.prisonpolicy.org/blog/2020/01/16/percent-incarcerated/

Widra, E. (2024). *States of Incarceration: The Global Context 2024*. Prison Policy Initiative. https://www.prisonpolicy.org/global/2024.html

Wilson, D., Gallagher, C., & MacKenzie, D. (2000). A Meta-Analysis of Corrections-Based Education, Vocation, and Work Programs for Adult Offenders. *Journal of Research in Crime and Delinquency*, *37*(4), 347–368. https://doi.org/10.1177/0022427800037004001

Wooditch, A., Tang, L. L., & Taxman, F. S. (2014). Which Criminogenic Need Changes Are Most Important In Promoting Desistance From Crime and Substance Use?. *Criminal justice and behavior*, *41*(3), 276–299. https://doi.org/10.1177/0093854813503543