RECIDIVISM AMONG REHABILITATED OFFENDERS WITH MENTAL ILLNESS: A QUANTITATIVE STUDY

by

Robert Olando Walker

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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APPROVED BY:

Patrick Webb, Ph.D., Committee Chair

Carlton Lewis, Ph.D., Committee Member

ABSTRACT

Offenders with severe mental illness (SMI) found a place within the criminal justice system (CJS) with its most crucial objectives including the reduction of recidivism among discharged offenders and their safe reintegration into a free community as rehabilitated offenders. Beyond the monetary costs of recidivism, the continued potential for criminality among offenders with mental illness (OMI) added enormous costs to all law-abiding citizens and their respective communities. However, no study found in the literature that attempted to investigate the relationship between recidivism and the successful rehabilitation of patients with mental illness. Those found involved offenders without mental illness and non-offending hospitalized psychiatric patients. The study primarily aimed to define the relationship between recidivism and rehabilitation outcomes (successful or unsuccessful) for patients with mental illness. It approached the investigation through a theoretical framework of the Risk-Need-Responsivity (RNR) Model. The study used an analytical retrospective cross-sectional design with data from the Texas Department of Criminal Justice (TDCJ) with a base release date in 2016 and 2017. The sample population consisted of three groups: a test group (OMIS upon release and later committed a crime), a positive control (OMIS upon release and later re-imprisoned for noncriminal parole violations), and a negative control group (offenders without mental illness upon discharge who later committed a crime). Descriptive analysis used relative frequency and standard deviation, while quantitative analysis used binary logistic regression.

Keywords: Criminal recidivism, technical recidivism, successful rehabilitation, mental illness.

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This dissertation is dedicated to my dearly departed Baby Zeus, you were always by my side throughout this entire process. I miss you so much.

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List of Abbreviations

Attention-deficit/hyperactivity disorder (ADHD)

About Face Vocational Program (AFVP)

Adolescent-limited antisocial (ALA)

Analysis of Variance (ANOVA)

Antisocial personality disorder (APD)

Bureau of Justice Statistics (BJS)

Borderline personality disorder (BPD)

Confidence interval (CI)

Correctional Institutions Division (CID)

Criminal justice system (CJS)

Severe mental illness (CMJ)

Stress process theory (CSPT)

Diagnostic and Statistical Manual, Fifth Edition (DSM-5)

Federal prison system (FPS)

General strain theory (GST)

Intellectual development disorder (IDD)

Life course persistent (LCP)

Major depressive disorder (MDD)

Mental illness services (MIS)

National Institute of Corrections (NIC)

Negative protective factor (NPF)

Odds ratio (OD)

Offenders with mental illness (OMIs)

Pew Center on the States (PCS)

Posttraumatic stress disorder (PTSD)

Relative frequency (RF)

Risk-need-responsivity (RNR)

Relative risk (RR)

Standard deviation (SD)

Social learning theory (SLT)

Severe mental illness (SMI)

Substance-related and addictive disorders (SRAD)

Theory of differential association (TDA)

Texas Department of Criminal Justice (TDCJ)

United States Penitentiary (USP)

Violation of terms and agreements (VTA)

CHAPTER ONE: INTRODUCTION

Overview

In the United States, the criminalization of OMIs had caught individuals with SMI in the CJS. The most common mental ailments included anxiety disorders, antisocial personality disorder (APD), bipolar disorder, major depressive disorder (MDD), and posttraumatic stress disorder (PTSD). Consequently, more people with mental illness (five to eight times) experienced incarceration than those also with mental illness in a free community, making the prison system a de facto psychiatric hospital while having no capability to treat OMIS (Weaver et al., 2019). This chapter introduced the recidivism and rehabilitation of OMI, specifically their historical and theoretical contexts. It also included the problem statement, purpose statements, research questions, and definitions of terms.

Recidivism might become a vital concept in the field of criminal justice (National Institute of Justice, 2022). Two of the most important objectives of the CJS were the recidivism reduction in discharged offenders and safely reintegrating them into a free community (Heffernan & Ward, 2019). To fail in these goals means failing in the more sustainable value of offender correction, which mere crime control, incapacitation, and even retribution could not maintain as prison facilities must increase to accommodate more inmates.

However, for years, recidivism remained unstudied in the United States, even after the Three Prison Act established the federal prison system in 1891 (Federal Bureau of Prisons, 2022; National Institute of Correction [NIC], 2022). Since then, the Bureau of Justice Statistics (BJS) managed to produce only three studies on recidivism. The first

study followed state prisoners released before 1994 with its publication date unknown. The second study followed those released in 1994 and published in 2002 (Pew Center on the States [PCS], 2011). The third study followed prisoners released in 2008 and published in 2021 (Antenangeli & Durose, 2021). However, only the third report reached publication, reporting about state-level recidivism. The PCS (2011) filled the recidivism statistical gap in between, reporting for prisoners released in 1999 and 2004.

The cost of recidivism had been very high, too. Reincarcerated individuals increased the national burden of financially supporting the needs of prisoners non-productive to the community. The United States spent an estimated $80 million annually on incarceration-related facilities (i.e., prisons) and administrative processes (e.g., probation and parole). Consequently, some researchers (e.g., Okonofua et al., 2021) referred to it as “the most incarcerated country in the world” for a valid reason.

However, beyond the monetary costs of recidivism, the continued potential for criminal recidivism among OMIs added enormous costs to the lives of all law-abiding citizens and their respective communities. Criminally driven recidivist offenders were and must be considered dangerous to the community if left untreated (Garritsen et al., 2022). Their initial incarceration transferred the accountability for their mental illness to the criminal justice system, which must take responsibility for treating them while still inside the system. The proper goal should be not to release OMIS to the community until such treatment succeeded. This adverse effect of recidivism on the offenders themselves (as potential victims) and the community underscored the necessity of cutting recidivism to as low as possible among OMIs (Garritsen et al., 2022).

Background

Historical Background

Ten years after the Three Prison Act of 1891 had passed, there would have been a record of recidivism in the United States from its first three federal prisons ever—United States Penitentiary (USP) Leavenworth in Kansas, McNeil Island Correction Center in Washington State, and USP Atlanta in Georgia (NIC, 2022). Prisoners released in 1999 and 2004 returned to imprisonment in three years at a rate of 45.4% and 43.3%, respectively (The Pew Center on the States, 2011).

Among those freed in 2008, 82% reverted to imprisonment within ten years (Antenangeli & Durose, 2021). The highest recidivism rate (43%) occurred during the first year of release. Since then, the annual recidivism rate gradually declined until reaching only 22% in Year 10. However, the accumulated recidivism in 10 years reached 81.9%, the highest of which was among the youngest age group (24 years or younger) and gradually declined towards the higher age groups. Once they left imprisonment, older prisoners seemed to have a lower likelihood of ever going back to prison.

In a study, Rakes et al. (2018) noted that adults aged 45 years and older tended to have lower rates of rearrests, reconviction, and return to incarceration. This was the opposite of younger adult peers, who tended to have high levels of rearrests and reconviction. This was an inverse relationship between age and recidivism in that as a person advances in age, the lower rate of recidivism (Rakes et al., 2018). Rakes et al. (2018) acknowledged that previous age-based recidivism research focused on accounting for older adults as one age group, especially adults aged at least 45 years. The current study added literature by identifying the differences experienced when it came to older

adults and recidivism rates. The potential for recidivism decreased with the increase in age. The differences between age groups for older adults also depicted certain forms of variations and were statistically significant (Rakes et al., 2018).

Rakes et al. (2018) noted that, in the research, all older adults aged at least 45 years old were less likely to re-offend and be reconvicted compared to their younger counterparts. This view originated from the understanding that at the end of the five years of study, only 34% of older adults aged at least 45 years became reincarcerated. On the other hand, approximately 50.6% of the younger adult population initially released became reincarcerated within five years. In the selected research participants, 64% of released older adults aged 45 years and above did not re-offend and did not return to prison. Higher proportions of the non-recidivists came from older adults aged 45 years and above (Rakes et al., 2018).

Theoretical Background

Several theories from psychology, sociology, and criminology explained the relationship between recidivism and the human state of health (physical and mental). Theories associated with mental health include the *stress process theory* (SPT), the *general strain theory* (GST), and the *deterrence theory*. Studied that supported this association followed since then.

SPT reasoned that “stress begets more stress” (Wallace & Wang, 2020). In this theory, incarceration might be the primary stressor for mental health problems, usually during imprisonment. Conversely, it too could be a secondary stressor or a consequence of a mental illness that led to offending, eventual conviction, and incarceration.

Meanwhile, GST argued that a mental stressor could strain a person's coping mechanism to the point of causing them to behave in maladaptive ways (Wallace & Wang, 2020), such as criminality or escapism (e.g., drug use). Maladaptive behavior, unlike well-adaptive behavior, could lead to offending behavior. Therefore, poor mental health, including mental illness, could push a person to behave to the point of offending post-release and reincarceration.

Lastly, classical deterrence theory believed punishment—or more accurately, the prospect of punishment—could deter future criminal behavior (Butters et al., 2020). Therefore, a released prisoner who knew the stressful life in incarceration should feel deterred from behaviors that can lead to reincarceration. However, it remained unassociated with OMIs.

Recidivism Among OMI

Because of the apparent association between the pattern of recidivism with age and age-driven behavioral dynamics—including maturity—an apparent link could exist between recidivism and offender mental health. This was an association between recidivism and age, not recidivism and rehabilitation outcomes. This paper noticed this apparent link, but this link remained uninvestigated. Wallace and Wang (2020) affirmed that prisoners with "better mental health in-prison and post-release" appeared likely to experience low recidivism. If analyzed by contrast, it logically followed that prisoners who had a diagnosed mental illness before or during incarceration might be strongly predisposed to high rates of recidivism post-release.

Rehabilitation Among OMIs

Interventions for OMIs had therapeutic tendencies, underscoring anticipation that reduced symptoms would lead to reduced criminal behavior (Gowensmith et al., 2016; Kingston et al., 2018). Gowensmith et al. (2016) reported that community-based rehabilitation programs have a 70% success rate in restoring offender competency (As cited in Stringer, 2019, p.4). However, this outcome appeared lower than those accomplished in state hospitals, which was an 80% success rate (Stringer, 2019, p.4). In this context, the RNR model can play a significant role in reducing the current recidivism rate in the United States.

Among incarcerated individuals today, around a fifth (15-20%) had mental ailments (Benson, 2003). The objective of successful rehabilitation was partly to ensure that OMIS who had been released back into the community stayed free and reintegrated as productive members or at least as peaceful citizens and did not return to the life of incarceration (Garritsen et al., 2022; Heffernan & Ward, 2019). Indeed, interventions for these offenders, which largely focused on symptom reduction, maintained such an expectation (Kingston et al., 2018). The problem was there had been no study in the literature that attempted to investigate the relationship between recidivism and the successful rehabilitation of patients with mental illness. Studies were mostly old and involved offenders without mental illness (e.g., Lipsey & Cullen, 2007) and non-offending hospitalized psychiatric patients (e.g., Dincin & Witherbridge, 1982). This dissertation was a venture to this path yet untrodden.

The selection of the criminal deterrence theory originated from the understanding that there existed different elements of punishment that might influence deterrence. The

first element was that there was the certainty of punishment. This assertion argued that enhancing the potential for being apprehended and punished should increase the deterrent effect. The other major element assumed that punishment must be severe. This implied that the extent to which punishment for a specific crime was carried out might affect behavior in the event of the potential offender concluding that the punishment was severe and that a person should not engage in criminal offenses.

The National Institute of Justice (2016) provided various views that help to learn more about deterrence. The views appeared to support the rationale for aligning the criminal deterrence theory with the dynamics of recidivism. One major aspect was that the certainty of being caught was a significantly powerful deterrent compared to punishment. The potential for being caught in a criminal offense was a more effective deterrent compared to draconian punishment. The other element that connected the criminal deterrence theory with recidivism was that sending a person convicted of a crime to a correctional unit was not an effective approach to deter crime. This view showed that individuals who were incarcerated could experience negative outcomes related to the potential for future imprisonment (National Institute of Justice, 2016).

The National Institute of Justice (2016) also shared views that supported the link between the criminal deterrence theory and recidivism by indicating that police officers deterred crimes by enhancing the perception that offenders will be caught and punishment. The police could strengthen the perception of the certainty of a criminal offender being caught and detained. In this context, the police used a form of sentinel activity, including hot spots policing (Ladegaard, 2018). The behaviors of the criminals were more likely to be affected by seeing police officers with handcuffs and radios, rather

than presenting new laws related to the enhancement of penalties (National Institute of Justice, 2016).

Certainty had a significant influence on deterrence compared to the severity of punishment. Here, "certainty" referred to the potential for being caught and punished for committing a crime (Paternoster, 2018). The most significant contribution that certainty made was essential in deterrence than severity. The certainty of an individual being caught should deter them from engaging in criminal activity, rather than the fear of being punished or the overall level of the punishment. These aspects helped to connect the criminal deterrence theory as a major theoretical framework for understanding more about the significance of deterring criminal offenses, which reduced recidivism rates (National Institute of Justice, 2016).

Problem Statement

The problem is that the criminal justice system usually seeks to establish a safer environment for Americans by incarcerating people considered to be a major threat to thes afety and wellbeing of society, rather than focusing on the rehabilitation of those incarcerated to make them productive members of society. However, it is important to ensure that mentally ill individuals are treated so that they can understand that their behaviors are violent and inappropriate and how they should change. Cole et al. (2018) suggest that mentally ill offenders should obtain justice by ensuring that they receive the treatment and medication they require to handle their mental health conditions. Tardos (2021) likewise affirms that in the absence of the provision of care to them, there is a high potential that mentally ill offenders would continue to be engaged in crime in correctional facilities because of the illegal activities and gangs in the institutions, and

because they are not mentally competent to avoid those situations and their implications . In the quest to improve the lives of mentally ill offenders and make them better citizens prior to their reintegration into society, there is a need for the criminal justice system to take an approach that suits them, rather than focusing on their punishment (Tardos, 2021). Rather than focusing on punishment, or retribution, it is critical for the criminal justice system to offer the medical care that mentally ill offenders require, and to ensure rehabilitation throuh appropraite treatment of their mental health conditions. As such, the current justice system continues to contribute to the increase of criminals because no substantive reforms are being realized to handle mental health care issues among offenders (Mulvey & Schubert, 2017). Adopting a rehabilitation intervention instead of retribution for mentally ill offenders benefits the offenders and society at large because rehabilitation offers a platform that supports positive treatment plans for the offenders and helps in reducing the rates of recidivism by providing mentally ill offenders a pathway to rehabilitation before their release.

Purpose Statement

The study aimed to define the relationship between recidivism and rehabilitation outcomes in OMIs. Specifically, it aimed to

1. Determine the rehabilitation outcomes among OMIs.
2. Determine the recidivism, particularly criminal recidivism, outcomes of successfully rehabilitated OMIs.
3. Determine the recidivism outcomes of successfully rehabilitated OMIs.
4. Determine the relationship between rehabilitation outcomes and recidivism outcomes in OMIs.

Significance of the Study

Pursuing the subject in this dissertation promised several evidence-based gains in the practice of criminal justice, incarceration mental health, and criminal rehabilitation policymaking. At least two significant contributions might become identifiable at this point for each of the three practice areas mentioned.

In the practice of criminal justice, knowledge of the relationship between recidivism and the successful rehabilitation of OMIS would reinforce current knowledge and strategies for rehabilitating offenders so that they might return to their respective communities as productive and law-abiding members. Therefore, first, outcomes in this dissertation would help enable the United States criminal justice system to accomplish the goals of deterrence and incapacitation without the elements of fear of punishment, or at least not at the maximalist level a sentence might demand (Braithwaite, 2018). The penological justification of deterrence and incapacitation simply failed without an act of parole based on successful rehabilitation (Bergeron, 2019).

Lastly, the holistic reform might be more sustainable and resilient post-release, helping in the reduction of the financial burden that the current criminal system carried because of its high incarceration level. In so doing, offenders, not just those with mental illness, must receive support in stabilizing their lives as they searched for paths out of crime (Annison et al., 2018). Therefore, this included the pursuit of a holistic environment, not just facilities, inside the incarceration centers in the United States (Jewkes et al., 2019).

In the area of mental health during incarceration, knowledge of the relationship between recidivism and successful rehabilitation of OMIS involved two benefits. First, it

would contribute insights into the design of more effective interventions (Jewkes et al., 2019). These interventions would—at least temporarily while high levels of OMIs existed within prison walls—allow federal and state prisons to gain efficacious capabilities at providing interventions for mental illness without relying on hospital services. Instead of living up to its current reputation as an incapable de facto mental health institution, federal and state prisons could elevate their proficiencies in treating mental illness in their inmates.

Second, from the perspective of offender interest, the transformation of federal and state prisons into efficacious and well-functioning mental health facilities would provide OMIS opportunities to gain control of their ailments while incarcerated (Jewkes et al., 2019). These opportunities would not be available to them outside the criminal justice system (Bueter, 2021). Therefore, instead of experiencing fear, their incarceration experience would instead provide them hope that incarceration would become the best moment in their lives yet.

In criminal rehabilitation policymaking, this dissertation, first, might play an important role in providing empirical evidence that rehabilitation strategies for OMIs (and those without mental illness) should dominate the attitudes and arsenal of prison administrators throughout the United States. While retribution, deterrence, and incapacitation appeared to be important objectives for the United States criminal justice system, the negative components of their strategies could not support a renewed and reformed offender who permanently rejected the options of criminality (Annison et al., 2018).

Second, knowledge of the relationship between recidivism and successful rehabilitation of OMIS would also help policymakers adopt a holistic approach to offender rehabilitation in general and those with mental illness in particularl. A holistic approach to offender rehabilitation had never been achieved in the United States CJS because of the imbalanced focus on retribution, deterrence, and incapacitation (Annison et al., 2018; Jewkes et al., 2019).

Research Questions

This dissertation ultimately intended to answer four modified research questions, namely:

RQ1: *Was there a relationship between recidivism rates associated with mental illness?*

RQ2: *Was there a relationship between recidivism rates associated with gender?*

RQ3: *Was there a relationship between recidivism rates associated with age?*

RQ4: *Was there a relationship between recidivism rates associated with race?*

RQ5: *Was there a relationship between recidivism rates associated with mental illness and gender?*

RQ6: *Was there a relationship between recidivism rates associated with mental illness and age?*

RQ7: *Was there a relationship between recidivism rates associated with mental illness and race?*

Definitions

Key concepts associated with the variables in this dissertation, including the variables themselves, must be understood based on the following definitions:

1. *Recidivism* – The reincarceration of a released prisoner. Wallace and Wang (2020) identified two types: (1) *general reincarceration* by receiving a new conviction and (2) *technical reincarceration* by violating parole conditions.

Because of its interest in rehabilitation, this dissertation found more interest in general recidivism, which was also called "criminal recidivism" (Kingston et al., 2018), as referred to throughout. Its strong divergent implications for a successful rehabilitation outcome should merit offender discharge from incarceration.

2. *Rehabilitation* – "The extent to which a program is implicated in the reduction of crime by 'repairing' the individual in some way by addressing his or her needs or deficits" (NIJ, 2022). Its underlying principle was human reformation ideally in a holistic manner.
3. *Mental Illness* – A health condition "involving changes in emotion, thinking, or behavior (or a combination of these)" and was "associated with distress and/or problems functioning in social, work, or family activities" (American Psychiatric Association [APA], 2018). Subject to contrary evidence, all OMIS in this dissertation were assumed to be forensically diagnosed as psychiatric patients, consistent with the assumptions of Garritsen et al. (2022).

CHAPTER TWO: LITERATURE REVIEW

Overview

This chapter provides a comprehensive review of prior studies on important theories of recidivism and rehabilitation. It tried to highlight the critical role of mental illness in an offender's performance in rehabilitation programs within the CJS and the theoretical probability of post-release recidivism.

Theoretical Framework

The General Strain Theory of Recidivism

Agnew (2001) noted that stressors (i.e., strains) increase the emergence of negative emotions (e.g., anger and frustration), which increased the likelihood of resulting in crime when four conditions occur. The stressors were perceived as unjust (Condition I). These stressors were experienced at high magnitude (Condition II). These stressors involved low social control (Condition III). Lastly, these stressors created some incentives to commit a crime to cope (Condition IV). These stressors ranged from the loss of positive stimuli (e.g., death of a friend) or the presentation of negative stimuli (e.g., verbal insults) to the blockage of valuable goals (e.g., failure to achieve justice) (Agnew, 2001). Therefore, the first three conditions enabled the development of the fourth condition.

The American Psychiatric Association (2018) described mental illness as "associated with distress and/or problems functioning in social, work, or family activities." These stressors were associated with stressors of high magnitude and low social control, which could lead to the creation of incentives to commit a crime as a

coping mechanism. Therefore, mental illness could lead OMIS to commit a crime to relieve the overwhelming internal strain: thus, their incarceration.

However, for OMI, Condition I would unnecessarily apply depending on the depth of self-awareness that the offenders hold about themselves. Offenders suffering from delusions (e.g., schizophrenia) had no awareness of the notion of justice or injustice (Freckelton, 2020; Harcourt, 2021). Therefore, the first condition would be considered tentatively in this paper because of the difficulty of applying it to all OMI.

Recidivism was related inversely to mental health (Wallace & Wang, 2020). Therefore, OMIS during incarceration and post-release increased the risk for recidivism. Released offenders with uncontrolled mental illness occurred only under two conditions. First, the offender had reached the end of the sentence. Second, the offender had the mental illness under control, consequently, demonstrated good behavior and was qualified for parole because of that good behavior.

Under the assumptions of GST (Agnew, 2001), released offenders with uncontrolled mental illness were at high risk for recidivism (Freckelton, 2020; Harcourt, 2021; Wallace & Wang, 2020). However, released offenders with controlled mental illness—not necessarily remission from it—were at low risk for recidivism. Therefore, unless the mental illness was under control upon release from incarceration, since then, this dissertation hypothesized that released OMIS at the end of their sentence might recidivate. This hypothesis also applied if the parole board released an offender with uncontrolled mental illness before the sentence ended over good behavior not grounded on the remission or control of mental illness. This exposes the gap of interest in the research as it relates to the recidivism rates of mentally-ill offenders. There is a need to

further explore the risk of recidivism, and how it is associated with successful rehabilitation. Further, it brings to light a need within the existing body of research to clearly define what successful rehabilitation looks like, including whether or not control of mental illness should be considered a key element of successful rehabilitation that weighs upon release decisions for incarcerated offenders. The current research will seek to fill this gap.

The RNR Correctional Model

This model of forensic psychiatric rehabilitation of OMIs argues that treatment must address "the criminogenic needs of high-risk individuals" (Bonta & Andrews, 2007; Garritsen et al., 2022), particularly offenders with antisocial pathology associated with violent behavior. It demanded that any therapeutic modalities to be used in treating these patients must be invariably evidence-based with clear therapeutic efficacy. Moreover, therapeutic interventions must be adapted to the offenders' attributes, including motivation.

Consistent with CSLT, the model maintained that criminal behavior could be learned through operant conditioning and social interaction (Johnston, 2019). Offenders learned to commit crimes through the absence of supporting factors in their lives, which were called "supportive factors" but understood in a negative sense. Their interaction inside an individual could develop normative patterns of thinking and behaving—commonly referred to as antisocial attitudes and behaviors—which could initiate and maintain criminal behavior. Therefore, imitation and modeling—including differential reinforcement—spurred the development of criminal behavior.

The model originated the classification of recidivism risk factors into static and dynamic categories (Bonta & Andrews, 2007; Garritsen et al., 2022). Static risk factors, which constituted the unchangeable attributes of the offender's history (such as the age of the first conviction, criminal history, and family background), appeared to be good predictors of recidivism. However, these factors could not monitor any change in recidivism risk and the effects of treatment (Heffernan et al., 2019). Therefore, these factors could not support rehabilitation goals.

Conversely, dynamic risk factors—the clinical and changeable attributes of the offenders and their respective conditions that expectedly "increase the likelihood of recidivism" (Bonta & Andrews, 2007; Garritsen et al., 2022)—were considered essential in successfully rehabilitating OMIs. Rehabilitation programs could use it to set therapeutic targets for recidivism reduction while monitoring the therapeutic progress. Therefore, these factors performed an essential part in the incarceration-based treatment of OMIs. However, this review shows that in spite of understanding the role these factors play, to some degree, there is not currently a measure of outcome as it relates to successful rehabilitation and risk of recidivism. This aligns with the previously identified weakness in the larger body of research and the overarching gap that needs filled as it relates to clearly measuring the link between rehabilitation, mental illness, and recidivism.

The Consolidated Implications of the Selected Theories

The GST of recidivism and the deprivation theory linked the stressor-laden incarceration conditions of OMIS to their external adaptive efficacy after their sentences or after officially successful rehabilitation. However, failing to resolve the mental illness

(or establishing needed coping skills that could control the mental illness) might continue (Agnew, 2001; APA, 2018; Aranda-Hughes et al., 2020; Sykes, 1958). Because of the inherent adaptive limitations that mental illness brought to some offenders, pronouncing an inmate rehabilitation program successful in effectively controlling mental illness—and then making such a conclusion of success a basis for parole—could expectedly increase the probability of recidivism among OMI.

Offenders with mental illness—especially those suffering from severe mental illness such as personality disorders and psychosocial deficits from cognitive maldevelopment—were supposed, upon incarceration, to be admitted to a forensic psychiatric facility for treatment (Bogaerts et al., 2019; Garritsen et al., 2022). This therapeutic component of offender rehabilitation should have achieved its goals before an offender with mental illness was considered for release from incarceration. The serious barrier in accomplishing that involved sentence limitation wherein the criminal justice system must release an offender with mental illness, regardless of success in psychiatric therapy or holistic rehabilitation, simply because the sentence for the crime committed had ended. In such a scenario, the risk for criminal recidivism should be expectedly high. Yet the failure of the criminal justice system to treat the mental illness of offenders freed to their respective communities typically led to poor outcomes (Nicolls et al., 2018). Apart from a high risk of recidivism, OMIS might become homeless or hospitalized. Thus, research is needed to determine if successful treatment of OMIS as a part of meaningful rehabilitation can help reduce recidivism.

Related Liteature

Common Recidivism Profiles of OMI

Johnston (2019) reported that OMIS were already being overrepresented in the United States. Mental illness had been found in around 14% of the male inmates and 31% of the female inmates and was associated with three mental illnesses: bipolar disorder, MDD, and schizophrenia (Johnston, 2019). It was also instrumental in their collision with the United States criminal justice system. Consequently, the system must be successful in treating this mental illness if the system hoped to break the offenders' cycle of recidivism.

Moffitt's Dual Taxonomy Theory argued that offenders had two criminal recidivism trajectories:the adolescence-limited antisocial (ALA) trajectory, and the life-course-persistent (LCP) trajectory. The ALA trajectory argued that most adolescent offenders experience reincarceration that ends only when adolescence ended (Villanueva et al., 2019). Meanwhile, the LCP trajectory asserted that a minority of adolescents continue to commit crimes even in adulthood (Villanueva et al., 2019). Most of these offenders were males and their crimes mostly involved crimes against persons.

Moreover, inherent in mental illnesses was the potential for resisting rehabilitation, so the assumption of rehabilitation among OMIS appeared fundamentally inconsistent. Olver and Riemer (2021) insisted that psychopathy, which was a form of mental illness, reputedly resisted "correctional and forensic mental treatment." Therefore, the release of an offender with uncured psychopathy was "synonymous with being high risk for different recidivism outcomes" (Olver & Reimer, 2021). This concern led to either of the two elements of criminal recidivism in OMI: end-of-sentence discharge, and

discharge despite unsuccessful rehabilitation. Either way, a serious systematic flaw could exist in the policy of discharging OMIS by parole short of curing the mental illness before discharge.

The Youth Profile

Among adolescent criminal recidivists, those in the LCP trajectory had been estimated at one to 29 percent across empirical evidence (Jolliffe et al, 2017; Villanueva et al., 2019). In Spain, adolescent criminal recidivists consisted of two profiles. The first profile consisted of male adolescents with high scores for recidivism risk and low protective factors (Villanueva et al., 2019). This profile represented the largest population of adolescents with criminal recidivism. The second profile consisted of female adolescents with offenses dominantly against persons and low protective factors (Villanueva et al., 2019). These adolescents were far smaller in population and dominantly foreign-born.

Psychopathological Profile

Unless a cure for mental illness occurred during the incarceration of OMIs, the releases from the prison of these offenders demonstrated that not all mental illnesses were equal. Some types of mental illness might not be fully cured but sufficiently controlled to support discharged OMIS staying outside incarceration for years. These manageable types of mental illnesses were behind sustainable functioning in a free community. However, the literature (e.g., Olver & Reimer, 2021) identified some mental illnesses that resist incarceration-based rehabilitation so that their release into the free community constituted a strong predictor of criminal recidivism. These specific mental illnesses included psychopathy (Olver & Reimer, 2021).

Most psychopathic crime studies involved male offenders (Olver & Reimer, 2021). Olver & Reimer (2021) found that psychopathy was predictive of criminal recidivism, including new sexual and violent crimes. Uncured psychopathy had been found in offenders with low protective factors. Therefore, low protective factors in released offenders with psychopathy constituted a strong prediction of sexual and violent recidivism. Significant improvements in protective factors had been indicators of progress in the treatment of psychopathy in the correctional context, particularly a reduction of potential violent recidivism. However, no significant findings had been reported on the effect of improved protective factors in sexual recidivism, including violent sexual recidivism.

Psychiatric Risk Factors

All OMIS were individuals diagnosed with various forms of mental illnesses. Bellamy et al. (2019) estimated that apart from all having a diagnosis of mental illness, 80% had been diagnosed with at least a serious mental illness. This indicated an inherent resilience of their mental illness, which might require intensive and prolonged rehabilitative, including clinical intervention. Garritsen et al. (2022) and Yukhnenko, Blackwood, and Fazel (2019) identified risk factors that were invariably symptomatic profiles of different psychopathological disorders. Consistent with the RNR Model, the evidence demonstrated that psychiatric factors could develop from NPFs, driving offenders with or without mental illness to commit crimes. These risk factors, too, drove criminal recidivism among OMIs. However, the specific measure of recidivism remains unknown.

Criminal Recidivism Factors Among OMI

Mental health requirements, or by extension mental illness, were considered a dynamic risk factor associated with criminal recidivism, reported in several studies (e.g., Garritsen et al., 2022; Yukhnenko et al., 2019). Bellamy and colleagues (2019) observed that more than half of this offender group had three or more reincarcerations in their lifetime, demonstrating their inherently high risk for recidivism. Clinically recognized seven risk factors of recidivism including the violation of terms and agreements (VTA) (Table 2.1). While psychosomatic symptoms are clinical indicators of mental illness, factors like antisocial behavior, hostility, and impulsivity were symptoms commonly found in many disorders listed in DSM-5 (APA, 2013). Moreover, addiction (e.g., substance addiction) was a central symptom of a major disorder classification that the DSM-5 called "Substance-Related and Addictive Disorders" (SRAD) (APA, 2013). Therefore, it was also a psychosomatic symptom. While all these factors might be considered predictive of criminal recidivism, VTA was essentially associated with technical recidivism.

Against earlier trends in factor studies on criminal recidivism, which exclusively focused on risk factors, recent literature (e.g., Guay et al., 2020; Navarro-Perez et al., 2020; Ortega-Campos et al., 2020) found more convincing evidence on the value of negative protective factors (NPFs) as more predictive of criminal recidivism across age groups. Most of this literature used the positive form of these protective factors even if their real empirical values to criminal recidivism were invariably in the negative form (Table 2.2).

Table 2.1

Clinically Recognized Risk and Protective Factors

Risk factors	Protective factors
Addiction	Coping skills
Antisocial behavior	Self-reliance
Hostility	Cooperation with treatment
Impulsivity	Labor skills
Influence of risky network members	Responsibility for the offense
Psychotic symptoms	Problem insight
Violation of terms and agreements	Social skills

Note. From Garritsen et al., 2022.

Table 2.2

Equivalent Negative Protective Factors of Criminal Recidivism

Protective factors	Negative protective factors
Coping skills	Poor coping skills
Self-reliance	Lack of self-reliance
Cooperation with treatment	Non-cooperation with treatment
Labor skills	Poor labor skills
Responsibility for the offense	Lack of responsibility for the offense
Problem insight	Lack of problem insight
Social skills	Poor social skills

Note: From Bonta & Andrews, 2007; Garritsen et al., 2022.

It can be seen that many of these skills directly relate to both correctly treating mental illness and helping to reduce the factors that are related to recidivism in the prior research. For example, effective treatment of OMIS should include the development of coping skills and effective treatment, and relies on compliance—the willingness to receive and follow treatment (Agnew, 2001; APA, 2018; Aranda-Hughes et al., 2020). Therefore, in this dissertation, NPFs refer to deficient protective factors that are lacking

in the psychosocial development and life contexts of released offenders. Guay, Parent, and Benbouriche (2020) observed that protective factors had a buffer effect on recidivism. Major categories of negative protective factors included personality traits (tendencies to commit a crime), prosocial participation (lack of or weak social support linkage), and prosocial action dynamics (weak school or work commitment) (Navarro-Perez et al., 2020). These protective factors are critical to meaningful rehabilitation to prevent recidivism.

Despite this dissertation's focus on the mental illness of offenders and its relationship with criminal recidivism, this literature review also explored comparable factors associated with offenders without mental illness. This approach followed the reasoning of the Normalization Theory, which asserted that clinical factors, including psychiatric diagnosis and treatment, did not provide any predictive value for the criminal activity of OMIS (Johnston, 2019). This theory argued that the risks and needs that motivated offenders without mental illness to commit crimes also drive OMIs. Offenders with mental illness did not commit crimes because they had mental illnesses. Instead, they did so because committing a crime to satisfy some needs was not entirely associated with the symptoms of mental illness.

The risks involved with criminal recidivism among OMIs might be comparable if not identical to offenders without mental illness. Johnston (2019) identified these criminogenic risk factors as substance abuse (understood as a consequence of psychopathology instead of its cause), employment uncertainty, family instability, and poorly structured relaxation time. These criminogenic factors partly reflected risk factors in Table 2.1 and NPFs in Table 2.2.

Negative Protective Factors of Criminal Recidivism

Based on the original list of seven protective factors described in the RNR Model (Bonta & Andrews, 2007; Garritsen et al., 2022), NPFs pertained to protective factors that were lacking in the lives of offenders (Table 2.2), causing them to recommit crimes and repeatedly returning them to incarceration (Villanueva et al., 2019). However, these factors did not provide incremental reinforcement to risk factors and had been found predictive (Viljoen et al., 2018; Villanueva et al., 2019).

Factors Among OMI

Despite its framing from the standpoint of "protectiveness," NPFs had implications for mental disorders. A "lack of self-reliance" (Table 2.3) was synonymous with a lack of "personal independence." For an offender, failing to meet standards of personal independence indicated deficits in "adaptive functioning," which offenders needed in daily activities like communication, independent living, and social participation (APA, 2013). The Diagnostic and Statistical Manual identified these among other factors in Diagnostic Criterion B for Intellectual Developmental Disorder (IDD).

Intellectual disability was also associated with failing to meet standards of social responsibility (APA, 2013), including "inability or refusal to take responsibility for offenses done" (Table 2.3), which was a component of the IDD Diagnostic Criterion B. These NPFs were also linked with other mental illnesses, such as autism spectrum disorder and mild neurocognitive disorder (APA, 2013). This manifestation of the intellectual deficit had a close linkage with antisocial personality disorder (APD), a condition wherein an individual pursued personal goals and pleasure with utter disregard for others' interests and feelings (Garritsen et al., 2022). Thus, the inability to take

responsibility for offenses was a linked indicator to the risk factor “antisocial behavior” (Table 2.1), which had been described as having “low empathy” and “low regrets” (Navarro-Perez et al., 2020). The NPF’s poor or lack of social skills was a social deficit associated with schizoid personality disorder and pyromania (APA, 2013). Pyromania was a specie of APD.

Table 2.3

NPFs of Criminal Recidivism (OMI)

Personality traits	Antisocial participation	Antisocial action dynamics
Lack of self-reliance	Poor social skills	Better coping skills
Low offense responsibility	Poor treatment adherence	More behavioral insights

Note: From Garritsen et al., 2022; Olver & Reimer, 2021.

Poor treatment adherence was not associated with mental illness (APA, 2013), but with practical treatment necessity. “Cooperation with treatment” had a practical therapeutic rationale OMIs (Garritsen et al., 2022). Poor adherence to treatment essentially led to the discontinuation of medication upon discharge, indicating its value for offenders with controlled (not cured) mental illness. Therefore, its retention in the list testified to its value, not as a symptom of underlying psychopathology, but for its ability to support the treatment of these psychopathologic symptoms.

Since the original work of Bonta and Andrews (2007), recent studies (e.g., Garritsen et al., 2022) demonstrated important changes to the original list of seven protective factors. For instance, “better coping skills,” which was part of the original list (Table 2.1), had been lately associated with criminal recidivism (Garritsen et al., 2022). Therefore, it now belonged to the NPFs. “Problem insight,” including “more insight into

risk behaviors," had been also linked to a higher likelihood of criminal recidivism (Garritsen et al., 2022). This finding disputed previous studies, which asserted that a lack of problem insight demonstrated a higher likelihood of having an impaired sense of responsibility for offenses made. Thus, it indicated an antisocial personality (Bogaerts et al., 2020; Van der Linde et al., 2020), which constituted an established risk factor for criminal recidivism.

Factors Among Offenders Without Mental Illness

All the NPFs observed in offenders without mental illness were typically not associated with personality disorders, explaining the space for the "Personality Traits" column (Table 2.4). The only relevant NPF from the original seven-factor list was the "labor skills" factor.

Labor skills played a role in predicting criminal recidivism, about its ability to support a source of livelihood, which had been found instrumental in establishing behavioral structure, source of income, and social skills development (Garritsen et al., 2022; Ramakers et al., 2017). Thus, this factor supported a healthy social mindset that was relatively free from APD. NPFs involved antisocial participation centered on a child's or an adolescent's development of maladjusted behaviors—including criminal recidivism—after long exposure to violent offenders. Antisocial influences came from a family, an extended family (e.g., parents, relatives, and caregivers), and peer groups (Navarro-Perez et al., 2020; Ruiz & Pereda, 2022). Therefore, these NPFs also constituted adolescent-specific factors.

Jacobs and Skeem (2021) described the factors of disorder and disadvantaged neighborhoods that had been linked to criminal recidivism only among offenders with

low individual risks. Among high individual-risk offenders, disorderly neighborhoods had no significant impact on criminal recidivism. Perhaps far stronger factors proved more influential towards criminal recidivism than a disorderly neighborhood. Nevertheless, it remained unknown if this NPF could transform a low-risk person into a high-risk individual.

Table 2.4

NPFs of Criminal Recidivism (Offenders Without Mental Illness)

Antisocial participation	Antisocial action dynamics
Lack of support from adults	Poor labor skills
Disorderly neighborhood	Early start of violence
History of child abuse	Poor school performance
Crime of parents or caregivers	
Crime in the peer group	

Note. From Navarro-Perez et al., 2020.

Risk Factors of Criminal Recidivism

Risk factors comprised "a series of individual, social, and environmental factors that made criminal behavior possible" (Villanueva et al., 2019). In effect, these were NPFs in an offender's life that might have commonalities between those with and without mental illness. This subsection attempted to demarcate risk factors uncommon between these offenders while pointing out commonalities that had comparable effects in influencing recidivism among OMIs and those without mental illness.

The Youth Level Service/Case Management Inventory identified the so-called "Central Eight" risk factors that had been found strongly capable of distinguishing adolescent recidivists from non-recidivists (Villanueva et al., 2019). These factors were

"antisocial attitudes and personality patterns, antisocial peers, and a history of previous offenses, poor family circumstances, education and employment, substance abuse, and leisure and recreation." A high score on this Central Eight had been significantly associated with the likelihood of an adolescent offender being reincarcerated (Campbell et al., 2018; Villanueva et al., 2019).

Factors Among OMI

Bonda and Andrews' seven-factor list of risk factors for criminal recidivism might be divided into three major categories: individual risk factors (hostility, impulsivity, addiction, and psychotic symptoms), social risk factors (antisocial behavior, violation of terms and agreements, and influence of risky network members), and environmental risk factors (none) (Navarro-Perez et al., 2020) (Table 2.5).

This demonstrates the underlying assumption of criminal recidivism is not influenced by environmental conditions, which explains the recent findings that disorderly neighborhoods had no impact on recidivism among offenders with mental health but with high individual risks (Jacobs & Skeem, 2021). Nevertheless, these risk factors for criminal recidivism (Table 2.5) have been explored empirically in recent years, finding more specific behavioral descriptions for each factor.

Individual Risk Factors

All four risk factors for criminal recidivism (hostility, impulsivity, addiction, and psychotic symptoms) had strong links with mental disorders. All were considered pathological personality traits (APA, 2013).

Hostility consisted of any or all of the following behavioral dimensions: (a) "persistent or frequent angry feelings"; (b) "anger or irritability in response to minor

slights and insults"; and (c) "mean, nasty, or vengeful behavior" (APA, 2013). It was a common symptom of attention-deficit/hyperactivity disorder (ADHD), oppositional defiant disorder, adult schizophrenia, traumatic brain injury (part of its spectrum of mood changes), paranoid personality disorder (response to minor slights), borderline personality disorder ([BPD] accompanying symptom), and APD (APA, 2013). Although hostility sometimes escalated into aggression, aggression had been observed more frequently among male adolescents, individuals with a violent history, treatment non-adherents, substance abusers, and impulsive individuals (APA, 2013).

Table 2.5

Risk Factors of Criminal Recidivism (OM)

Individual	Social	Environmental
Hostility	Antisocial behavior	
Impulsivity	Violation of terms	
Addiction	Influence of risky network members	
Psychotic symptoms		

Note. From Navarro-Perez et al., 2020.

Impulsivity often accompanied hostility in OMI, typically manifesting as anger control problems. It was an aspect of behavioral inhibition (APA, 2013), which consisted of any or all of three behavioral expressions: (a) "acting on the spur of the moment in response to immediate stimuli"; (b) "acting on a momentary basis without a plan or consideration of outcomes"; and (c) "difficulty establishing and following plans" (APA, 2013). It was also an important differential diagnostic symptom in ADHD (APA, 2013), schizophrenia (adolescent) (APA, 2013), BPD (accompanying symptom) (APA, 2013),

alexithymia (Leshem et al., 2019), and APD (APA, 2013). Garritsen et al (2022) considered impulsivity as highly predictive of aggression.

Addiction was a recognized mental disorder typically observed in two forms: behavioral addiction (e.g., kleptomania, gambling disorder, and internet gaming disorder) and substance use disorder (e.g., alcoholism and drug addiction) (APA, 2013; Guay et al., 2020; Zhong & Martin, 2022). Kleptomania was associated with offenses against property such as shoplifting. Up to almost a quarter (2%–24%) of individuals arrested for shoplifting had kleptomania (APA, 2013). Females outnumbered males thrice more. It also had a high rate of criminal recidivism (Moles-Lopez & Añaños, 2021).

Psychotic symptoms were a set of symptoms common among psychotic disorders, schizophrenia, and other disorders like schizotypal (personality) disorder and specific learning disorder (APA, 2013). This set included five symptomatic domains: delusions, hallucinations, disorganized thinking (and/or speech), abnormal or grossly disorganized motor movements (e.g., catatonia), and negative symptoms.

Social Risk Factors

All three risk factors differed in their respective social dimensions, which included interpersonal relationships (antisocial behavior), contractual relationships (breach of terms), and group relationships (influence of risky group members. Only antisocial behavior had a potential link to an underlying mental illness in offenders.

Navarro-Perez et al. (2020) noted that antisocial behaviors that had been associated with a high risk for criminal recidivism, included low collaboration (Navarro-Perez et al., 2020), low commitment (Navarro-Perez et al., 2020), low empathy/regrets (Navarro-Perez et al., 2020), or callousness (APA, 2013). Callousness was an aspect of

behavioral antagonism and consisted of any or all of these four behavioral expressions: (a) “lack of concern for feelings or problems of others”; (b) “lack of guilt or remorse about the negative or harmful effects of one’s actions on others”; (c) aggression; and (d) sadism (APA, 2013). Since these behaviors were highly associated with IDD, these risk factors interacted with the antisocial component of IDD, specifically the inability or refusal to take responsibility for committed offenses. Therefore, these behaviors were symptomatic of mental illness.

Factors Among Offenders Without Mental Illness

Several studies (e.g., Navarro-Perez et al., 2020; Yukhnenko et al., 2019) found risk factors that had been associated with criminal recidivism (Table 2.6). Although some of these factors might significantly imply a possible mental illness (e.g., trauma, peer pressure, and adaptive limitations), they must be assumed non-pathological to offenders despite possible cognitive and affective struggles.

Individual Risk Factors

All three risk factors include cognitive and emotional choices that increase the risk for offenders without mental illness to experience high recidivist behaviors. This is so despite some static dimensions of the risk factor (e.g., an adverse parental model). However, stress intolerance and negative attitudes are dynamic factors that must change with available support or professional help.

Stress Intolerance involves an inability to tolerate difficulties and frustration. Offenders with this risk factor tend to experience pervasive irritability because of intolerance to frustration (APA, 2013). Although only mild in severity for offenders without mental illness, this risk factor of recidivism remains observable in disruptive

mood dysregulation disorder. For stress-intolerant offenders, crime becomes an option to release distress, which could lead to reincarceration.

Negative attitudes consist of maladaptive perceptions that resist an active interaction with external stimuli (APA, 2013). It might be expressed as resistance to instruction, and a moderate decrease in human engagement. In psychiatry, negativism is often linked to neurodevelopmental disorders, psychosis, bipolar disorder, and MDD (APA, 2013). Evidence also links it to certain medical conditions, such as rate autoimmune conditions, paraneoplastic disorders, and cerebral folate. However, since the offender could not be—or was not—diagnosed with these diseases, the behavioral manifestations must be assumed as less severe than when a clinical diagnosis had been made. However, persistent negativism reduced the quality of life and experience, which might eventually lead to mental illness.

Early Start of Crime is a complex but static risk factor that results from stress intolerance (i.e., crime as a reliever of overwhelming stress) and negative attitudes (i.e., crime as an expression of internal negativity) (Moles-Lopez & Añaños, 2021). It seems to be associated with a formative outcome from exposure to crime-committing models, like parents, caregivers, or peers. Its classification under "individual risk factors" emphasizes the decision-making foundation of committing a crime at an early age. Nevertheless, because of its static nature, this risk factor tends to be unchangeable (Moles-Lopez & Añaños, 2021); thus, a persistent risk for criminal recidivism.

Social Risk Factors

All of the risk factors for recidivism in Table 2.6 are typically static risk factors after the fact. However, while the negative influence of these risk factors cannot be

undone, psychotherapy or counseling could mitigate these effects. Even separation from these risk factors, such as leaving home and peer group, could also mitigate. However, success highly depends on the offender's ability to find a reliable source of income somewhere far. However, these risk factors do not have to be disadvantageous to an incarcerated person.

Table 2.6

Risk Factors of Criminal Recidivism (Offenders Without Mental Illness)

Individual	Social	Environmental
Stress intolerance	History of child abuse	Poor school performance
Negative attitudes	Crime of parents, caregivers	Poor family circumstances
Early start of a crime	Crime in the peer group	
	Little ability of parents to educate	
	Marginal environment	
	Antisocial peers	
	Violation of terms	

Note: From Moles-Lopez & Añaños, 2021.

Sometimes the best opportunity to leave the marginal environment at home and in the community and receive professional help is incarceration. Despite the losses experienced inside the prison, some gains remain achievable: livelihood training, access to psychotherapy and counseling, reliable food support without having to look for a job, and even a better place than home. This allows an offender to prepare themself thoroughly for eventual discharge and return to a free community with more income-generating skills and better resilience.

Criminal Recidivism Outcomes Among OMI

The recidivism data for the U.S. and the rest of the world remain unstudied for public or research consumption. The best available data are spotty and often regional or limited to a specific state or two. Many of the most recent data came from theses and dissertations instead of published peer-reviewed articles. Therefore, all data in this section on recidivism rates are non-comprehensive, often historical, and non-current, and cannot account fully for the state of criminal recidivism in the federation or the rest of the world.

American Outcomes

In 2020, the Bureau of Justice Statistics reported the admissions for released prisoners under conditional violations reached 108,933 (recidivism rate = 9.21%), a decline from 167,037 (recidivism rate = 12.11%) in 2019 (Carson, 2021). These recidivism rates were computed against sentenced prisoners in corresponding years (2019: 1,379,786; 2020: 1,182,166). Technically, these recidivism rates did not account for the release population of the individual reincarcerated offenders and how many years the reincarceration occurred since their release.

These data also did not distinguish the reincarcerated OMIS from those without mental illness. Therefore, these recidivism rates were overestimations of the actual rates, which must be adjusted by the ratio between the offenders with and without mental illness. Lastly, these data represent rearrests because of release conditions violations and new crimes. No data was available that segregated criminal recidivism data from technical recidivism data. Therefore, these data failed to distinguish between criminal recidivism, which this study considers more important because of its higher threat to the

community, and technical recidivism, which did not represent a criminal threat to the community although an institutional issue with the Department of Justice.

The actual recidivism rates should be higher than these conservative rates because the appropriate denominators were naturally far lower than new incarcerations unless release rates in 2019 and 2020 were higher than the incarceration rates. For instance, prisoner releases in 2019 and 2020 were 608,026 and 549,622 (Carson, 2021), respectively. Therefore, the release-to-imprisonment (RI) ratios were 0.44 and 0.46, respectively.

If the recidivism rates were adjusted by these RI ratios, the adjusted recidivism rates would be 20.93% and 26.33%, respectively. These recidivism rates are very high. However, the data can only be estimated this far because no ratio is available for released OMIS computed against the total released for the period. Therefore, monitoring the recidivism rates of mentally-ill offenders represents an endeavor not yet pursued by the Bureau of Justice Statistics. This is something that the research community might be able to fill in.

Fazel and Wolf (2015) reported a recidivism rate of 45% in the United States, covering 33 states and a five-year monitoring period (2005-2010). This indicated that even the adjusted estimates above are still excessively conservative compared to the five-year recidivism rate 10 years earlier. Therefore, unless the success of penal rehabilitation programs in the last decade has improved significantly, a recidivism rate of 45% remains reasonable as an overall estimate. Still, this figure represents packed information and is blind to offenders with mental illness.

Bellamy et al. (2019) provided a rare insight into the relative recidivism of OMIS and the general incarcerated population. Using data available in 2019, the study found that OMIS had better a recidivism rate (21.7%) than the general prison population (43.4%) in the United States, which was double the other. The attribution of this success fell on the presence of off-prison support.

Reviewing a sample of local recidivism rates could help adjust to the actual contexts existing at the local level. Barnes (2022) reported that in Warren County, Tennessee, the recidivism rate in the previous year "hovered over eighty percent." Most of these reincarcerated offenders were "struggling from some combination of substance abuse and mental illness."

While this criminal recidivism rate could not represent all states in the country, it illustrates that the adjusted recidivism across the United States, as computed above, might be far lower than the real recidivism rates throughout the years. Yet, the severity of mental health conditions on the ground appear to be relatively comparable. Barnes (2022) ventured to claim that "the experience in this community is like that of other rural areas across the United States." The failure of offender rehabilitation might have failed worse than expected.

Outcomes Around the World

When conducting a systematic review of recidivism rates around the world, Fazel and Wolf (2015) found that, of "the 20 countries with the largest total prison population worldwide," only two countries reported reincarceration rates. These two countries were the U. S. and the United Kingdom. The other countries, which reported only once in the last 30 years, included Canada, Denmark, Finland, France, Germany, Iceland, Ireland, the

Netherlands, Norway, Singapore, and Sweden. In the Netherlands, recidivism rates—even after the expiration of the mandatory treatment for OMI—ran between 19% and 23% within two years (Drieschner et al., 2018). This situation demonstrates that recidivism around the world could not be reliably used for international comparison (Fazel & Wolf, 2015).

Implications for Proactive Rehabilitation

Criminal justice agencies have an interest vested in the release of offenders into the community (Brine et al., 2021). Recidivism reflects the failure of these agencies in their correctional and rehabilitative jobs within the criminal justice system. Consequently, proactive rehabilitation, as opposed to reactive rehabilitation, must be initiated and implemented to save them from this failure.

The case in the Netherlands, Drieschner et al. (2018) and Garritsen et al. (2022) highlighted the reality that even after the psychiatric treatment of these offenders within a legally specified period, recidivism could not be completely eradicated. Therefore, there was a potentially unseen need for the current mandatory prescription for treatment to be reviewed and improved to further reduce recidivism outcomes.

Meanwhile, in the case of rural United States, the lack of financial resources for the treatment of OMIs leaves only long-term incarceration as a better option for the release of unsuccessfully rehabilitated offenders with their mental illnesses uncontrolled (Barnes, 2022). In rural United States, poor supply has been existing for rehabilitative services and psychiatric treatment. Increased retention of offenders inside the local criminal justice system does not escape the financial costs of incarceration. Prison capacity must be expanded as the ratio of released and newly sentenced prisoners'

declined. Eventually, successful offender rehabilitation represents the only sustainable means of unclogging prisons and jails. This means that a proactive, outcome-oriented rehabilitation of OMIs, which treats the roots of the offenders' mental health problems, can provide a more efficient use of the invested financial resources by providing a more positive and holistic set of interventions when compared to using those same financial resources to expanded incarceration areas (Barnes, 2022).

Rehabilitation Success Among OMI

The primary measure of rehabilitation success is desistance (Brine et al., 2021). Two elements could measure the strength of an offender's desistance: multiplicity of criminal acts, and completeness of cessation from all criminal behavior. With limited evidence available, rehabilitation literature around the world (e.g., Bredenoort et al., 2022) observed consistent effects on the criminal recidivism of OMIS after going through hospital-ordered detention after sentencing.

Factors of Rehabilitation Success

Literature found several factors of rehabilitation success discovered only in the community. Often these factors were important components in the desistance process that had been initiated before the release, which increased the possibility of avoiding long-term recidivism (Brine et al., 2021). These factors also enabled the freed offenders to successfully reintegrate into their respective communities (LePage et al., 2018). These factors included marriage (Brine et al., 2021), social support (Brine et al., 2021), volunteering activities (Brine et al., 2021), and work (Brine et al., 2021; LePage et al., 2018). Marriage provided structured life roles, such as father/mother, and husband/wife

(Brine et al., 2021). Work granted the structured life role of an employee (Brine et al., 2021) while providing a means for livelihood (LePage et al., 2018).

As suggested by Kolbeck et al. (2021), there existed a link between race and recidivism. This link might be better understood through the exploration of race and the employment-recidivism relationship. The adverse impacts of incarceration on subsequent employment were influenced by Whites with work history, especially the ones who had an advantage in the labor market and are likely to lose a lot during their incarceration. Relative to probation, incarceration was linked with an enhancement in the post-prison employment outcomes of both White and Black returning citizens who did not have any work history. However, it did not have any influence on the potential for employment for Black returning citizens with a work history. The relationship between race and the employment-recidivism rate was linked with the view that due to the low likelihood to be employed after being incarcerated, it was likely that Blacks and other individuals from minority racial groups in the United States engaged in other criminal activities (Kolbeck et al., 2021).

The conceptualization of employment in the employment-recidivism relationship helps in better understanding the differences associated with how different people are incarcerated regarding their racial status (Kolbeck et al., 2021). Further, Kolbeck et al. (2021) asserted that released inmates tend to have different levels of stability as far as employment was concerned. Whites were highly likely to find jobs after their release from correctional facilities. However, other minority groups did not have employment stability, especially after being convicted and released. They ended up finding alternative and illegal ways to make money. Due to this, they tended to take part in activities that

break the law, which increased their potential for recidivism and consequential rearrests and incarceration. In such settings, Blacks were considered to be at a disadvantage when it comes to the connection between race and recidivism (Kolbeck et al., 2021).

Gender has a significant influence on the rates of recidivism. A gendered impact of relationships could explain how women living with an intimate partner tended to recidivate or learn criminal behavior. In addition, women who had a high or low propensity to marry were more likely to be part of criminality relative to women who had a moderate potential to marry. This aspect helps find an insight into the connection between marriage and recidivism. The propensity to marry as a series of variables relating to educational expectations, work experiences, and relationship perceptions were influential in how people could think more about engaging in criminal activities. When it came to direct consideration for gender and recidivism, males were more likely to re-offend and be taken to prison. Females had a low likelihood of re-offend and being rearrested (Mathers & Lindekugel, 2019).

For women who committed violent crimes, re-offended, and were reincarcerated, marriage was related to lower recidivism, but this was not true for their male counterparts. When initially convicted of engaging in property offenses, males had a high likelihood to re-offend compared to women. When females and males were both released based on extensive probation supervision, men were more likely to be rearrested compared to women (Mathers & Lindekugel, 2019). At this point, it was established that a major reason for men to re-offend was when looking for a source of income. This was especially for individuals who found it hard to locate new jobs because of their incarceration status (Kolbeck et al., 2022).

The implication is that there were clear gender differences when it comes to how different individuals are likely to re-offend. In addition, men who served time for property or personal criminal activities were more likely to re-offend than those who were sentenced for engaging in drug crimes, but the traits of each criminal offense were not significant among women (Mathers & Lindekugel, 2019). The overall assertion in this context was also associated with the view that among risk variables, gender differences were evident when identifying the influence of the consideration of variables associated with age as well as gang membership. The risk factor of age was a major correlate when determining the potential for people to re-offend and be incarcerated again (Mathers & Lindekugel, 2019).

The views shared by Mathers and Lindekugel (2019) were illustrated in a study carried out by Ropes Berry et al. (2020), which argued that people of color were significantly and disproportionately incarcerated and reincarcerated after release in the U.S. setting. In comparison to their women counterparts, men of all races were likely to report higher levels of recidivism in the U.S. The study noted that Black men had a higher likelihood to be incarcerated, and more quickly so, than other races and genders. The implication is that there is an intersection between race and gender when it comes to various groups in the U.S. The interaction of gender and race was a major potent predictor of the time taken for an individual to be rearrested and reconvicted. This remained the case even when controlling for a range of identified risk variables (Ropes Berry et al., 2020).

United States Successes

In a 2018 report, the Prison Policy Institute reported that 27.0% of offenders released in 2008 failed to find a job, which, in 2018, was five times more than the unemployment rate of the public (LePage et al., 2020). Moreover, up to 45% of freed offenders reported no earnings within a year after their release. A year later, Bellamy et al. (2019) reported a better Year 1 recidivism rate for OMIs than the general incarcerated population in the country at a level of at least twice better (21.7% vs. 43.4%). Year 1 recidivism was typically the year with the lowest recidivism among released inmates in the United States. Since then, recidivism gradually increased.

The Bellamy Group study was the only study that documented a clear success in the rehabilitation efforts for OMIs that this study found. While Bellamy et al. (2019) attributed this performance to the presence of community support for the freed incarcerated individuals, particularly the Forensic Peer Support (FPS) program, it remained potentially possible that the extra care provided for OMIs—particularly the forensic psychiatric interventions taken to treat their mental disorders—could have contributed significantly to their overall rehabilitation and readiness to reintegrate into their respective communities.

However, some programs, while unable to completely correct this problem of unemployment among released offenders in the United States, somehow improved their reintegration into the community. The About Face Vocational Program (AFVP), when supported with principles of individual placement and supported employment, demonstrated far higher full-time employment rates for formerly incarcerated veterans than traditional vocational programs like the AFVP (LePage et al., 2018).

Providing support from an entirely different dimension of reintegration, the federal prison system (FPS) program—which many states and local governments in the United States supported—functions primarily to provide hope and inspirational example to formerly reincarcerated offenders (Bellamy et al., 2019). In this program, successfully reintegrated former offenders share their experiences at reintegration after periods of reincarceration in the CJS. Program workers help released offenders connect to their respective communities, access off-prison clinical treatment and support services, and assist in addressing the most common reentry challenges for former offenders, particularly financial, psychological, and social difficulties.

One of these FPS providers is Peerstar, LLC, which has been licensed and operational in Pennsylvania since 2009 (Bellamy et al., 2019). They provid peer support and mentoring services to released OMIS with or without any substance abuse disorder. After release into the community, an offender with mental illness is immediately paired with a community-based FPS mentor who is typically not the same person working with the rehabilitation group inside the prison system.

Recommendations for Best Practice Based on the RNR Correctional Method

The Risk Principle recommends that the therapeutic intensity should fit the OMIS risk level (Johnston, 2019). This means that the OMIs with the highest risk should be provided with the most intensive therapeutic intervention to achieve the greatest reduction in their recidivism rates. Meanwhile, low-risk offenders should be provided with only minimal to no intervention (Johnston, 2019). The findings presented by Johnston (2019) align with the results provided by Zgoba et al. (2020). The reason is that the findings indicate that there are no statistically significant differences in the level of

recidivism based on being diagnosed with a psychotic disorder. There were no significant differences associated with being diagnosed with antipsychotic medication or being placed on involuntary antipsychotic medication (Zgoba et al., 2020).

Johnson (2019) observed that low-risk offenders receiving intensive treatment experience instead a high recidivism rate. This performance was attributed to the negative influence of high-risk offenders frequently engaged during rehabilitation sessions. This attribution to the adverse effect of social exposure could have empirical grounding because of studies like Vaisman and Einat (2021).

The *Need Principle* recommends that criminal recidivism could decline if offenders receive treatment that focuses on dynamic criminogenic needs (Johnston, 2019). Andrews et al. (1990) identified the preferred intervention targets (Table 2.7). The overall goal was the total shift of perceived rewards and costs from criminal activities to noncriminal ones in the context of behavior, education, and family. In addition, Zgoba et al. (2020) shared comparable views by indicating that the reasons for high incarceration levels in the U.S. had diverse forms of explanations. The study noted that released offenders diagnosed with mental illnesses who did not abuse substances were at no higher risk of recidivism compared to inmates who did not have such issues. On the other hand, offenders with a substance use disorders were found to be at a higher risk of recidivism compared to inmates without a substance use disorder, regardless of whether they had a mental illness (Zgoba et al., 2020).

Further, Zgoba et al. (2020) shared the view that recidivism was highest among mentally ill offenders who were diagnosed with co-occurring substance user disorders. This means that released offenders who were diagnosed with a mental illness, as well as a

substance use disorder, portrayed higher levels of recidivism compared to offenders who did not have a mental health illness. However, they did not depict a higher recidivism rate when the study controlled for a co-morbid substance use disorder (Zgoba et al., 2020).

Table 2.7

Need-Based Intervention Targets

Target factor	Specific action
Antisocial behavior	Change antisocial attitudes and peer associations Replace lying, stealing, and aggress skills with prosocial skills
Antisocial participation	Promote familial affection Parental monitoring and supervision Promote anticriminal role models
Stress intolerance	Increase self-control and self-management skills

Note. From Andrews et al., 1990; Johnston, 2019.

The Responsivity Principle focuses on the delivery of effective rehabilitative interventions (Johnston, 2019). The General Responsivity Principle recommends the targeting of the correct factors using interventions adequately capable of accomplishing the rehabilitative goal. Useful strategies in delivering the intervention constitute cognitive-behavioral and cognitive-social learning methods, such as positive (anticriminal) modeling, skill development, role-playing, positive reinforcement, resource provision, verbal guidance, and habituation of alternate low-risk behaviors (Johnston, 2019). The goal is behavioral change.

The specific responsivity principle recommends that intervention strategies should be tailored to match the intervention setting and offender traits. The goal is to build on the offender's strengths and reduce barriers to their rehabilitation. The risk factors to target are both internal and external (Table 2.8). Some factors that are indirect or even

irrelevant to rehabilitation must be addressed as a prerequisite to effective treatment. An offender with substance addiction must be treated for psychosis first before addiction therapy worked. These intermediate factors might be pursued as a short-period goal for reducing criminal recidivism.

Table 2.8

Responsivity Factors for Rehabilitation

Internal factors	External factors
Cognitive deficits	Language barriers
Depression	Therapist traits
Interpersonal anxiety	Unstable housing
Motivation	
Personality traits	

Note. From Andrews et al., 1990; Johnston, 2019.

Success in the rehabilitation of OMIS requires more complex processes not typically used in the general incarcerated population in the country. The clear necessity of treating their mental disorders demands a special set of correctional capabilities, particularly a separate set of professionals capable of handling forensic psychiatric challenges and implementing clinical interventions. This demand essentially sets aside special attention for all OMI, resulting in more robust rehabilitative interventions not usually found in the general incarcerated population.

Summary

This complexity of rehabilitative care has led to better recidivism performance that has rarely been documented in the CJS literature in the country and even abroad. This dissertation found it extremely difficult to find studies focusing on this area of

outcomes for offenders with mental illness and their recidivism performances through years of reintegration after the year of their release into their respective communities. Nevertheless, this dissertation found one study—the Bellamy Group Study in 2019—which demonstrated that recidivism rates in this group can be twice as better than those in the general incarcerated population.

Thus, bearing these outcomes in mind, it can be reiterated that there is a lack of research seeking to measure the connection between recidivism and rehabilitation of persons with OMI. There has not been a meaningful, long-term study related to outcomes, that specifically considers whether or not people with OMIS can and are routinely being successfully rehabilitated, and how that relates to rates of recidivism. Thus, the current study will seek to fill this gap by determining the rehabilitative outcomes among OMIs, and to determine the rate of recidivism among successfully rehabilitated OMIs. This will provide a foundation on which to create a measurable relationship between rehabilitation outcomes and recidivism outcomes among OMIs.

CHAPTER THREE: METHODS

Overview

This chapter describes in detail the methodological components of the study, particularly the research design, the research questions, the hypothesis, the participants, the study setting, the instrumentation, and the data analysis approach. Information about the data and their collection was described in the Participants and Setting section.

Design

This dissertation uses the analytical cross-sectional design in understanding the relationship between three variables: mental illness (independent), successful rehabilitation (dependent), and recidivism (dependent). These are the three variables of interest, as established via analysis of the gap in existing literature. This quantitative observational design was best suited for investigations that seek to determine multivariate relationships at a specific point in time while having no interest in causality between these variables (Cataldo et al., 2019; Spector, 2019). It is highly effective in ruling out many alternative explanations of the observed relationship. To increase its robustness, a control variable is introduced for the determination of the rehabilitation success rate of offenders without mental illness to clarify the relative effectiveness of the rehabilitation program across offenders regardless of their mental health status.

Moreover, in large but highly accessible data, this design has the flexibility of studying either a sample of a larger population or the entire population of interest itself (Cataldo et al., 2019). Like a census, it determines the prevalence or frequency using the measure of the rate of the dependent variable (recidivism). Therefore, it allows the

observation of recidivism characteristics of OMIS in successful rehabilitation and offenders without mental illness (Bangdiwala, 2019).

Further, cross-sectional studies are typically quick and cheaper to implement because they involve a singular temporality only and do not require a follow-up component (Bangdiwala, 2019; Cataldo et al., 2019). Consequently, its sampling scope has the problem of losing participants during the follow-up period.

Furthermore, data collection requirements are also simpler. Since the test group consisted of offenders with mental health who experienced reincarceration at a specific collection year (e.g., 2021) from a specific observation period (e.g., 2016 to 2020), its positive control group, which consisted of OMIS who were not reincarcerated at the specific collection year, would have data within the common data set of OMI. Meanwhile, if a negative control group was used, more general data from the specific collection year might develop summarized information for offenders without mental health illnesses.00

Research Questions

This dissertation ultimately intended to answer four modified research questions, namely:

RQ1: *Was there a relationship between recidivism rates associated with mental illness?*

RQ2: *Was there a relationship between recidivism rates associated with gender?*

RQ3: *Was there a relationship between recidivism rates associated with age?*

RQ4: *Was there a relationship between recidivism rates associated with race?*

RQ5: *Was there a relationship between recidivism rates associated with mental illness and gender?*

RQ6: *Was there a relationship between recidivism rates associated with mental illness and age?*

RQ7: *Was there a relationship between recidivism rates associated with mental illness and race?*

Hypotheses

The reseach questions and related hypotheses for this study were:

RQ1: *Was there a relationship between recidivism rates associated with mental illness?*

- **$H_0$1:** There was not a statistically significant relationship between *recidivism* rates and mental illness.
- **H_a1:** There was a statistically significant relationship between *recidivism* rates and mental illness.

RQ2: *Was there a relationship between recidivism rates associated with gender?*

- **$H_0$2:** There was not a statistically significant relationship between *recidivism* rates and gender.
- **H_a2:** There was a statistically significant relationship between *recidivism* rates and gender.

RQ3: *Was there a relationship between recidivism rates associated with age?*

- **$H_0$3:** There was not a statistically significant relationship between *recidivism* rates and age.
- **H_a3:** There was a statistically significant relationship between *recidivism* rates and age.

RQ4: *Was there a relationship between recidivism rates associated with race?*

- **$H_0$4:** There was not a statistically significant relationship between *recidivism* rates and race.
- **H_a4:** There was a statistically significant relationship between *recidivism* rates and race.

RQ5: *Was there a relationship between recidivism rates associated with mental illness and gender?*

- **$H_0$5:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of gender.
- **H_a5:** There was a statistically significant relationship between *recidivism* rates and mental illness among offenders of gender.

RQ6: *Was there a relationship between recidivism rates associated with mental illness and age?*

- **$H_0$6:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of age.
- **H_a6:** There was a statistically significant relationship between *recidivism* rates and mental illness among offenders of age.

RQ7: *Was there a relationship between recidivism rates associated with mental illness and race?*

- **$H_0$7:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of race.
- **H_a7:** There was a statistically significant relationship between *recidivism* rates and mental illness among offenders of race.

Participants and Setting

The study drew data from the Texas Department of Criminal Justice (TDCJ). The base dataset consisted of inmates released in 2016 and 2017 with follow-up data in 2017, 2018, 2019, and 2020, consisting of 40,111 samples. Recidivism data included both technical and criminal types. Therefore, it reported up to Year 3 recidivism (2017-2020) and potentially Year 4 recidivism (2016-2020).

TDCJ (2022a) administered 109 facilities consisting mostly of state prisons, state jails, private jails and prisons, and specialized facilities, like intermediate sanction facilities, facilities for the developmental disabilities program, and substance abuse felony punishment facilities. These facilities are distributed across six regions and private locations. All state prisons and jails are operated by the TDCJ Correctional Institutions Division (CID). Meanwhile, all private prisons and jails are operated by the Management and Training Corporation, a private management corporation based in Diboll, Texas.

To supply the special needs of OMI, the TDCJ (2022a) also maintains psychiatric facilities at the West Texas Hospital (Montford Unit, Region V) in Lubbock, and two

non-hospital facilities: Scott Unit (Richmond, Fort Bend County, Region III), which is a male-only facility, and Skyview (Rusk, Cherokee County, Region II), which is a co-gender facility. These psychiatric facilities were operated by the CID.

The West Texas Hospital has a holding area with a capacity of 30 beds and an in-patient area consisting of 550 beds in addition to its dormitory area (TDCJ, 2022b). It has 96 mental health personnel who provide psychiatric and counseling services while implementing two educational programs (literacy and pre-release), other programs and services (e.g., chaplaincy services, reentry planning, and crime stoppers program), and volunteer-driven programs (e.g., employment and job skills training, substance abuse education, support groups, mentoring, life skills training, parent training, marriage training, and faith-based studies and activities).

The Scott Unit has an in-patient area with a capacity of 550 beds for mental care admission in addition to its dormitory area (TDCJ, 2022c). It has 31 mental health personnel who provided psychiatric and counseling services while implementing three educational programs (special education, vocational, and food service preparation), other programs and services (e.g., chaplaincy services), and volunteer-driven programs (e.g., life skills training and faith-based studies and activities).

The Skyview Unit has an in-patient area with a capacity of 560 beds for mental care admission in addition to its dormitory area (TDCJ, 2022c). It has 33 mental health personnel who provide psychiatric and counseling services. It also provides chaplaincy services and volunteer-driven programs, like substance abuse education, support groups, faith-based studies and activities, and a family visitation center.

Meanwhile, the TDCJ (2022a) has four pre-release facilities that are located in four cities—Bryan City in Brazos County (the Hamilton Unit), Brownwood City in Brown County (the Havins Unit), Beaumont City in Jefferson County (the LeBlanc Unit), and Edinburg City in Hidalgo County (the Segovia Unit). Although their programs and services are essentially similar to those in regular psychiatric units, these are geared dominantly towards preparing OMIS for their upcoming release to the free community. Typically, these facilities have one or two mental health personnel. Some facilities did not have any, like the Hamilton and the Havins units.

Instrumentation

Because of the nature of the study, which involved a dataset and did not perform a survey type of data collection, this dissertation did not use a data collection instrument apart from the typical data summary tables used in the data processing phase of the study.

Study Variables

There were dependent and independent variables in the study. The independent variable was mental illness. These variables were selected as the independent variables because they did not depend on other variables, but they affected other variables. The dependent variables, which relied on the independent variables, included the rehabilitation rates and recidivism rates. Additionally, demographic variables were considered to determine if they effected outcomes on the dependent variables, or could serve as confounding variables. These include gender, age, race, and ethnicity.

Procedures

Recoding of the Main Outcome Dependent Variable

The dataset was recoded to express the dependent variable recidivism for the main outcome of the study as a binary variable, which could measure the cases of offender recidivism in the context of the three-year follow-up period (Table 3.1).

Table 3.1

Recoding of the Recidivism Variable in a Four-Point Ordinal Scale

Scale	Score
Did not recidivate	0
Year 1 after release (0 to 365 days)	1
Year 2 after release (366 to 730 days)	2
Year 3 after release (731 to 1095 days)	3

Recoding of the Main Independent Explanatory Variable

The main independent (explanatory) variable of mental illness was recoded also to a binary measure concerning the mental health status of the released offender. The two-digit codes found in the original PUHLES Psych Score were recoded as “mental illness = 1” or “without mental illness = 0” (Table 3.2). Based on the PUHLES Psycho Score, only five original codes referred to statuses with mental illness, namely codes 2B, 3N, 4ID, 4IR, and 4IT, among those released in 2016 and 2017 (Table 3.3). There remaining PUHLES codes had no mental illness upon release. However, the specific mental illnesses involved remained undisclosed and beyond the scope of this study.

Table 3.2

Recoding of the Mental Health Variable in a Two-Point Ordinal Scale

Scale	Description	Score
"No" mental illness	No presence of mental illness; not mentally ill	0
"Yes" mental illness	Presence of mental illness; mentally ill	1

Table 3.3

PUHLES Psych Code With Equivalent Recodes

PUHLES Code	"Mental illness" scale	Score
1A	No	0
2B	Yes	1
3C	No	0
3D	No	0
3E	No	0
3G	No	0
3K	No	0
3M	No	0
3N	Yes	1
4P	No	0
4ID	Yes	1
4IR	Yes	1
4IT	Yes	1

Coding of the Independent Demographic Variables

The coding of the independent demographic factors also involved binary codes to simplify the computation process. However, the treatment between gender, race, and race varied according to the number of categories involved. The gender variable was coded similarly to the mental illness variable, which used two straightforward codes or scores (Table 3.2; Table 3.4). However, the race variable used a reference category (White = 1,

non-White = 0) (Table 3.4) while the age, being a continuous variable, was coded by range (low = 17, max = 88).

Table 3.4

Coding of Ordinal Demographic Variables

Variable	Yes?	No?
White	1	0
African American	1	0
Hispanic	1	0
Other race	1	0

Data Analysis

Analysis was conducted using all samples acquired in the dataset. This means that all data that would fit the characteristics of the test group, the positive control group, and the negative control group were analyzed in this dissertation.

Descriptive Statistics

The ordinal demographic data (gender and race) from the 2021 dataset was analyzed using relative frequency (RF), expressed in absolute count ("Sample Frequency") and percentage ("Sample Percent"), at $p < 0.05$ and a confidence interval (CI) of 95%. The mental health data were also analyzed similarly. Meanwhile, the continuous data (age) used three statistics for the analysis, namely, mean, standard deviation, and range (as related to minimum and maximum, median, and 25^{th} and 75^{th} percentiles).

Predictive Statistics

Logistic regression was used to predict the low versus moderate-to-high recidivism risk. It is a widespread statistic in criminology involved in almost three-quarters (73%) of studies in predictor studies (Villanueva et al., 2019). Meanwhile, a binary logistic regression was used to predict the low- versus moderate-to-high recidivism risk (dependent variable) with two predictors (mental illness and successful rehabilitation). Binary Logistic Regression models the relationship between a dichotomous dependent variable ("mentally ill" and "not mentally ill") and multiple independent variables, even in different categories (Senaviratna & Cooray, 2019) (Tables 3.1—3.4). It made four central assumptions about the variables: linearity, independence of errors, absence of multicollinearity, and no high outliers.

Analysis of Association

To test the assumption of linearity, an additive regression model was to determine whether the likelihood of offender recidivism was associated with the main independent variable (mental illness) and the secondary independent variables (gender, age, and race). To test the presence of outliers, the residuals were then scatter-plotted to determine their relationship with a regression line.

To test for the absence of multicollinearity among independent variables in a logistic regression model, the study used the Variance Inflation Factor (VIF) Test (Vorosmarty & Dobos, 2020). VIF used two measures to measure multicollinearity: general variance inflation factor (GVIF) and GVIF with degrees of freedom (DF). If both GVIF and GVIF with DF were less than or equal to the largest DF among the

independent variables, then multicollinearity in the logistic regression model did not exist.

To test for outliers, the study used Cook's Distance statistic. There must be no high ($D_i > 0.05$) or extreme ($D_i > 1.00$) outliers in the dataset that could drive the predictions made in this study. Therefore, D_i must be far below 0.05 to conclude the absence of high outliers.

To test for the relational linearity between the independent variable age and the logit of the dependent variable recidivism, the study used the Box-Tidwell Test (Shrestha, 2019). Since the test required a continuous variable, it could be used on the age variable only. It measured the strength of the linear relationship using the maximum likelihood estimate (MLE). A strong linear relationship must have an LME of 1.0 at $p < 0.5$. A scatter plot with a declining straight-line curve of the log odds of the dependent variable recidivism would confirm the linear relationship.

Test of the Hypotheses

Logistic Regression Models

Predictive testing used logistic regression models—additive prediction and interactive prediction models—to determine the probabilities of the dependent variable recidivism to change with changes in the independent variables, respectively, and interactively. Additive prediction models of logistic regression determined the probability of recidivism to vary with changes in the individual independent variables (mental illness, gender, age, or race). Meanwhile, interactive prediction models of logistic regression determined the probability of recidivism to vary with changes in the interactive influence of mental illness with each of the demographic independent

variables. Log-odds coefficients measured the predictive likelihood of recidivism across different independent variables at $p < 0.01$ (***) in the additive logistic regression model of demographics and at three p values—$p < 0.10$ (*), $p < 0.05$ (**), and $p < 0.01$ (***)—in the interactive logistic regression model of demographics and mental illness. Confidence intervals were set at 95%.

Test of Fitness

The study used the Akaike Information Criterion (AIC) to determine the fitness of the baseline (additive) and interactive models of logistic regression to test the hypotheses. If the interactive model was closely comparable with the baseline model, the models then fit for testing the hypotheses. Moderate fitness typically had an AIC of 3 (Cavanaugh & Neath, 2019). Meanwhile, substantial fitness had an AIC of 0 to 2.

CHAPTER FOUR: FINDINGS

Overview

The datasets analyzed came from the TDCJ and involved inmates released in 2016 and 2017 and followed up towards 2019, covering two to three years of data for potential recidivism outcomes. However, since the datasets did not include information about mental illness, the dependent variable must be dropped in the study and the discussion of results and findings in this chapter. Nevertheless, the total population consisted of 40,110 released inmates in both genders (male and female), age ranges (younger to older), three races (White, Hispanic, and Black), and three ethnicities (Hispanic, Non-Hispanic, and Undecided). The dataset was analyzed statistically using the Logistic Regression Model and descriptively using relative frequency (RF).

Results demonstrated that mental illness did not significantly affect the probability of offender recidivism. Meanwhile, significant effect was demonstrated on the probability of offender recidivism, among certain demographics, including males, offenders in the younger age group, and white offenders. A very weak race effect was seen on the probabilty of offender recidivism among those with mental illness, particularly among the African American demographic. Conversely, being female, older, and non-White had no significant effect on the probability of offender recidivism. Lastly, no gender effect or age effect had been found on the probability of offender recidivism by mental illness.

Research Questions

This dissertation ultimately intended to answer four modified research questions, namely:

RQ1: *Was there a relationship between recidivism rates associated with mental illness?*

RQ2: *Was there a relationship between recidivism rates associated with gender?*

RQ3: *Was there a relationship between recidivism rates associated with age?*

RQ4: *Was there a relationship between recidivism rates associated with race?*

RQ5: *Was there a relationship between recidivism rates associated with mental illness and gender?*

RQ6: *Was there a relationship between recidivism rates associated with mental illness and age?*

RQ7: *Was there a relationship between recidivism rates associated with mental illness and race?*

Being conceptual opposites, findings on recidivism were considered to be direct evidence of the success or failure of rehabilitation at least in the context of the number of years after release from incarceration. This meant that high recidivism rates among released inmates would imply low success rates in the TDCJ rehabilitation programs relevant to the released inmates. Conversely, low recidivism rates among the sample population would imply high success rates in the rehabilitation programs involved.

Null Hypotheses

Subsequently, consistent with the circumstance stated above, the Null Hypotheses for this study were to read as follows:

- **$H_0$1:** There was not a statistically significant relationship between *recidivism* rates and mental illness.
- **$H_0$2:** There was not a statistically significant relationship between *recidivism* rates and gender.
- **$H_0$3:** There was not a statistically significant relationship between *recidivism* rates and age.
- **$H_0$4:** There was not a statistically significant relationship between *recidivism* rates and race.

- **$H_0$5:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of gender.
- **$H_0$6:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of age.
- **$H_0$7:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of race.

Descriptive Statistics

Sample Characteristics

Demographics

The total sample population (N = 40,111) had a mean age of 37.4 years (range = 17-88 yrs., median = 35 yrs.) (Table 4.1). More than three-fourths (87.96%) of them were male (Table 4.2) and more than half belong to two dominant races, Hispanic (34.91%) or White (34.66%) (Table 4.3).

Table 4.1

Descriptive Statistics of Age Variable Treated as Continuous

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
Age	40,111	37.4	11.3	17	28	35	45	88

Table 4.2

Categorical Distribution of Offender Gender

Variable category	Sample frequency	Sample percent
Female	4,830	12.042
Male	35,281	87.958
Total	40,111	100

Table 4.3

Categorical Distribution of Offender Race

Variable category	Sample frequency	Sample percent
White	13,903	34.661
Other	207	0.516
African American	11,999	29.914
Hispanic	14,002	34.908
Total	40,111	100

Mental Illness

Not all offenders in the released dataset had complete data on mental illness. Of the total sample population (N = 40,111), only 37,091 offenders (92.47%) had a reported PUHLES Psych Score, which coded for those diagnosed with or without mental illness. Therefore, the remaining 3,020 offenders (7.53%) had no reported state of mental health on their respective discharge dates. However, 3,184 offenders have either no reported PUHLES Psycho Score or a reported score that had no sensible coding scheme that could rule out whether these offenders had mental illness or none on the date of release. Consequently, this situation left only 36,927 offenders sampled for this independent variable (Table 4.4). Of this sample, only 6,870 offenders (18.60%) had mental illness upon release.

Recidivism

Data on recidivism, which was made dichotomous (“did not recidivate” vs. “recidivate”), had been reported on all offenders in the total population (N = 40,111). The “recidivate” category was stratified cumulatively into “Year after release” and counted by days. Almost four-fifths (79.74%, n = 31,984) of the offenders did not recidivate three

years after release (Table 4.5, Table 4.6). Slightly one-fifths (20.26%, n = 8,127) of the sample recidivated during the entire period. However, there had been no clear pattern observable during the three-year follow-up period. Year 1 had the lowest recidivism incidents (n = 1,880, 4.69%), which almost doubled in Year 2 (n = 3,601, 8.98%). The recidivism incidents declined in Year 2 (n = 2,646, 6.60%) but without reaching the Year 1 level.

Table 4.4

Categorical Distribution of Coded Offender Mental Illness

Variable category	Sample frequency	Sample percent
Not mentally ill	30,057	81.396
Mentally ill	6,870	18.604
Total	36,927	100

Table 4.5

Categorical Distribution of the Outcome Variable: Uncoded Offender Recidivism

Variable category	Sample frequency	Sample percent
Did not recidivate	31,984	79.739
Year 1 after release (0 to 365 days)	1,880	4.687
Year 2 after release (366 to 730 days)	3,601	8.978
Year 3 after release (731 to 1095 days)	2,646	6.597
Total	40,111	100

Table 4.6

Categorical Distribution of the Outcome Variable: Coded Offender Recidivism

Variable category	Sample frequency	Sample percent
Did not recidivate	31,984	79.739
Recidivated	8,127	20.261
Total	40,111	100

The TDCJ's recidivism rate was less than half the federal recidivism rate of 44% in the first year in 2005 and 68% within three years (World Population Review, 2023a), which corresponded to the follow-up periods of this study. However, more recent rates in the United States have significantly declined to 12.11% (n = 167,067) in 2019 and 9.21% (n = 108,933) in 2020 (Carson, 2021), making the 2016-2017 TDCJ recidivism rate higher than more recent levels.

The World Population Review data did not include recidivism rates from California, Georgia, Hawai'i, Oregon, Tennessee, Texas, and Utah, excluding them from the comparison. Therefore, this study—perhaps for the first time—provided information about the recidivism rate in the State of Texas. Nevertheless, among states with recidivism rates, this study showed Texas as having the lowest recidivism rate in the United States based on 2022 data. Its recidivism rate, as observed in this study, was up to more than five percent below the recidivism rates of the bottom seven states in 2022—Virginia (23.4%), West Virginia (24.0%), South Carolina (24.5%), Florida (24.5%), Oklahoma (25.0%), Minnesota (25.0%), and Nebraska (25.5%) (World Population Review, 2023a).

Logistic Regression Analyses

Sample Size

The dataset had a very large sample size, providing at least 35,000 observations. Thus, it satisfies the assumption of sufficient size for each independent variable in any study to be analyzed using the logistic regression model.

Independence of Observations of the Variables

Analysis of the residual errors from the full additive model of the relationship between the dependent variable recidivism and the four independent variables (mental illness, age, gender, and race) demonstrated that no observable relationship existed between the residuals and the order of observations in the dataset (Fig. 4.1). This lack of relationship between observations showed independence of observations so that the probability of recidivism in one offender could not be conditioned on another offender's likelihood to recidivate. The random pattern in the scatterplot visually demonstrated the independence of each observation in this dataset.

Multiple Collinearity of Independent Variables

The variance inflation factor (VIF) test showed no presence of multicollinearity (GVIF < 3, GVIF with DF < 3) in the independent variables of mental illness, age, gender, and race (Table 4.7). Therefore, the independent variables in this study were not correlated with each other in any significant manner, so changes in an independent variable could result in or be influenced by changes in any of the other independent variables.

Extreme Case Outliers in Observations

Cook's Distance Test, which measured the influence of observation in the dataset on the study's logistic regression model, found no high ($D_i > 0.05$) or extreme ($D_i > 1.00$) outliers in the dataset that could drive the predictions made in this study. The data observed had been quite low (max. Di = 0.0059), which was far below $D_i > 0.05$, to provide any influence (Table 4.8, Fig. 4.2,). Therefore, all outliers observed in the dataset could not materially affect the relationships and interrelationships between the independent variables (mental illness, gender, age, and race) and dependent variable offender recidivism.

Figure 4.1

Scatterplot of Residuals and Observations

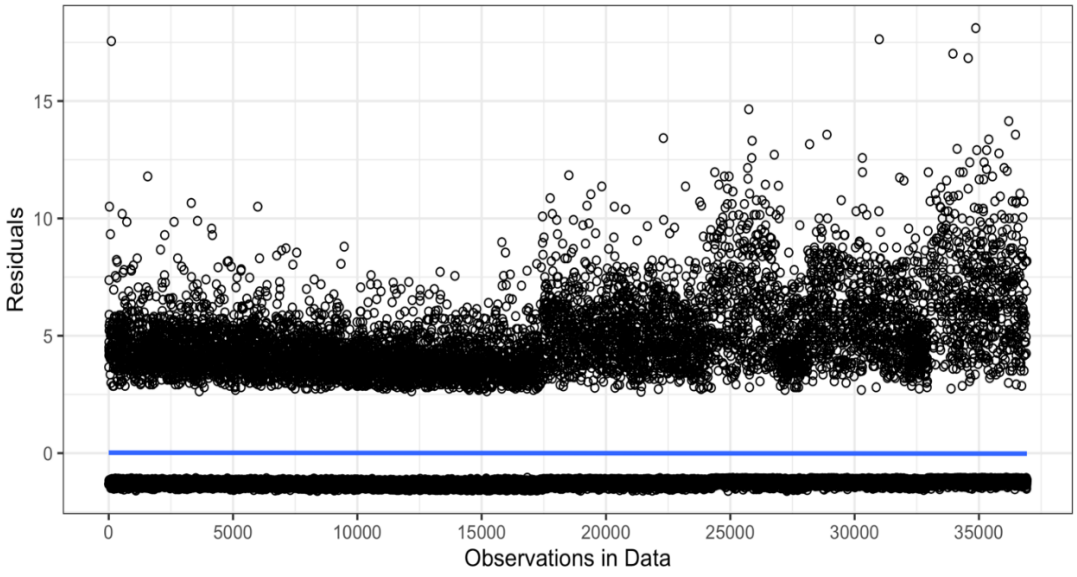


Table 4.7

Variance Inflation Factor (VIF) Test for Multicollinearity in Regression Predictors

Predictor variable	GVIF	DF	GVIF with DF
Mental illness	1.025	1	1.013
Gender	1.024	1	1.012
Race	1.041	3	1.007
Age	1.040	1	1.020

Note: VIF less than 3 indicates no presence of multicollinearity in the model

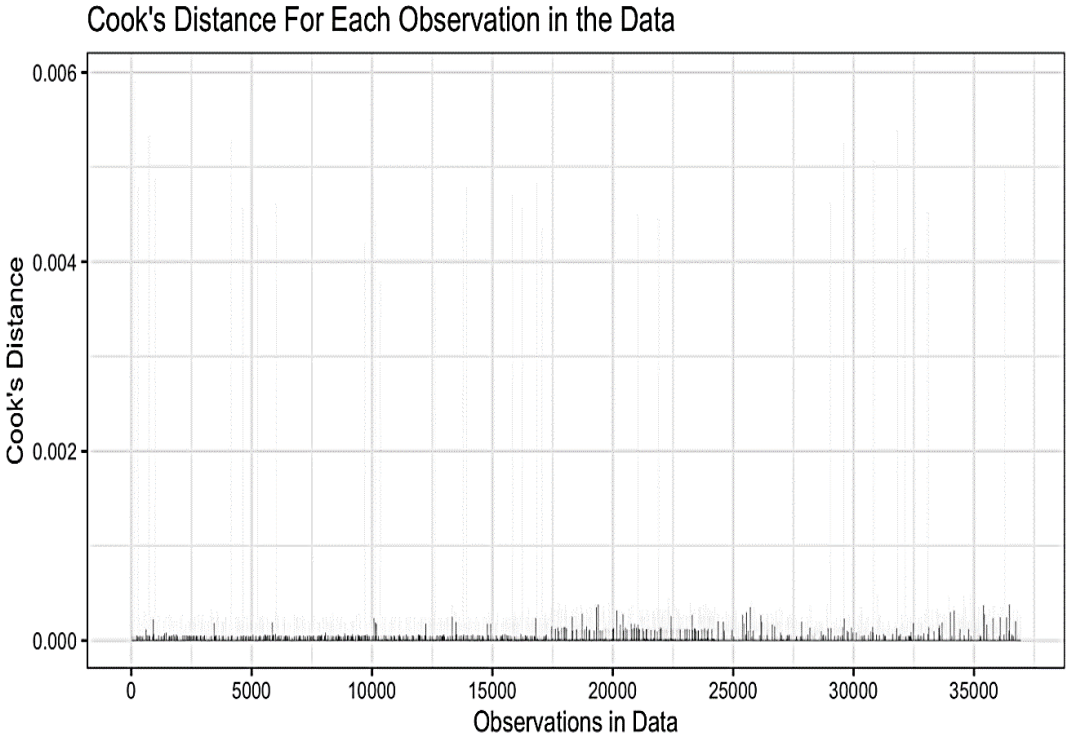
Table 4.8

Cook's Distance Measurements

Measures	Di
Minimum	0.000001120
Mean	0.000027087
Median	0.000005972
Maximum	0.005916004

Figure 4.2

Cook's Distance for Each Observation



Relational Linearity Between Independent Variable Age and the Logit of the Dependent Variable Recidivism

The Box-Tidwell Test found a strong linear relationship (MLE = 1.0, z = -4.695, p = 0.00000) between age, which was the only continuous variable in the study, and the log-odds of recidivism (Table 4.9). The declining straight-line scatterplot of the log odds of offender recidivism demonstrated this, indicating the reverse relationship between offender recidivism and the independent variable age. Thus, the null relationship between age and recidivism could be rejected with high certainty.

Figure 4.3

Log-Odds Scatterplot of Recidivism and Offender Age

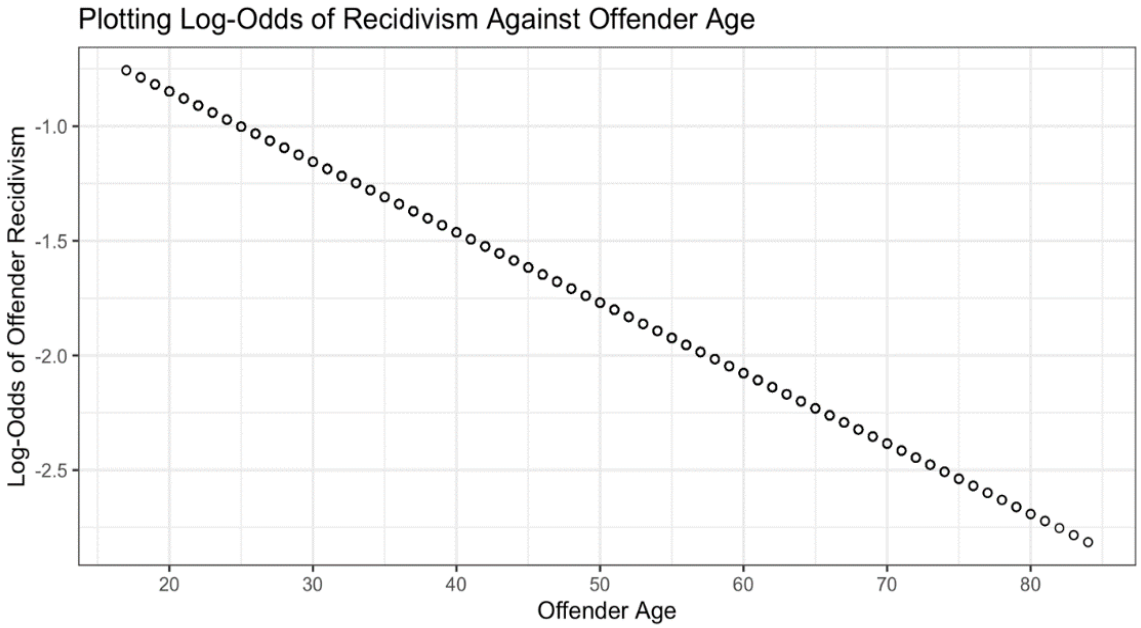


Table 4.9

Box-Tidwell Test Assessing Linearity of Relationship between Age & Logit of Response Variable

MLE of Lambda	Score statistic (Z)	P-Value
1	-4.695	0.00000

Note. P < 0.05 indicates that the null relationship of not a linear relationship can be rejected with high certainty.

Hypothesis Testing

Predictions Tested

Based on the seven alternative hypotheses, the study identified seven distinctive predictions—four additive predictions and three interactive predictions. The additive

predictions pertained to the respective relationships of each of the independent variables (mental illness, gender, age, and race) with the dependent variable (probability of offender recidivism). Meanwhile, the interactive predictions expressed the influence of mental health on the relationship between each demographic independent variable (gender, age, or race) and the probability of offender recidivism.

The Measure of Predictive Likelihood

Each prediction was individually tested for significance in the relationship between an independent variable (mental illness, gender, age, or race) and the dependent variable (probability of offender recidivism) using the logistic regression model. Log-odds coefficients measured the predictive likelihood of recidivism across different independent variables at $p < 0.01$ (***) in the additive logistic regression model of demographics (Table 4.10) and at three p values—$p < 0.10$ (*), $p < 0.05$ (**), and $p < 0.01$ (***)—in the interactive logistic regression model of demographics and mental illness (Table 4.11). Confidence intervals were set at 95%.

The Measure of Fitness

The Akaike Information Criterion (AIC) was used to determine the fitness of the baseline (additive) and interactive models of logistic regression for the study (Table 4.10; Table 4.11). The fitness of both models was closely comparable with a difference of only 3.31—Baseline Model (+3.31) and Interactive Model (-3.31). Therefore, both moth models are of sufficient fit for use in this dataset.

Table 4.10

Additive Logistic Regression Model of Demographics Predicting Likelihood of Recidivism

Demographic	Outcome Variable: Recidivism	
	Baseline Model	Pr(>|z|)
Mental illness ($ß_1$)	0.045	0.19195
	(0.034)	
Male offender ($ß_2$)	0.532	<0.00000***
	(0.044)	
Other race offender ($ß_3$)	-0.663	0.00166**
	(0.211)	
African American offender ($ß_4$)	-0.289	<0.00000***
	(0.033)	
Hispanic offender ($ß_5$)	-0.338	<0.00000***
	(0.032)	
Offender age ($ß_6$)	-0.033	<0.0000***
	(0.001)	
Constant (α)	-0.431	<0.0000***
	(0.063)	
Observations	36,927	
Log likelihood	-18,235.230	
Akaike inf. crit.	36,484.450	

Notes: Log-odds coefficients reported, and standard errors are in parentheses.

* p < 0.10, **p < 0.05, ***p < 0.01

Table 4.11

Interactive Logistic Regression Model of Demographics & Mental Illness Predicting Likelihood of Recidivism

Offender Demographic	Outcome Variable: Recidivism Logistic Regression Outcome
	Interactive Model
Mental illness (ß1)	-0.134
	(0.176)
Male offender (ß2)	0.559***
	(0.050)
Other race offender (ß3)	-0.508**
	(0.223)
African American offender (ß4)	-0.316***
	(0.036)
Hispanic offender (ß5)	-0.333***
	(0.035)
Offender age (ß6)	-0.034***
	(0.001)
Male offender X mental illness (ß7)	-0.141
	(0.107)
Other offender X mental iIllness (ß8)	-1.168
	(0.761)
African American offender X mental illness (ß9)	0.172**
	(0.086)
Hispanic Offender X mental illness (ß10)	-0.028
	(0.081)
Offender Age X mental illness (ß11)	0.007*
	(0.004)
Constant (α)	-0.424***
	(0.069)
Observations	36,927
Log likelihood	-18,228.570
Akaike inf. crit.	36,481.140

Notes: Log-odds coefficients reported, and standard errors are in parentheses.

* p < 0.10, **p < 0.05, ***p < 0.01

Results

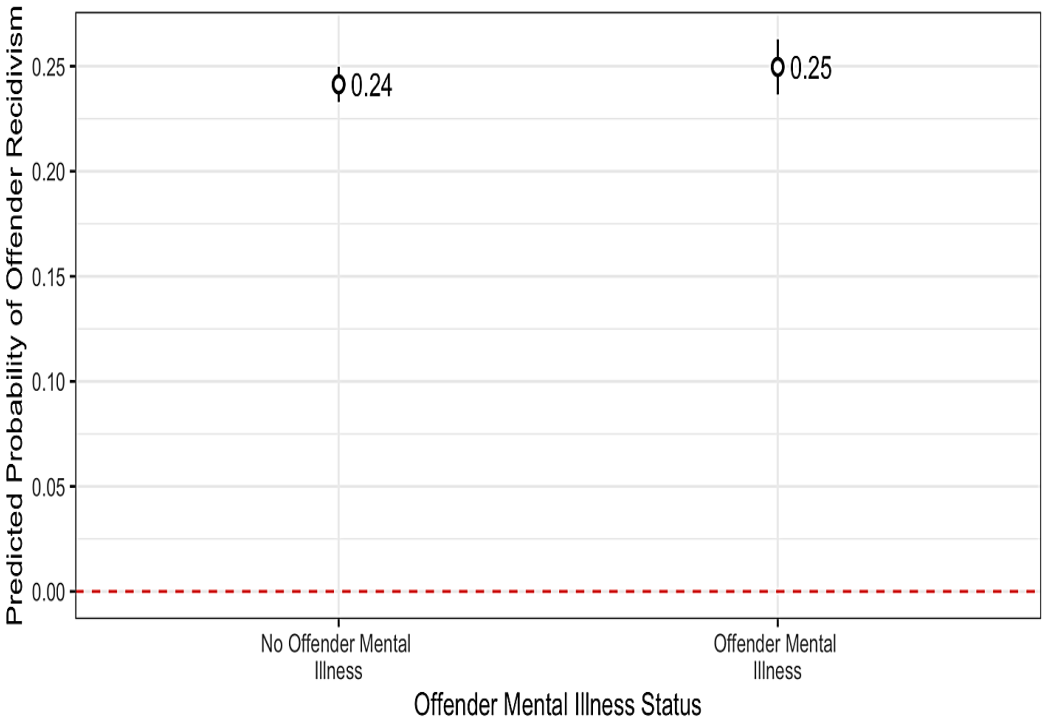
Hypotheses

RQ1: No Significant Effect of Mental Illness on Recidivism—H01

Using predicted probability as a measure of comparison, the data analysis found no evidence that mental illness significantly affected the predictive probability of offender recidivism. OMIS had a 25% probability of recidivating (Fig. 4.4). Meanwhile, offenders without mental illness had a 24% probability of recidivating. The difference between the point estimates of the two predictive probabilities to influence offender recidivism was only 1%. Therefore, the null hypothesis $H_0 1$ could not be rejected and the alternative hypothesis $H_1 1$ could not be accepted.

Figure 4.4

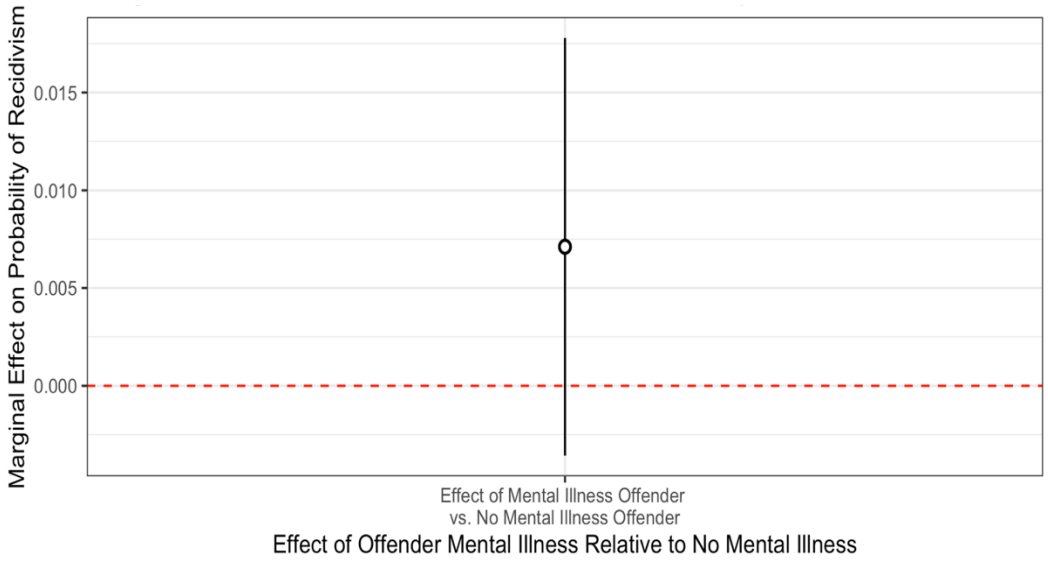
Predicted Probability of Offender Recidivism by Mental Illness Statues



Marginal effect analysis found the 95% confidence interval point estimate breaching the zero-effect line towards negative effect (Fig. 4.5). This phenomenon indicated the marginal effect of offender mental illness was of relatively the same size as the effect of the offender with no mental illness on the probability of recidivism. Therefore, it confirmed the finding from the comparison of predicted probability point estimates.

Figure 4.5

Marginal Effect of Mental Illness Contrasts on Probability of Offender Recidivism



This finding negated recidivism theories, such as GST and deprivation theory (Agnew, 2001), that impute mental illness as a factor in offender recidivism outcomes (Wallace & Wang, 2020). In this study, the mental illness of released offenders did not seem to significantly impose external adaptive inefficiency more than those experienced by offenders without mental illness. However, this difference might be a factor associated

with controlled and uncontrolled mental health, implying that patients in the dataset might have controlled mental illness upon their release, which was beyond the scope of this study (Freckelton, 2020; Harcourt, 2021; Wallace & Wang, 2020). In this sense, released offenders with controlled mental illness, even if not necessarily in remission from it, were at low risk for recidivism. This situation invited a further study into the specific categories included in the PUHLES Psych Scores involved in the dataset. These scores could reveal whether the released offenders had controlled instead of uncontrolled mental illness.

RQ2: Male Offenders More Likely Than Female Offenders to Recidivate—H2

A comparison of the predicted probability of offender recidivism demonstrated a significant difference between the likelihood of gender influencing offender recidivism. Male offenders showed a significantly higher predicted probability (24%) to recidivate than female offenders (16%) (Fig. 4.6). The marginal effect of being male offenders significantly raised the probability of recidivism by at least 7% (95% CI, 0.24-0.16) while not crossing the zero-effect line (Fig. 4.7). Therefore, the null hypothesis $H_0 2$ must be rejected and the alternative hypothesis $H_1 2$ must be accepted.

These findings were consistent with past literature. Antenangeli and Durose (2021) found male inmates had relatively higher recidivism rates than female inmates, which had been consistent for the next 10 years after release. Miller and Marshall (2018) confirmed that more male sex offenders recidivate after release than women offenders. Common in all these studies as in the current study, female offenders had a far smaller population incarcerated, which reflected the proportion of women released in the current study.

Figure 4.6

Predicted Probability of Offender Recidivism by Offender Gender Identity

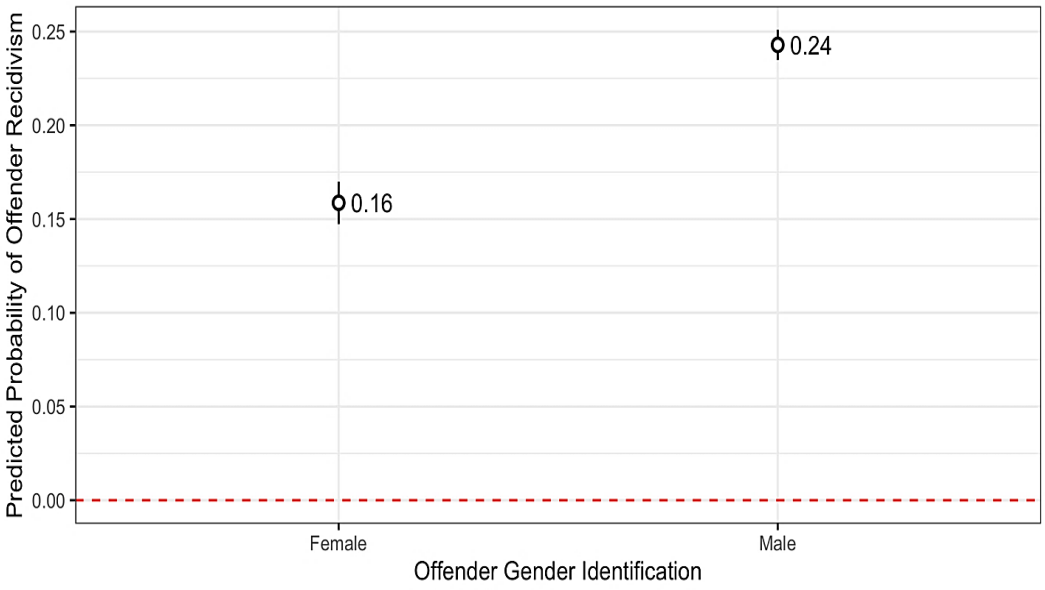
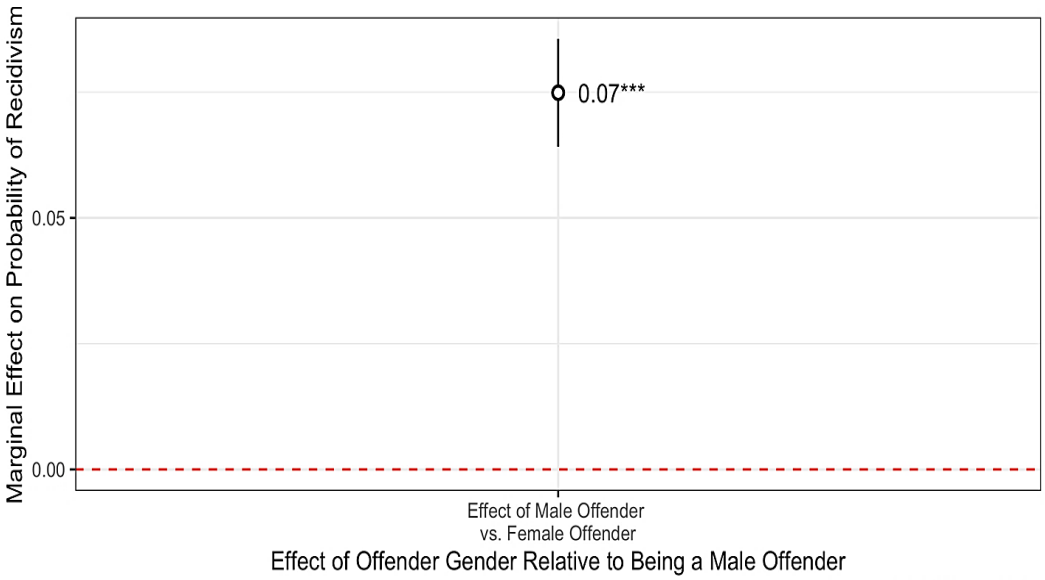


Figure 4.7

Marginal Effect of Gender Contrasts on Probability of Offender Recidivism



One gender/sex differential factor was self-esteem. Thapa et al. (2020) observed that high self-esteem among females increased recidivism rates. In contrast, self-esteem seemed to lack influence on male recidivism rates, which implied that their high rates of recidivism might be a volitionally driven phenomenon rather than psychological, like self-esteem.

Physical aggression, which was common in criminal offending, was also more common among males than among females. Henricksen et al., (2022) found young males (21%) participated in physical fights more than young females (3%). Interestingly, both genders were susceptible to risk factors for physical aggression: alcohol intoxication, attention problems, and traumatic events. Males were uniquely susceptible to physical aggression through PTSD symptoms. Conversely, females were susceptible to psycho-affective risk factors (anxiety, depression, and loneliness) and narcotics use. This meant that the rehabilitation program under TDCJ might be more effective in dealing with female than male risk factors. Alternatively, perhaps female offenders could be more responsive than males to interventions for these risk factors.

RQ3: Recidivism Probability Reduced With Offender Age Increase—H3

The study observed a decline curve in the relationship between offender age and recidivism (Fig. 4.8). At the minimum offender age of 17 years, the predicted probability of the offender to recidivate was 38.9%. Conversely, at the maximum age of 84 years, the predicted probability of offender recidivism was only 6.6%. This relationship meant that the probability of offender recidivism declined with age. Therefore, the null hypothesis $H_0 3$ must be rejected and the alternative hypothesis $H_1 3$ must be accepted. Its marginal

effect was 0.5%, which referred to the decline of recidivism probability with every year increase in offender age (Fig. 9).

Figure 4.8

Predicted Probability of Offender Recidivism by Offender Age

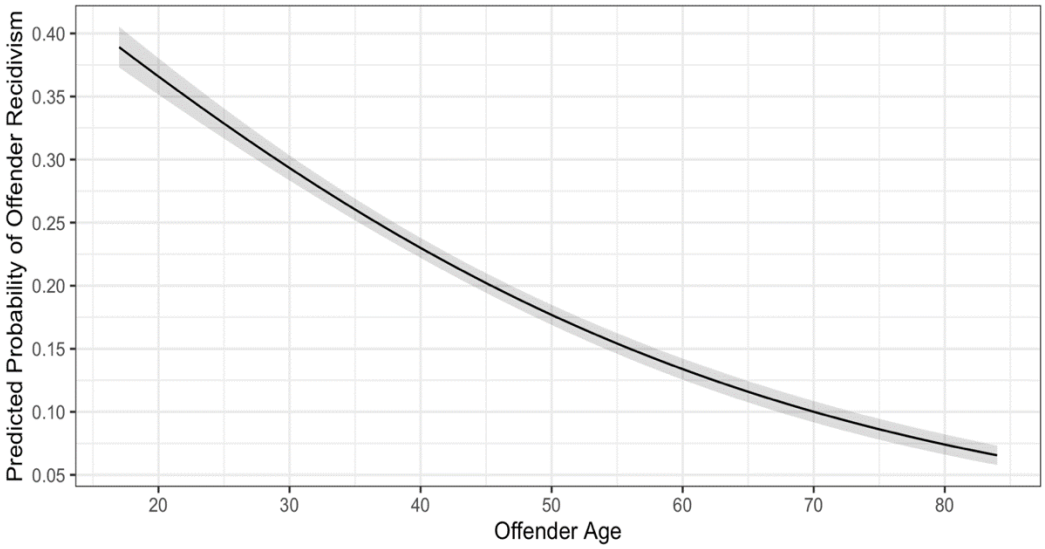
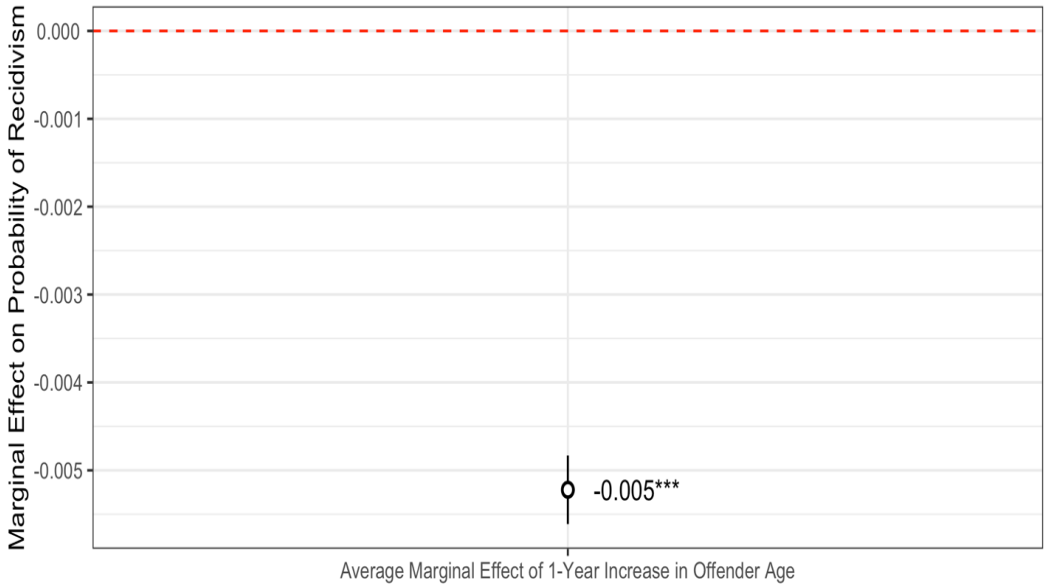


Figure 4.9

Marginal Effect of Age Contrasts on Probability of Offender Recidivism



This finding also corroborated those in previous literature (e.g., Antenangeli & Durose, 2021; Jhi & Joo, 2009; Paretta, 2019; Rakes et al., 2018). In Antenangeli and Durose (2021), inmates released in 2008 in 24 states showed the highest recidivism rates in ten years among those aged 24 years and younger. The three-year recidivism rate in this age group was 75.0%. The 24-state dataset in Antenangeli and Durose (2021) had a younger age group that was 11 years older than the current study. In an older study in Texas, which involved released inmates between 2001 and 2003, the younger age group (ages 18 to 24) also had a higher recidivism rate (58%) compared to older age groups (ages 25 to 34, 35 to 44, and 45+) (Jhi & Joo, 2009). Other studies (e.g., Paretta, 2019) showed a strong link between recidivism and juvenile delinquency throughout the United States.

Meanwhile, in Rakes et al. (2018), which used the North Carolina data of older age groups, the lowest age group (age 44 to 54) studied who were released in 2004 and 2005 had a higher recidivism rate (51%) than two other older age groups: ages 55 to 64 and ages 65 and older. This demonstrates that, even among older inmates, the relatively younger age groups tended to have higher recidivism rates. In Jhi and Joo (2009), older inmates also had lower recidivism rates than the younger age groups.

In effect, factoring in a more comprehensive dataset of the incarcerated population, covering all states from 2010 to 2020, Carson (2021) also confirmed this age differential trend. All these findings indicated that literature, both current and historical, and both limited states and all states, agreed on the predominance of younger age groups in the incarcerated population and the recidivism outcomes. Therefore, the recidivism outcomes in Texas for the 2016 and 2017 releases, as the current study observed, merely reflected a more pervasive trend throughout the United States among youth offenders.

RQ4: White Offenders Mostly Likely of the Races to Recidivate—H_I4

Predicted probability point estimates indicated that White offenders (24%) are most likely to recidivate (Fig. 4.10). Non-White races had significantly lower predicted probability—African American and Hispanics (19%) and Other (14%). Although the marginal effects of White with the other racial categories were in negative territories, no marginal effect breached the zero-effect line (Fig. 4.11), making the negative effect significant. The effect of other race offenders had a 10% negative effect than White on the probability of recidivism: thus, twice stronger than those between African American or Hispanic offenders and White offenders. This negative effect implied a reductive

effect of race on recidivism. Therefore, the null hypothesis $H_0$4 must be rejected and the alternative hypothesis $H_1$4 must be accepted.

Meanwhile, there was no significant difference in the probability to recidivate between the other racial categories, namely, between African Americans and Hispanics, African Americans and Other, and Hispanics and Other. The approximate differences in these dual relationships appeared insignificantly small—0.00%, 0.05%, and 0.05%, respectively. Therefore, the significant effect existed only when compared to White offenders.

This finding agreed with past literature. Antenangeli and Durose (2021) confirmed the leading recidivism rates among Whites across 24 states in the United States. Nevertheless, this difference appeared interesting because Hispanics had the highest number of parolees in the dataset. Therefore, the highest White recidivism could not be attributed to having the highest corresponding population released, being only the second highest parolees.

Figure 4.10

Predicted Probability of Offender Recidivism by Offender Race

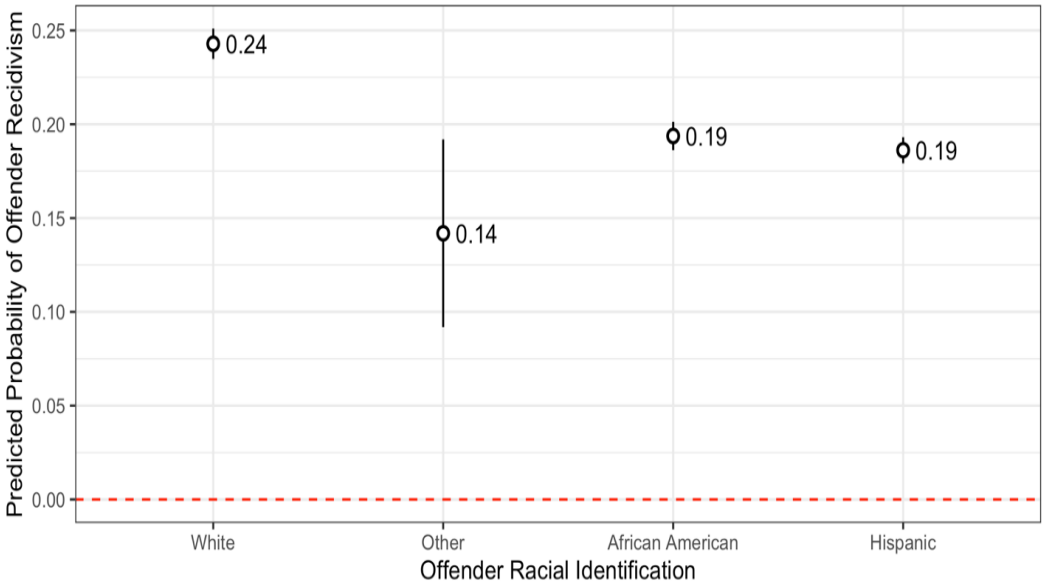
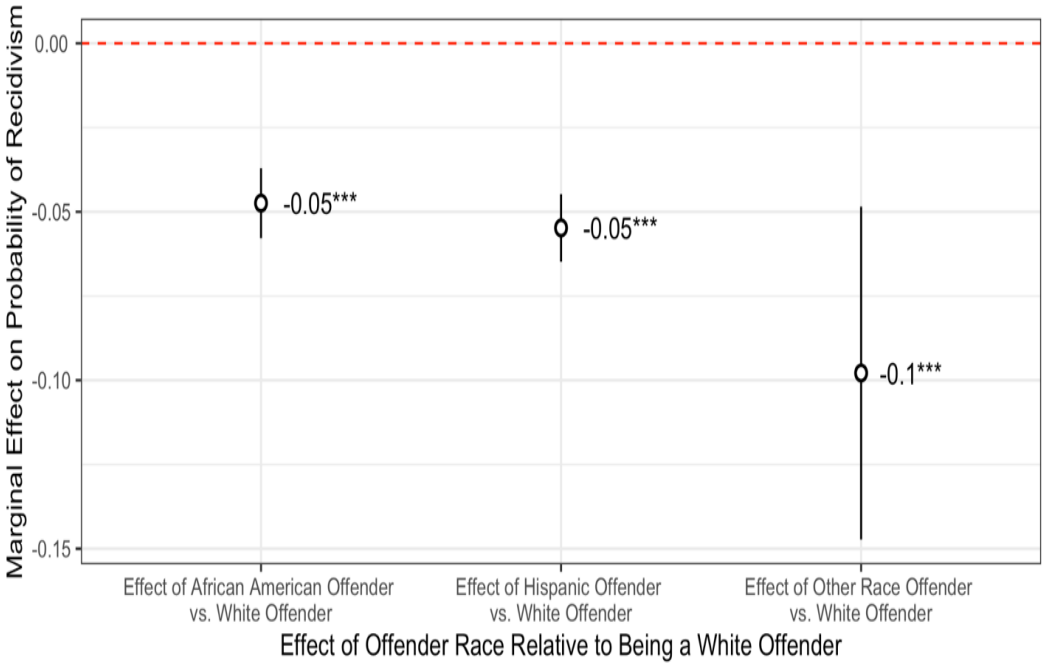


Figure 4.11

Marginal Effect of Race Contrasts on Probability of Offender Recidivism



The finding on African American, which showed a slightly higher but insignificant predicted probability of offender recidivism than Hispanic offenders (even though it had the lowest number of parolees in the dataset), diverged from common observations in past literature, which found constantly low incarceration population for Blacks in the United States, including in California (Young & Pearlman, 2021). Atkin-Plunk et al. (2019) confirmed the low recidivism rates among Blacks despite their poor understanding of procedural justice. However, the relationship between race and recidivism was significant.

However, the sheer predominance of Hispanics (f = 34.91%) in the State of Texas compared to Whites (f = 34.66%) and African Americans (f = 29.91%) (Table 4.3) could explain the slight difference in predicted probabilities for recidivism between African American and Hispanic offenders. Nevertheless, the 5% difference in the population frequency of Hispanic and African American offenders could represent an underlying excess of probability strength for recidivism in African American offenders in the dataset.

In effect, this observation agreed with the recidivism in 24 states for inmates released in 2008, which confirmed that Blacks had the highest recidivism rates from the first year up to the tenth year (Antenangeli & Durose, 2021). These results were consistent with former slave states, such as Minnesota (World Population Review, 2023b). Using juvenile data, Strassfeld and Cherng (2022) also recorded the three major races—Blacks (highest recidivism rate), Hispanics (middle), and Whites (lowest recidivism). It also recorded a high recidivism rate for indigenous inmates, second only to the Blacks.

Whether a bias existed in this data, it was beyond the current study to explore the question. The only difference with the findings in this study was White offenders still dominated recidivism rates far more than African American offenders. This seemed unique for Texas.

RQ5: No Gender Effect on Recidivism Variation With Mental Illness—H5

Data indicated that offender gender had no effect on the probability of recidivism varying with mental illness. The mental illness difference between female offenders (2.00% higher with offender mental illness) to recidivate had no significant difference with those between male offenders (0.00%) (Fig. 4.12). Both genders cross the zero-effect line (Fig. 4.13), supporting the result. Therefore, the null hypothesis of $H_0 5$ could not be rejected and the alternative hypothesis of $H_1 5$ could not be accepted.

This finding meant that the gender effect observed in males on increased offender recidivism did not demonstrate a similar strength among male OMI. The implication was clear. Male offenders without mental illness created the gender effect on offender recidivism.

Figure 4.12

Predicted Probability of Offender Recidivism by Offender Gender and Mental Illness

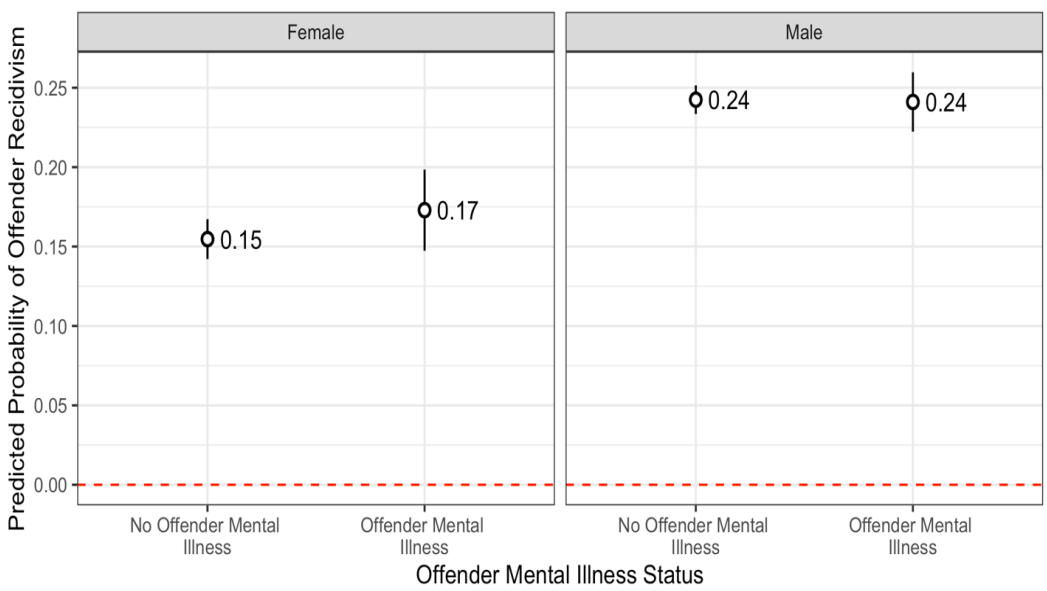
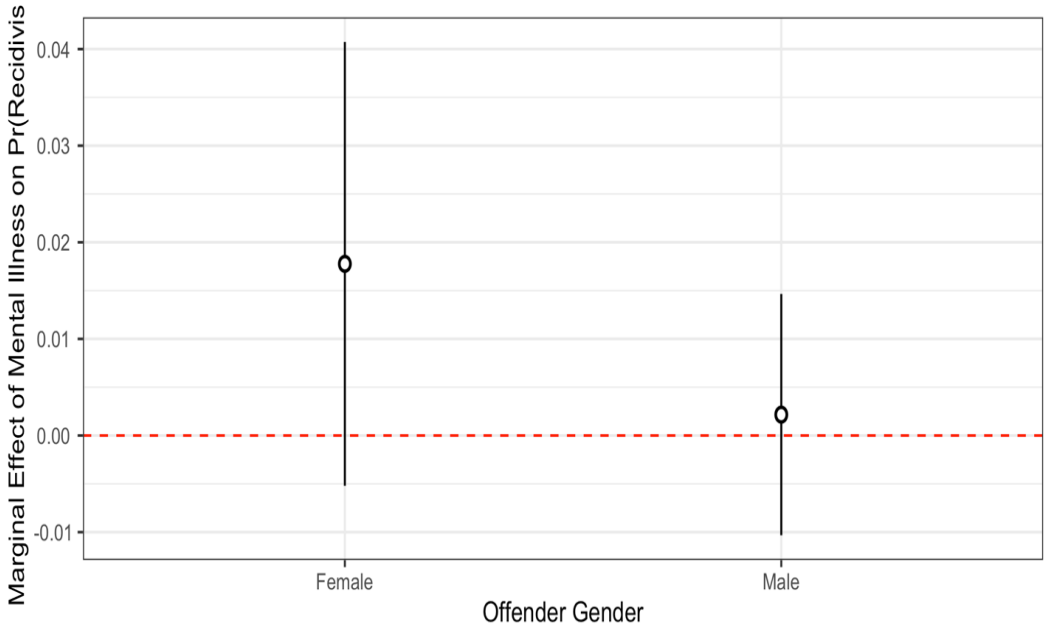


Figure 4.13

Marginal Effect of Mental Illness on the Probability of Offender Recidivism by Gender



Moreover, this implication disagreed with past literature (e.g., Bessler et al., 2018; Kim et al., 2016) that linked male OMIS with higher recidivism. In these studies, mental illness was blamed as the cause of the higher recidivism rates among male OMI. The current study managed to observe the male gender effect as significantly a phenomenon not associated with mental illness in the 2016-2017 dataset.

RQ6: Weak Evidence on Race Effect on Offender Recidivism Variation With Mental Illness—H6

The study found that African American OMIS (22%) had a slightly higher likelihood (+3.00%) of recidivating than African American offenders without mental illness (19%) (Fig. 4.14). It had a marginal effect of 2% for mental illness on the probability of recidivism (Fig. 4.15). However, the rest of the race categories had no significant differences in OMI. Therefore, the null hypothesis $H_0 6$ could not be completely rejected but the alternative hypothesis $H_1 6$ could be accepted.

Figure 4.14

Predicted Probability of Offender Recidivism by Offender Race and Mental Illness

RQ7: No Age Effect on the Recidivism Probability to Vary With Mental Illess—H7

Analyzed data found that only small significant differences in age exist across age groups on offender age (Fig. 16). However, evidence from the marginal effect of mental illness on the probability of offenders to recidivate across age groups seemed to disagree. While the confidence interval crossed the zero-effect line for ages 17 through 24, older age groups demonstrated slightly higher (1.00%) increases in the probability of recidivism in offenders with mental health. Further, slightly higher (2.00%) increases had been observed in age groups 49 to 84 years (Fig. 17). Therefore, with this small effect in the older age groups, the null hypothesis $H_0 7$ must be accepted and the alternative hypothesis $H_1 7$ must be rejected.

Figure 4.15

Marginal Effect of Mental Illness on the Probability of Offender Recidivism by Race

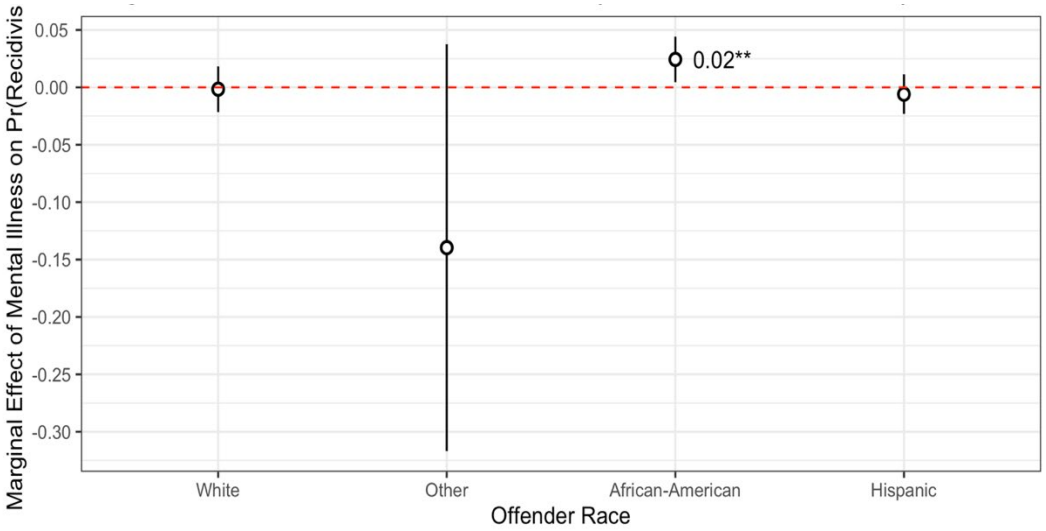
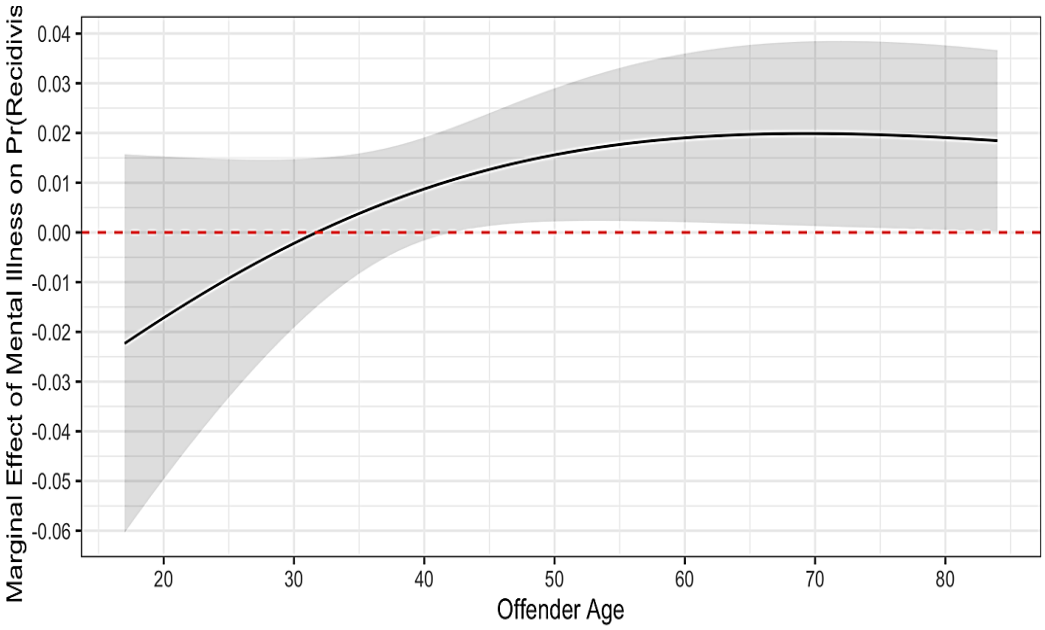


Figure 4.16

Marginal Effect of Mental Illness on the Probability of Offender Recidivism by Age



Nevertheless, the small but increasing effect of mental illness in older offenders pointed out an important direction for future consideration in practice. If the effect strength increases in the future, crime prevention might be focused on helping older people therapeutically deal with their mental illness before criminal behavior develops. Otherwise, this finding might inspire a future direction for recidivism theories.

CHAPTER FIVE: CONCLUSIONS

Overview

The study found that there was a statistically significant but indirect relationship between successful rehabilitation and recidivism among offenders. Successful rehabilitation was associated with increased reentry resilience so that recidivism rates among released inmates were low. Failure in rehabilitation would lead to higher recidivism rates. Meanwhile, the relationship between successful rehabilitation and recidivism with demographic factors was opposite—that is, proportionately in certain demographic characteristics and inversely in others.

The study intended to answer four research questions focused on the relationship between recidivism rates of released inmates and mental illness (RQ1) associated with their gender (RQ2), age (RQ3), and race (RQ4). Based on the sample of 40,111 inmates released in 2016 and 2017 from a TDCJ dataset, recidivism was not associated with mental illness and was differently associated with the three demographic elements (Table 5.1).

Hypotheses

The hypotheses for this study were:

RQ1: *Was there a relationship between recidivism rates associated with mental illness?*

- **$H_0$1:** There was not a statistically significant relationship between *recidivism* rates and mental illness.
- **H_a1:** There was a statistically significant relationship between *recidivism* rates and mental illness.

RQ2: *Was there a relationship between recidivism rates associated with gender?*

- **$H_0$2:** There was not a statistically significant relationship between *recidivism* rates and gender.

- **H_a2:** There was a statistically significant relationship between *recidivism* rates and gender.

RQ3: *Was there a relationship between recidivism rates associated with age?*

- **$H_0$3:** There was not a statistically significant relationship between *recidivism* rates and age.
- **H_a3:** There was a statistically significant relationship between *recidivism* rates and age.

RQ4: *Was there a relationship between recidivism rates associated with race?*

- **$H_0$4:** There was not a statistically significant relationship between *recidivism* rates and race.
- **H_a4:** There was a statistically significant relationship between *recidivism* rates and race.

RQ5: *Was there a relationship between recidivism rates associated with mental illness and gender?*

- **$H_0$5:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of gender.
- **H_a5:** There was a statistically significant relationship between *recidivism* rates and mental illness among offenders of gender.

RQ6: *Was there a relationship between recidivism rates associated with mental illness and age?*

- **$H_0$6:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of age.
- **H_a6:** There was a statistically significant relationship between *recidivism* rates and mental illness among offenders of age.

RQ7: *Was there a relationship between recidivism rates associated with mental illness and race?*

- **$H_0$7:** There was not a statistically significant relationship between *recidivism* rates and mental illness among offenders of race.
- **H_a7:** There was a statistically significant relationship between *recidivism* rates and mental illness among offenders of race.

Discussion

Demographic Context

There had been no gender and age effects on the recidivism probability for offenders varying with their mental illness. However, evidence had been observed on the effect of the three demographic factors—gender (male only), age (younger only), and race (White only)—on the recidivism of released offenders during follow-up years.

Historical Contexts

The informational limitations of the 2016-2017 TDCJ dataset—specifically, missing data—reflected the institutional limitations of data gathering and reporting from a policy perspective. The imprisonment policy in the United States came into law with the Three Prison Act of 1891 (NIC, 2022), which was 115 years after the 1776 Declaration of Independence and 103 years after the ratification of the Constitution of the United States. However, the first recidivism report came out only in 2011, which was 120 years after the Three Prison Act of 1891. The report was the first publicly disclosed report in American history, and it did not come from the Federal Bureau of Prisons. Instead, it came from a private company—The Pew Center on the States. Moreover, the Pew Report covered inmates released in 2008 only (PCS, 2011), which implied an absence of recidivism data in the United States for 117 years (1891 to 2008).

Table 5.1

Summary of Findings

RQ	Findings	Hypothesis
1	Mental illness had no significant effect on recidivism.	Null
2	Male offenders were more likely than female offenders to recidivate.	Alternate
3	Recidivism probability was reduced with offender age increase.	Alternate
4	White offenders were most likely of the races to recidivate.	Alternate
5	No gender effect on recidivism variation with mental illness	Null
6	Weak race effect on recidivism variation with mental illness	Alternate
7	No age effect on the recidivism probability to vary with mental illness.	Null

Therefore, the incompleteness of the 2016-2017 TDCJ dataset was essentially a product of this long history of unmonitored rehabilitation and recidivism outcomes in the United States. This meant that policy-level implications existed in the way data were being reported in the United States and specifically in the State of Texas. While the issue of recidivism reporting had been addressed already at least in the 2016-2017 TDCJ dataset, the exclusion of mental health data in this dataset implies a policy-level reporting restriction that limited, instead of supporting, empirical endeavors in uncovering barriers in optimizing pre-release rehabilitation outcomes and post-release recidivism outcomes, such as the inmates' mental health at the time of release.

Conceptual Contexts

Literature exploring the theoretical dimensions of recidivism and rehabilitation of offenders in the United States had been robust and continued to flourish as lately as 2020 (e.g., Butters et al., 2020; Stefanovska, 2018; Wallace & Wang, 2020). Theories like SPT, GST, and Deterrence Theory (Butters et al., 2020; Wallace & Wang, 2020) were equipped to explain the etiology of criminal offending, and thus provide insight into the

complex dimensions of post-release recidivism in the United States. Such theories as the Theory of Deprivation, the Importation Theory, and the Theory of Differential Association (Fitz, 2020; Stefanovska, 2020; Stefanovska, 2018; Wang et al., 2021) could significantly explain rehabilitation and accomplish so using models like the RNR Model (Garritsen et al., 2022; Viglione, 2017). All these theories and models have conceptual reaches that could effectively address the rehabilitation and recidivism outcomes of imprisonment in the United States.

Recidivism, Mental Illness, and Demographic Factors

Research Question 1: Outcomes Associated With Mental Illness

The study found no significant effect of mental illness on offender recidivism after three years of follow-up. Mental illness and lack of mental illness had an equally significant effect on offender recidivism. The finding did not support the assumptions in GST and deprivation theory that mental illness represented a driving factor in offender recidivism (Agnew, 2001; Wallace & Wang, 2020). This divergence in outcomes might be inferred as a consequence of the significant control of mental illness upon the release of offenders in the dataset. If mental illness was controlled when OMIs were released, a higher likelihood existed that offender recidivism would closely reflect the success level of prisoner rehabilitation during imprisonment, which the study observed. Conversely, uncontrolled mental illness would increase offender recidivism, which was not observed in this study. Therefore, this result implies mental illness in offenders released did not interfere with whatever level of success in rehabilitation during their imprisonment period. However, because of the unclear understanding of the PUHLES Psych Scores and

codes in this study, the inference on the control of mental illness cannot be ascertained or verified.

Research Question 2: Outcomes Associated With Gender

The study found a direct association between rehabilitation success or recidivism rates and gender. However, the likelihood of a significant effect of gender was associated only with the male gender and insignificantly so with the female gender. This distinction of the male gender as an influential factor in offender recidivism reflected findings in past literature (e.g., Antenangeli & Durose, 2021; Miller & Marshall, 2018). Therefore, this study reaffirmed the consistency of the role of the male gender in increasing offender recidivism. Yet, the implication of external factors exerting influence on male characteristics in the community cannot be ruled out because recidivism occurred after release with incarceration factors already less influential in the male effect on recidivism.

Released females appeared to be directly associated with rehabilitation success rate while the released male was directly associated with recidivism rate. However, the relationships roughly approximate the distribution of males and females in the prison population, not only in Texas but also across the United States. The very strong (more than seven times) predominance of the male population over the female population in the 2016-2017 dataset from the TDCJ reflected the male-female ratio of the incarcerated population across the United States (Carson, 2021). This meant that the rehabilitation success among males and females under the TDCJ before their releases in 2016 and 2017 reflects relative comparability and apparent consistency. Therefore, when the TDCJ released these offenders from incarceration (males and females alike) experienced a comparable level of rehabilitation success. The lack of adequate mental health data in the

dataset, particularly in 2016, prevented the study from interpreting any association between mental health status at pre-release and the success of rehabilitation programs concerning the offenders' gender.

As indicated above, the study's outcome indicated the influence of extra-incarceration factors that might have been influential in increasing the recidivism rates among males over females. The population in Texas, which slightly consisted of more females than males (United States Census, 2022), could provide insight into these factors. Therefore, there seemed to be some factors in the Texan community that prevented females from committing criminal offenses while encouraging males to commit crimes. However, determining these factors was beyond the scope of this study. Nevertheless, the study confirmed that gender had been associated with a successful rehabilitation rate, which was relatively comparable between genders, and with a recidivism rate, which was skewed towards males and away from females. Potential mental health factors might have contributed to weakening any resilience gained from the rehabilitation success inside the incarceration facilities of the TDCJ. Female factors included a complex emotional response to strain, which did lead to offending (Manasse et al., 2020), and, thus, prevented them from re-offending after release.

The higher recidivism rates among males released in 2016 and 2017 also indicated that, while rehabilitation had been a success in general, the resilience required to survive in the community remained unachieved upon release, considering the statistical fact that more males tended to commit crimes in the Texan community than females. Released males failed to achieve adequate resilience upon release in 2016 and 2017 which would see them through the follow-up years of 2017, 2018, and 2019. Therefore,

some form of resilience assessment before the release of offenders did not exist in the Texan criminal justice system. Yet, resilience determination before release from incarceration might not be possible until the released offenders had gone through the challenges of societal reintegration that required them psychological and behavioral resilience (e.g., Attami et al., 2020).

Thus, data from parole officers involved in assessing released offenders might provide some understanding of these extra-incarceration factors of recidivism, particularly those linked with gender differences, such as the general tendency of females not to commit a criminal offense in Texas, as evidenced in the higher ratio of females in the Texan community and lower ratio of females incarcerated. Garcia-Hallett (2019) implied that the discrimination commonly inflicted on women (e.g., those of color) in the community and prison could increase their resilience once released back into the community. However, it was unknown whether females did not dominate specific crimes (e.g., property crimes), as noted overseas (e.g., Chu et al., 2021; Estrada et al., 2019).

Research Question 3: Outcomes Associated With Age

The study found a direct association between rehabilitation success with recidivism rates and age. Older age seemed to be directly associated with rehabilitation success (in terms of acquired resilience) during three years of follow-up while recidivism rate was directly associated with younger age. However, the level of resilience acquired through the rehabilitation programs could not be determined and is beyond the scope of this study.

However, the difference in their resilience appeared to influence the recidivism outcomes among this sample of released inmates. The high rate of recidivism among the

younger inmates in the 2016-2017 dataset was significantly higher than among older inmates. Yet, this age difference appeared consistent with the historical recidivism rates among younger offenders in Texas and the United States (Carson, 2021; United States Census, 2022).

Therefore, while the study confirmed the association between pre-release rehabilitation success and post-release recidivism rates and gender, rehabilitation success appeared to be lower among younger inmates than older inmates. Mitchell and MacKenzie (2006) explained that the stabilization of lack of self-control after early childhood among younger-age inmates, which caused resistance to rehabilitation interventions later on, might explain this phenomenon. Consequently, recidivism showed a significantly higher rate among younger inmates than older inmates.

Research Question 4: Outcomes Associated With Race

The study found a direct association between successful rehabilitation with recidivism rates and race. However, a strong significant association was found only in Whites, which was twice stronger as non-White races had no significant effect on offender recidivism. Thus, the non-White effects were significant but relatively weaker.

The race differences in the outcomes did not show similar patterns across the United States. The highest representation among Hispanics and the least among Blacks in the released inmates in 2016 and 2017 indicated better rehabilitation successes among Hispanic inmates in Texas than any other race. This interpretation appeared to be supported by the racial distribution of prisoners in Texas, which was dominantly Whites (United States Census, 2022), and across the United States, which was dominantly Blacks (Carson, 2021). Hispanics were always in the middle-sized population.

Conversely, White inmates in Texas appeared to be most resistant to rehabilitation efforts. Their dominant size in the prison population in Texas failed to translate into the racial distribution of those released in 2016 and 2017. Meanwhile, Black inmates appeared to be consistent in their minority-defined prison population and release distribution in the study period. The recidivism data in this study confirmed this interpretation. Whites had the highest recidivism rate, which confirmed their inherent resistance to rehabilitation efforts. Their rehabilitation resistance seemed to allow them to gain only low resilience from the rehabilitation programs, resulting in their highest recidivism rate after release. Unable to benefit fully from their rehabilitation activities, the White inmates failed to survive the challenging conditions of their reintegration, motivating them instead to commit new crimes.

In contrast, the openness to rehabilitation among Hispanics and acquired resilience might have led to a lower recidivism rate than those among Whites even when carrying the heavy "burden of their criminal history" (Paat et al., 2017). This characteristic of the Hispanic race remains unobserved empirically in prison and recidivism studies. Thus, this study opened a line of inquiry that might be productively pursued in the future.

Overall Outcomes Associated With Individual Demographic Factors

Overall, the study found a significant but indirect relationship between pre-release rehabilitation success and post-release recidivism. Demographic factors significantly associated with rehabilitation success included female gender, older age, and other race. Meanwhile, Demographic factors significantly associated with high recidivism included male gender, younger age, and White race.

Recidivism and Mental Illness With Individual Demographic Factors

As early as the later part of the twentieth century, incarceration literature in the United States seemed to associate incarceration with mental health deficiencies or even disabilities. Baloch and Jennings (2018) observed noted a report from the Department of Justice on the presence of mental disability in at least half of the prison population in the United States. These mental disabilities were primarily cognitive and psychosocial.

Research Question 5: Outcomes Associated With Mental Illness and Gender

The study found no significant gender effect on the probability of offender recidivism among patients with mental illness. This means that maleness or femaleness did not affect the recidivism of offenders released in the dataset used. This finding implied that the driver for recidivism among male offenders was not a mental illness. Instead, male offenders without mental illness made sane decisions to commit crimes after their release. Moreover, external factors that influence recidivism among male offenders played a potentially stronger effect than mental illness.

Conversely, some studies (e.g., Bessler et al., 2018; Kim et al., 2016) pointed out factors that might have played in the high recidivism among male Texan offenders in this study. These factors, which might not be the exact factors involved but more specific male-related ones, included childhood maltreatment, which had led to mental burdens (e.g., behavioral disorders, emotional dysregulation, and major depressive disorder) that might have increased their recidivism rate. Unresolved fully to the point of conferring male offenders with high resilience upon reintegration, these mental health factors among males might have countered the gains of rehabilitation in the next three years after their release.

Research Question 6: Outcomes Associated with Age and Mental Illness

The study found no age effect involved in offender recidivism with mental illness. However, with the small trend observable, the effect of mental illness on offender recidivism increases slightly but insignificantly with age. While mental challenges associated with childhood abuse might have strongly influenced recidivism among younger offenders without mental illness, among those with mental illness, age-associated changes appeared to increase among older offenders.

The consistently high recidivism among younger inmates in this study, the State of Texas for years, and across the United States (Carson, 2021; United States Census, 2022) indicated low resilience gained in the rehabilitation programs of the State and the entire nation in this age group. Psycho-emotional maturity might have played a strong influence in this age difference, assuming comparability of their mental health factors.

Li et al. (2022) observed an increasingly shortening time gap for recidivism among youth offenders based on a study in Harris County, Texas. These young parolees had experienced repeated reincarceration before reaching the age of 18 years. In these cases, reincarcerated inmates reported higher levels of anger, irritability, and substance use (alcohol or drug). This strained mental state indicated poor rehabilitation outcomes and low resilience acquisition in the previous incarceration, which readily slipped them into criminal behaviors after parole. In contrast, Li et al. (2022) noted far longer time gaps among youth parolees who went through mental conditions, like anxiety, depression, and somatic symptoms.

Other empirical evidence (e.g., Bessler et al., 2018; Hong et al., 2020; Kim et al., 2016; Veeh et al., 2018) confirmed that incarcerated delinquents could have experienced

childhood maltreatment, which led to some forms of mental illness (e.g., behavioral disorders, emotional dysregulation, major depressive disorder, and low resilience) and higher recidivism rates. However, while these studies pointed out higher recidivism among adult probationers who used to be incarcerated juveniles, the lower recidivism rate among the older inmates in this study indicated that released adults were non-delinquent offenders and did not have the mental health burden that the younger age group had.

The literature identified several factors after release that could increase recidivism among offenders without mental illness, which were expected to worsen among older OMIs. Lares and Montgomery (2020) identified these factors to include loss of ties to the community and loss of ties with family and friends, which had led older offenders to consider reoffending. However, the insignificant effect of mental illness on older offenders observed in this study implied that these social networks continued to exist at least among the older offenders in the dataset. In this sense, the study indirectly confirmed the value of social ties for increasing resilience among older parolees against future reoffending.

Research Question 7: Outcomes Associated With Race and Mental Illness

The study found an interesting weak race effect involving recidivism and mental illness in African American offenders. This finding means that African Americans OMIS had a weak effect in driving recidivism. Conversely, Whites and Hispanics with mental illness showed no effect on offender recidivism. These findings seemed interesting because White OMIS had a significant effect on recidivism. Therefore, different factors found in African American OMIs, which were not found among White OMIs, caused the weak effect on recidivism.

The racial differences among inmates released in 2016 and 2017 in Texas offered a unique study of rehabilitation responsiveness and resistance. From a mental health perspective, assuming that all the races were subject to relatively similar negative factors, Hispanics and slightly followed by Whites with mental illness seemed to be the easiest to develop resilience from recidivism. Their potentially higher openness to rehabilitation in incarceration, as opposed to the seeming relatively stronger resistance among African American OMIs to rehabilitation, could explain this resilience. Moreover, the focus of some studies (e.g., Marbley et al., 2016; Unnever & Cullen, 2011) on the "'problem" of Hispanic rehabilitation represented two stereotypical assumptions about Hispanics: (1) Hispanics are prone to violence (Unnever & Cullen, 2011), and (2) high recidivism or resistance to rehabilitation (Marbley et al., 2016).

However, the present study observed otherwise. Hispanics dominated the racial profile of those released in 2016 and 2017, indicating their openness to rehabilitation and apparent success in developing resilience after release, as evidenced in their lower recidivism rates at least compared to Whites. As a sideline, the study contributed to the argument over the death penalty for Hispanics and minority offenders (e.g., Unnever & Cullen, 2011), as Whites supported (e.g., Unnever & Cullen, 2011), as an unnecessary waste of highly reformable lives if such life-taking punishment comes into law. Unfortunately, some racial studies among offenders (e.g., Veeh et al., 2018) found no interaction between Whites and Blacks, recidivism, and mental health. This type of racial study appeared to be poorly represented in literature. Therefore, the racial difference invites future studies to delve into the possible interactions between these factors.

Nevertheless, the high recidivism among Whites after release, as observed in this study, might be related to persistent mental health concerns. Yakovchenko et al. (2022) and Bebbington et al. (2021) observed that White parolees with their high release rates in their study seemed to associate with more mental health problems requiring further treatment outside incarceration despite their older age. These observations might explain the very high recidivism rate among Whites in this study. Similarly, this empirical evidence might also explain why fewer Whites left the Texas prison system in 2016 and 2017. Therefore, empirical evidence seemed to imply that the current rehabilitation programs managed to detect a lack of rehabilitation success and low resilience levels among Whites, as observed in this study. In effect, the racial distribution of Texas probation and recidivism seems to reflect the empirical evidence, even if that consistency did not reflect racial distribution across the United States.

This study observed that the mental health implications of these findings appeared to be unclear apart from simulating the findings in the racial data. Because the limited studies focused primarily on the ethnicity configuration of Hispanics and non-Hispanics, it was difficult to determine the mental health implications of ethnicity in this study. Therefore, the study could only deduce from the evidence on White, Black, and Hispanic inmates to explain these implications. Nevertheless, in studies (e.g., Hong et al., 2020) that involved Hispanic-defined ethnicity configuration, largely limited implications could be made. For instance, Hong et al. (2020) found truancy recidivism associated with Hispanic youths with mental health problems. However, this finding failed to reflect the implications of ethnicity on male and older inmates and, thus, was highly limited.

Implications

The Need for Rehabilitation Programs Addressing Male Risk Factors

The study reaffirmed a recurring thread in the literature that the male gender had a direct and significant effect on offender recidivism in the sense that being female would not contribute to offender recidivism. Therefore, inmate rehabilitation programs must be able to directly address male characteristics that had a direct effect on recidivism. The objective must be to reduce male-specific factors that have a significant effect on offender recidivism.

Better Adjustment to Freed Life Among White OMIs Than African American OMIs

The study found higher recidivism among White offenders after release than White OMIs, indicating that mental illness seems to help White offenders to adjust to life outside incarceration. In contrast, African American OMIs had slightly poorer post-release adjustment behavior than African Americans without mental illness. Therefore, the recidivism trajectories between White OMIs and African American OMIs were slightly opposite. This situation invites modifications in the post-release support for African American OMIs to neutralize internal and external factors leading to recidivism among offenders with mental illness.

The Need for Rebuilding Social Ties for Older OMIs

The study found a slight but increasing pattern of age effect on recidivism for older OMIs. Lares and Montgomery (2020) implied this pattern was a consequence of the loss of social ties among older OMIs after incarceration. Although insignificant in the study's dataset, the underlying cause of this insignificance could be the continued

presence of social links for older OMIs in the dataset. Therefore, an implication is for the need to address potential perils associated with losses in social connections after parole. In the absence of this social link for some older OMIs, post-release support must provide programs that could reestablish these social links and, if such would not be possible, establish new ones at least with sectors in the community that support successful reentry of released offenders.

The Need for Rehabilitation Programs Addressing Younger-Age Risk Factors

The study observed a perceivable low resilience among younger inmates. However, it was unclear if such low resilience involved rehabilitation resistance or unfocused rehabilitation programs. Regardless, it was evident that the current rehabilitation programs failed to provide high resilience to the released inmates in 2016 and 2017. The low resilience among released younger-age inmates represents a common statistical fact not just in Texas but also across the United States, making it a prevalent problem. Therefore, resolving this rehabilitation failure among inmates younger than age 36 must be addressed at the policy level so that a target rehabilitation must be established solely for this age group. This alternative rehabilitation program must address known risk factors within the age group and any population-relevant risk factors that might be identified through a study of this age group in the unique context of the Texas penitentiary system and cultural diversity. The high recidivism rates in this age group could not be addressed and stayed unaddressed using the existing rehabilitation programs.

Limitations

One of the key limitations of the current study is the unpredictablity of the influence of ethnically undefined or undecided inmates. The definition of “White” in the

TDCJ's classification system in the study remained unspecified, particularly about how the United States Census defines the term in their surveys. However, based on the methodology used by the Bureau of Statistics in conducting recidivism studies (e.g., Carson, 2021), the study assumed and adopted the definition of "white" as "non-Hispanic white" and of "black" as "non-Hispanic black." Therefore, the study must assume that these definitions at least agreed significantly. However, an unaccounted portion of the sample population could not be known. A small portion (0.3%) of the inmates were "Undecided" over their ethnic preferences, comprising more than a hundred inmates. The term "Undecided" also implied a decision from the inmates to choose between being Hispanic or not instead of a clear parameter, such as ancestry if born American or place of origin if an immigrant. Although statistically small, their influence on recidivism outcomes across different demographic characteristics could not be anticipated.

Recommendations for Further Research

Further Study in Correctional Jobs-Associated Recidivism Outcomes

Because this study focused exclusively on the broader aspect of recidivism in the State of Texas, it could not provide information on the effectiveness of correctional jobs-related interventions within the TDCJ, premised on work deterrence theories (e.g., Wallace & Wang, 2020). This recommendation would allow a more job-specific understanding of the association between correctional jobs (e.g., construction, correction enterprises, work release, etc.) and recidivism rates for inmates released in 2016 and 2017, considering the existence of white-collar crimes that involved employees of private corporations. Knowledge of these outcomes would provide opportunities for fine-tuning

the TDCJ rehabilitation programs, particularly associated with correctional jobs in that inmates participated before their release.

Further Study in Correctional Programs-Associated Recidivism Outcomes

Because this study also focused exclusively on the broader aspect of recidivism in the State of Texas, it could not provide information on the effectiveness of correctional programs within the TDCJ. Most studies in the literature, including this study, considered these programs as a combined entirety, instead of being assessed individually to determine their independent effectiveness in rehabilitating inmates and supporting their acquisition of high reentry resilience.

This further study should allow a better understanding of the association between correctional programs (e.g., chaplaincy services, crime stoppers, employment, and job skills training, faith-based studies and activities, life skills training, literacy education, marriage training, mentoring, parent training, substance abuse education, support groups, etc.), both as a whole and individually, and recidivism rates for inmates released in 2016 and 2017 or more recent parolees.

Knowledge of these outcomes would provide opportunities for fine-tuning the TDCJ rehabilitation programs that inmates participated in before their release. However, this study must be conducted through in-house research initiatives among employees of the TDCJ to allow a higher familiarity with the rehabilitation program's contexts and common practices and some honesty, especially when the study aimed for institutional consumption of its outcomes.

Further Studies on Gender-Specific Factors Among Male Inmates on Recidivism

The high recidivism rate among male inmates in this study implied some underlying factors in gender differences remained unaddressed in the current rehabilitation programs in the TDCJ to provide high resilience among male offenders from recidivism. A further study on these male factors might help improve gender-specific modifications on the current program to further improve the resilience performance among male inmates after their release. Success in this correctional modification could further improve the reduction of recidivism rates in the state of Texas. The study might include a review of probation records for released offenders from 2016 to 2017 to ascertain these factors associated with their gender differences.

Further Studies on Recidivism & Mental Illness With PUHLES Definition

The current study recognizes the possibility of the control of mental illness upon offender release in the dataset used as an important factor in the lack of significant effect of mental illness on offender recidivism and contrary to prevailing theories on recidivism, including GST and deprivation theory (Agnew, 2001; Wallace & Wang, 2020). However, the current study could not verify whether the mental illness profile of the dataset was predominantly controlled or not because of the lack of information about the PUHLES codes associated with the dataset. The scores integrated into the study could not distinguish the continued presence of mental illness (uncontrolled) upon release. Therefore, the dataset might be further studied in future studies to decode the PUHLES data to determine the level of mental illness control in the dataset. The outcomes of these studies would help explain the lack of significant effect that mental illness had on offender recidivism in the dataset.

Further Studies on Gender-Specific Risk Factors Among Male Inmates

The present study reaffirms the resilient effect of the male gender on offender recidivism. This finding indicates that uniquely male characteristics might drive the gender's effect on offender recidivism. However, several studies (e.g., Freeman & Sandler, 2008; Vitopoulos et al., 2019) failed to find gender differences that had direct consequences on offender recidivism. Therefore, a need exists in determining these unique male characteristics so that prisoner rehabilitation programs might be designed to directly address or modify these male characteristics to reduce their recidivism effects. These needs include external factors that might interact with male characteristics leading to eventual recidivism. These studies might start with a systematic or integrative literature review to consolidate relevant findings in the last five or more years.

Further Studies on Gender-Specific Resilience Factors Among Female Inmates

The low recidivism rate among female inmates in this study implied some underlying factors that enabled female inmates to respond effectively to the current rehabilitation programs in the TDCJ. A further study on these female factors might help improve gender-specific modifications on the current program to further improve the resilience performance among female inmates after their release. Findings might also motivate a gender-specific approach in designing and implementing rehabilitation programs within the TDCJ. Success in this correctional modification could further improve the reduction of recidivism rates in the state of Texas. Moreover, the study offered a highly interesting subject both in theory and practice because of some Asian studies (e.g., Huang et al., 2020) indicating that male offenders tended to be more

resilient than females during and after incarceration, which starkly disagreed with the findings of the current study.

Further Study for a Method of Determining Pre-Release Resilience Status

The higher recidivism rate among males in this study indicates a potential lack of resilience among male offenders when released to the community in 2016 and 2017. An inability of the rehabilitation system to assess their resilience status at pre-release might be a result of a lack of methodology in doing so. This deficiency had been commonly unaddressed in current criminal justice literature.

Therefore, a further study, but preferably a larger empirical focus on this issue, to determine a method of assessing the resilience status of offenders scheduled for release would help in ensuring that those released to the community already had the necessary resilience to survive and be integrated into the community without committing new crimes. This method could also justify the postponement of an offender's release when their resilience level remained inadequate to prevent future recidivism. Parole postponement had a history in Texas either through the post-parole approval requirement, which allowed a one-year extension of stay in prison, or for complete programming (Deitch et al., 2021), which could include complete rehabilitation and passing a resilience assessment.

Alternatively, particularly in end-of-sentence situations, rehabilitation might continue after parole to ensure full rehabilitation and the development of high resilience for successful reentry while under parole supervision. This alternative offered more advantages to parole-approved inmates to avoid the incidents of deaths from COVID-19

in 2020 among those who stayed in prison. Thus, the TDCJ might need to establish a special facility for this purpose.

Moreover, although this recommendation was directed to the TDCJ as an empirical initiative in the State of Texas, it did not limit the practice of rehabilitative care in the State of Texas for the incarcerated population. The evident deficiency of this methodology in practice across the United States indicated that the rehabilitation system across the United States would benefit from the development of this methodology.

Further Study on the Juvenile Delinquency Background of Adult Parolees

The significantly lower recidivism rate among the older age group in the 2016-2017 dataset indicated a lack of juvenile incarceration history, which studies (e.g., Bessler et al., 2018; Hong et al., 2020; Kim et al., 2016; Veeh et al., 2018) linked to higher recidivism rates among adult probationers. Therefore, studying further this dataset to determine their juvenile incarceration history could dispute or further support these existing studies. Findings from this further study could also contribute to a clear profile of prior juvenile incarceration among adult inmates in Texas at least for those released in 2016 and 2017.

Further Study on the Rehabilitation Resistance Factors Among White Inmates

The present study indicates some signs of resistance among White inmates to the rehabilitation programs of the TDCJ, which might have led to their low resilience upon release and high recidivism after release. This White behavior appeared interesting because of their less dominant presence in the prison systems of the United States across every state, which observed Black dominance. Therefore, a further study on the resistance factors among White inmates would offer insights into the psychological and

behavioral characteristics of Whites in Texas. Results could also help in designing rehabilitation programs that would increase cooperation and adoption from White inmates.

Further Study on the Resilience Capacity of Hispanics During Rehabilitation

The study observed the seemingly superior adaptive traits among Hispanics towards rehabilitation efforts, which allowed them to acquire high resilience before their release and sustained them in their reintegration in the three years after their release from incarceration. This finding appeared to be unique in literature, which often focuses on White resilience and Black recidivism. Understanding the enabling traits of Hispanics could enrich the understanding of the enabling factors of rehabilitation, especially among Hispanics.

This knowledge could help in enhancing rehabilitation programs to use these enabling factors to further improve Hispanic outcomes while providing potential materials for improving the rehabilitation potential of other races. Therefore, further study would be highly beneficial to theory and practice. Specifically, these studies might focus on exploring state profiles in the United States to determine societal factors outside prisons that might have contributed to the openness of Hispanics to rehabilitation and their ability to acquire reentry resilience after their release from incarceration.

Conclusion

The study originally aimed to determine the interaction of rehabilitation success and recidivism with demographic factors and mental health. However, the lack of mental health assessment in the 2016 dataset resulted in a decision to analyze the results with secondary literature rather than with incomplete datasets. Nevertheless, higher

rehabilitation success had been largely associated with the female gender, the older age group, and Hispanics. In effect, opposite outcomes described high recidivism rates, including inmates of the White race. Negative outcomes were almost invariably associated with mental deficiencies upon release.

Consequently, the study noted two policy implications for practice, particularly the need for rehabilitation programs that address risk factors for younger inmates, and the enhancement of the TDCJ presentation of mental health data for research purposes. It acknowledges two study limitations, specifically the limits of the dataset used and the unknowable influence of the ethnically undecided inmates while recommending eight areas for future studies.

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