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Criminal Thinking, Age, Psychological Well-Being, and Recidivism among Recently Released Female Violent Offenders

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Abstract

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Released Female Violent Offenders

by

Nyasia Belfrom

MA, Walden University, 2017

BS, Texas State University, 2015

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Forensic Psychology

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Abstract

High rates of incarceration among female inmates as well as high rates of recidivism characterize the U.S. justice system. Though some research has been conducted on gendered differences between prisoners, a gap existed in the application of criminal thinking theory for female offenders following their release. The purpose of this quantitative research study was to analyze the relationship between criminal thinking, age, psychological well-being, and recidivism among recently released female violent offenders in the region of Central Texas through the use of Yochelsen and Samenow's criminal thinking theory. The sample for this study consisted of $N = 98$ female participants in the study of which 70 were ex-offenders and 28 were not ex-offenders. Participants completed the Psychological Inventory of Criminal Thinking, the measure of Psychological Well-Being, and a short demographic survey. The results of this study found a significant association between age and offender type as well as a significant association between education and likelihood of offending, with less educated participants being more likely to commit the crime. Results also found a negative relationship between mental health well-being and likelihood to become an offender. The higher the educational level of individuals, the less likely they were to commit crimes. In efforts to promote positive social change, prison stakeholders should work towards salvaging their institutions and minimize the perpetuation of crime in a setting designed to eliminate crime. The importance of reengineering the prison system could potentially result in positive social change as it would make it more useful for offenders and society as a whole.

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Dedication

I dedicate this dissertation to my amazingly beautiful and talented daughter, Nyla.

Without you, mommy wouldn't have been able to see the light at the end of the tunnel.

Being a full-time single mommy and employee was everything but easy. I hope this

proves to you that you can be anyone and accomplish anything in life that you set your

mind and heart to. You are the best part of me.

Acknowledgments

I would love to take the time to acknowledge my amazing mentors, Dr. Barbara Palomino de Velasco and Jana Price-Sharps for pushing me to jump that finish line. You two held my hand throughout this journey and gave me the tough, but gentle love that I needed.

Table of Contents

iii

List of Tables

List of Figures

Chapter 1: Introduction to the Study

In 2017, the United States incarcerated about 219,000, a number that had increased nearly 50% since 2000, and almost 700% since 1980 (Seibold & FNI isenberg, 2018). Moreover, the incarceration rates for women have continuously risen in comparison to men, with women as the fastest expanding population incarcerated in the United States (Carson & Anderson, 2016). Indeed, the United States had the second largest female prison rate in the world (64.6 per 100,000 people in the United States), second only to Thailand (66.4; Krabbe & van Kempen, 2017).

While both men and women who have been incarcerated tend to come from low educational and socioeconomic status, as well as have higher rates of childhood and adult victimization levels and increased rates of mental illness and substance abuse, women had a comparatively shorter criminal history and lower level of criminality than men (Franke et al., 2019). Yet, prisons have tended to treat women and men in the same way, but the focus on both the prison system and theories of criminality are rooted in masculinity. In fact, female prisoners who were in prison often had different needs – physical, emotional, and mental – which often have necessitated different treatment than that given to male prisoners (Krabbe & van Kempen, 2017). The fact that prison systems were male-oriented, in combination with the different needs of female prisoners, raises questions as to the efficiency of current systems. In addition, while prison policy worked along certain lines of logic – including serving a given sentence, rehabilitation, resocialization, and perhaps even deterrence, the way to achieve these specific goals were often different when dealing with men or women.

When women are released from prison, there are likewise significant discrepancies between them and their male counterparts. Researchers indicated that the recidivism rate for both men and women reentering the community was significant, with almost two-thirds of released individuals rearrested within 3 years, and three-fourths rearrested within 5 years (BJS, 2014). However, the reasons for recidivism were different between the sexes. Van Ginneken (2015) found that incarcerated women had more self-reported mental health and emotional problems related to prison, which had been found to not only affect offenders' psychological well-being in and out of prison (including the risk of depression, substance abuse, and suicide), but had also been linked to a reduction in recidivism post release (van Ginneken, 2015; Vrabel et al., 2019).

Recidivism has also been linked to criminal thinking, which involves two central processes within an offenders' thoughts: reactive and proactive criminal thinking. The former involves reactions, indicating weak control over impulses and emotions, while the latter suggested the ability to plan and be deliberate (Walters, 2107). Both of these thought processes are important in gauging the likelihood of an individual to commit antisocial behavior in the future. Researchers indicated that criminal thinking was different for women and men, adhering to the gendered pathways model, which suggested that social and traumatic experiences such as relationships, mental health, physical and sexual abuse, and substance misuse were more significant in the development of female offenders than males (Turanovic et al., 2015). My research was aimed at analyzing the relationship between criminal thinking, age, psychological well-being, and recidivism among recently released female violent offenders. The remainder

of this chapter provides an introduction to the dissertation as a whole. The next section offers a background on the major ideas of this topic, as well as the related literature. Next, a problem statement is offered, followed by the purpose statement. This study's research questions, as well as the concomitant hypotheses, are presented next, along with the theoretical framework for the study, nature and significance of the study, and the definitions, assumptions, delimitations and scope, and limitations of the study. Finally, this chapter ends with a summary.

Background

Criminal thinking and recidivism have been linked to one another in the extant literature. Gavel and Mandracchia (2016) defined criminogenic thinking as the patterns of cognitive events that were associated with criminal behavior. They explained that these cognitive events allowed the development and maintenance of patterned criminal behavior and addressed a gap in the literature related to the understanding of the specific processes involved in criminogenic thinking and the development of criminogenic thinking specifically. Criminal thinking was identified as important because it was a major risk factor for criminal behavior among offenders (Vaske et al., 2016). In addition, in a study by Walters and Lowenkamp (2016), the researchers used the Psychological Inventory of Criminal Thinking Styles (PICTS) to predict recidivism in both male and female released federal offenders. The researchers determined that the PICTS General Criminal Thinking score was able to predict recidivism in both males and females in terms of providing diagnostic information beyond what was provided through the use of a comprehensive risk assessment procedure (Walters & Lowenkamp, 2016).

Vaske et al. (2016), on the other hand, explored the issue of gendered differences in criminal thinking. The researchers explained that there was a lack of consensus in research on whether there were gendered differences in criminal thinking and whether females had the same level of criminal thinking as males. The results of the Vaske et al. (2016) study were that 26% of the items analyzed were different between genders, but that male and female probationers were just as likely to exhibit antisocial attitudes. Based on these findings, Vaske et al. (2016) concluded that it was important that researchers did not assume that criminal thinking assessments were gender-neutral or that similar results would be yielded between genders.

Further, there have been crucial differences found between former inmates in their pathways to, experiences in, and release from prison on the basis of factors that included age and mental health. Within prison, van Ginneken (2015) explained that there was evidence that imprisonment caused a criminogenic rather than a rehabilitative effect and that an individual's prison experience may have affected their outcomes post release. Based on the results of interviews, the researcher concluded that even among prisoners in the same prison environment, there were variety of patterns and differences in psychological adjustments. Gemeda (2017) explained that serious crimes and recidivism may have been directly related to psychopathic personality traits. Furthermore, psychopathic personality traits may have also helped to explain the effect of antisocial behaviors and mental health and its relation to recidivism.

Age had also been shown to significantly impact how criminal thinking and other risk factors and experiences affected the likelihood of recidivism. Walters (2020) found

that age significantly moderated the relationship between criminal thinking and perceived expectations of legal punishment and age had been used as a predictive variable in some models aimed at predicting recidivism within the U.S. criminal justice system. However, other research has revealed no significant variation in the association between recidivism and criminal thinking when demographics were not treated as control variables. Thus, there is a lack of clarity in existing literature concerning how age impacted recidivism and recidivism risk factors (Benson & Harbison, 2020; Folk et al., 2018; Vaske et al., 2016; Walters, 2020).

Researchers have found that any paradigms for understanding recidivism, or models for reintegration into society, were premised on male understandings and ignored the differences that men and women developed, criminally or otherwise, differently (Gobeil et al., 2016). Crewe et al. (2017) noted that there was a lack of literature related to the practices and effects of imprisonment on women, and that there were distinct differences that existed between male and female prisoners, particularly differences related to the problems experienced by each group. The issues that were identified as most important among women, when compared to male inmates, were loss of contact with family members, power, autonomy and control, and psychological well-being and mental health and issues related to trust, privacy, and intimacy.

Prior research had linked recidivism and criminal thinking among various populations of previously incarcerated individuals. However, there remains a lack of understanding pertaining to associations between age, gender, criminal thinking, and recidivism, and the intersections of these factors among currently or previously

incarcerated women (Walters, 2018; Walters, 2019). This study addressed the gap in the literature, thereby contributing more knowledge to field of female-based offenders and hopefully aid in creating female-centered models of reintegration.

Problem Statement

The general topic that was explored in this study was the criminal thinking and recidivism of women incarcerated in the United States. Researchers had suggested that women in prison reported emotional and mental health problems that may have been related to the prison environment (Caulfield, 2016; van Ginneken, 2015). The mental health and psychological wellbeing of incarcerated individuals is important because mental illness, including the reduction of feelings of despair and isolation were important in reducing the risk of suicide, depression, and substance abuse among prisoners as well as reduced recidivism post-release (Molleman & van Ginneken, 2014; Pimlott Kubiak et al., 2015; Scott et al., 2015; Scraton, 2016; van Ginneken, 2015; Vrabel et al., 2019).

The specific topic that was explored in this study was the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated female violent offenders that had been released from prison in the last 2 years using Yochelson and Samenow's criminal thinking theory as a predictor of recidivism (Folk et al., 2016; Pimlott Kubiak et al., 2015; Pantalone et al., 2018). There is a lack of literature on the use of criminal thinking theory and recidivism among violent female offenders; based on this gap in literature, additional research was needed to understand the relationship between recidivism, age, and criminal thinking among previously-incarcerated female offenders, particularly as gender, age, and criminal

thinking were all factors related to and potential predictors of recidivism (Collica-Cox &

Furst, 2018). While some literature existed on the use of criminal thinking theory as

related to recidivism, there was a lack of literature with a focus on the use of Yochelsen

and Samenow's criminal thinking theory and assessment on female offenders. Similarly,

although there were studies on gendered differences between prisoners, the gap existed in

the application of criminal thinking theory for female offenders after their release into the

community (Adams et al., 2017; Crewe et al., 2017; Walters & Lowenkamp, 2016).

Purpose of the Study

The purpose of this quantitative research study was to analyze the relationship

between criminal thinking, age, psychological well-being, and recidivism among recently

released female violent offenders through the use of Yochelsen and Samenow's criminal

thinking theory. Addressing this gap was important to understand the potential gender

differences and applicability of criminal thinking theory for females and how it related to

the recidivism of female offenders that had reentered the community. Additionally,

addressing this gap was important because in research on the criminal thinking of

offenders, female offenders were often overlooked, as was the impact of age (Link &

Oser, 2018; Pantalone et al., 2018; van Ginneken, 2015; Vaske et al., 2016). This study

also contributed to understanding the role of criminal thinking on the recidivism of

formerly incarcerated female violent offenders.

Research Questions and Hypotheses

The following research questions and hypotheses were developed to guide the

study:

Research Question 1 (RQ1): Is there a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

$H_0 1$: There is no statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

$H_a 1$: There is a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Research Question 2 (RQ2): Is there a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

$H_0 2$: There is no relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

$H_a 2$: There is a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Research Question 3 (RQ3): Is there a statistically significant association between the age of female offenders and the number of incarcerations?

$H_0$3: There is no statistically significant association between PICTS scores related to age and number of incarcerations.

H_a3: There is a statistically significant association between PICTS scores related to age and number of incarcerations.

Research Question 4 (RQ4): Is there a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

$H_0$4: There is no relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

H_a4: There is a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Theoretical Framework

The theoretical framework that was used in this study was based on Yochelson and Samenow's (1976; 1977) theory on criminal thinking. Criminal thinking theory, also referred to by researchers as criminogenic thinking, was the concept that criminals

thought differently and had different personalities than noncriminal (Yochelson &

Samenow, 1976; 1977). The three main categories of criminogenic thinking are

criminogenic thinking patterns, automatic errors of thinking, and problems in the thinking

process between idea and execution (Mandracchia et al., 2015). Researchers also have

suggested that there is a link between general thinking error and specific thinking patterns

that perpetuates problematic behaviors (Mandracchia et al., 2015). Understanding

criminal thinking is important because there was an association between recidivism and

psychopathic characteristics which was associated with criminogenic thinking

(Mandracchia et al., 2015).

Criminal thinking was useful and beneficial to this study to understand the

differences in results between offenders and nonoffenders. Criminal thinking could be

used to understand the nature of criminal cognition based on the context of incarceration

and how these may have been related to criminal behavior, particularly as related to

recidivism. Specifically, whether the environment of incarceration reinforced antisocial

behavior and criminal acts and how routines may have played a role in such behavior

(Morgan et al., 2015). There was limited literature available regarding the application of

Yochelson and Samenow's theory of criminal thinking (1976; 1977) to incarcerated and

recently released female violent offenders specifically. Therefore, this study also

contributed to the existing research by adding to the limited literature available.

Nature of the Study

I used a correlational cross-sectional research design, which was an appropriate

choice since the objective of the study was to measure variables and analyze them using

statistical analysis to explain phenomena (Mustafa, 2011). More specifically, this study used a set of research questions and associated hypotheses to be tested, consistent with quantitative psychology (Else-Quest & Shibley Hyde, 2016). In order to determine association of the results to the characteristics of female violent offenders, a control group was used that consisted of female nonoffenders.

This study explored the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated female violent offenders who had been released from prison in the last 2 years using Yochelson and Samenow's criminal thinking theory. Because this data was not currently available, the sources of data for this study included the criminal thinking assessment, the well-being assessment, and online flyer survey completed by participants. The Psychological Inventory of Criminal Thinking (PICTS) questions regarding reoffense and incarceration were used to measure past recidivism, and other questions were used to assess criminal thinking. PICTS was selected as a measure of recidivism because there was evidence that the PICTS General Criminal Thinking score was able to predict recidivism in both males and females (Walters & Lowenkamp, 2016). The Measure of Psychological Well-Being (MPWB) was the well-being assessment that was used (Choi et al., 2014). The MPWB was selected due its validity in relation to comparable instruments and the direct, succinct nature of the seven items included in the scale.

The primary target population for this study included the adult female violent ex-offenders in Central Texas. The ideal sample size for this population was 128 participants. The minimum sample size for this study was 82, which was computed using

power analysis. The required number of samples was determined through power analysis. Power analysis was conducted through G*Power software. The assessment was administered online once the participant accepted the terms of the study and gave informed consent agreement in the beginning of the survey. The online administration of the assessment allowed for standardization and removed potential bias associated with in-person administration. The platform that was used to administer the assessments was Survey Monkey. Survey Monkey was selected due to feasibility and the low-cost associated with the platform. Participants involved in this study were asked to complete a consent form and were informed of their ability to discontinue or refuse to answer any part of the assessments at any time. Due to the sensitivity of this data, the data collected in this study was kept in a password protected file on my computer. In responding to Research Question 3, participants were also asked whether they had reoffended at any time and how many times they had been incarcerated as measures for recidivism. Linear regression was used in this study to analyze the connections between measures from the assessment on criminal thinking and measures related to the questions on recidivism, to identify and statistically significant associations. Linear regression analysis was also used to identify statistically significant findings from the assessments as well as associations between the results of each assessment.

Definitions

Criminal thinking: A collection of intervening variables that can link crucial independent variables from core criminological theories to various categories of criminal conduct (Yochelson & Samenow, 1976; 1977).

Deterrence: Methods that help to discourage offenders from committing further criminal activity (Calvi & Coleman, 2000).

Ex-offenders: Persons who have been released from prison and have returned to the community (James, 2015).

Gendered pathways to crime model: This model posits that females are impacted by different factors than males in their development of offending. These factors include substance misuse, mental health issues, sexual and abuse, substance misuse, and relationship challenges (Chesney-Lind & Pasko, 2004).

Inmates: Any individuals who are confined in an institution for rehabilitation, typically prison (James, 2015).

Intersectionality: A theory that originated in black feminist thought, intersectionality considers multiple aspects of identity, difference, and inequality, including gender, race, class, etc., in the theoretical or analytical approach of the study (Else-Quest & Shibley Hyde, 2016).

Recidivism: The repetition of or the return to criminal behavior by the same person, which results in the offender's re-arrest, re-conviction, or return to prison (Chenane et al., 2014).

Reentry: A generalized term that is used to indicate issues, programs, and services that are connected to the transition that offenders experience when they move from prison back to their community (BJS, 2016).

Assumptions

There were several assumptions that undergirded this proposed study. The first assumption was that all the respondents would respond to the questionnaires openly and honestly. Moreover, there was an assumption that all participants would be able to understand the language and questions used in the online flyer survey. An additional assumption was that participants would have a personal understanding of factors that contributed to criminal thinking and/or recidivism. Finally, this study would proceed under the assumption that the survey instruments proposed in this study would measure validly and reliably.

Scope and Delimitations

There were several factors that delimited this study and its scope. First, the focus of the proposed study was on female ex-offenders in Texas, which excluded male ex-offenders, as well as offenders outside of this geographic location. Thus, the results of this study were generalizable to the population of adult female violent ex-offenders in the geographic region considered in the study. Second, the sampling of this proposed study relied on prospective participants who were willing and available to participate in the study. Third, this study was delimited to analyzing the concepts of criminal thinking, psychological well-being, and recidivism.

Limitations

A limitation of the study would be the generalizability of the results of the study to other populations as the sample would be restricted to an accessible group of recently incarcerated female violent offenders. However, a purposeful sample was calculated to

maintain the likelihood of the generalizability of the data. A minimum sample size had also been identified in consideration of maintaining the feasibility of the study. An additional limitation of this study was that there had not been a criminal thinking assessment designed specifically for women and there was a lack of consensus as to whether gendered differences existed in terms of criminal thinking, with evidence that criminal thinking assessments differed between males and females (Vaske et al., 2016). For this reason, the results of this study was specific to female offenders and can not necessarily be generalized to male offenders.

Significance

Applying Yochelson and Samenow's criminal thinking theory (1976; 1977), this study explored the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated female violent offenders that had been released from prison in the last 2 years using Yochelson and Samenow's criminal thinking theory. By analyzing the criminal thinking of and psychological wellbeing of recently released female offenders, this study added to the limited literature on female offenders and also contributed to the literature by investigating the connections between criminal thinking, psychological wellbeing, age, and gender as potential predictors of recidivism. Addressing this gap was important because in research on the criminal thinking of offenders, female offenders were often overlooked, as was the impact of age (Link & Oser, 2018; Pantalone et al., 2018; van Ginneken, 2015; Vaske et al., 2016). As reflected in the background section, there were similarly a lack of understanding and evidence related to the factors associated with criminal thinking among female offenders

and how these factors differed from those of male offenders (Crewe et al., 2017; Folk et al., 2016; Link & Oser, 2018; Pantalone et al., 2018; van Ginneken, 2015; Vaske et al., 2016; Walters & Lowenkamp, 2016).

In addition, the results from this study may help to inform policy related to the role of criminal thinking and psychological wellbeing on the risk of recidivism among previously-incarcerated women, as well as informed intervention programs aimed to reduce criminal thinking and recidivism among violent female offenders specifically. This was important given that the recidivism rate for both men and women reentering the community is significant, with almost two-thirds of released individuals rearrested within 3 years, and three-fourths rearrested within 5 years (BJS, 2014). Moreover, such results were crucial given the current paradigms used for understanding recidivism and the models for reintegration into society, which were premised on male understandings and ignored the differences that men and women developed, criminally or otherwise, differently (Gobeil et al., 2016). The results of this study helps bring to light the need for gender-specific interventions and approaches.

Summary

This quantitative study aimed to explore the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated female violent offenders who had been released from prison in the last 2 years (Folk et al., 2016; Pimlott Kubiak et al., 2015; Pantalone et al., 2018). Based on the gap in literature, additional research was needed to understand the relationship between psychological wellbeing and criminal thinking, age, and the recidivism of female violent

offenders, particularly as age, gender, and criminal thinking were all factors related to and potential predictors of recidivism (Collica-Cox & Furst, 2018). The theoretical framework used in this study was based on Yochelson and Samenow's theory on criminal thinking, and the group of interest in this study were female violent offenders in Texas. The proposed criminal thinking assessment used in this study was the PICTS, while the proposed well-being assessment was the MPWB. Chapter 2 will review the extant literature on the topics addressed by and in this study.

Chapter 2: Literature Review

Introduction

This research centered on criminal thinking and recidivism among women who were previously incarcerated in the United States. Given the persistently high rates of recidivism in U.S. prisons (BJS, 2014), I aimed to address several gaps in extant literature, which included the connection between psychological wellbeing, criminal thinking, age, gender, and recidivism; the use of criminal thinking theory among violent female offenders; and the application of criminal thinking theory for female offenders after their release into the community. Considering these research gaps, the purpose of the quantitative research study analyzed the relationship between criminal thinking, psychological wellbeing, age, gender, and recidivism among recently released female violent offenders with Yochelson and Samenow's criminal thinking theory (1976; 1977).

In Chapter 2, I first describe my literature search strategy. Then, the theoretical framework of the study, the theory of criminal thinking, is explored. Subsequently, the U.S. prison system is then discussed. I then discuss reentry into society following time in prison and recidivism, including subsections on predictors of recidivism and means of preventing recidivism, followed by a discussion of psychological well-being among prisoners. A summary concludes the chapter.

Literature Search Strategy

To find articles relevant to the present study, EbscoHost and Google Scholar databases were searched. The following words and phrases were searched to locate articles: *criminal thinking, criminal thinking theory, recidivism, female inmates, women,*

incarceration, deterrence, ex-offenders, and *reentry.* Most articles included in this review were written within the past 5 years to ensure their current relevance to the research focus. However, some older seminal and theoretical works were included as well to inform the historic and theoretical basis of the study.

Theoretical Framework

The theoretical framework that guided this study was Yochelson and Samenow's theory on criminal thinking, or criminogenic thinking (1976; 1977). Criminogenic theorists contend that criminals and noncriminals differ cognitively. Criminal thinking theorists generally categorized the ways that criminally divergent thinking differs in three ways: criminogenic thinking patterns, automatic errors of thinking, and problems in the thinking process between idea and execution (Mandracchia et al., 2015). Criminal thinking theory was a useful and effective theory for lending insight into the causes of criminal behavior, recidivism, gender-related differences among incarcerated individuals, and other research aimed at explaining/examining criminality (Yochelson & Samenow, 1976; 1977).

There were a number of studies that implemented criminal thinking theory to guide their research. Criminal thinking theory informed research into mental health issues within offenders (Folk et al, 2016; Mandracchia et al., 2015;). Its connection to emotional intelligence had also been investigated (Westfall, 2019). Criminal thinking had been associated with stressful life events and culture (Link & Oser, 2017). Mandracchia et al. (2015) and Ziegler-Hill et al. (2017) investigated the role psychopathy had in criminal thinking. Folk et al. (2018) revealed no significant variation between recidivism and

criminal thinking on the basis of demographic variables, including gender. Rudin et al. (2019) contested the COMPAS model and more variables needed to be considered. Though research has shown there are differences in criminal thinking based on gender (Benson & Harbison, 2020), most research into criminal thinking and gender has focused on comparing men and women (Vaske et al., 2016).

In my study, criminal thinking theory was used as a guide to frame female experiences and perspectives of criminal thinking, psychological wellbeing, age, and recidivism. Constructing an accurate picture of the patterns of behavior associated with criminal thinking was necessary to analyze ways to help offenders successfully reenter society (Ziegler-Hill et al, 2017; Mandracchia et al., 2015). Cognition that resulted in multiple incarcerations would need to be different from nonoffenders, so this study utilized criminal thinking theory to inform its investigation into the criminal thinking of female violent offenders.

Criminal thinking theory was the best choice for this investigation into the relationships between the PICTS score, age, and incarceration. Criminal thinking posits that cognitive differences would be present, which I sought to assess through the investigation into the first research question. This investigation also investigating the relationship between criminal thinking, age, first incarceration as well as total incarcerations to build an image of what kind of criminal thinking patterns were present in female violent offenders. Criminal thinking theory helped explain repeated negative behavior by exploring cognitive differences between offenders and noncriminals that lead to incarceration.

Review of the Literature

The U.S. Prison System

The United States prison system is a complex and multi-faceted entity comprised of both private and public institutions. Approximately 1,435,500 people were incarcerated in state and federal prisons at the end of 2019 (Kang-Brown et al, 2020). Of those incarcerated, approximately 231,000 were women (Kajstura, 2019). Thus, approximately 16% of U.S. prisoners were female in 2019.

While this figure was very high in relation to the prison populations of other countries with similar economic and political contexts, it has decreased significantly since a peak in 2007. In 2007, the prison population was approximately 7,339,600 (Kaeble et al., 2016). Since then, it had decreased annually by approximately 1%. The total prison population at the beginning of 2015 was the lowest since 2003 due to public policy changes, reform efforts, and several other factors (Figure 1). However, when considering that one in 36 individuals living in the U.S. were incarcerated at this low-point, questions still aroused about the efficacy of the system and the number of prisoners that were repeat offenders (Kaeble et al., 2016).

Figure 1

Estimated Total Population Under the Supervision of the U.S Adult Correctional System,

by Correctional Status, 2000-2014.
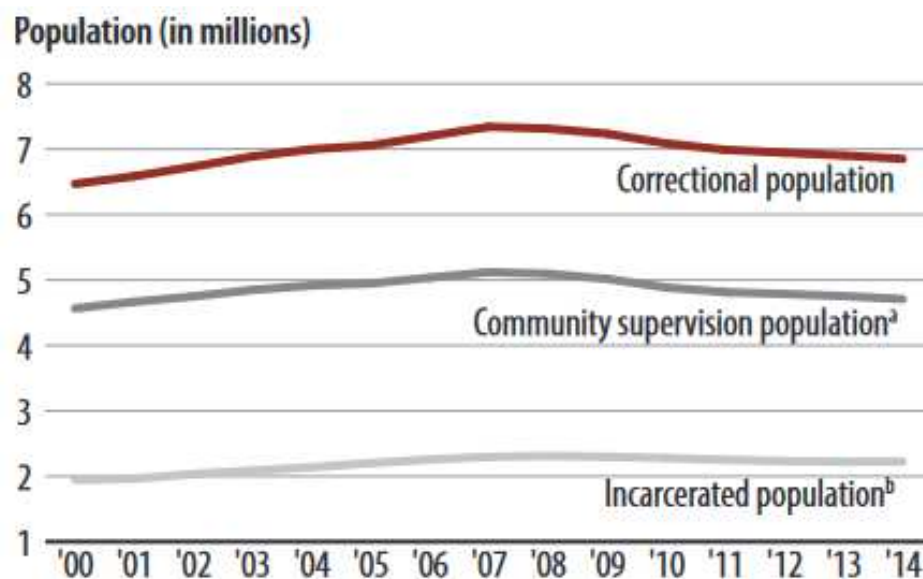
Note. From Kaeble et al., 2016.

The U.S. prison populace was by no means distributed evenly where geography

was concerned. Rather, approximately 50% of the prison populace once resided in seven

jurisdictions (Kaeble et al., 2015). More specifically, by the end of 2014, 50% of the

prison populace resided in Texas, California, Georgia, Florida, Pennsylvania, Ohio, and

Michigan (Kaeble et al., 2015). Thus, a significant focus in recent research had been

examining why certain regions had significantly higher rates of crime and incarceration

than others.

There were many points of contention associated with the U.S. prison system

related to aspects such as the potential for behavioral correction/rehabilitation, safety,

sentencing, and mental health care (Kaeble et al., 2015; Sawyer & Wagner, 2019). One

significant point of contention pertained to the system of requiring bail payments that could vary significantly depending on which judge determined the bail amount. In many cases, a rich or well-connected person could be released immediately because they had the resources to make bail, while a poor person may have been held for weeks, months, or even years waiting for their sentencing or to go to trial. Individuals being held in U.S. prisons for not being able to pay their bail amount made up a significant majority (76%) of the U.S. prison population (Sawyer & Wagner, 2019). With the average bail amount being set at $10,0000, many lower and even middle-class citizens were detained for a significant amount of time based solely on their lack of financial resources and assets.

Another significant point of contention was the number of nonviolent offenders who were incarcerated for years at a time. Many critics of the current system noted that it treated those with mental illnesses and substance abuse issues punitively rather than seeking to heal or rehabilitate them (Green & Jackson, 2017; Sawyer & Wagner, 2019). As of 2019, one in five individuals that were incarcerated in the U.S. were in prison for drug offenses and violations; most of these individuals were housed in state prisons (Sawyer & Wagner, 2019). Another large subsect of non-violent individuals incarcerated in the U.S. were in prison due to probation and parole violations, rather than the crime that led to their probation/parole. Further, sometimes non-violent offenders or partners of violent offenders were threatened with prosecution and/or jail time for refusing to testify or incriminate their spouses (Green & Jackson, 2017). Non-violent offenders were not selected for this study as they were not likely to have the same deeply ingrained criminal thinking as a repeat violent offender.

"Prison-industrial complex" was a term that was used by many to describe the U.S. prison system (Green & Jackson, 2017). The term described the infrastructure and network that propelled the prison system to be a multi-billion-dollar industry that countless businesses profited from. In the 1970s, many public policies that were "tough on crime" led to an increase in the disproportionate incarceration of many marginalized citizens, primarily people of color, the poor, and the uneducated.

Many prisons promoted programs and efforts to rehabilitate prisoners, decreasing criminality and, by extension, the number of prisoners that required housing in correctional institutions. Prison programs designed to decrease recidivism in the U.S. and/or improve the well-being of prisoners could broadly be characterized as (a) rehabilitation, (b) education, or (b) vocational training (Dick, 2018). Effective prison programs had been shown to decrease recidivism, which, in turn, decreased prison costs (Dick, 2018). However, there was limited data pertaining to the effectiveness of programs designed to reduce recidivism in the U.S., particularly where programs for specific prison populations (i.e. women, those who served time for specific crimes, individuals with substance abuse issues) were concerned (Dick, 2018). Further, the profits of many correctional institutions were also dependent on the number of prisoners they housed; thus, some private prisons and correctional institutions had a financial motive to keep rehabilitation efforts from being exceedingly successful (Green & Jackson, 2017).

Criminal Thinking

Connections between certain mental illnesses and criminogenic thinking had been found in recent research. Mandracchia et al. (2015) sought to analyze psychopathy and

criminogenic thinking among male incarcerated offenders in the Mississippi Department of Correction. The researchers found that increased indicators of primary and secondary psychopathy significantly predicted increased overall and specific subtypes of criminogenic thinking. Based on these findings, Mandracchia et al. (2015) suggested that prison-based treatment programs should address psychopathic personality characteristics and criminogenic thinking. Thus, implications and insights from criminal thinking research could contribute to improved incarceration and mental health treatment outcomes.

Folk et al. (2016) similarly found evidence of a relationship between criminal thinking and mental health. More specifically, the researchers assessed the effectiveness of a cognitive-behavioral criminal thinking intervention intended to be self-administered to inmates living in segregated housing. A total of 273 inmates participated in the Taking a Chance on Change (TCC) intervention. Analysis of intervention data revealed a significant decrease in criminal thinking among most participants; further, 48 participants experienced a significant decrease in disciplinary infractions after completing the TCC program. This finding coincided with the additional finding that decreased reactive criminal thinking were a predictor of decreased disciplinary infractions. Findings from Folk et al.'s (2016) study highlighted how interventions and programs aimed at addressing criminal thinking could also effectively reduce criminal behavior, violent outbursts, and other unfavorable conduct among current and former inmates.

Criminal thinking was analyzed by Morgan et al. (2015) using two studies, one used college student participants and a second used inmate participants, to understand

whether levels of criminal thinking were fixed or fluid across situational contexts. The hypothesis of the researchers were that criminal thinking and antisocial attitudes would be related to increased proximity to a criminal act. The researchers found that the results between the two studies were generally consistent between the two participant groups. Based on the findings of the study, Morgan et al. (2015) concluded that additional research was needed to understand criminal cognitions over time and whether criminal cognitions change based on different environmental factors.

Not all recent criminal thinking research had been conclusive. For instance, Morgan et al. (2015) studied criminal thinking among two separate populations to examine similarities and differences. In one study, a sample of college students participated; in another otherwise identical study, inmates participated. The researchers hypothesized that criminal thinking and antisocial attitudes would be related to increased proximity to a criminal act. The researchers found that the results between the two studies were generally consistent between the two participant groups. Based on the findings of the study, Morgan et al. (2015) concluded that additional research was needed to understand criminal cognitions over time and whether criminal cognitions change based on different environmental factors.

A recent study conducted by Vaske et al. (2016) offered potential explanations for the lack of conclusive research findings: "One explanation for these inconsistent results was that it may have been difficult to conceptualize and operationalize criminal thinking" (p. 2). The researchers went on to delineate further sources of confusion surrounding the notion of criminal thinking: "The conceptualization of criminal thinking was often broad

in the literature. There were also questions surrounding how the concept should be operationalized and what was the best way to assess criminal thinking (i.e., interview vs. self-report, close-ended questions vs. open-ended questions)" (p. 2). Further, the accuracy of measures of criminal thinking varied across gender which could contribute to null associations (Vaske et al., 2016).

There was a lack of consensus in extant literature regarding whether age-related and gendered differences were apparent where criminal thinking was concerned (Benson & Harbison, 2020; Folk et al., 2018' Vaske et al., 2016; Walters, 2020). Age was examined as a potential moderating variable of the association between general criminal thinking and perceived expectations of legal punishment by Walters (2020). The researcher found that age did significantly moderate the studied relationship; the relationship between general criminal thinking and perceived expectations of legal punishment was not significant at age 17 but was significant at age 21 and beyond (Walters, 2020). Age had also been used as a predictive variable in models, such as the Correctional Offender Management Profiling for Alternative Solutions (COMPAS) model, that, like criminal thinking scores, was used to predict recidivism within the U.S. criminal justice system and guide decisions pertaining to "judicial bail, parole, sentencing, lending decisions, credit scoring, marketing, and access to social services" (p. 2).

However, in contrast to these findings, another recent study conducted by Folk et al. (2018) revealed no significant variation in the association between recidivism and criminal thinking on the basis of demographic variables, including age, race, gender,

psychological well-being, and education level. Further, Rudin et al. (2019) contested a premise that guided the development of the COMPAS model; the researchers contended that while there may have been a relationship between age and the likelihood of recidivism as predicted by the COMPAS model, the model was not linear as the model developers purported it to be and was significantly influenced by other demographic variables such as race and gender (Rudin et al., 2019). These findings largely indicated that while relationships may have existed between age, criminal thinking, recidivism, and/or likelihood of reoffending, these relationships were not well-understood or salient when demographic controls were not in place.

Considering the identified research gap, Vaske et al. (2016) sought to delineate whether criminal thinking was conceptualized differently based on gender and whether men and women possessed the same latent criminal thinking levels. A total of 375 probationers participated by filling out a survey. Upon analyzing the survey data, the researchers found mixed results. There appeared to be gender differences in survey scores which were significant, as 26% of item variance was tied to gender. However, some evidence indicated that the survey questions were more valid for participants of a certain gender due to DIF. Thus, while Vaske et al. (2016) found evidence of gender-related differences in criminal thinking, the researchers also noted the need for further research to determine whether notions of criminal thinking were inaccurately biased towards male criminal thinking and experiences.

Gender and criminal thinking had also been studied based on specific crimes that were committed (Benson & Harbison, 2020). Using the PICTS, Benson and Harbison

(2020) recently compared the scores of women and men who were convicted of and incarcerated for white collar crimes. Analysis of participants' responses revealed low criminal thinking scores for participants of both genders when no controls were put in place. However, when factors which predicted criminal thinking were controlled by the researcher, women had significantly higher scores on all three of the scales that were considered than men. Despite this finding, other factors associated with risk of criminality and personal needs had stronger effects than gender. Benson and Harbison's (2020) research demonstrated how criminal thinking could differ based on gender, as well as the importance of controlling for other factors that predicted criminal thinking when seeking to understand how criminal thinking differed based on gender.

It should be noted that most of the recent research which centered on the relationship between gender and criminal thinking was framed as a comparison of women and men, or female and male offenders (Vaske et al., 2016). There was a significant body of literature that pertained to criminal thinking solely among males/male prisoners, and a significant lack of research with a central focus on criminal thinking among females/female prisoners. During one such study, Westfall (2019) recently explored the association between criminal thinking and emotional intelligence among female prisoners in Iowa. The PICTS and Emotional Quotient Inventory were used. The results of Westfall's (2019) research highlighted how experiences, factors, and contexts that were specific to female prisoners could impact criminal thinking. For instance, there were disproportionate rates of sexual assault and childhood sexual abuse among female prisoners; these experiences could detrimentally affect social-emotional development and

indirectly increase reactive criminal thinking. Further, the lack of available research on criminal thinking styles among female prisoners paralleled a lack of recidivism prevention programs in the U.S. prison system that were effectively tailored to help female prisoners (Westfall, 2019).

Another recent study conducted by Link and Oser (2017) centered on how stressful life events and culture influenced criminal thinking among 418 African American women that participated in the B-WISE project. The findings indicated that in certain contexts and among certain populations, criminal thinking could be a maladaptive approach to cope with stressors. In particular, coping with gendered racism, loss of social network, financial challenges, and other stressors that resulted from going to prison or being on probation could lead to criminal thinking among African American women; in turn, use of criminal thinking as a coping mechanism could then lead to recidivism (Link & Oser, 2017).

Age

Age had also been shown to significantly impact how criminal thinking and other risk factors and experiences affect the likelihood of recidivism. Walters (2020) found that age significantly moderated the relationship between criminal thinking and perceived expectations of legal punishment, and age had been used as a predictive variable in some models aimed at predicting recidivism within the U.S. criminal justice system. However, other research had revealed no significant variation in the association between recidivism and criminal thinking when demographics were not treated as control variables. Thus, there were a lack of clarity in the existing literature concerning how age impacted

recidivism and recidivism risk factors (Benson & Harbison, 2020; Folk et al., 2018; Vaske et al., 2016; Walters, 2020). There was a lack of consensus in extant literature regarding whether age-related and gendered differences were apparent where criminal thinking was concerned (Benson & Harbison, 2020; Folk et al., 2018' Vaske et al., 2016; Walters, 2020). Age was examined as a potential moderating variable of the association between general criminal thinking and perceived expectations of legal punishment by Walters (2020). The researcher found that age did significantly moderate the studied relationship; the relationship between general criminal thinking and perceived expectations of legal punishment was not significant at age 17 but was significant at age 21 and beyond (Walters, 2020). Age had also been used as a predictive variable in models, such as the model, that, like criminal thinking scores, were used to predict recidivism within the U.S. criminal justice system and guided decisions pertaining to "judicial bail, parole, sentencing, lending decisions, credit scoring, marketing, and access to social services" (p. 2).

However, in contrast to these findings, another recent study conducted by Folk et al. (2018) revealed no significant variation in the association between recidivism and criminal thinking on the basis of demographic variables, including age, race, gender, psychological well-being, and education level. Further, Rudin, Wang, and Coker (2019) contested a premise that guided the development of the COMPAS model; the researchers contended that while there may have been a relationship between age and the likelihood of recidivism as predicted by the COMPAS model, the model was not linear as the model developers purported it to be and was significantly influenced by other demographic

variables such as race and gender (Rudin et al., 2019). These findings largely indicated that while relationships may have existed between age, criminal thinking, recidivism, and/or likelihood of reoffending, these relationships were not well-understood or salient when demographic controls were not in place.

Recidivism and Rehabilitation

Among inmates that were not sentenced to life imprisonment, recidivism and rehabilitation were significant concerns. Recidivism described a criminal reoffending or committing another crime, following their release from prison (Carr, Baker, & Cassidy, 2016). High recidivism rates served as an indicator that the current prison system was somewhat ineffective, as the goals of the prison system were to deter criminal activity and rehabilitate individuals so that they did not re-offend after their release (Carr et al., 2016; Mitchell, Cochran, Mears, & Bales, 2017; Stemen, 2017). Recidivism had been a common topic in recent literature and research among populations of violent offenders as well as those incarcerated for non-violent offenses, such as drug violations and prostitution. Certain non-violent offenses, such as prostitution, were a reason for incarceration that disproportionately affected women (Pantalone et al., 2018). Despite women being more likely than men to reoffend after being incarcerated for certain non-violent offenses, there remained a lack of available data and programs which centered on recidivism among female inmates.

Researchers aimed to understand why individuals who had been previously incarcerated re-offend, and which ex-inmates were most likely to offend, in the hopes of developing solutions to reduce rates of recidivism (James, 2015). Many prisoners were

not serving life sentences and were eventually released; thus, recidivism was a concern that applied to most prison populations (Alper et al., 2018; Carlson, 2018; Carr et al., 2016).

As with most research on U.S. prisoners, recidivism research had largely centered on male experiences. Thus, while gender differences were easily identifiable in terms of recidivism rates, gender differences associated with the variables and factors that were closely tied to recidivism were less clear (Olson et al., 2016). Recidivism was measured in both reconviction and reimprisonment rates (Fazel & Wolf, 2015). While both types of recidivism were considered in this study, reimprisonment was the focus, as reimprisonment could have a more significant impact on well-being and social integration than being convicted a second time without reimprisonment.

When considering recidivism and recidivism research, it was imperative to consider the potential cumulative effects of multiple challenges and comorbidities which affected the experiences of those who were previously imprisoned. Pantalone et al. (2018) sought to examine the unmet social service and mental health needs of women who were previously incarcerated. The study subjects lived in two different cities in Alabama and had been diagnosed with HIV. The researchers conducted semi-structured interviews with participants to gain insight into their experiences. Analysis of the interview data revealed that there was a significant and influential lack of services related to planning for prison release and life after prison. Further, a small number of organizations were offering post-release services but were unduly burdened with helping a large number of ex-inmates. Post-release adjustment and avoiding recidivism were

significantly dependent on the availability of substance abuse and/or mental health treatment, as well as social support (Pantalone et al., 2018).

Substance abuse and mental health treatment options were available at many prisons across the country, and may have included prescription treatment, group and/or individual therapy, art programs, and other approaches designed to improve the lives of inmates with substance abuse and/or mental health issues. However, a lack of resources in some prisons limited the scope of treatment approaches and programs (Dick, 2018; Pantalone et al., 2018). Social support could be understood as the various individuals and community resources that helped and comforted individuals, particularly in times of distress. Findings from Pantalone et al.'s (2018) research helped to delineate the key elements of avoiding recidivism and effectively re-adjusting for women who were previously incarcerated and were dealing with one or more health and wellness comorbidities, namely substance abuse disorder and mental health disorders which significantly impacted the daily life of inmates (i.e. PTSD, schizophrenia, bipolar disorder).

Olson et al. (2016) compared recidivism and prison release risk factors among male and female inmates. The researchers differentiated between rearrests for violent and non-violent crimes in their calculated rates. Logistic regression of data gathered from the Illinois State Police and Illinois Department of Corrections was used, as it remained difficult to find complete recidivism data for a given region that could be gathered from a single source in the U.S. Data from 3,014 female and 23,520 male individuals were included in the analysis. Upon conducting a regression analysis with the collected data,

Olson et al. (2016) found some significant differences associated with gender. Types of arrest, time served, and prior incarceration were found to be significantly related to female and male recidivism, but these associations differed in strength. Men and women were both more likely to re-offend if they had a history of violent arrests. Previous arrests for selling drugs predicted female recidivism for violent offenses, but not male recidivism. Conversely, males were less likely to re-offend violently based on a higher number of previous arrests for drug possession, but this effect did not apply to females. Access to substance abuse treatment was associated with decreased recidivism among both female and male inmates. Findings from Olson et al.'s (2016) research highlighted how risk factors for violent and non-violent recidivism differed, as well as similarities and differences between factors that contributed to and reduced recidivism among men and women.

When correctional institutions sought to prevent recidivism through targeted interventions and programs, gender was not always a consideration. However, it remained unclear whether recidivism interventions were more effective when they were tailored to the gender and gendered experiences of current or former inmates. Gobeil et al. (2016) recently examined and compared gender-neutral and gender-informed approaches to recidivism prevention interventions. A meta-analysis was conducted across 37 studies, 38 effect sizes, and 22,000 currently or formerly incarcerated women. Data analysis revealed that participating in some form of a recidivism prevention intervention was associated with a 22-35% higher likelihood of a subject not reoffending. Further, it was revealed that after excluding studies with small effect sizes or low-quality methods,

gender-informed interventions were significantly more effective than gender-neutral interventions. Thus, Gobeil et al. (2016) suggested the importance of consideration of female experiences and perspectives when developing interventions aimed at reducing recidivism among women.

Tools to predict recidivism had been tested among male and female inmates (Walters, Glenn, & Lowenkamp, 2016). A recent study conducted by Walters et al. (2016) involved testing the Psychological Inventory of Criminal Thinking Styles (PICTS) as a means of predicting recidivism. A sample of 14,519 female and 81,881 male offenders who had served time and were on probation responded to a survey including the PICTS items, and the results were subsequently analyzed. Analysis of the data revealed that some scores and items (reactive, proactive, and criminal thinking) predicted recidivism at six, 12, and 24 months post-release. Controlling for prior arrests and age revealed small and moderate effect sizes, respectively. Further, general criminal thinking scores from the assessment predicted recidivism more effectively among both female and male ex-inmates than overall scores on the PICTS (Walters et al., 2016). The results of Walters et al.'s (2016) research did not reveal significant gender differences on PICTS scores among those included in the sample; however, it was important to note that the sample of female ex-inmates was significantly smaller than the male sample and thus, may have been less reflective of the average experiences and likelihood of recidivism among women who were previously incarcerated.

Mitchell et al. (2017) used regression analysis methods to examine how effectively serving time in prison reduced recidivism among those convicted of drug

offenses. Data reflected the recidivism and sentencing data of individuals convicted of felony drug charges in Florida. Regression analysis revealed no significant reduction in recidivism as a result of time served in prison. Those sentenced for the most minor drug offenses were not less likely to re-offend based on serving time in prison. Findings from Mitchell et al's (2017) research called into question the implications and effectiveness of time in prison as a deterrent for non-violent felony reoffenders.

While there remained a lack of comprehensive data on female recidivism in the U.S., some were available. A report compiled by Alper et al. (2018) indicated that based on data from 2005, 35% of female prisoners were rearrested during the first year following their release, compared to 45% of male prisoners. Nine years after the initial data was collected, discrepancies based on gender narrowed with 24% of male prisoners and 21% of female prisoners arrested (Alper et al., 2018). Thus, based on this limited cohort data recidivism was lower among women, but that the gap in recidivism rates decreased over time after ex-inmates were released. The researchers' findings were based on a nine-year cohort study which included 401,288 prisoners who were released from prisons in 30 states.

A meta-analysis of adult recidivism in the U.S. was recently conducted by Katsiyannis et al. (2017). The researchers noted a significant need for the study, as the last comprehensive meta-analysis of U.S. recidivism before their research was conducted in 1996. Their meta-analysis included all instances of re-offense reported after any criminal was released from prison between the years of 1994 and 2015. Upon analyzing publicly available data, the researchers found that age, antisocial personality scales,

distress, criminogenic needs, criminality within the family, gender, family rearing, risk

scales, antisocial behavioral history, substance abuse, and social achievement were

significant predictors of recidivism in the U.S. Findings from Katsiyannis et al.'s (2017)

research highlighted the multitude of factors, including gender, that impacted recidivism

rates; it was important to note that some of these factors, including family rearing,

disproportionately impacted female offenders.

Another recent study conducted by Western et al. (2015) highlighted significant

hardships and stressors experienced by recently released inmates. Namely, the

researchers emphasized the difficulties of the social re-integration process following time

in prison. Panel data from 122 individuals who were recently released from prison was

sourced from the Boston Reentry Study. The data was collected using a comprehensive

survey of post-prison reentry experiences. Upon analyzing the data for items relevant to

the topic of the study, Western et al. (2015) found significant unemployment issues

among respondents. Over 50% of respondents were unemployed, while over 66%

received public assistance. Some respondents were more prone to experience problems

related to housing stability, unemployment, and severance of family ties; specifically,

those with mental illnesses and substance abuse issues were the most prone to experience

these challenges. Further, many participants relied on mothers, sisters, grandmothers, and

other female relatives for financial assistance in the months following their release. Other

challenges revealed by the survey included persistent feelings of isolation, material

insecurity, and anxiety. The researchers concluded by emphasizing how the struggle of

readjusting socially to society combined with material insecurity could lead to significant stress and isolation among recently released inmates.

Challenges and issues experienced by ex-inmates as they re-enter society, including those highlighted by Western et al. (2015) contributed to recidivism. The sense of isolation and other challenges of reintegration made it difficult for many ex-inmates to re-connect to their old lives and potentially positive influences. Issues of unemployment and lack of opportunity could make some crimes more appealing, particularly for those who could not acquire legal employment because of a felony conviction. Further, disconnection from social influences and isolation during and after time in prison also contributed to decreased motivation to avoid the lifestyle and consequences of criminality. For this reason, Western et al. (2015) contended that success after ex-inmates reentered society should not be based solely on whether or not they re-offended (recidivism), but rather, how they socially reintegrated into their community: "Our focus on social integration broadens the definition of "success" after incarceration. In contrast to the usual focus on recidivism, a successful transition from prison in our analysis involves attaining a basic level of material and social well-being consistent with community membership" (p. 1515).

Many factors were tied to recidivism or had been studied to determine how they were linked to recidivism (Agan & Makowsky, 2018; Reagan, 2017; Zgoba & Salemo, 2017). Certain mental health conditions, such as antisocial personality disorder, and substance abuse were closely linked to recidivism (Gemeda, 2017; Westerberg, McCrady, Owens, & Guerin, 2016). Hardship, be it personal or financial, could have also

led to desperation and additional criminality following release from prison. Similarly, a lack of access to resources or job opportunities because one's criminal past could also lead to recidivism. Experiences of recidivism were complex, multi-faceted, and were still not well-understood when considering the existing body of research on the subject.

Predictors of recidivism

High rates of recidivism around the world have necessitated increased research on factors that predicted recidivism (Ahmed, 2015). A significant portion of extant research on predictors of recidivism centered on the U.S. prison system, given that the U.S. had the highest rate of recidivism among industrialized global nations (Sellers, 2016). However, research from other parts of the globe remained useful where insights about psychology and personality-related factors were concerned, as these constructs could have been analyzed independently from regional characteristics and variables. A qualitative study conducted by Ahmed (2015) was aimed at determining which factors predict recidivism based on four predictive constructs: stigma, personality, prison, and discrimination. Participants were ex-prisoners that served time in Nigerian prisons. Narrative analysis of interview data revealed that stigma, prison, and discrimination had a significant influence on criminal recidivism. Conversely, personality and personality factors were not found to significantly influence recidivism. The results of Ahmed's (2015) research suggested that experiences and circumstances may have affected recidivism as much as, if not more than, personality traits and characteristics.

Lauch, Hart, and Bresler (2017) studied recidivism alongside the results of a treatment program for offenders who previously committed intimate partner violence.

Domestic violence was an issue that disproportionately affected women in the U.S.; approximately 1 in 3 women, and 1 in 10 men, were victims of domestic violence (Huecker & Smock, 2019). Lauch et al. (2017) analyzed data that reported which offenders out of a sample of males who had been convicted of intimate partner violence against their female partners (n = 202) had completed the AMEND-Emerge-based program and which had not. Program data was then compared to archival corrections data to determine which program participants reoffended following their completion or incompletion of the program. Within the sample, data revealed a relatively low rate of recidivism (22.28%). Those who completed the program had lower rates of recidivism than those who did not, though the difference was small. Comparison of demographic factors to the recidivism and program data revealed that the program may have addressed some participants' needs more effectively than others; namely, young African Americans who were unmarried may have not benefited as significantly from the AMEND-Emerge-based program as individuals who represented other demographics (Launch et al., 2017). Findings from Launch et al.'s (2017) study highlighted the importance of ensuring efforts to prevent recidivism were effective among all relevant demographics and prison populations, including both women and men who perpetrated intimate partner violence.

Robertson et al. (2018) studied gender-specific predictors of recidivism. The sample that was analyzed represented 10,827 men and women who were previously convicted of a DUI in Mississippi. Recidivism scales were used to predict recidivism within a twelve-month interval after the DUI conviction. Upon using quantitative methods to analyze the data, Robertson et al. (2018) found that different factors predicted

recidivism depending on the gender of subjects. Heavy consumption of alcohol and criminal history predicted recidivism among men, while current or past substance abuse issues were a predictor of recidivism among women. Predictors of recidivism that applied to both men and women were found to be past DUI arrest, physical consequences of substance abuse, and driving behaviors. Findings from Robertson et al.'s (2018) research revealed significant differences in factors that predicted recidivism among men and women; however, it was important to note that some of these factors, such as driving behavior, were specific to ex-offenders that were arrested for one or more DUI(s).

In a related study conducted 2 years earlier, Robertson, Gardner, Walker, and Tatch (2016) examined DUI recidivism based on adherence to an anti-DUI intervention. Multiple risk factors were also considered. Data from the Mississippi Alcohol Safety Education Program (MASEP) and state records were analyzed. Analysis of the data revealed that individuals who demonstrated effective adherence to the MASEP program presented a significantly lower likelihood of recidivism within the three years after program completion. Among those who completed the program, recidivism was more likely among younger individuals, African Americans, and those with low education levels. Adherence to the program was more common among African American and older program participants. Gender was not found to be a significant predictor within the context of Robertson et al.'s (2016) research. Findings from Robertson et al.'s (2016) research highlighted the significant connection between adherence to treatment programs and recidivism among DUI offenders, as well as the importance of ensuring that

treatment programs were equally effective among all relevant demographics and sub-populations.

Harris, Boccaccini, and Rice (2017) also studied recidivism among offenders based on the crime they committed in the past. Their focus was on examining sexual deviance and psychopathy as recidivism predictors among individuals who were previously convicted of a sexual offense. Various scales and field measures were used to assess psychopathy and sexual deviance among 687 individuals who were released after being convicted of a sexual offense. Data analysis revealed that scores on a revised psychopathy checklist and anti-social personality disorder diagnoses were predictors of recidivism where a violent-sexual offense was committed, but not when an offense was solely violent or sexual in nature (Harris et al., 2017). No evidence suggested that individuals with high levels of both sexual deviance and psychopathy would re-offend at a higher rate than the average. The results of Harris et al.'s (2017) research highlighted the complex relationship between psychological deviance, psychopathology, and recidivism among individuals convicted of sex crimes.

Research on predictors of recidivism among offenders who had perpetrated family violence was recently conducted by Millsteed and Coghlan (2016). Because there was a disproportionate prevalence of female domestic violence/abuse victims and male domestic violence/abuse perpetrators (Huecker & Smock, 2019), the implications of the study largely reflected recidivism committed by male perpetrators against female victims. The authors noted the need for the study based on the lack of tools available which could be used to predict recidivism among those who had previously committed domestic

assault or violence. Logistic regression analysis and modeling were used to test various predictors. Consistent with past research findings, a history of prior incidents, a breach of a family violence order, or having pending criminal charges for violating a family violence order were found to be predictors of recidivism among domestic violence perpetrators. Substance abuse was also found to be significantly related to recidivism, though this predictor was not specific to perpetrators of domestic violence. Millsteed and Coughlan (2016) concluded by suggesting the need for further piloting and evaluation of tools to predict recidivism among sub-populations of ex-inmates in Victoria.

In another study with a similar focus, Farzan-Kashani and Murphy (2017) studied whether long-term criminal recidivism was predicted by anger issues among men who were previously convicted of partner violence. The period that was studied was the eight years following offenders' release from prison after being charged with domestic violence. The sample included 132 men who took part in a violence prevention treatment program. Findings from analysis of correctional and program data revealed that the more significant an offender's anger problems were, the more likely they were to have a high number of general violence changes and protection orders against them. Further, recidivism was predicted by high Anger Expression and low Anger Control among those in the sample (Farzan-Kashani & Murphy, 2017). Thus, while violence prevention programs may have been effective to reduce violence and recidivism perpetrated by some domestic violence offenders, certain subgroups, namely those who struggled to express and control their anger appropriately, may not have experienced success in these programs. Further research was necessary to determine whether issues of anger

expression and/or control were connected to violence and recidivism prevention among female offenders.

Psychological Well-Being and Recidivism

The psychological health and well-being of inmates were a commonly discussed topic in extant literature about the U.S. prison environment (Bar-on, 1988; Franke et al., 2019; Keogh et al., 2017). Significant concerns had been raised for years due to the high prevalence of mental health disorders among inmates and the limited availability of psychological support and resources within prisons. Some cognitive and mental health conditions, including posttraumatic stress disorder, attention deficit hyperactivity disorder, antisocial personality disorder, and learning disabilities, were more common than others within prison populations (Stanford & Muhammad, 2017). Beyond specific conditions, issues and episodes of substance use, self-harm, and suicide were also more prevalent among prison populations than the general populace (Franke et al., 2019).

Certain mental health conditions and disorders make both female and male inmates more likely to be incarcerated more than once (Gemeda, 2017). Gemeda (2017) recently examined whether psychopathic personality disorder, a condition characterized by antisocial and/or violent behavior, mediated recidivism among former inmates. The researcher involved a sample of 196 adults who were convicted and incarcerated for multiple crimes. Semi-structured interview methods were used to gather data. The author used structural equation modeling to also consider the implications of drug abuse, and the influence of associates and social exclusion. Analysis of the data revealed that recidivism was indirectly influenced by drug abuse, the influence of associates, and social exclusion

by means of psychopathic personality disorder (Gemeda, 2017). Thus, while drug abuse, the influence of associates, and social exclusion were not found to directly affect recidivism in this context, one or more of these issues coupled with a diagnosis of psychopathic personality disorder were closely linked to recidivism. Findings from Gemeda's (2017) research highlighted the complex interplay of factors that could contribute to recidivism.

A review of recent developments and findings pertaining to mental healthcare in prison environments by Franke et al. (2019) revealed significant challenges and research gaps. Where challenges were concerned, several mental health conditions and negative effects were found among prisoners. Substance use disorder treatment outcomes were found to be promising in the prison context, but psychological therapies were not found to be effective over an extended period. Franke et al. (2019) concluded by noting significant research gaps and needs for future research where prison mental healthcare was concerned; namely, research on female prisoners, those with multiple comorbidities, and testing of innovative diagnostic and therapeutic treatment methods.

Though mental health resources could be scarce in prison, some mental health interventions, workshops, and programs have been tested. Keogh et al. (2017) recently examined the outcomes and implications of a one-day mental health workshop implemented among male inmates at a prison in Ireland. Semistructured phone interviews were conducted with ten prisoners who had participated in the workshop. Quantitative evaluation was conducted in a different phase of the study. Analysis of the qualitative data revealed that the participants had primarily positive feedback to share regarding how

the workshop affected their mental health and well-being. Notably, the opportunity for prisoners who had time to reflect on their mental health and strategize towards improving their well-being in a structured and supportive environment was a unique experience that stayed with participants long after their participation. Keogh et al. (2017) also highlighted common issues and challenges which affected the delivery of mental healthcare in the prison environment, noting that identifying those with mental health issues was not useful if appropriate services could not be provided. The researchers also noted that typically interventions were medical in nature and focused on the distribution of medication. Further, while the identification of mental health problems among prisoners who were on remand had improved, there was little in the way of treating those who were incarcerated or likely to have had mental health issues.

Results and insights from Keogh et al.'s (2017) study highlighted how research on mental healthcare interventions and treatment in the prison setting should be compatible and realistic within the scope of possibility for the care prisons could provide. Determining an ideal or favorable treatment approach for prison populations was pointless if the populations that demonstrated favorable results in a research setting would not realistically benefit from such high-quality treatment on a large scale. Thus, research on prison mental healthcare should have involved prioritization of contextual considerations including but not limited to prison resources, public policy, and the conditions/changes necessary to implement suggested changes and initiatives effectively.

Recent research had revealed associations between the psychological well-being of ex-inmates and their likelihood of reoffending (Bales et al., 2017; Schaftenaar et al.,

2018). Mental illness could further complicate the process of re-entry into society; ex-inmates with serious mental illnesses were less likely to find stable employment and social networks following time in prison (Duwe & Johnson, 2016). Further, some individuals who had difficulty finding mental healthcare and resources may have experienced poor mental healthcare outcomes after they no longer had access to healthcare in prison (Lamberti, 2016).

Bales et al. (2017) recently studied recidivism in relation to mental illness among prisoners in U. S. jails. A cohort of 200,889 inmates who were released from prisons in Florida between 2004 and 2011 was studied. Of those included in the sample, the proportion of inmates diagnosed with a serious mental illness and/or mental health diagnosis was compared to those without a diagnosis/mental illness. Analysis of recidivism data for the cohort revealed that ex-inmates with a mental illness were significantly more likely to re-offend in comparison to those without a mental illness.

Schaftenaar et al. (2018) studied recidivism among individuals who were sentenced to spend time in a Forensic Psychiatric Hospital (FPH) as a result of being charged with a crime in the Netherlands. The researchers examined the two years following the release of 111 patients. Rates of criminality following discharge for those who were sentenced to time at an FPH due to criminality were compared to rates of criminality among those who were receiving care as usual, as well as a control group that reflected average recidivism rates. Data analysis revealed that the recidivism rate among those sentenced to time at an FPH was significantly lower than the average rate of recidivism represented by the control group (15.6% and 46.5%, respectively). Further,

patients who received continued contact and support after being discharged from an FPH were even less likely to re-offend. Findings from Schaftenaar et al.'s (2018) research emphasized the importance of effective mental healthcare and continued support for reducing recidivism among those convicted of crimes.

Similarly, Lowder et al. (2016) studied recidivism among those who were previously sentenced to treatment in a Mental Health Court (MHC). The authors noted the rapid expansion of MHC systems across the U.S. due to the significant number of mentally ill individuals who would otherwise be processed through criminal courts. A sample of data from MHC patients was compared to data from individuals receiving treatment as usual at the same facility to assess recidivism. Individual characteristics, demographics, and process factors were also considered alongside recidivism. Analysis of the data led to the finding that while MHC participants spent fewer days in jail than the control group, they did not have fewer convictions or charges. Even more significant decreases in jail time following treatment were found among those who experienced co-occurring substance use, MHC graduation, and longer MHC participation length. Findings from Lowder et al.'s (2016) research emphasized how MCHs may have offered a solution to reducing recidivism, as well as removing mentally ill offenders from prison environments which may have exacerbated mental illness.

Lamberti (2016) contended that collaboration between criminal justice and mental health organizations hold the solution to preventing a significant portion of criminal recidivism. Specialty probation, mental health courts, conditional release programs, and other approaches for addressing criminality perpetrated by individuals with mental

illnesses all entailed the use of legal leverage to motivate adherence to state-prescribed

treatment. There were some conflicting findings in research regarding the efficacy of

such approaches, though a growing body of literature seemed to indicate that the close

involvement of criminal justice authorities in mental illness treatment and justice

approaches increased rates of recidivism (Lamberti, 2016). To ensure that the structure

and administrators of mental health treatment approaches to criminal justice were

effective, Lamberti (2016) concluded that best practices from both the fields of criminal

justice and mental healthcare should be heeded and that a stepwise process consisted of

"engagement, assessment, planning and treatment, monitoring, problem-solving, and

transition" (p. 1210) should be followed when mental healthcare professionals

collaborate with criminal justice and law enforcement organizations.

Preventing Recidivism

Due to the far-reaching concerns and implications related to recidivism, many

prison leaders and researchers have aimed to develop solutions to reduce and prevent

recidivism (Carr et al., 2016; Collica-Cox & Furst, 2018). Various approaches and

programs have been developed to prevent recidivism. Some focused on specific prison

populations (i.e. women, drug users, mentally ill prisoners), while others centered on

offering education and other resources. There remained a significant lack of recidivism

prevention programs that were tailored to help female inmates (Collica-Cox & Furst,

2018).

A key component of preventing recidivism was ensuring individuals who were

released from prison had the highest possible likelihood of successfully rejoining society.

Thus, many programs aimed at preventing recidivism were conceptualized as "reentry" programs. James (2015) described common programs implemented in U.S. prisons that were aimed at improving reentry into society. Typically, there were three phases associated with an offender reentering society. There were programs in place for while an offender was incarcerated aimed at preparing offenders for their release and connecting them to services. Finally, there were programs designed to assist offenders long-term at integrating into their communities by providing support and supervision focused on job training and placement, drug and mental health treatment, and house assistance.

Regardless of how effectively programs designed to curtail recidivism were, obstacles and challenges were unavoidable. Collica-Cox and Furst (2018) studied one such program aimed at preventing recidivism among female inmates. The researchers noted the significant need for recidivism prevention programs aimed at female prison populations, as their needs were often overlooked because there were significantly more male prisoners incarcerated across the country. The program, Parenting, Prison & Pups (PPP), described by the authors falls into the category of programs described by James (2015) that were implemented before inmates were released back into society. The PPP program was developed to reduce recidivism by incorporating parenting curriculum and animal-assisted therapy.

Despite the PPP program being evidence-based and mimicking elements of successfully implemented programs, Collica-Cox and Furst (2018) highlighted certain challenges associated with program implementation that would be inevitable. Namely, issues with program implementation were usually related to "gaining sponsorship,

successfully navigating large bureaucracies, obtaining all of the necessary levels of approval from multiple agencies, and negotiating facility schedules" (p. 112). However, effective time management, patience, policy adherence, dedication, and flexibility could help to mitigate such issues. In terms of implementing the PPP program specifically, Collica-Cox and Furst (2018) recommended slow and incremental program implementation, incorporation of corrections officers and staff into the planning process, and constant assessment and evaluation of program efficacy.

Serious mental illnesses could contribute to the likelihood that ex-inmates would re-offend in multiple ways; thus, researchers such as Hirschtritt and Binder (2017) have contended that the cycle of mental illness-incarceration-recidivism must be broken. Many individuals who commit crimes, both violent and non-violent, experienced mental illness (Hirschtritt & Binder, 2017). In many cases, these individuals were incarcerated rather than being sent to a mental treatment facility. Once in prison, mental healthcare and resources could be scarce. Trauma and adverse experiences in the prison environment could further exacerbate mental health conditions, leading to the condition remaining the same or worsening by the time an inmate was released from prison. Left in a worsened mental state with few job prospects and financial resources due to imprisonment, these individuals were then at a significantly heightened risk of reoffending (Hischtritt & Binder, 2017). Thus, improving mental illness treatment available in prisons and reducing the number of mentally ill individuals who were incarcerated rather than treated may be the only way to break the cycle.

Initiatives aimed at improving substance abuse treatment in prisons may have also contributed to reduced recidivism rates (Haviv & Hasisi, 2019; Ray, Grommon, Buchanan, Brown, & Watson, 2015). The Access to Recovery (ATR) initiative provided both support and clinical treatment for inmates who underwent substance abuse treatment in prison. The Substance Abuse and Mental Health Services Administration (SAMHSA), a U.S. government organization, funded and managed the initiative. Because the initiative was implemented at prisons all over the U.S., some institutions implemented the initiative more effectively than others. Evaluation of the implications of the initiative revealed that prison programs guided by ATR were more effective when reentry into society and preventing recidivism were prioritized alongside the prevention of substance abuse (Ray et al., 2015). Haviv and Hasisi (2019) also studied addiction treatment as an approach to preventing recidivism. The implications of three different drug rehabilitation programs offered in Israeli prisons were studied. Upon conducting a comparative analysis, only one of the three programs that were studied was found to be effective. The effective program was more comprehensive than the other two and addressed more elements of their health and well-being. Haviv and Hasisi (2019) concluded by noting that a two-fold strategy was key for effective drug rehabilitation and prevention of recidivism: programs should be "based on the promising components of rehabilitation, that is, cognitive behavioral therapy, therapeutic community, long duration, intensity, and positive social climate," and should "succeed in retaining its participants through completion." (p. 2742).

Education has also been used as an approach to reduce recidivism (Ellison, Szifris, Horan, & Fox, 2017; McCorkel & DeFina, 2019; Sellers, 2016). Education

provided inmates with human capital and knowledge that could be used to seek

opportunities upon being released from prison. Thus, effective prison education programs

contributed to reducing recidivism and had the potential to increase employment

opportunities upon an inmate's re-entry into society. A meta-analysis of prison education

programs conducted by Ellison et al. (2017) revealed 18 existing papers that described

prison education programs researched in robust detail. Analysis of the 18 included papers

revealed an average recidivism rate of approximately 64%. Prison education programs

were found to reduce recidivism and improve the likelihood of an ex-inmate being hired

upon their release by 24%. Findings from Ellison et al.'s (2017) study revealed a

significant connection between education programs in prison, post-incarceration

employment, and recidivism.

Online learning had been proposed and tested as a means of reducing the costs of

prison education programs intended to reduce recidivism (Sellers, 2016). Many prisons

approached the adoption of prison education programs with trepidation due to the

significant costs associated with adopting an education program. Education staff must

have been hired, classroom textbooks and materials must have been acquired, and prison

leaders/administrators must have participated in program planning and strategizing. Thus,

online education was an appealing option, as resources could be shared and utilized at a

much lower cost and fewer educational staff members were needed. Though measures

were necessary to ensure prisoners did not misuse internet access and computer

privileges, emerging research evidence suggested that adverse incidents were low and

online education was a favorable alternative to face-to-face classroom learning within the prison context (Sellers, 2016).

In summation of this section, high rates of recidivism, or reoffending following a criminal conviction, served to indicate ineffective elements were present within a prison system (Carr et al., 2016; Mitchell, Cochran, Mears, & Bales, 2017). Researching and understanding recidivism was imperative because most individuals who served time in prison were not serving life sentences (Carr et al., 2016). The U.S. had one of the highest rates of recidivism among industrialized nations. Many factors and predictive variables were tied to recidivism, such as mental health conditions, substance, abuse, experiences of hardship, lack of access to resources/job opportunities, age, antisocial personality scales, distress, criminogenic needs, criminality within the family, gender, family rearing, risk scales, antisocial behavioral history, substance abuse, and social achievement, stigma, prison, discrimination, and anger problems (Gendreau & Goggin, 2019; Kirk, Barnes, Hyatt, & Kearley, 2018). Some predictors, such as heavy consumption of alcohol, only predicted recidivism among men or women. Other predictors, such as past DUI arrests and prior breaches of a court order, were specific to individuals who had perpetrated a specific type of offense.

Programs and initiatives were implemented by criminal justice institutions to prevent recidivism. Programs took place during incarceration, during offenders' release period, or over a long-term period to permanently reintegrate ex-inmates into their communities. Slow and incremental program implementation, incorporation of corrections officers and staff into the planning process, and constant assessment and

evaluation of program efficacy had been shown to improve the effectiveness of recidivism prevention programs. Initiatives aimed at improving substance abuse and mental illness treatment may have also contributed to reduced recidivism rates (Haviv & Hasisi, 2019). Education had also been used as an approach to reduce recidivism, as there was a significant connection between education programs in prison, post-incarceration employment, and recidivism.

Extant recidivism research had largely centered on male experiences, as they were treated as the "norm" in research because they represented most global prison populations. However, gender-informed interventions were significantly more effective than gender-neutral interventions where criminal recidivism was concerned. There remained a need to increase consideration of female experiences and perspectives when developing interventions aimed at reducing recidivism.

Summary

In summation of this review of literature, the aim of this study explorec the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated violent female offenders that had been released from prison in the last two years using Yochelson and Samenow's criminal thinking theory. Quantitative methods were used to address the purpose of the study. The theoretical framework that guided this research was Yochelson and Samenow's theory on criminal thinking.

Criminal thinking theory (Yochelson & Samenow, 1976; 1977) was a useful approach for framing research that considered the causes and nature of criminality

alongside recidivism, mental illness, gender-related differences, and other subtopics (Mandracchia et al., 2015; Morgan et al., 2015). Criminal thinking primarily affected thinking patterns, automatic errors of thinking, and the process whereby ideas were translated into a response or action (Yochelson & Samenow, 1976; 1977). Relationships between mental health and criminogenic thinking, as well as certain mental illnesses and criminogenic thinking, had been found in recent research; however, additional research was needed to understand criminal cognitions over time and whether criminal cognitions change based on different environmental factors (Mandracchia et al., 2015).

High rates of recidivism were indicative of ineffective prison outcomes to a certain degree (Carr et al., 2016). Predictors of recidivism that had been discussed frequently in recent literature include mental health conditions, substance, abuse, experiences of hardship, lack of access to resources/job opportunities, age, gender, antisocial personality scales, criminal thinking, distress, criminogenic needs, criminality within the family, gender, family rearing, risk scales, antisocial behavioral history, substance abuse, and social achievement, stigma, prison, discrimination, anger problems, and alcohol abuse. Interventions designed to prevent recidivism were implemented by some criminal justice institutions during incarceration, during offenders' release period, or over a long-term period following their release (Gobeil et al., 2016). Some programs involved substance abuse or mental illness treatment; others center on education and provided resources to ease the transition of reentry into society.

Chapter 3 offers details of the methodology selected for this research. The purpose and research questions were reviewed, followed by the role of the researcher.

Aspects of the methodology were then explained, including the instrumentation and data analysis plan. Threats to validity were then explained within the context of the study. Ethical procedures that followed would also be explained. A summary will conclude the chapter.

Chapter 3: Research Method

Introduction

The specific topic explored in this study was the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated violent female offenders that had been released from prison in the last 2 years using Yochelson and Samenow's criminal thinking theory was a predictor of recidivism (Folk et al., 2016; Pimlott Kubiak et al., 2015; Pantalone et al., 2018). Based on the gap in literature, additional research was needed to understand the relationship between criminal thinking and the recidivism of violent female offenders, particularly as mental health and criminal thinking were both factors related to potential predictors of recidivism (Collica-Cox & Furst, 2018). Given this purpose, the following research questions and hypotheses were developed to guide the proposed study:

RQ1: Is there a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H$_0$1: There is no statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha1: There is a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of

non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

RQ2: Is there a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

H$_0$2: There is no relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha2: There is a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

RQ3: Is there a statistically significant association between the age of female offenders and the number of incarcerations?

H$_0$3: There is no statistically significant association between PICTS scores related to age and number of incarcerations.

Ha3: There is a statistically significant association between PICTS scores related to age and number of incarcerations.

RQ4: Is there a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H₀4: There is no relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha4: There is a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

The remainder of this chapter explores, in detail, the proposed methodology and procedures for this study. I start with an explanation of the role of the researcher, an in-depth description of the methodology, including participant selection and criteria, and instrumentation that would be used for this study. Next, I present a section on the procedures that would be used to recruit participants and collect data, followed by a data analysis plan. The chapter concludes with ethical procedures and a summary of the chapter's most salient points.

Research Design and Rationale

This study used a comparative, nonexperimental, cross-sectional design and a quantitative methodology. A cross-sectional study, rather than a longitudinal study, was more fitting for this study since data collection involved survey questionnaires that only occurs during a single period (Asiamah, Mends-Brew, & Boison, 2019). Additionally, because I explored the differences between female offenders and nonoffenders at one specific period, I used a nonexperimental approach because there would be no manipulation of variables or the random assignment of participants. Finally, this study was comparative since I utilized test norms to compare their results to the offender group.

Population

The primary target population for this study included the adult female violent ex-offenders in Central Texas. The ideal sample size for this population was 128 participants. The minimum sample size for this study was 82, which was computed using power analysis. The required number of samples was determined through power analysis. Power analysis was conducted through G*Power software. The sample size computation was based on different factors. These included the type of statistical analysis consisting of Cohen's effect size, level of significance, the statistical power, and the probability of rejecting a false null hypothesis.

I used a quantitative method, which was an appropriate choice since the objective of the study was to measure variables and analyze them using a statistical analysis to explain the phenomena (Mustafa, 2011). A quantitative research design was also a better choice given that one objective of this study was to examine the potential relationships and differences between the identified variables. In order to determine association of the results to the characteristics of violent female offenders, test norms were used consisting of female nonoffenders.

Sampling and Sampling Procedures

A computation of the ideal sample size was conducted using the G*power analysis. First, an *a priori* power analysis was conducted with the following factors: (a) statistical test of means: difference between two independent means (two groups), (b) two-tailed test, (c) medium effect size of 0.50 for an independent sample ANOVA, (d) level of significance of 0.05, and (e) statistical power of 0.80, which was normally used in

quantitative studies (Faul et al., 2009). The computation yielded a minimum sample size of 128 samples, 64 samples for each of the two sample groups of (a) recently released female violent offenders and (b) normative control sample of non-offenders. Second, an *a priori* power analysis was conducted with the following factors: (a) statistical test of correlation: point biserial model, (b) two-tailed test, (c) medium effect size of 0.50 for a correlation analysis, (d) level of significance of 0.05, and (e) statistical power of 0.80. The computation yielded a minimum sample size of 82 samples. The higher between the computations used was 128 samples. This meant that there would ideally be at least 128 samples as the minimum to achieve the required statistical power for a quantitative study of 80% using both the statistical analyses of independent sample ANOVA test and correlation analysis. Thus, the target sample size for this study, as based on a power analysis, was 128 which included a breakdown of at least 64 samples of recently released female violent offenders (study group) and at least 64 samples of normative control sample of nonoffenders (control group).

Inclusion criteria for ex-offenders was that they were adult females 18 years of age or older, had served any length of prison time for violent-based offenses in Texas and must have currently been released from prison. However, inclusion criteria did not include specific socioeconomic backgrounds, race, ethnicity, or sexuality. I posted an online flyer survey around the community and at number of local facilities. These facilities included sober living facilities, nonprofit organizations, probation officials, halfway houses, substance abuse treatment programs, and street poles/signs in Central Texas in order to gain access to the adult female population of violent ex-offenders.

Given the specific criteria needed as well as the difficulty in reaching this specific population, purposive sampling was used. A short inclusion inquiry presented along with a document of implied informed consent was used before the instruments for this study in order to assess that the participants met the inclusion criteria. Any individuals who did not meet the criteria were included in the study.

For the sample of participants in the test norms, inclusion criteria must have included that they were adult females over the age of 18, have had never been convicted of a crime, and lived in Central Texas. This critera ensured that there were parallel demographics with the ex-offenders.

Procedures for Recruitment, Participation, and Data Collection

Before any preliminary contact with potential participants, I received Institutional Review Board (IRB) approval and permission to conduct research. After receiving notification from IRB, I began working on creating my survey and scouting potential areas to advertise my online survey. Once survey was posted, I discussed both academic and government policies that pertained to ethical standards, including confidentiality and the importance of maintaining the anonymity of the participants within the survey.

The Implied Informed Consent Form provided background information regarding the study, a description of the study questionnaires, the purpose of the study, the directions for completion in the study, the participant inclusion criteria, a statement concerning anonymity and voluntary participation, the risks associated with participation, the website location for research results, and my contact information.

The assessments and surveys were administered online to allow for standardization and minimized any potential bias associated with in-person administration. The platform utilized to administer the assessments was Survey Monkey. Survey Monkey was selected due to feasibility and low costs associated with the platform. The flyer was continuously posted on social media, and in local agencies. The data was recorded on Survey Monkey and remained in a password-protected file on my personal computer that always stayed in my possession throughout the study.

I posted the online flyer survey around the community and at number of local facilities. These facilities included sober living facilities, nonprofit organizations, probation officials, halfway houses, substance abuse treatment programs and local areas around the neighborhoods (light posts, mail boxes, street poles) in Central Texas. I also posted the flyer on social media. There were no conflicts of interest anticipated with this study. The informed consent included clear instructions on the procedures of the study. Once the participant accepted the informed consent and continued to the link of the online survey, it was implied that they agreed to the terms of the study.

Instrumentation

Three instruments were used for this study. The first was the PICT. The second was the MPWB. Last, I used a demographic questionnaire.

Psychological Inventory of Criminal Thinking

The first was the PICTS, which was an 80-item self-report measure designed that aimed to assess crime-supporting cognitive patterns. PICTS did so by measuring eight thinking patterns that were believed to be associated with a criminal lifestyle (Walters,

1995), based on Walters' (1990) lifestyle model, which suggested that criminal behavior was ground in specific lifestyles that could be liked to four specific behavioral styles: interpersonal intrusiveness, irresponsibility, self-indulgence, and social rule breaking (Palmer & Hollin, 2003). The first version of the PICTS was created in 1989 and had 32 items, with four items for each thinking style, all of which were rated on a 3-point Likert-type scale (*agree*, *uncertain*, *disagree*). One year later, the PICTS was revised by adding two validity scales – confusion and defensiveness – as well as a revision to the Likert scale to form a 4-point rating scale (*strongly agree*, *agree*, *uncertain*, *disagree*). Two years after the second version, the PICTS was revised once again, wherein the number of items for each scale was doubled – from four up to eight – as well as adding revised validity scales, factor scales, and content scales. Finally, the fourth version of the PICTS contains eight new fear-of-change items, bringing the PICTS to its current form: an 80-item inventory composed of two validity scales (revised Confusion scale [Cf-r] and revised Defensiveness scale [Df-r]), eight thinking-style scales (Mollification scale [Mo], Cut- off scale [Co], Entitlement scale [En], Power Orientation scale [Po], Sentimentality scale [Sn], Superoptimism scale [So], Cognitive Indolence scale [Ci], and Discontinuity scale [Ds]), four factor scales (Problem Avoidance scale [PRB], Interpersonal Hostility scale [HOS], Self-Assertion/ Deception scale [AST], and Denial of Harm scale [DNH]), two general content scales (Current Criminal Thinking scale [CUR] and Historical Criminal Thinking scale [HIS]), and one special scale (Fear of Change scale [FOC]). The survey had been shown to have well-established internal consistency, test-rest reliability, and temporal stability of the PICTS scales (Walters, 2002).

Measure of Psychological Well-Being

The second instrument used during this research was the MPWB. The MPWB, developed by Choi et al. (2014), was a short-form scale designed to assess psychological well-being among adults of all ages. This seven-item Likert-type scale was intended to measure seven constructs of well-being on the basis of whether participants *agreed not at all* (1), *agreed a little* (2), or *agreed a lot* (3). The instrument specifically measured the constructs of purpose in life, self-acceptance, personal growth, acceptance of living situation, perceived constraints, personal mastery, and self-efficacy. Items three and five were reverse-coded.

Demographic Questionnaire

The third instrument used in the study was a simple demographic questionnaire consisting of approximately 10 questions that were also administered to participants. The demographic questionnaire covered basic questions pertaining to the demographic characteristics of participants, including age, race, socioeconomic status, and education level. While not all of this information may have been pertinent, the collection of demographic data provided the researcher with a more informed basis to analyze the data.

Data Analysis Plan

I entered the data gathered from the responses of participants in the Survey Monkey into SPSS v23.0 to prepare for data analysis. The study included an analysis of the demographic characteristics of participants using descriptive statistics, such as frequencies and percentages for categorical variables and measures of central tendencies

for continuous variables. I planned to also calculate each participant's scores for the domains of the two assessments.

RQ1: Is there a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H₀1: There is no statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha1: There is a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

RQ2: Is there a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

H₀2: There is no relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha2: There is a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

RQ3: Is there a statistically significant association between the age of female offenders and the number of incarcerations?

H$_0$3: There is no statistically significant association between PICTS scores related to age and number of incarcerations.

Ha3: There is a statistically significant association between PICTS scores related to age and number of incarcerations.

RQ4: Is there a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H$_0$4: There is no relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha4: There is a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Analysis Plan

The analysis for (RQ1) used an ANOVA which tested the significance of group differences between two or more. I conducted linear regression analysis to determine

whether statistically significant correlations existed between the PICTS scores of recently released female violent offenders and normative control sample of non-offenders.

The analysis for (RQ2) was conducted with a linear regression analysis to determine if statistically significant correlations existed between the PICTS scores and age of first incarceration (via the PICTS).

The analysis for (RQ3) was conducted further with a linear regression analysis to determine if statistically significant correlations existed between the PICTS scores of the ages of the recently released female violent offenders and their number of incarcerations (via the PICTS).

The analysis for (RQ4) utilized an ANOVA which tested the significance of group differences between two or more. I conducted linear regression analysis to determine whether statistically significant correlations existed between the MPWB scores of recently released female violent offenders and normative control sample of non-offenders.

For this study, there were two different statistical analyses that were conducted. These included an independent sample ANOVA which tested the significance of group differences between two or more; and a correlation analysis to address research question three. The ANOVA between two independent groups was conducted to determine whether there was a statistically significant difference between the criminal thinking scores and the normative control sample of non-offenders as measured by the PICTS assessment, whether there was a relationship between age of first incarceration PICTS score, and whether there was a statistically significant association between the age of

female offenders and the number of incarcerations. The power analysis conducted was for both statistical analyses.

Threats to Validity

Validity was a crucial component in research as it establishes the ways in which findings of the study lead to valuable conclusions. While this study's research methodology ultimately determined its validity, it was also important to note that the validity of an instrument was also significant. That was why the instruments being used for this study had been validated. The PICTS was found to have moderate to moderately high internal consistency and test-retest stability, and meta-analyses of studies in which the PICTS has been administered found that the PICTS scales were able to predict future adjustment/release outcome at a low but statistically significant level (Walters, 2002).

The influence of confounding variables could threaten the external validity of a study. To combat this issue, a demographic questionnaire was administered to participants. Gathering demographic information helped to ensure that similarities and differences between the control and non-control samples were rooted in this study's central concepts, rather than differences on the basis of education, age, race, and other demographic traits (Persaud & Mamdani, 2006). The questionnaire acted to sort participants and ensure representation in the population being studied, which made the results more generalizable.

Moreover, for the purpose of this study, I attempted to control internal threats to validity of maturation by making sure that the study happened within a fixed period. The participants had four weeks to respond to the initial recruitment letter. Conducting this

study in such a timely manner helped to ensure that data obtained was relevant and able to provide valid conclusions. Participants were selected purposively and had membership in the community under investigation, ensuring that data collected was relevant to the research questions.

Ethical Procedures

Before starting the data collection processes, this research study received IRB approval from the University. Because this study used a survey method, which involved humans as participants, I made sure to protect the anonymity and of participants. Participants' anonymity stayed protected with an implied informed consent form attached to the first page of the online survey. Moreover, there were no identifiable information from the participants and all data remained anonymous.

Each participant seen an informed consent page before taking their survey. To ensure anonymity of participants, there were no identifiable information, such as name or address, collected. Only aggregate data appeared in any published work. Participants were advised that they may leave the study at any time without penalty, and that their participation would not impact anything in their personal or professional lives.

All the data collected in this study stayed secure in a password-protected computer and personally kept safely guarded. All surveys and documentation for the current study remains for five years after the completion of this study, after which it would be deleted. In addition, there were no foreseeable adverse events triggered by the participation in this study or by the use of the surveys or assessments for participants, and no conflicts of interest were anticipated. Participants were informed that their

participation was anonymous and the study was voluntary. They were assured that they could stop at any time.

Summary

The purpose of the quantitative research study explored the relationship between criminal thinking, psychological wellbeing, age, and recidivism among previously-incarcerated violent female offenders that had been released from prison in the last two years. The group of interest in this study were female violent offenders in the region of Central Texas. The ideal sample size for this population was 128 participants. The minimum sample size for this study was 82, which was computed using power analysis. In addition, a small number of non-offender participants were also recruited as a control group. After signing an Informed Consent form, all participants took an online flyer survey, the Psychological Inventory of Criminal Thinking Styles (PICTS), and the Measure of Psychological Well-Being (MPWB). Data analysis included determining associations between criminal thinking in ex-offenders and non-offenders, between criminal thinking for both ex-offenders and non-offenders, as well as an association with the PICTS scores. Chapter Four will present the results of this study.

Chapter 4: Results

Introduction

The purpose of this quantitative research study was to analyze the relationship between criminal thinking, age, psychological well-being, and recidivism among recently released female violent offenders through the use of Yochelsen and Samenow's criminal thinking theory. The following research questions and hypotheses were addressed:

RQ1: Is there a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H01: There is no statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha1: There is a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

RQ2: Is there a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

H02: There is no relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha2: There is a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

RQ3: Is there a statistically significant association between the age of female offenders and the number of incarcerations?

H03: There is no statistically significant association between PICTS scores related to age and number of incarcerations.

Ha3: There is a statistically significant association between PICTS scores related to age and number of incarcerations.

RQ4: Is there a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H04: There is no relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha4: There is a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

The following is a discussion of the study's population and sample as well as a demographic description of the sample. Demographic descriptions included frequencies and percentages for categorical (nominal) variables and descriptive statistics of minimum, maximum, mean, and standard deviation for variables measured at the interval level of measurement. Also presented were the testing of parametric assumptions for the statistical analysis and results of hypothesis testing. This chapter concludes with a discussion of the results of this study.

The second research question's findings conform to the theory on criminal thinking, there were more offenders with only a high school education or lower in the offender group compared to the nonoffenders group. This shows lower levels of education and lack of access to education may have impacted incarceration rate, recidivism, and criminal thinking (Mandracchia et al., 2015). Consequently, their thinking was decidedly different from ordinary individuals who pick up these lessons over time. Criminal thinking theory was a useful approach for framing research that considers the causes and nature of criminality alongside recidivism, mental illness and other subtopics (Mandracchia et al., 2015; Morgan et al., 2015). The findings of this study support the theory on criminal thinking (Yochelson & Samenow, 1976; 1977) and further demonstrates distinctions between general society and the criminal population.

Recidivism was more likely to take place in individuals who had higher frequencies of crimes. Relationships between mental health and criminogenic thinking and certain mental illnesses and criminogenic thinking had been found in recent research; however, additional research was needed to understand criminal cognition over time and

whether criminal cognition changes based on different environmental factors (Mandracchia et al., 2015). For example, an individual who was mentally preoccupied with committing a crime would likely do so which would increase incarceration risk. If he did not reform his thinking patterns in prison, there was a higher risk of recidivism once he was released because this is the familiar choice for him (Samenow, 2014).

The results of the fourth research question on the association of mental well-being and criminal thinking indicate that well-being was an independent factor that can regulate criminal thinking (Walters, 2107). Criminal thinking theory did not explore causative factors affecting criminal thinking but acknowledged that criminals have distinctly different thinking patterns (van Ginneken, 2015; Vrabel et al., 2019). Hence, as far as well-being was concerned, the theory worked beyond its purview.

Data Collection

The primary target population for this study included the adult female violent ex-offenders in Central Texas. Inclusion criteria for ex-offenders were that they were adult females 18 years of age or older, had served any length of prison time for violent-based offenses in Texas, and were released from prison at the time of the study. In addition, nonoffender participants were also recruited as a control group. The platform utilized to administer the assessments was Survey Monkey. Survey Monkey was selected due to feasibility and low costs associated with the platform. A flyer which explained the purpose of the study was continuously posted on social media and around the community of Central Texas. A link to the survey was provided on the advertised flyer which

directed them to the assessments which included a demographic survey, the PICTS survey, and the MPWB survey.

Demographics

There were a total of $N = 98$ female participants in the study of which 70 (71.4%) were ex-offenders and 28 (28.6%) were not ex-offenders (Table 1).

Table 1

Are you a Female Ex-Offender?

	Frequency	Percent
No	28	28.6
Yes	70	71.4
Total	98	100.0

Table 2 provides the distribution of age categories of the ex-offenders and nonoffenders. Within the nonoffender group, most participants were in the 25-34 category, 11(39.3%), whereas ex-offenders were mostly in the 35-44 age category, 23(32.9%). In both groups, there were few people in the 55-64 and 65+ age categories. Among ex-offenders, there were 4(5.7%) in the 55-64 group and 2(2.9%) in the 65+ age category. Among nonoffenders, there were 6(21.4%) in the 55-64 group and 1(3.6%) in the 65+ group.

Table 2

Age Categorization

Are you a female ex-offender?		Frequency	Percent
No	25-34	11	39.3
	35-44	8	28.6
	45-54	2	7.1
	55-64	6	21.4
	65+	1	3.6
	Total	28	100.0
Yes	18-24	13	18.6
	25-34	16	22.9
	35-44	23	32.9
	45-54	12	17.1
	55-64	4	5.7
	65+	2	2.9
	Total	70	100.0

In order to determine if the distribution of ages were associated with the type of group (ex-offender or nonoffender) the Chi-Square test for association was conducted. The Chi-Square test of association was used to determine the level of association between two nominal variables. Table 3 provides the results of the Chi-square test which indicate that there was a significant association between group type (ex-offenders versus nonoffenders) and age category, $\chi 2(5) = 13.986$, $p = .010$. The Fisher's Exact test was used since there were five cells that had an expected count less than five.

Table 3

Chi-Square Tests for Age

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	13.549[a]	5	.019	.016
Fisher's Exact Test	13.986			.010
N of Valid Cases	98			

Note. 5 cells (41.7%) have expected count less than 5. The minimum expected count was .86.

Table 4 provides a breakdown of the distribution of race by ex-offenders and non-offenders. The proportions of Black or African Americans were similar in both groups: Nonoffenders 10 (35.7%) and ex-offenders 28(40.0%). There was a large discrepancy in the proportions of White women between nonoffenders, 15(53.6%) versus ex-offenders, 22 (31.4%).

Table 4

Race

Are you a female ex-offender?		Frequency	Percent
No	Black or African American	10	35.7
	Hispanic	3	10.7
	White	15	53.6
	Total	28	100.0
Yes	Asian / Pacific Islander	3	4.3
	Black or African American	28	40.0
	Hispanic	17	24.3
	White	22	31.4
	Total	70	100.0

In order to determine if the distribution of races were associated with the type of group (ex-offender or non-offender) the Chi-Square test for association was conducted. Table 5 provides the results of the Chi-square test which indicate that there was no significant association between group type (ex-offenders versus non-offenders) and race, $\chi 2(3) =$ 4.971, $p = .147$. The Fisher's Exact test was used since there were two cells that had an expected count less than five.

Table 5

Chi-Square Tests for Race

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	5.697[a]	3	.127	.125
Fisher's Exact Test	4.971			.147
N of Valid Cases	98			

Note. 2 cells (25.0%) have expected count less than 5. The minimum expected count was .86.

Table 6 provided the distribution of educational level of ex-offenders and nonoffenders. There was a considerable amount of individuals with lower educational levels (less than high school or high school) in the ex-offender group compared with the nonoffenders. Within the nonoffender group, 29 (41.4%) had less than a high school education and 30 (42.9%) had only a high school education. There were less non-offenders with lower educational levels: 1 (3.6%) less than high school and 8 (28.6%) high school education. Also, there were very few people with higher educational levels among ex-offenders: 1 (1.4%) with a Bachelors degree and 9 (12.9%) with some college.

In the nonoffender group, 5 (17.9%) had some college, 7 (25.0%) had a Bachelor's

degree, and 7 (25.0%) acquired a graduate degree.

Table 6

Education

Are you a female ex-offender?		Frequency	Percent
	<HS	1	3.6
	HS/GED	8	28.6
	Some college	5	17.9
No	Bachelors	7	25.0
	Graduate degree	7	25.0
	Total	28	100.0
	<HS	29	41.4
	HS/GED	30	42.9
	Some college	9	12.9
Yes	Bachelors	1	1.4
	Missing	1	1.4
	Total	69	98.6

In order to determine if the distribution of educational levels were associated with the

type of group (ex-offender or nonoffender) the Chi-Square test for association was

conducted. Table 7 provides the results of the Chi-square test which indicate that there

was a significant association between group type (ex-offenders versus nonoffenders) and

education level, $\chi 2(4) = 40.024, p < .001$. The Fisher's Exact test was used since there

were four cells that had an expected count less than five.

Table 7

Chi-Square Tests for Education Level

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	41.619[a]	4	.000	.000
Fisher's Exact Test	40.024			.000
N of Valid Cases	97			

The Psychological Inventory of Criminal Thinking Styles (PICTS) Survey

As mentioned earlier, the Psychological Inventory of Criminal Thinking Styles (PICTS) survey was used in order to measure individuals' level of criminal thinking styles. The PICTS is an 80-item self-report measure designed that aims to assess crime-supporting cognitive patterns. The items were measured on a Likert scale to form a 4-point rating scale (*disagree, uncertain, agree, strongly agree*). Reliability was measured by calculating Cronbach's alpha. A general accepted rule was that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good level. Nunnally (1978) recommends a minimum level of .7. Reliability was calculated as .982 which indicates excellent reliability for the PICTS. As a result, the mean of item responses was calculated and served as a measure of PICTS used in the analysis.

The Measure of Psychological Well-Being (MPWB) Survey

Measure of Psychological Well-Being (MPWB) Survey was used in order to measure overall well-being. The MPWB, developed by Choi et al. (2014), is a short-form scale designed to assess psychological well-being among adults of all ages. The responses ranged from 1 = *all of the time* to 5 = *none of the time*. Reliability was calculated with a Cronbach's alpha of 0.834 which was very good reliability. The mean

of item responses was calculated and served as a measure of well-being used in the analysis.

Wellbeing ranged from 1.00 to 4.60 ($M = 2.43$, $SD = 1.06$) and PICTS ranged from 1.21 to 3.88 ($M = 2.90$, $SD = .98$). This information was provided in Table 8.

Table 8

Descriptive Statistics of Wellbeing and PICTS

	N	Min	Max	M	SD	Skewness	Kurtosis
Wellbeing	95	1.00	4.60	2.43	1.06	.711	-.826
PICTS	95	1.21	3.88	2.90	.98	-.875	-1.051

Parametric Testing of Assumptions

The assumptions of normality and absence of outliers were first tested. Skewness and kurtosis index were used to identify the normality of the data. The results suggested the deviation of data from normality was not severe as the value of skewness and kurtosis index were below 3 and 10 respectively (Kline, 2011). Hair et al. (2010) and Bryne (2010) argued that data was considered to be normal if skewness was between -2 to +2 and kurtosis was between -7 to +7. Table 9 provides the ranges of standardized values for wellbeing and PICTS. There were no standardized values beyond -3/+3, thus there were no outliers in the dataset.

Table 9

Ranges of Standardized Scores

	N	Min	Max
Wellbeing	95	-1.35	2.04
PICTS	95	-1.73	.99

The assumption of equality of variances was tested in order to determine if the variances of PICTS were similar between ex-offenders and non-offenders. A significant Levene's test indicated that there was a violation of this assumption, $p = .042$. Therefore, a Welsh's t test was used which compensates for this violation.

Lastly, linearity was tested in order to determine if there was an approximate liner relationship between PICTS and wellbeing scores. The scatter plot in Figure 1 below indicates an approximate negative linear relationship between PICTS and wellbeing scores. An increase in an individual's wellbeing seems to be associated with a decrease in criminal thinking.

Figure 1

Scatter Plot Depicting the Negative Relationship Between Wellbeing and PICTS
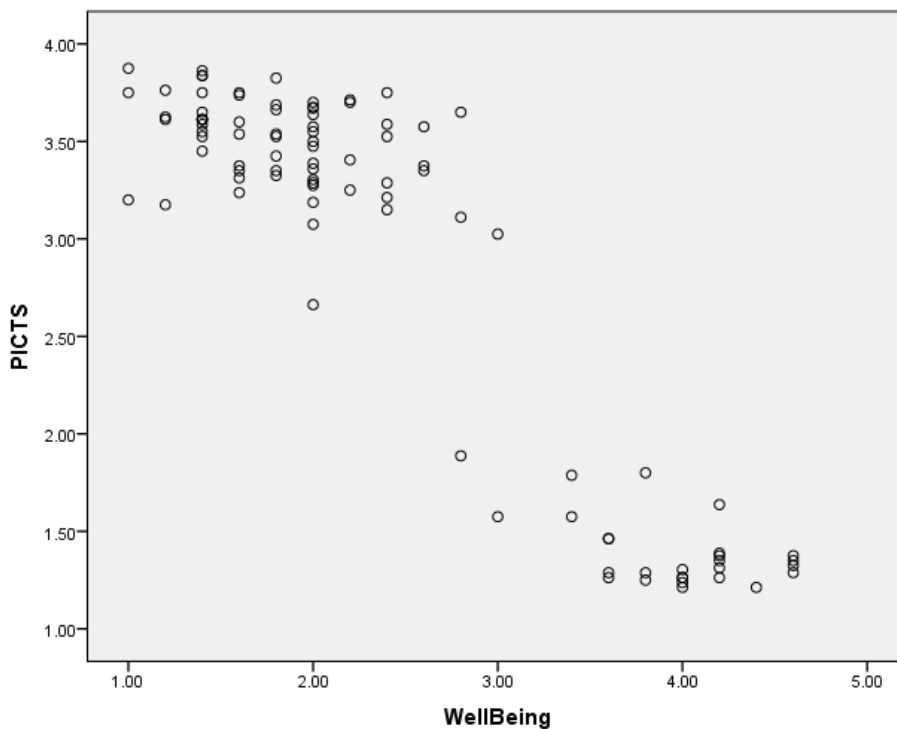
Results

An independent *t*-test was conducted in order to address this first research question and hypothesis:

RQ1: Is there a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

H$_0$1: There is no statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha1: There is a statistically significant difference between the criminal thinking scores of recently released female violent offenders and the normative control sample of non-offenders as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

There were 26 non-offenders and 20 ex-offenders. An independent-samples *t*-test was run to determine if there were differences in the criminal thinking scores (PICTS) of non-offenders and ex-offenders. There were no outliers in the data, as assessed by standardized values. PICTS scores were normally distributed, as assessed by skewness and kurtosis indexes but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ($p = .042$). The mean criminal thinking scores were greater in the ex-offender group ($M = 3.47$, $SD = 0.30$) than non-offenders

($M = 1.38$, $SD = 0.17$), a statistically significant difference, $M = 2.09$, 95% CI [1.99,

2.19], $t(80.586) = -42.787$, $p < .001$. Tables 10 and 11 provide this information.

Table 10

PICTS Score

	Are you a female ex-offender?	N	Mean	Std. Deviation	Std. Error Mean
PICTS	No	26	1.38	.17	.03
	Yes	69	3.47	.30	.04

Table 11

Independent t-*Test (Equal Variances Not Assumed)*

t	df	p	Mean Difference	Std. Error Difference	95% CI of the Difference	
					Lower	Upper
-42.787	80.586	.000	-2.09	.05	-2.19	-1.99

A one-way ANOVA was conducted in order to address this second research

question and hypotheses:

RQ2: Is there a relationship between the age of first incarceration and the score

measured by the Psychological Inventory of Criminal Thinking Styles (PICTS)

assessment.

H₀2: There is no relationship between the age of first incarceration and the score

measured by the Psychological Inventory of Criminal Thinking Styles (PICTS)

assessment.

Ha2: There is a relationship between the age of first incarceration and the score measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

A one-way ANOVA was conducted to determine if PICTS scores of ex-offenders were different among age categories. There were no outliers in the data, as assessed by standardized values. PICTS scores were normally distributed, as assessed by skewness and kurtosis indexes and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances ($p = .437$). Participants were classified into six age groups: 18-24 ($n = 13$), 25-34 ($n = 15$), 35-44 ($n = 23$), 45-54 ($n = 12$), and 65+ ($n = 2$). PICTS score was greatest for the 55-64 age group ($M = 3.57$, $SD = 0.20$) and the lowest score was in the 25-34 age group ($M = 3.38$, $SD = 0.47$). The differences in mean PICTS between the age categories, was not statistically significant, $F(5, 63) = 0.430$, $p = .826$. Tables 12, 13, and 14 provide this information.

Table 12

Descriptive Statistics of PICTS by Age

Age	Mean	Std. Deviation	N
18-24	3.45	.32	13
25-34	3.38	.47	15
35-44	3.50	.23	23
45-54	3.51	.20	12
55-64	3.57	.20	4
65+	3.51	.19	2
Total	3.47	.30	69

Table 13

Levene's Test of Equality of Error Variances

F	$df1$	$df2$	Sig.
.981	5	63	.437

Table 14

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	p
Corrected Model	.206	5	.041	.430	.826
Intercept	429.366	1	429.366	4477.310	.000
Age	.206	5	.041	.430	.826
Error	6.042	63	.096		
Total	838.336	69			
Corrected Total	6.248	68			

The third research question pertained to the relationship between age of female ex-offenders and the number of incarcerations:

RQ3: Is there a statistically significant association between the age of female offenders and the number of incarcerations?

$H_0$3: There is no statistically significant association between PICTS scores related to age and number of incarcerations.

Ha3: There is a statistically significant association between PICTS scores related to age and number of incarcerations.

Information regarding the number of incarcerations was not collected due to concerns of participants being poor historians with the inability to accurately recall

number of incarcerations thus this could not be directly measured. However, as addressed in Research question 2, PICTS scores were not significantly different based on age categories. Therefore, it seems likely that there was no significant association between age and the number of incarcerations.

Linear regression was used in order to address this fourth research question and hypothesis:

RQ4: Is there a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment?

$H_0$4: There is no relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS) assessment.

Ha4: There is a relationship between the mental well-being as measured by the Measure of Psychological Well-Being (MPWB) and criminal thinking

To assess linearity a scatterplot of wellbeing against PICTS score was plotted. Visual inspection indicated a linear relationship between the variables. There was homoscedasticity and normality of the residuals and there were no outliers outside -3/+3 standard deviations. Wellbeing score significantly predicted PICTS score, $F(1, 94) = 495.621$, $p < .001$, accounting for 84.2% of the variation in PICTS score ($R^2 = .842$). A one unit increase in wellbeing leads to a 0.844 decrease in PICTS score. Tables 15, 16, and 17 provide this information.

Table 15

Model Summary[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.918[a]	.842	.840	.39007	1.763

Note. a. Predictors: (Constant), Wellbeing; b. Dependent Variable: PICTS.

Table 16

ANOVA[a]

	Sum of Squares	df	Mean Square	F	p
Regression	75.410	1	75.410	495.621	.000[b]
Residual	14.150	93	.152		
Total	89.560	94			

Note. a. Dependent Variable: PICTS; b. Predictors: (Constant), Wellbeing.

Table 17

Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Std. Error	Beta		
(Constant)	4.955	.101		49.256	.000
Wellbeing	-.844	.038	-.918	-22.263	.000

Note. a. Dependent Variable: PICTS.

Summary

The purpose of this quantitative research study was to analyze the relationship between criminal thinking, age, psychological well-being, and recidivism among recently released female violent offenders through the use of Yochelsen and Samenow's criminal thinking theory. Regarding the first research question, there was a significant mean difference in PICTS scores between ex-offenders and nonoffenders. Mean PICT scores of

ex-offenders were significantly greater than non-offenders. Pertaining to the second research question, there were no significant mean differences in PICTS scores based in age categories. No data was collected on the number of incarcerations; thus the third research question was not addressed. Lastly, pertaining to the fourth research question, there was a significant negative relationship between wellbeing and PICTS scores. Increasing wellbeing results in a significant decrease in criminal thinking, as measured by PICTS score.

What follows in Chapter 5 was a discussion as to how the results of this study were interpreted in the context of the theoretical framework. Limitations of the results of the study are provided. Additionally, recommendations for future research are discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative research study was to analyze the relationship between criminal thinking, age, psychological well-being, and recidivism among recently released female violent offenders through the use of Yochelsen and Samenow's criminal thinking theory. This study contributed to the understanding of how criminal thinking influences recidivism of formerly incarcerated female violent offenders (Yochelson & Samenow, 1976; 1977).

This section was aimed at analyzing the findings of the study and focusing on ways those findings can promote positive social change. The first research question addressed in this study was whether offenders were more likely to have criminal thinking, the study's findings were affirmative. There was a statistically significant difference between criminal thinking scores of recently released female violent offenders and nonoffenders. The second research question was whether offenders' age at first incarceration was likely to influence criminal thinking, there was no relationship between the age of the first incarceration and levels of criminal thinking. The third research question was whether offenders' age influenced the number of incarcerations, however the number of incarcerations was not collected due to concerns of participants being inaccurate. The fourth research question was whether offenders' well-being influenced criminal thinking, the study's findings were affirmative. There was a relationship between mental well-being and criminal thinking.

Interpretation of the Findings

In this study demographic data was also collected. Age of participants and educational levels were included in the demographic data. The following two findings speak to this set of demographics.

- There were more younger female offenders (under 45 years) compared to the older female offenders who participated in this study.

- Offenders were more likely to have dropped out of high school or only had a high school degree than the non-offender group.

These findings were consistent with previous studies that have demonstrated that low education levels often lead to dire economic conditions such as poverty, which also triggered criminal activity (Machin, Marie & Vujić, 2011; Kearney et al., 2014). Hence a person with a low level of education was likely to have fewer options of earning an income and may resort to crime. This phenomenon was also evident in low-income neighborhoods with lower mean levels of education and higher crime rates. Thus, this study reinforced previous scholars' findings who had ably demonstrated the connection between poor education and crime.

The next pertinent finding is the role of criminal thinking.

- There is a statistically significant difference between criminal thinking scores of recently released female violent offenders and nonoffenders.

Recidivism was more likely to occur among offenders than non-offenders (Mulder et al., 2011). Studies indicated that serving time may have had the opposite effect on an offender, hardening them to criminal activity instead of reforming them to become better

society members (Haney, 2012). Therefore, the study's findings were similar to other studies that had proven this over time, validating previous researchers' claims.

A third interesting finding was the role of age and the theoretical construct of criminal thinking.

- There was no relationship between the age of the first incarceration and criminal thinking.

Van der Geest et al. (2016) demonstrated that the first incarceration and criminal thinking age were significantly related. The lower the age the person began criminal behavior the more the person had a pattern of criminal thinking. He attributed this phenomenon to the simple fact that younger inmates get exposed to older, more hardened criminals within the prison system, which could worsen rather than improve their outlook on crime. Once such offenders were released from prison, not only were their attitudes more accommodating of criminal thought and crime, they may have built a network of enablers in the outside world based on recommendations from prison. These factors could lead an increase in criminal behavior and increased levels of recidivism. Recidivism had also been linked to criminal thinking, which involved two central processes within an offenders' thoughts, reactive and proactive criminal thinking. The former involved reactions, indicating weak control over impulses and emotions, while the latter suggests the ability to plan and be deliberate (Walters, 2107). The findings of this study differed from these findings, which may have suggested that this contradiction was only specific to the sample group that the researcher examined. Samenow (2014) suggested that all criminal behavior was a matter of an individual consciously making the wrong choice

regardless of how good or bad their personal circumstances happen to be. Hence in this context, recidivism would not be due to criminal thinking patterns but a deliberate effort by the criminal to commit crime.

These findings were consistent with Farrington et al. (2013), who demonstrated the same factor in their study on the association between age and offenses committed. However, he pointed out that this fact was only contradicted when considering the case of professional criminals or gangsters such as members of the mafia, who can repeatedly serve sentences over their criminal career. Habitual criminals could be jailed several times over decades, which means that if the sample were focused on specific types of criminals, then there would be a statistically significant relationship between age and the number of incarcerations. In such a scenario, the higher the age, the larger the number of incarcerations the sample may have indicated. Hence, this study was partially true and in conformity with previous studies.

Fourth, data revealed the role of mental health and criminal thinking.

- There is a negative relationship between mental well-being and criminal thinking.

Maschi, Viola & Morgen (2014) investigated the associations between mental stability and behavior. He found that the more stable the study subjects were, the less erratic their behavior became. This stability was reflected in improved social interactions within their workplace and home life. Subjects suffering from depression displayed a tendency for unreliability, lack of discipline, and a poor work ethic. His findings mirror this study's findings and validate them despite the two research works' key distinctions of stable

behavior and unstable behavior. This study found a significant association between age distribution and offender type, as demonstrated in a chi-square test. There were younger female offenders (under 45 years) compared to the older.

The study also found a significant association between education and likelihood of offending, with the less educated being more likely to commit the crime. Hence, more offenders with a less than high school or high school only education level in the offender group than the non-offenders. This also suggested possible future studies for scholars.

A linearity test found an approximate negative relationship between well-being and likelihood to become an offender. The higher the individual's well-being scores, the less likely they were to end up offending.

Limitations of the Study

This study had several limitations. First, the fundamental research was quantitative, gathering data from the respondents using questionnaires with closed-ended questions. This approach did not allow input from other influential stakeholders such as prison administrators, psychologists, prison guards and other relevant staff. A suggestion could be future researchers broadening their participants to include other people in the prison. Such participants may have introduced hidden but influential aspects of the prison system, which could have changed the recommendations.

Second, the study was only focused on a small sample of respondents who were all female. Generalizing this to males or both federal and state prison offenders was not possible due to the sample's unique nature. Accommodating the possibility of projection to these larger populations was limited, which would have been possible with a more

heterogeneous sample. Therefore, the study's generalizability and utility were limited to populations of offenders who possess the same characteristics as those included in this study.

Significance of the Study

This study had highlighted several factors that affect offenders and how these translated into their lives outside prison. This research provided a new body of findings relevant to mental health research about both offenders and non-offenders. Mental health scholars, judicial stakeholders, policymakers, and others may want to consider how the findings of this study may influence how release programs and oversight policies were developed. Furthermore, non-offenders were also likely to be part of the puzzle when making decisions about how education influences criminal behavior.

This study had also highlighted the importance of increasing education levels to reduce criminal thinking among likely offenders. The higher the educational level of individuals, the less likely they were to commit crimes. The more educated individuals were, the more likely they were to get good jobs, reduce criminal behavior, and reduce criminal thinking. The more educated individuals were, the more they understand the consequences of crime and how adversely it would affect their lives. The more educated individuals were, the higher the likelihood that they would come up with innovative solutions to life's challenges, eliminating the need for criminal behavior and thinking.

The findings of this study also highlighted the importance of reengineering the prison system to make it more useful for offenders and society as a whole. Prison reform activists would therefore find in the study some insights that may further enrich their calls

for the reorientation of the prison system resulting in a more humane system that prioritizes mental well-being.

The researcher's theoretical framework for this study was Yochelson and Samenow's theory on criminal thinking, which posited that criminals think differently and had different personalities than non-criminals because of their mental attitudes. Criminal thinking and choices theory was a valuable and practical theory for lending insight into the causes of criminal behavior, recidivism, gender-related differences among incarcerated individuals, and other research aimed at explaining/examining criminality (Yochelson & Samenow, 1976; 1977). The two researchers demonstrated that criminals use distinctly different thought processes than normal individuals, frequently mirroring doing the opposite of what was expected from an average person, e.g., a typical individual would generally dislike walking through a crowded street because he would have to bump into many people. Still, a pickpocket would love the opportunity because he gets a chance to steal from the unsuspecting public. Their view of the situation was peculiar and may or may not have justifications, such as blaming the victim for tempting them into the crime, hence rationalizing the crime they want to commit.

Finally, this study highlighted the importance of reengaging offenders after release to glean insights from them. A released offender was one of the best windows into the prison world, and their feedback has enriched this research in a significant way. Using offenders to formulate prison policy was a reliable approach to reforming the system because they would expose all its weaknesses with internal perspectives and solutions as

happens in Sweden (Nilsson, 2013). Mental health, education, age, and criminal thinking should all be considered when developing release programs and oversight.

Recommendations

Researchers may want to consider using a longitudinal study that considers the variables influencing criminal behavior over time. For example, tracking the recidivism rates over 20 years to how changes in policy may influence criminal behavior upon release. Tracking people who did reoffend over 30 years would also provide a deeper perspective, such as what motivated them to commit crimes repeatedly. The following will contribute to effective ways towards positive social change.

Prisons should consider prioritizing offenders' mental reorientation rather than emphasizing confinement and punishment for offenses. The mental well-being among offenders should be addressed and included in their release plan to assist in reducing recidivism rates. Ensuring that each offender was engaged in an activity that promotes their mental well-being in a permanent manner beyond the prison walls would likely translate into reduced criminal thinking and less recidivism (Mandracchia et al., 2015).

Prison programs need to be extended beyond the prison sentence to ensure the offenders continues to get support in the crucial first two years once they leave prison. Activities like counseling, community service, and mentoring the young, would likely keep an offender engaged in productive activities that open up new opportunities and reduce criminal thinking. Probation should be a period when the judicial system increases its engagement with the offenders rather than repeatedly reminding them that they were under watch and could land in prison at any time.

Future researchers may want to incorporate a mixed-method research design that would enable them to collect quantitative and qualitative data. Such a design would accord the study a more encompassing and insightful findings and conclusions. A longitudinal, mixed-method approach would provide even more profound and richer findings, illustrating the interplay between government budgeting, prison reforms, and administrative will. Including a focus group discussion for the prisoners in the qualitative aspect would enrich the study further and possibly provide revolutionary findings because the offenders would provide their perspectives, revealing dominant considerations that may not be readily apparent.

A broader sample of the country's prison population would also ensure future studies were more generalizable. A sample that considers various strata such as demographics, prison concentration, population, and crime prevalence would provide more generalizable findings applicable statewide or nationally.

Implications

Various implications proceeded from the findings and discussions above. First, the prison institution may not be reforming offenders with a focus on confinement and punishment for offenses rather than the mental reorientation of convicts. From the findings, it was evident that recidivist tendencies were more pronounced among offenders than the general public due to a preponderance of criminal thinking in their thought patterns. Gemeda (2017) explained that severe crimes and recidivism might be directly related to psychopathic personality traits, i.e., extreme criminals who eventually served time and were released were likely to end back in prison because of personality

aberrations. Furthermore, psychopathic personality traits like violence and impulsiveness also explain the effect of antisocial behaviors, such as crime, on mental health and its relation to recidivism. These weaknesses were worsened by other complicating factors such as age, number of sentences, and mental well-being, that were important in an offender's life. Researchers have suggested that women in prison report emotional and mental health problems related to the prison environment such as depression and anxiety (Caulfield, 2016; van Ginneken, 2015). Therefore, the findings illustrate a failure in the judicial systems that proclaim specific aims but fall far short of them or achieve entirely different results based on the recidivism rates seen above that show higher crime rates among ex-convicts compared to non-convicts.

The prisons' focus was to rehabilitate, however it may instead impact an individual's depression and criminal thinking (Adams et al., 2017; Crewe et al., 2017; Walters & Lowenkamp, 2016). The negativity in offenders' thought patterns, highlighting the bias towards crime among individual offenders who then relapse into recidivism. Therefore, prison could be considered a potential training ground for criminals rather than a place where offenders ponder their actions and seek ways to reform. The perpetuation of more crimes seems easier for offenders than non-offenders, which suggests potential weaknesses within the prison system's framework. Sardhamar & Telle (2012) found that recidivism rates dropped 20% in Norway when the focus of prison moved from retribution to wholesome rehabilitation. In essence, considering the results above, prison could worsen offenders' mental condition rather than improve and reshape their outlooks to make them better members of society.

Conclusion

In conclusion, this study set out to answer three research questions regarding the impact of various factors on criminal thinking and how these relate to recidivism (Yochelson & Samenow, 1976; 1977). The study indicates that mental health, age, and criminal thinking may affect recidivism. Using a cross-sectional quantitative design for data collection, prisons currently constituted may not be very effective in curbing recidivism. Therefore, the recommendation was that prison stakeholders can apply to salvage their institutions and minimize the perpetuation of crime in a setting designed to eliminate crime.

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