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Predictors of Recidivism for Offenders with Substance Use Disorders

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Walden University
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Abstract

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Yvonne Denise Cheeks

MA, Walden University, 2015

BS, Winston-Salem State University, 2010

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Recidivism is a substantial problem in the United States due to the number of paroles/probationers reoffending. The U.S. prison system has become the new asylum and a revolving door for individuals, which is even more true for those with substance use disorders (SUDs). Once these individuals leave prison, they are likely to end up reoffending at some point in the future due to substance use/abuse (i.e., committing crimes to support substance use, selling substances, etc.). Scholarly literature lacked studies examining the predictors of recidivism for offenders with SUD in North Carolina. . The purpose of this quantitative, correlational, cross-sectional study was to examine the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status with 3 years of release in North Carolina. Social learning theory was used as the theoretical framework for this study. The North Carolina Public Safety Division of Adult Correction and Juvenile Justice provided the secondary data of 5,903 cases in the final data set. Multiple logistic regression indicated statistically significant results related to age at initial offense (p = .000), ethnicity (p = .000), education attainment level (p = .003), and employment history (p = .007), and reoffending status within 3 years. The findings of this study may offer some insights to correctional officers who serve as community supervisors and be used by leaders and practitioners to help recommend treatment, interventions, and strategies to decrease recidivism for this population.

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Dedication

This study is dedicated to my departed parents, Major Nathaniel and Mary Lee Hairston, who instilled in me the importance of education; my loving husband, Johnnie Tyrone Cheeks; my children, Zakiyah Hairston, Kiana Hairston, and Addie Hill, for supporting me through this process of furthering my education along with my four siblings (departed Major National Hairston, Jr. and Kenneth Hairston); JoAnn Hairston, who is my biggest fan of furthering my education; Preston R. Hairston, who continuously encourages me to press on my journey; my grandchildren, Tremaine Naheem Hairston and London Nicole Hairston, who keep me grounded and rejuvenated; and my friends who constantly encourages me to practice perseverance on my educational journey. My special friend, Sharon Finely, who continues to bless me with spiritual guidance, and my mentor, Dr. Lelia Vickers.

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Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Recidivism is a substantial problem in the United States due to the number of paroles/probationers reoffending. In 2014, the Bureau of Justice noted that approximately 9% of 466,800 parolees were at risk of reoffending (Bureau of Justice Statistics [BJS], 2015). Approximately Ninety-nine-point-five percent (99.5%) of inmates (i.e., 92,678 inmates) in the federal prison system are believed to have a history of substance use (BJS, 2015). According to Smith (2014), the U.S. prison system has become the new asylum and a revolving door for individuals, which is even more true for those with substance use disorders (SUDs). Once these individuals leave prison, they are likely to end up reoffending at some point in the future due to substance use/abuse (i.e., committing crimes to support substance use, selling substances, etc.; Ben-Moshe, n.d.; Smith, 2014). Researchers have continued to struggle with understanding why there are so many occurrences of reoffending associated with community supervision (BJS, 2015; Department of Justice [DOJ], 2012; Knopf, 2018).

In this study, I examined the relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status in North Carolina. This chapter includes a summary of the background as well as a discussion of the problem, purpose, research question, theoretical framework, nature, definitions, assumptions, scope and delimitations, limitations, and significance of the study.

Background

Offenders with SUD are at more of an increased risk for reoffending than offenders without SUD (Baillargeon et al., 2009, Baillargeon et al., 2009; Lamb et al., 2004). According to the Bureau of Justice Statistics [BJS] (2015), an estimated 1,561,500 prisoners were held in federal and state prisons at the end of 2014. The BJS noted that probationers accounted for the majority of 82% of the federal and state prison population. In 2014, there were an estimated 2,067,100 entries to probation, which was down 1.3% from 2,094,100 during 2013. The number of cases assigned probation as necessary for release declined in 2014 from an estimated 3,910,600 in 2013 to 3,864,100 in 2014. The decrease in the probation population was due to the completion or early discharge of probation. From the end of 2007 to the end of 2014, the parole population increased by nearly 4%. At the end of 2014, an estimated 856,900 offenders were on parole, up from 855,200 at the end of 2013. The increase in the parole population was due to the state parole population increase, while the federal parole population decreased. (BJS, 2015).

According to BJS (2015), at the end of 2014, 25% of probationers were female, compared to 22% of probationers in 2000. In 2014, more than half of probationers (i.e., 54%) were non-Hispanic White, about 30% were non-Hispanic Black, and 13% were Hispanic, similar to 2000 (BJS, 2015). The percentage of probationers supervised for a felony offense increased during the past 15 years, from 52% in 2000 to 56% in 2014 (BJS, 2015). In 2014, males made up 88% of the adult parole population, the same percentage reported in 2000. The parole population was 16% Hispanic, a decrease from 21% in 2000. In 2014, 43% of the parole population was White, compared to 38% in

2000. More than 60% of parolees were supervised for a violent offense or a drug crime in 2014 (BJS, 2015).

Many different plausible related factors might explain recidivism, such as socio-economic status, gender, age, and employment. The most plausible reasons that explain the relatively high recidivism rate are centered on the reoffender's education literacy, lack of vocational job skills, lack of interpersonal skills, or substance abuse (Tegeng & Abadi, 2018). Another factor involved in a high recidivism rate is the impact of psychological factors, such as problems the offender was having before their first offense and imprisonment (Tegeng & Abadi, 2018). This study was needed to determine the predictors for parolees/probationers reoffending and how to address their needs to reduce recidivism.

Problem Statement

Recidivism is a substantial problem in the judicial system in the United States, with approximately 9% of 466,800 parolees at risk of reoffending and an estimated 5% of 2,067,100 probationers at risk of violating their conditions of supervision (BJS, 2015). Almost all (i.e., 99.5%) of inmates (approximately 92,678 inmates) in the federal prison system are believed to have a history of SUD and reoffending at some point (BJS, 2015). In North Carolina, at the end of 2017, there were approximately 97,624 offenders on community corrections supervision (North Carolina Department of Public Safety [NCDPS], 2018). Upon release from prison, these individuals require effective aftercare treatment programs that may help these individuals not to use substances again (Louden & Skeem, 2012).

According to Smith (2014), the U.S. prison system has become the new asylum and a revolving door for individuals with SUDs. Once these individuals leave prison, they are likely to end up reoffending again at some point in the future due to the ramifications of substance use (i.e., committing crimes to support substance use, selling substances, etc.). Offenders released to community supervision continue to have so many occurrences of reoffending, and researchers have continued to struggle with determining why there are so many occurrences of reoffending (BJS, 2015; DOJ, 2012). Nally et al. (2014) noted a higher unemployment rate amongst released offenders during the first year of release from correctional facilities, which was correlated with reoffending and returning to prison. Parolees with SUDs have a substantially increased risk of having their parole revoked for reoffending (Baillargeon et al., 2009). The impact of recidivism is very costly to the economic and judicial systems in the United States due to the high rate of homelessness, unemployment, and the cost of overcrowded prisons.

Some researchers have focused on the criminal behavior of the offender in the criminal justice system (Carmichael & Piquero, 2004; Duntley & Shackelford, 2008; Fox & Farrington, 2016; Wolff et al., 2013). However, this research illuminates essential findings regarding the predictors of recidivism for offenders with SUDs. I have found no research that has examined the predictors of recidivism for offenders with SUDs in North Carolina. Given such, further research was warranted to fill this gap and address the documented problem by examining the predictors of recidivism for offenders with SUDs. Therefore, I conducted this study on the high recidivism rate and determined the

relationship between demographic factors, educational attainment, employment history, history of substance use, and reoffending within 3 years of release.

Purpose of the Study

The purpose of this quantitative, correlational, cross-sectional study was to examine the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status with 3 years of release in North Carolina. I used secondary data from the Automated System Query (ASQ; http://webapps6.doc.state.nc.us/apps/asqExt/ASQ) system managed by the North Carolina Public Safety Division of Adult Correction and Juvenile Justice from the year 2017 to examine the arrest and incarceration history of individuals who had been released to community supervision within 3 years. The sample for this study was comprised of 568 participants from the archival data. The study included those in the database who were 18 years old or older who had been incarcerated and released at some point and time, and those who were released 3 years before the date the data were pulled or before January 1, 2015.

Research Question and Hypotheses

The following research question and corresponding hypotheses guided this study:

Research Question: What is the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status with 3 years of release in North Carolina?

H_0: There is no statistically significant predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status within 3 years of release in North Carolina.

H_A: There is a statistically significant predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status with 3 years of release in North Carolina.

The independent variables were age at initial offense, gender, ethnicity, educational attainment level, employment history, and substance use history (i.e., type of substance, severity of substance use, and substance use duration). I examined the dependent variable of recidivism to measure the reoffending status within 3 years of release (i.e., history of reoffending: 1 = yes, 0 = no).

Theoretical Framework

I used the social learning theory (SLT) as the theoretical framework of this study. The premise of SLT is that individuals learn from observing others' behaviors (Bandura, 1977). Copying the behaviors of others itself leads to reinforcing consequences (e.g., reoffending). Many behaviors that are learned from others yield satisfying or reinforcing results from criminal behaviors, which suggests that repetitive offending may also be learned (Astray-Caneda, et al., 2011).

SLT can help explain and predict how a person will behave because it suggests that people learn how to act from parents and others in their social environment (Bandura, 1977). The theory focuses on learning that occurs within a social context and learns from one another (Ormond, 1999). SLT assumes that effects from the behaviors a person engages in and are learned and reinforced based on the positive or negative feedback received from others. Positive reinforcements will result in behaviors being retained and stored in an individual's behavior "bank" to be repeated. Negative reinforcement of a particular behavior should indicate that society finds the behavior unacceptable and, therefore, not to be retained or repeated (Bandura & Kupers, 1964). SLT posits that learning through observation can have a powerful effect. The effect is enhanced when the observers believe that the person demonstrating the behavior is similar to themselves (Bandura, 1977).

The utilization of the theory as an effective approach to change human behaviors began in the early 1950s, and its use in the social and behavioral sciences as a mental health intervention grew in popularity in the late 1950s as interest in insight-oriented approaches diminished (Osgood, 1956; Spector, 1956; Thistlethwaite, 1951). SLT is one of the most influential learnings and human development theories and is rooted in many of the basic concepts of traditional learning (Mischel, 1973; Rosenstock et al., 1988). In the SLT, Bandura (1977) proposed that people can learn new information and behaviors by observing other people; therefore, observational learning, imitation, or modeling explains a wide variety of human behaviors.

Nature of Study

I conducted a quantitative, correlational, cross-sectional study using secondary data. The quantitative, correlational design was appropriate for this study because I looked at the relationships between variables (i.e., correlational) and did not attempt to establish causation (see Simon, 2012). I used the following statistical analyses: frequencies (i.e., descriptive statistics), chi-square tests to add to the descriptive analyses (and test for statistically significant differences between groups when the dependent variable is binary), and multiple logistic regression to answer the research question (see Rutter et al., 2007). Multiple logistical regression was appropriate to answer the research question because it is a predictive statistical analysis used to examine the predictive relationship (i.e., odds ratio) between multiple independent variables and the dependent variable (see Rutter et al., 2007).

Definition of Terms

Age at initial offense: An individual's age when they are arrested and/or imprisoned for doing something illegal (BJS, 2014).

Community corrections/community supervision: The supervision of persons released from a penal institution after they have served their sentence. These include parole and probation (Adult Correction & Juvenile Justice, n.d).

Offender: A person who was incarcerated in a correctional setting such as a jail or prison (Skeem et al., 2014).

Parole: A release status where the individual is under conditional post-release supervision in the community (BJS, 2015).

Probation: Correctional supervision in the community over an offender as an alternative to serving time in prison (BJS, 2014).

Recidivism: Rearrest of someone who has been released from incarceration. For the purposes of this study, it would be within 3 years following the initial release from incarceration (National Institute of Justice [NIJ], n.d.).

SUD: The recurrent use of alcohol and/or drugs that cause impairment in activities of daily living (Substance Abuse and Mental Health Services Administration [SAMHSA], 2015).

Assumptions

A key assumption that influenced the outcomes of this study is associated with secondary data. Other organizations have collected secondary data for their process purposes or by other researchers for different studies, but these same data can be useful to a researcher (Rabianski, 2006; Tasic & Feruh, 2012). When utilized by others than those who collected the data and when processes are applied that supplement, modify, summarize, update, or in any way manipulate the data, the possibility of error increases (Rabianski, 2006). The researcher needs to use secondary data to ensure that the original data collection and recording process was accurate, reliable, precise, unbiased, valid, appropriate, and timely. Additional potential errors using secondary data that could affect the reliability of the study include sampling and non-sampling errors, errors that invalidate the data, errors that require data reformulation, and errors that reduce reliability (Rabianski, 2006). Sampling errors are statistical issues surrounding the sample selection when the chosen sample does not reflect the total population. In contrast, non-sampling

errors arise from problems occurring during gathering the primary data, such as the observation or questioning phase (Rabianski, 2006). Errors that invalidate the data include that the secondary data might be contaminated and rendered invalid due to the actions or attitudes of the person(s) and/or organization assembling the data. Errors that require data reformulation occur when the secondary data are sometimes not directly useful to the researcher due to not adequately measuring the research concept (Rabianski, 2006; Tasic & Feruh, 2012). Errors to reliability are reduced when the dataset is accurate and free from procedural and measurement errors (Rabianski, 2006).

Scope and Delimitations

I conducted this quantitative, correlational, cross-sectional study to examine the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status with 3 years of release in North Carolina. I used secondary data from the ASQ system managed by the North Carolina Public Safety Division of Adult Correction and Juvenile Justice. The sample included data from individuals who are 18 years old or older who have been incarcerated and released at some point and time, and those who were released 3 years before the date the data were pulled or before January 1, 2015. The study results can only be generalized to individuals who are similar to the sample derived using these inclusion criteria and individuals who are similar to the demographics of the sample.

Limitations of Study

The limitations of this study were related to the design, methodology, and data collection, both of the initial collectors of the data as well as mine as the researcher conducting this study. The limitations of the data accuracy are based upon the quality of the standard operating procedures used and whether those who entered the data into the system followed the parameters of correct data input. Outliers can occur by human error in data collection. If any outliers were identified in the data analysis, I would have performed a *t* test before removing them (see Osborne & Overbay, 2004).

Significance of the Study

This study may affect social change by contributing towards an understanding of the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status with 3 years of release in North Carolina. The findings may offer some insights to correctional officers who serve as community supervisors to decrease recidivism in North Carolina. This information can also be used as a resource for leaders and practitioners involved in the North Carolina Public Safety Division of Adult Correction and Juvenile Justice and afford them with options to recommend treatments, interventions, and strategies to decrease recidivism for this population.

Summary

In summary, many reoffenders have parole or probation supervision failure due to the lack of educational attainment and employment history (Lennox et al., 2012).

Examining the predictors of recidivism of offenders released to community supervision and how the occurrences are impacted by employment could help society to serve reoffenders with employment upon release. Specifically examining the variables of age at initial offense, gender, ethnicity, educational attainment, employment history, history of substance use (i.e., type of substance, severity of substance use, and duration of substance use), and reoffending status within 3 years after release could provide valuable information to vocational rehabilitation programs to better serve this population. This study may provide insights to correctional officers who serve as community supervisors to why there is a high recidivism rate in North Carolina.

The findings of this study may also provide essential implications of risk factors that increase the occurrences of recidivism for reoffenders. This information could be used as a resource for leaders and practitioners involved in the North Carolina Public Safety Division of Adult Correction and Juvenile Justice. Chapter 2 provided an in-depth review of relevant literature on the topic and discussed this study's theoretical framework.

Chapter 2: Literature Review

In 2014, the Bureau of Justice noted approximately 9% of 466,800 parolees were at risk of reoffending. An estimated 5% of 2,067,100 probationers were at risk of violating their conditions of supervision due to substance abuse (BJS, 2015). Approximately 99.5% of inmates (i.e., 92,678 inmates) in the federal prison system are believed to have a history of substance use (BJS, 2015). Upon release from prison, these individuals require effective aftercare treatment programs that may help them not use substances again (Louden & Skeem, 2012).

The purpose of this quantitative study was to examine the relationships between gender, ethnicity, age at initial offense, educational attainment, history of substance use/abuse (i.e., type, severity, and duration), employment history, and the dependent variable of reoffending status in North Carolina. According to Smith (2014), the U.S. prison system has become the new asylum and a revolving door for individuals with substance use disorders. Once these individuals leave prison, they are likely to end up reoffending at some point in the future due to substance use/abuse (i.e., committing crimes to support substance use, selling substances, etc.; Ben-Moshe, n.d.; Knopf, 2018). Researchers have struggled to understand why there are so many occurrences of reoffending associated with community supervision (BJS, 2015; DOJ, 2012; Knopf, 2018). Nally et al. (2014) noted a higher unemployment rate among released offenders during the first year of release from correctional facilities, and this also correlated with approximately half of them reoffending. Parolees who have a SUD have a substantially increased risk of having their parole revoked for reoffending (Baillargeon et al., 2009).

SUD individuals have been found to have difficulty maintaining and securing employment (Nally et al., 2014).

In this chapter, I summarized and analyzed the research related to the present study and relevant theories and conclusions from past studies. Recidivism is discussed, as are demographic factors, history of substance abuse, employment history, and reoffending status in North Carolina. The SLT and how it is related to recidivism are also reviewed.

Literature Search Strategy

I searched the following databases and search engines for the topics of recidivism, jail, reoffending, prison, arrest, and SUDs: the BJS, EBSCOhost, SAGE, PsycINFO, PsycARTICLES, SocINDEX, ProQuest, Criminal Justice Articles, and Google Scholar. The keyword search terms related to the theoretical foundation were *SLT* and *Bandura*. The keywords used related to the problem included *recidivism, jail, reoffender, prison, arrest, rearrests, revocation, employment, education, criminal justice, substance used disorder*, and *theories.*

Theoretical Foundation

As the theoretical foundation for this study, I used the SLT for a complete integrated criminological approach to recidivism. Albert Bandura is credited with being the creator of SLT, even though many individuals contributed to its development (Ormrod, 1990). Bandura (1977) felt that behaviorism, as characterized in the 1950s, was too limiting in explaining human learning. Traditional behaviorists held that learning occurs gradually through trial and error with reinforcement. Still, Bandura believed that

learning could occur all at once, without practice or reinforcement, but by observing other people (Crain, 2000).

SLT posits that learning through observation can have a powerful effect. The effect is enhanced when the observers believe that the person demonstrating the behavior is similar to themselves (Bandura, 1977). The utilization of the theory as an effective approach to change human behaviors began in earnest in the 1950s, and its use in the social and behavioral sciences as a mental health intervention grew in popularity in the late 1950s as interest in insight-oriented approaches waned (Osgood, 1956; Spector, 1956; Thistlethwaite, 1951). SLT is one of the most influential learnings and human development theories and is rooted in many of the basic concepts of traditional learning (Mischel, 1973; Rosenstock et al., 1988). The theory focuses on learning that occurs within a social context and learns from one another (Ormond, 1999). In addition, in the SLT, it is anticipated that people can learn new information and behaviors by observing other people; therefore, observational learning, imitation, or modeling explains a wide variety of human behaviors (Bandura, 1977).

Traditional behavioral therapy has its roots and fundamental principles within SLT and centers on principles of learned behavior within a social context. Skinner (1953, 1974) documented that when the behavior occurs, whatever follows it (i.e., the consequences of behavior) can either increase or decrease the frequency, duration, or intensity of the behavior (Coady & Lehmann, 2008). Bandura (1977) added to the development of the therapy by exploring the role of cognition and emphasizing that people can learn vicariously. Bandura (1977) pointed out that people are motivated by

their goals and dreams and that people are more likely to perform a modeled behavior if the consequence is something they value (i.e., that helps reach their goal).

Consequently, humans tend to model themselves after similar people or those they admire (or want to be similar to; Bandura, 1977). Humans provide their own rewards (i.e., self-reinforcement) and are capable of delaying gratification. Learning occurs by observing others, getting an idea of how to behave, and using this information to guide what to do in future situations. Learning, more than imitation, is a process of active discovery (Bandura, 1977).

Social learning is achieved through continuous reciprocal interaction between cognitive, behavioral, and environmental influences (Bandura, 1977). In SLT, it is suggested that learned behaviors are learned not only by observation but also by demonstration. The theory was then advanced from "behaviorism" to social cognitive learning theory. Copying the behaviors of others leads to reinforcing consequences (e.g., reoffending). Many behaviors are learned from others yield satisfying or reinforcing results, which are applicable when considering criminal behaviors. It has been suggested that repetitive offending may also be learned (Astray-Caneda et al., 2011). Bandura (1974) believed that observing others' behaviors was an essential part of social learning.

SLT can help explain and predict how a person will behave because it suggests that people learn how to act from parents and others in their social environment (Bandura, 1977). SLT assumes that effects from the behaviors a person engages in are learned and reinforced based on the positive or negative feedback received from others. Positive reinforcements will result in behaviors being retained and stored in an

individual's behavior "bank" to be repeated. Negative reinforcement of a behavior should indicate that society finds the behavior and unacceptable and, therefore, should not be retained or repeated (Bandura & Kupers, 1964). The theory focuses on learning by observing others' behavior, attitudes, and outcomes of those behaviors, also known as "modeling" (Akers & Jensen, 2017; Bandura, 2016). There are four factors related to effective modeling: attention, retention, reproduction, and motivation (Bandura, 2016).

Attention

Bandura (1977) argued that people could only learn if they attend to that which they observe. Attending in this context means that the observed behavior is perceived accurately, and the significant features of the behavior are focused on and differentiated. Bandura (1969, 2016) argued that research was needed to evaluate the effects on learning from an observational vantage point involving the visual exposure variables of frequency, duration, rate, saliency, multiplicity, and complexity of modeling cues. Simply exposing persons to different sequences of modeling stimuli does not guarantee that they will attend carefully to the cues, select only the most relevant stimuli, or accurately perceive the cues to which they have given their attention. Bandura (2016) posited that motivational conditions, prior training in being able to discriminate during observation, and possibly incentives might significantly impact those elements of a person's social environment that will be of most interest and what the person will pay the closest attention. Finally, the characteristics of the observer along with other social factors that align with association preferences (e.g., girls choosing girlish models) will determine the

types of models who are selected and the types of behaviors that will be most thoroughly learned or paid the most attention (Bandura, 2016).

Retention

Retention is remembering what you paid attention to (Bandura, 1977). Bandura (1977) argued that retention could happen in two ways: having the behavior represented as a picture or visual image or having the behavior represented through a series of instructions. Retention follows attention because it is the modeling step that converts what has been observed into a cognitive rule (Bandura, 1977). One example of the two modes of retention concerns tennis. When a child is learning how to play tennis, they will retain the image of the tennis instructor demonstrating the proper forehand technique after watching it being done repeatedly. The tennis student may also retain how to execute the appropriate forehand technique by being given a series of step-by-step instructions (Bandura, 1977).

Reproduction

Reproduction is reproducing the image of actions or behaviors in the model; how well the behavior is remembered is also a factor in reproduction (Bandura, 1977). The behavior may be noticed, but it may not always be remembered, which would prevent a person from being able to imitate it. A memory must form so that the observed behavior can be imitated later by the observer. Much of social learning does not happen immediately, so this process is especially vital in cases where replication is not immediate. Even if the behavior is reproduced shortly after being seen, there needs to be a memory to refer to. Bandura (1977) revealed that reproduction was more than a matter

of replicating the modeled behavior. In order for reproduction to happen, a person had to have the ability to reenact the behavior. Continuing with the earlier example of the tennis student learning to execute a proper forehand, if there were not adequate strength to swing the racquet, they would not be able to reproduce the modeled behavior.

Motivation

The final component of observational learning, as outlined by Bandura (1977), is motivation. People do not always imitate behavior they have observed unless they have the motivation to do so (Bandura, 1977). Bandura made a distinction between learning and performance, arguing that people do not always carry out all of the behaviors they learn, only those they are motivated to perform. Another element of motivation is the expectation of reward as well as the receipt of a reward itself. The observer will consider the rewards and punishment that follow a behavior. If the perceived rewards outweigh the perceived costs (if there are any), then the behavior will be more likely to be imitated by the observer. If the vicarious reinforcement is not seen to be significant enough to the observer, then they will not imitate the behavior (Bandura, 1977).

To explain motivation, I will use the example of a 90-year-old, wheelchair-bound woman who is watching the dance moves of the female partner on the television show, *Dancing with the Stars.* She would be able to retain the moves in her memory; however, she would not be able to reproduce the moves, even if she were highly motivated to do so. This is a negative example of how the components of modeling might work. Reinforcement is an antecedent rather than an influence on observed behaviors. In the case of criminal behavior, modeling would work similarly based on all the elements of

modeling. Still, it would be mediated based on the person's determination of whether the reinforcement of the behavior would be rewarded or punished (see Bandura, 1977).

In terms of motivation, individuals consider whether the rewards or punishments for certain behaviors are worth any risks associated with said behavior. Criminal behaviors, for most people, carry risks that are too great and punishments that are too severe to make carrying them out worthwhile (Bandura, 1977). However, a group of people, those who get assigned the appellation, criminal, assesses the risk and even considers the potential punishment and determine to carry out what society calls criminal activity. Bandura (1977) asserted that these individuals decide that carrying out criminal behavior is desirable, even with the associated risks and punishments. In the case of criminal behavior, motivation is not driven solely by what an individual has learned, but it is driven by what they have determined is worth doing (Bandura, 1977).

Akin to motivation in SLT is a differential association (Akers & Jensen, 2017). Differential associations are defined as those interactions with others who are engaging in particular actions or who express values and/or attitudes that support such behavior and the indirect association and identification with more distant reference groups. The primary differential association groups are family and friends. Still, differential association groups can also comprise secondary and indirect interactions and exposure such as mass media, the internet, computer games, and other "virtual groups" (Warr, 2002). The argument here is that those behaviors which are most frequent, long-lasting, and intense will have the most significant effect on motivation to carry out the behavior, such that continuous exposure to deviant behavior and/or attitudes lead to increased

probability and motivation of one's participation in deviant or criminal activity (Akers & Jensen, 2017).

Bandura (1969) was going against the current psychological discourse and began advancing the SLT. Along with students, Bandura asserted that children observe the people (models) around them behaving differently. Bandura (1969) stated that there are many models for children, including parents, characters on television, peers, and teachers. Children pay attention to what they see and retain those observed behaviors after observing the models within their worlds. While Bandura eventually changed the name of the theory to social cognitive theory as a more appropriate identifier, in its infancy, the approach was an attempt to juxtapose psychoanalytic with learning principles (Grusec, 1992).

Bandura's theory mainly focuses on how children and adults respond cognitively to their social experiences, namely exposure to models, verbal discussions, and discipline encounters (McLeod, 2016). Bandura and Walters stated that children observe and often imitate behaviors. The people in the children's world will reinforce those behaviors deemed socially acceptable or punish those who are not. The child will continue those behaviors that receive rewards, verbal or nonverbal (McLeod, 2016).

Observational Learning and Negative Behaviors

SLT offers significant insight as to how criminal behavior develops within an individual. Attitudes about delinquent behavior and crime are not present at birth but are learned through social experiences (Akers et al., 1979). All learning is either punished or rewarded by the self-governing systems within a person's environment. These self-

governing systems may consist of the other group members or include an individual who assumes the role of an influential authority figure and decides what values and behaviors are considered acceptable or unacceptable (Bandura, 1977). Thus, as individuals progress from childhood to adulthood, they learn behaviors and skills from those they feel closest (Zilney & Zilney, 2009). Social, cultural, and societal factors influence which behaviors individuals are exposed to, while beliefs about the benefits of indulging in these behaviors influence which is given the most attention (Bandura, 1986, 2002).

Criminal activity may result from observation of criminal behavior that the observer stores in their memory for later recall. Once the observed behavior is stored, the observer may move into the modeling stage of mimicry of the behavior as long as the ability to mimic the observed behavior is present (Bandura, 1974; Swanson, 2015). Swanson (2015) asserted that violent/criminal behavior repeatedly observed and to which the observer gave focused attention was more likely to be the behavior that was imitated/reproduced. Another influential factor involved in the development of behavior is how individuals define what they consider criminal behavior. According to Akers and Silverman (2004), definitions favorable to criminal acts foster a mindset that makes a person more inclined to commit criminal acts when the opportunity presents itself.

Human behavior involves an ongoing cycle of reciprocal interactions between the individual's cognitive processes, behavior, and the influences present within their environment. As such, the SLT rejects the idea of external stimuli in an individual's environment and internal decision mechanisms as independent determinants of behavior.

Psychological functioning is explained as a continuous reciprocal cycle of external and internal mechanisms at work (Bandura, 1977).

Certain behaviors may also be reinforced vicariously by observing the behaviors of others (Bandura, 1977). If an individual observes another person being punished, she or he should be less likely to engage in the behaviors that resulted in punishment. Conversely, if an individual observes that specific behavior is rewarded, she or he is more inclined to imitate that behavior (Bandura, 1977). Bandura (1977) argued that observed behaviors could serve as incentives that encouraged or discouraged observers from engaging in similar behaviors.

SLT assigns consequences as being influential in a person's capacity for self-regulation, and it argues that people have some control over their behavior choices (Bandura, 1977; Baumer et al., 2003). People have the innate ability to judge whether potential actions should be reinforced and be capable of determining whether they will carry out certain behaviors in the future, even if they have only observed them being done by others (Bandura, 1977; Burgess & Akers, 1966). Bandura (1977) argued that what is observed and learned from one's environment is quite possible what will be imitated later.

Individuals behave differently depending on their circumstances, which indicates that a better predictor of behavior is a person's disposition and not necessarily their situation (Bandura, 1977; Brezino & Piquero, 2003). People with a disposition toward negative behaviors have learned those behaviors. Still, these behaviors can be curtailed and even eliminated through environmental reinforcement that demonstrates what the

acceptable behaviors should be (Bandura, 1977). Influences within the individual's environment shape what is viewed by the individual as acceptable and unacceptable behavior (Bandura, 1977; Brezino & Piquero, 2003).

Differential reinforcement is defined as the balance between rewards or punishments as consequences of behaviors (Akers & Jensen, 2017). The assertion is made that when people engage in criminal behavior, they have done an "assessment" of the risks and determined that the value derived from carrying out the criminal action is greater than the resulting consequences or punishments (Akers & Jensen, 2017). The greater the value, frequency, and probability of perceived reward associated with deviant behavior, the greater the likelihood that it will happen and even be repeated. SLT proffers that most of the learning in criminal and deviant behavior results from direct and indirect social interaction where words, responses, presence, and behaviors of others directly reinforce the behavior, create the environment for reinforcement or serve as the means whereby other rewards/punishments are delivered (Akers & Jensen, 2017).

Behavior Modification

Because behaviors are learned, it is possible they can also be changed, although that may be difficult. Changing the environmental influences for an individual that is exposed can serve to either reinforce or discourage the desired behavioral choices made by the individual (Bandura, 1977; Duwe, 2015). Supporters of the SLT have suggested that reentry programs can be designed to address environmental influences that can support the individual development of more socially acceptable behaviors among offenders (Duwe, 2015; Siegel & Welsh, 2008). Thus, behaviors are not inborn but

learned, which suggests teaching offenders' different attitudes towards criminal offenses and delinquent behaviors can reinforce positive behaviors that society considers more acceptable (Bandura, 1977).

In an effort to refine SLT, Bandura introduced the concept of social cognition in opposition to traditional behaviorism by asserting that individuals used their brains to interpret and model behaviors they observed in their social circles (Bandura, 1986; Bandura, et al., 1996; Miller & Morris, 2016). Thoughts are not disembodied, immaterial entities that exist apart from neural events (Bandura, 1986, 1999). Bandura (1977) believed that people have the ability to conceive unique events and different novel courses of action and choose which one to execute as well as how to alter their behavior when necessary. This process has three primary modes: intrapersonal influences, environmental response-cost influences, and interpersonal/social observational learning (Bandura, 1969, 1986, 1997, 1998, 1999, 2002).

Intrapersonal influences

People make internal evaluations about the outcomes associated with behaviors to decide whether or not they will engage in a particular behavior. As emphasized in Social Cognitive Theory (SCT), intrapersonal influences result from relationships with others through observation and imitation. Intrapersonal influences are maintained through social reinforcement (Bandura, 2016; Flay & Petraitis, 1994). Bandura (1986) argued that critical to whether or not the behavior will be carried out are personal factors such as the characteristics of the concerned person and the influence exerted by the people in their circle.

Environmental response-cost influences

In the environmental response cost influences category of SCT, people understand the positive and negative impact of behaviors and determine which behaviors they will adopt (Bandura, 1969, 1986, 2002). Bandura (1971, 1977, 1986) asserted that individuals' relationship with their environment is reciprocal in that rewards and punishments drive whether behaviors are regularly practiced or not. In one study by Seaton (2009), African American youth were found to perceive institutional discrimination as significantly distressful. In the Seaton (2009) study, perceptions of institutional, large-scale collective racism as part of the social environment influenced African American youth's self-esteem whereby they manifested depressive symptoms. The results of the Seaton study supported Bandura's position that personal and/or vicarious environmental experiences do impact social development. Specifically, if individuals observe punishment being received for certain behaviors in their social environment, they will be influenced to avoid engagement in those behaviors, having deemed them too costly (Bandura, 1977).

Interpersonal /social observation

The interpersonal/social observational learning category of SCT is where people combine intrapersonal influence effects and environmental response-cost influences to explain how social behaviors are adopted and practiced. Different social, cultural, and societal factors influence how behaviors individuals are exposed to, and beliefs about the benefits of engaging in these behaviors are given the most attention (Bandura, 1986, 2002). Another factor in the interpersonal/social observational learning aspect of SCT is

that people imitate people to whom they feel most similar. Multiple studies have demonstrated a correlation between exposure to delinquent peers and increased delinquency in juveniles (Fite et al., 2012; Kerr et al., 2012; Meldrum et al., 2013).

Agency

Bandura, defined social/cognitive learning theory, believes that humans are in possession of personal agency, which means they can make things happen from their own actions (Bandura, 2001). Consciousness is the foundation and substance of mental life that contributes to the value to make life worth living. Cognitive factors are capable of predicting human behavior and guiding effective interventions (Bandura, 2001). People need to make good judgments related to their capabilities, anticipate the effects of various courses of action, evaluate the socio-structural opportunities and the constraints and adjust their behavior accordingly. Doing this makes it possible for them to successfully navigate through a world that is replete with challenges and dangers.

The sensory, motor and cerebral systems that humans possess are the necessary tools to accomplish tasks and achieve goals that give meaning, direction, and even satisfaction to life (Bandura, 1997). People are not just onlookers being moved along by environmental circumstances, and they are agents of their experiences. Bandura's theory suggests that cognitive processes exert determinative influence through interactive effects. For example, in response to the well-known information that exercise promotes health, people will perform physical activities that produce such healthy effects without first observing the activities or knowing exactly how these healthful benefits come about at the core level of understanding.

Intention

Agency refers to those actions which are intentionally carried out. Intention is the representation of an action that will happen in the future. Intentions and actions are different aspects of a functional relation separated by the element of time (Bandura, 2001). When one performs an action for a specific purpose, one is exercising personal agency. The determination of whether that action will result in beneficial or detrimental effects is a separate matter. In criminal actions that result in recidivism, personal agency is present even if the detrimental outcomes might be unplanned or unintended.

Forethought

Cognitive learning theory also includes the element of forethought. According to Bandura (1991), people set goals, anticipate the potential consequences of planned actions while selecting and creating those courses of action most likely to produce a beneficial outcome, and avoid the detrimental ones. Forethought is the term assigned when people motivate themselves and guide actions toward future events. Outcome expectations, be they positive or negative, motivate the course of action people will choose. Usually, people adopt the course of action that is likely to produce positive outcomes and generally discard those outcomes that might result in punishing or unrewarding outcomes (Bandura, 1986). As a form of self-guidance, cognitively represented in the present, future events are said to be converted into current motivators and regulators of behavior.

Structuring the appropriate course of action

Agency comprises the deliberate ability to make choices and form a plan of action. It entails being able to structure the appropriate course of action along with the motivation to regulate the execution of the action (Bandura, 1986, 1991b). In cognitive learning, theory agency is invested with a moral component. The exercise of the moral agency has a dual aspect- inhibitive and proactive (Bandura, 1999). Inhibitive moral agency manifests as the power to not behave inhumanely, and proactive moral agency is the power to behave humanely.

Unfortunately, several psychosocial mechanisms will allow a person to selectively disengage from inhumane behaviors (Bandura, 1991b). Several mechanisms will enable one to distance him/herself from inhumane actions such as making harmful conduct more socially acceptable by presenting it as serving a worthy or moral purpose; sanitizing descriptive language to mask it; exonerating the inhumane behavior by comparing it to worse inhumanities; diffusing or displacing responsibility thereby reducing personal responsibility; weakening self-sanctions by ignoring, minimizing or disputing the effects of one's harmful actions; dehumanizing the victims, attributing victims with bestial qualities and blaming them for bringing the suffering to themselves (Bandura et al., 1996b).

Social/cognitive learning theory asserts that people have personal agency, which gives them the ability to plan and carry out actions both in the immediate present as well as into the future. Through their agency, people can carry out morally acceptable actions or actions considered inhumane by societal moral standards of behavior. In choosing one action or another, people consider whether the resulting consequences will be rewarding

or punishing. When choosing an action that is morally unacceptable, even knowing the potential for punishment to result, people will override their moral self-sanctions and still commit the bad act by employing distancing mechanisms to lessen the impact of the reprehensible behavior on themselves.

In addition to the self-regulating behavior that many people will employ to decide whether they will or will not engage in a set of behaviors, they will also use comparative judgment processes to place the behavior in a favorable or unfavorable light (Bandura, 1977). Learned attitudes and reinforced behaviors can result in legal sanctions or other corrective measures. Bandura (1977) asserted that the value an individual places on the outcome from engaging in a particular behavior would incentivize or motivate future engagement. Criminal behavior does not necessarily have to be personally experienced but can be learned vicariously (Bandura, 1977). The primary deterrent to criminal activity is the legal ramifications and punishments and is intended to reduce or eliminate criminal behavior. However, if a potential criminal learns about other crimes taking place without punishment, this could serve as motivation to commit crimes in imitation of what was vicariously learned.

Literature Review Related to Key Variables and/or Concepts

A thorough review of the literature was conducted to provide the substantive support required to answer the research questions. In order to adequately address the questions, several subtopics needed to be discussed in a logical manner to offer evidence that recidivism in North Carolina is a more complex issue than just one of the criminals committing crimes over and over. The literature review that follows addressed several

factors that are important to discuss in relation to recidivism. Gender, ethnicity, age at initial onset, educational attainment level, employment history, and substance use disorder were significant factors in the risk of recidivism. Drug use and recidivism in the United States and North Carolina were discussed to show the correlation between drug use and reoffending at the national and state levels.

Recidivism

One of the most fundamental yet troubling issues in law enforcement and policing is that of reoffending or recidivism. Recidivism refers to the instance whereby a person returns to previous criminal behavior, despite having received sanctions or undergoing an intervention for a previous crime (Singh et al., 2018). A person recidivates when their criminal acts result in rearrest, reconviction, or return to prison with or without a new sentence within the first three years that follow their release from prison (National Institute of Justice, n.d.). In 2005, the Bureau of Justice conducted a study that indicated high recidivism rates for 404,638 released prisoners in 30 states (National Institute of Justice, n.d.). The evidence showed that within 3 years of release, approximately two thirds of released prisoners were rearrested. Within 5 years, approximately three quarters of released prisoners were rearrested. More than half of the prisoners who were rearrested had been arrested within the first year after their release (Durose et al., 2014).

Factors Related to Criminal Activity and Recidivism

Inmates released from prisons to community supervision on parole or probation with substance abuse disorders usually have significant problems with reoffending (BJS, 2015; DOJ, 2012). In 2014 BJS noted approximately 9% of 466,800 parolees were at risk

of reoffending an estimated 5% of 2,067,100 probationers were at risk of violating their conditions of supervision due to substance abuse (BJS, 2015). Ninety-nine-point five percent (99.5%) of inmates (92,678 inmates) in the federal prison system are believed to have a history of substance use (BJS, 2015). Upon release from prison, these individuals require effective aftercare treatment programs that may help these individuals not to use substances again (Louden & Skeem, 2012). Reducing Recidivism (2014) noted that approximately 99,089 individuals were on probation in North Carolina during 2013. Out of the 99,089 probationers, 9,458 violated probation due to technical revocations, 3,496 violators committed new offense revocations, and 8,240 violators were graduated with sanctions.

There are numerous risk factors associated with recidivism. Significant and substantial predictors of recidivism include demographic characteristics (e.g., age, race, gender, and socio-economic status), criminal history, companions, family variables, and substance abuse (Gendreau et al., 1996). This study focused on the independent variables of gender, ethnicity, age at first offense, educational level, history of substance use, and employment.

Gender

In 2014, 6.8 million people were under some level of corrections supervision in the United States. Approximately 86% were males, which represented a decrease from 89% recorded in 1999 (Katsiyannis et al., 2018). From 1999 to 2013, however, females involved in the criminal justice system increased to 48%. Researchers suggested the context of offending differs for females and males; gender differences appear in the level

of violence used in criminal incidents (Reisig et al., 2006). Bureau of Justice Statistics [BJS] (2015) reported that females represented approximately 7% of the total prison population over the past decade. The number of females under state and federal correctional jurisdiction increased by 1,600, increasing the number to 113,000 female inmates in 2014, making it the most significant number of female prisoners since 2009 (BJS, 2015).

Even given the previous statistics, research results on the rate of recidivism based on gender characteristics are mostly mixed, and that which captures data for women is limited (Morash et al., 2017). Researchers have indicated that women are disproportionately involved with the criminal justice system primarily for substance use involvement (Belknap, 2014). Also, more and more women make up an increasing proportion of offenders on probation and parole. At the end of 2014, more than one million women in the United States were supervised in the community, comprising 12% of the national parole population and 25% of the probation population (BJS, 2014). A Huebner et al. (2010) study found that the recidivism risk factors for women were tied to age, educational attainment, mental health, and prior criminal history. Huebner and Pleggenkuhle (2015) also found that neighborhood characteristics in relation to social disorganization equated to higher recidivism risk among males rather than females.

Geis (2009) noted that the general recidivism base rate for adolescent females was 37%, although 1 out of 5 female adolescents recidivated at lower rates than male adolescents. Female adolescents are often ignored as male adolescents are viewed as constituting a more significant problem in the criminal justice system because male

offending is more common and violent. Even though researchers consistently conduct research using males as the controlling gender, female recidivism rates are statistically significant (Geis, 2009). Gender comprehensive research may help criminal justice officials to make precise decisions regarding treatment, incarceration, and institutionalization. Even though gender did not change the relationship between the predictor variables and recidivism, gender is "essential in gaining a better understanding of the" total picture of juvenile recidivism (Geis, 2009, p. 90).

Ethnicity

Blumstein and Beck (1999) demonstrated that the war on drugs in the 1990s was related to an increase in the number of drug offenders in the prison population because more drug offenses were being adjudicated. Of the offenders who were involved with the criminal justice system, an overwhelming majority were African Americans and/or Hispanics (Blumstein & Beck, 1999). There was a 36% increase in the number of Blacks incarcerated for drug offenses, 32% in the number of Hispanics, and a 17% increase for White drug offenders. According to the U.S. Sentencing Commission (2004), the offender's ethnicity is related to the probability of recidivism. Black offenders are more likely to recidivate (32.8%) than Hispanic offenders (24.3%), while White offenders are the least likely to recidivate (16.0%). Hall (2015) noted that Blacks have the highest rates of rearrest, reconviction, and reincarceration. They showed Blacks having a recidivism rate of 77.6% compared to the 69.3% among Whites that recidivate. Other factors are involved with the higher recidivism rate among Black men, such as the war on crime

policies and other structural and cultural elements impacting Black men more than any other racial category.

Coley and Barton (2006) noted that Blacks have the highest rates of incarceration. Blacks have the highest rates of rearrests, reconviction, and reincarceration among all indicator categories. Understanding the role of race in recidivism prediction is necessary for defining a reduction tool (Pettit & Western,2014). In 2013, white inmates made up 47% of the entire jail population, up from 41% recorded in 1999, while Black inmates declined from 42% in 1999 to 34%, with the Hispanic population remaining the same at 16% (Katsiyannis et al., 2015). Even though the Black male inmate population had decreased, Black males have historically had the highest imprisonment rates in both state and federal prisons.

Age at initial offense

The age of onset for criminal behavior is considered one of the factors that should be investigated to discuss the risk for recidivism. In studying convictions up to age 40, the average onset age for criminal careers began at age 18.6, ended at age 25.7, and lasted 7.1 years (Farrington, 1998). They found in a follow-up study that the average onset age for career criminal behavior was 19.1 years, ending at age 28.2 and lasting 9.1 years (Farrington, 2006).

According to the U.S. Sentencing Commission (2016), younger offenders are more likely to recidivate than older offenders. Amongst all offenders under age 21, the recidivism rate is 35.5%. For offenders between ages 21-25, recidivism rates are 31.9%, and offenders between ages 26-30 are 23.7%. For offenders between ages 31-35

recidivism rate is 23.8%, and offenders between ages 36-40 are 19.7%. Offenders between ages 41-50 recidivism rate are 12.7%, while offenders over age 50 have a recidivism rate of 9.5%. They also noted that there was an association between age and recidivism rates. Offenders that were released before age 21 had the highest recidivism rate at 67.6%, while offenders over 60 years old at the time of release had a recidivism rate of 16%. Almost all offenders during the first year released to the community recidivated at a rate of 16.6% for the first time. After that first year, fewer people recidivated, going out to the seventh year.

Educational attainment

Educational attainment is one factor this study considers as a significant indicator in relation to the likelihood of reoffending. A lack of or limited education is often co-occurring with substance use disorder and can create an increased likelihood of recidivism. Inmates are statistically an undereducated community compared to the general population. Many inmates enter the criminal justice system with lower reading levels for their ages. Inmates also tend to lack basic writing and math skills.

In 1997, approximately 41% of those in prison/jail and 31% of probationers had not completed high school or its equivalent. This is in comparison to 18% of those in the general population who had not graduated from high school (BJS, 2003). According to Steurer and Smith (2003), there is a direct correlation between an offender's education level and the recidivism rate. They compared correctional education participants and non-participants in Maryland, Minnesota, and Ohio to assess the impact of correctional education on the recidivism of inmates. Offenders were chosen from the correctional

education groups who had participated in the study groups and those who had not attended. Examined were the sociodemographic characteristics of the groups, including age, education level, marital status, and literacy competency. Correctional education group participants in Minnesota and Ohio had statistically significantly lower rates of rearrest, reconviction, and reincarceration than nonparticipants.

Hill (2015) noted how education has a strong relationship in adult and juvenile offenders with recidivism rates. The offender's advancement of education while in the criminal judicial system can prepare them for success in post-release and enhance rehabilitation efforts. Most offenders are statistically undereducated, a contrast to the general population, which directly correlates to the increase in recidivism rates. Approximately 50% of all released adult offenders will recidivate if they are not provided with educational services either during their incarceration or after their release in comparison to 13% who are offered services (Hill, 2015).

Employment

Post release employment is considered the most influential factor for successful reentry and a strong deterrent to recidivism (Lockwood et al., 2015). Once a person has been incarcerated, it can be impossible to overcome as successful reentry back into the workforce is very difficult. Criminal records are oftentimes a barrier to employment since most employers are reluctant to hire ex-offenders (Gunnison & Helfgott, 2010; Lukies et al., 2011). Another factor that makes reentering the job market especially hard for this population is the lack of job skills or adequate education to qualify them for positions.

Many of the needs of ex-offenders are not met due to barriers and delays in the transition back into the community and their pursuit of employment (Harley, 2014). They noted the fact that many ex-offenders must deal with financial responsibility because of their criminal convictions. Recidivism for ex-offenders is correlated at statistically significant levels ($p < .05$) to educational achievement with employment regardless of the offender's classification. Some researchers have indicated that job placement programs can reduce recidivism (Hill, 2015). Moses (2012) found that job placement programs were not proven through research to reduce recidivism. There are many employment barriers involved in lowering recidivism, such as race discrimination, poor educational achievement, inadequate or obsolete skills, spotted or missing work history, drug addiction, and criminal history that can also impact both being able to attain work and are related to recidivism.

Nally et al. (2014) found that an offender's education and post release employment were significantly and statistically correlated with recidivism, regardless of the offender's classification. Employment is imperative to the recovery process for individuals with substance abuse disorders (McAweeney et al., 2008). Becoming employed will assist individuals with SUD from reoffending. Hill (2015) reported that,

> It is a challenge for anyone without formal education to obtain stable employment. For inmates, the odds of obtaining employment post-release are slight. However, for those who participated in inmate education, their chances of receiving post release employment are greater than those who did not (p. 6).

More and more researchers are pointing to educational attainment and employability as tools for reduction of recidivism. Chamberlain (2011) found that offenders who struggle with finding gainful employment because of low education levels are more prone to criminal activity and recidivism than those with more education and who are able to find higher-paying jobs.

Nally et al. (2014) noted a higher unemployment rate amongst released offenders during the first year of release from correctional facilities, which was correlated with reoffending and returning to prison. Parolees who have a substance use disorder have a substantially increased risk of having their parole revoked for reoffending (Baillargeon et al., 2009). Individuals with substance use disorders also have been found to have difficulty securing and maintaining employment (Nally et al., 2014). It would seem that the problem of securing and maintaining employment after having an offense and continued substance use may be related to being more difficult to avoid activities that would result in reoffending.

Substance Use Disorder

SUD is a relatively new and "catch-all" term for the condition that results from the abuse of several drugs: opioids, cocaine, heroin, alcohol, marijuana, prescription drugs, and fentanyl (Rudd, 2016). In the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition, the terms substance abuse, and substance dependence are no longer used. It refers to a substance use disorder defined as mild, moderate, or severe to indicate the level of severity, which is determined by the number of diagnostic criteria met by an individual (American Psychiatric Association [APA], 2013). SUD occurs when

the recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home. A diagnosis of SUD is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria (APA, 2013). Common SUD is related to alcohol, tobacco, cannabis (marijuana), stimulants, hallucinogens, and opioids.

SUD is characterized by an intense, enduring, and often irresistible desire (cravings) to experience the subjective effects of substances. Also associated with SUD are impaired insight, poor judgment, and risky decision-making related to substance-seeking behavior. In certain more long-term SUD, there is a markedly reduced desire for naturally rewarding social relationships and activities as well as reduced sensitivity to euphoric effects of substances over time or tolerance (APA, 2013). Uncomfortable and sometimes life-threatening withdrawal symptoms can develop when attempting to stop substance use as well as negative emotions when unable to obtain access to substances: dysphoria, anxiety, irritability (APA, 2013). Prolonged substance use/abuse can result in compulsive substance seeking that persists despite repeated damaging consequences to self, family, and society; and multiple relapses (APA, 2013). The structural brain abnormalities and associated cognitive and behavioral disruptions seen in individuals with SUD are so striking that many experts have come to refer to the disorder as a disease of the brain (Volkow & Li, 2004).

Of 21.5 million people aged 12 or older who had a SUD in the past year, 20.2 million were adults aged 18 or older, representing 94.2% of people who had experienced

a SUD (National Survey on Drug Use and Health [NSDUH], 2014). In 2014, approximately 20.2 million adults aged 18 or older had a past year of SUD. Of these adults, 16.3 million had an alcohol use disorder, and 6.2 million had an illicit drug use disorder (NSDUH, 2014). An estimated 2.3 million adults had both an alcohol use disorder and an illicit drug use disorder in the past year. Of the adults with a past year SUD, 4 out of 5 had an alcohol use disorder, nearly 3 out of 10 had an illicit drug use disorder, and 1 out of 9 had both an alcohol use disorder and an illicit drug use disorder (NSDUH, 2014). This suggests that most adults who had an alcohol use disorder did not have an illicit drug use disorder, and a little more than 3 out of 5 adults with an illicit drug use disorder did not have an alcohol use disorder.

Carpenter et al. (2017) provided the most recent information related to SUD and offers some specificity for the identification and classification of illicit drugs. Stimulants are defined as drugs that accelerate the nervous system. Cocaine and methamphetamine (meth) are stimulants. Analgesics are drugs that relieve pain. Sedatives/tranquilizers have a sedating effect on the nervous system. Even though OxyContin is an analgesic (Carpenter et al., 2017), put it in a separate category. Hallucinogens such as Special K, LSD, and ecstasy are called “club” drugs. In the hallucinogen category, LSD, PCP, and ecstasy are considered separately. Inhalants (substances that are breathed in) include several gases, solvents, aerosols, and nitrites.

In the United States, SUD associated with opioids carries a substantial economic burden and is estimated to be 78.5 billion dollars annually (Florence et al., 2016). The public bears approximately 25% of this cost through health care, substance abuse

treatment, and criminal justice costs. Researchers who have documented the economic impact of excessive alcohol use assert that the U.S. economy can be correlated with increased alcohol consumption (Carpenter et al., 2017). According to Carpenter et al. (2017), increased alcohol consumption can be directly correlated to a decline in economic stability for workers in the United States.

Drug use and recidivism in the United States

The goal of most correctional programs is to sanction and control offenders that may offer opportunities that will assist in altering negative behavioral patterns and lower the risk of recidivism (Durose et al., 2014). Drug abuse and criminal activity are often co-occurring (Dart et al., 2015). In recent history, increased attention has been paid to this situation. Another trend in current discourse focuses on the prevalence of SUD and recidivism within offending populations (Ogloff et al., 2004). Reoffenders released to community supervision with a substance abuse disorder have become a of the criminal justice system (U.S. Department of Justice, 2012; BJS, 2015). The NSDUH (2015) noted an estimated 27.0 million individuals aged 12 or older who were current illicit drug users in 2014. The percentages of illicit drug use among those individuals who were aged 12 or order in 2014 had increased from the numbers from 2002 to 2013. Mostly the increase in illicit drug use was due to those individuals aged 26 or older.

In recent years, just as female incarceration rates have increased, there are high rates of substance abuse and dependence among female offenders. Substance abuse or dependence occurring in female jail inmates is at a rate 9 times higher than females in the community (Reisig et al., 2006). The most recent data on drug dependence in female

inmates nationwide shows that in 2004, 60% of all female state prisoners and 43% of female federal prisoners met the criteria for having a drug dependence or abuse problem during the year prior to their incarceration (Erickson, 2016). Oftentimes, female offenders have a co-occurring mental health disorder in conjunction with substance use disorder. Researchers have indicated that three out of four female state prisoners with a mental health disorder also met the criteria for substance abuse (Erickson, 2016). Farkas and Hrouda (2007) indicated that 80% of females in jails were identified as having a lifetime co-occurring disorder. In this same study, only 15% of these women had ever had a diagnosis in their lifetime of only substance abuse without being diagnosed with a mental health disorder. Researchers have also found that co-occurring disorders were higher among female offenders than male offenders (Sacks et al., 2008).

Substance abuse is also an issue among offenders who are men, although gender specific theorists assert that substance abuse plays a different role in criminal behavior in females than in males (Van Voorhis et al., 2010). Greenfeld and Snell (1999) found that 40% of female inmates in state prisons reported being under the influence of drugs at the time of their offense compared to 32% of males. However, men were more likely to have been using alcohol at the time of their offense (38% of males were under the influence of alcohol at the time of the offense) compared to 29% of females (Greenfeld & Snell, 1999). While male and female offenders both have high rates of substance abuse prior to incarceration, there is evidence that male and female inmates differ in what substances they abuse prior to incarceration, with males more likely to be problem drinkers than females and females reporting more problems with cocaine than males (Erickson, 2016).

Drug use and recidivism in North Carolina

In 1998 a mandate was issued for North Carolina to begin reporting on the effectiveness of correctional programs in the state in increasing public safety and deterring future crime (North Carolina Sentencing and Policy Advisory Commission [NCSPAC], 2013). The passage of the Justice Reinvestment Act in 2011 resulted in substantial changes to sentencing practices and correctional policies within North Carolina's criminal justice system (NCSPAC, 2013). Results of ongoing data collection indicate that statewide recidivism rates have generally been consistent over the past decade (NCSPAC, 2013). Increases in the recidivism rates over the past few years are related to an increase in fingerprinting of misdemeanor arrests (NCSPAC, 2013). Because of the rise in recidivism, offender risk assessments have been considered a potentially valuable tool in predicting recidivism, with Risk and Needs Assessment being considered effective for accurately identifying those who are more likely to reoffend (NCSPAC, 2013).

Summary

Recidivism is a problem for the criminal justice system. However, theoretical research addresses recidivism among probation and parole offenders on community supervision with substance use disorders in North Carolina (BJS, 2015; DOJ, 2012). There are many influences involved with substance use disorder offenders as to why individuals keep reoffending. Some significant predictors of recidivism are demographic characteristics (e.g., age, race, gender, and socio-economic status), criminal history, companions, family variables, and substance abuse (Gendreau et al., 1996).

There is an association between age and recidivism rates. Almost all offenders during the first year released to the community recidivated at a rate of 16.6% for the first time (The United States Sentencing Commission, 2016). Parolees who have substance use disorders have a substantially increased risk of recidivating (Baillargeon et al., 2009). Individuals with substance use disorders also have been found to have difficulty acquiring and maintaining employment (Nally et al., 2014). It would seem that the problem of securing and maintaining employment after having an offense and continued substance use may be related to it being more challenging to avoid activities that would result in reoffending.

According to Hall (2015), Blacks have the highest rates of reoffending among all racial categories. Understanding the role of race in recidivism prediction is necessary for defining a reduction tool (Pettit & Western, 2004). Becoming employed can help individuals with SUD from reoffending (McAweeney et al., 2008). This study addressed the present gap in the literature that lacks the examination of recidivism and demographic factors, history of substance use, education attainment, and employment history.

Reducing recidivism requires behavior changes in criminals with substance use disorders. Individuals working with lowering the recidivism rate must also educate themselves on supervising, treating, and supporting the individuals in the criminal justice system released on probation for community supervision (The National Reentry Resources Center, 2014). Chapter 3 included the research design and rationale, methodology for the study, the utilization of archival data collection, threats to validity, and ethical procedures.

Chapter 3: Research Method

The purpose of this quantitative study was to examine the relationships between the independent variables of gender, ethnicity, age at initial offense, educational attainment, history of substance use/abuse (i.e., type, severity, and duration), employment history, and the dependent variable of reoffending status. According to Smith (2014, 2017), the U.S. prison system has become the new asylum and a revolving door for individuals with SUD. Once these individuals leave prison, they are likely to end up reoffending at some point in the future due to substance use/abuse (i.e., committing crimes to support substance use, selling substances, etc.). Researchers have struggled to understand why there are so many occurrences of reoffending associated with community supervision (BJS, 2012, 2015; Knopf, 2018). During the first year of release from correctional facilities, there was a higher unemployment rate among released offenders, and this also correlated with approximately half of them reoffending (Nally et al., 2014). SUD parolees have a substantially increased risk of revoking their parole and reoffending. They have also found that individuals with SUD have difficulty maintaining and securing employment (Baillargeon et al., 2009; Nally et al., 2014).

Using a correlational, cross-sectional research design allowed me to evaluate the secondary data from the NCDPS's ASQ to determine if there are statistically significant relationships between the independent variables and the dependent variable. This chapter includes discussions of the research design and rationale, research questions, population, procedures, and data collection. In the chapter, I also provide detailed information

regarding the independent and dependent variables and address the threats to validity. The final sections comprise ethical procedures and a summary of the chapter.

Research Design and Rationale

In this study, I used secondary data to conduct a quantitative, correlational, cross-sectional study. The independent variables included in this study were gender, ethnicity, age at initial offense, education attainment, history of substance use/abuse, and employment history, and the dependent variable was reoffending status in North Carolina. I used secondary data from the ASQ system managed by the North Carolina Public Safety Division of Adult Correction and Juvenile Justice from the year 2017 to examine the arrest and incarceration history of individuals who also had a history of SUD and had been released to community supervision. A correlational design was appropriate because I was looking at the relationships between variables (i.e., correlations) and not attempting to establish causation. The choice to use secondary data was significant in that it allowed for the investigation of the relationships between the independent and dependent variables in a timely and cost-effective manner while being mindful of the fact that I was utilizing data about a protected group of individuals (see Frankfort-Nachmias et al., 2015).

Correlational studies involve an attempt to find if any relationship exists between multiple variables (Simon, 2012). The correlational design was more appropriate for this study than other research designs because the design allowed for analyses of data collected through normal occurrences of events (see Simon, 2012). Simon (2012) described a correlational study as ex-post-facto, in which the normal factors occurring in

the surroundings have taken place after the research question is developed. I statistically measured the relationship between six quantitative independent variables (i.e., gender, race, age at initial offense, education attainment, and employment history), history of substance use/abuse (i.e., type, severity, and duration), and one dependent variable (i.e., reoffending status). Multiple logistic regression was used to measure the strength and direction of the relationships (Creswell, 2009). Correlational study designs entail the systematic investigation of the nature of relationships or associations between and among variables rather than direct cause-effect relationships (Creswell, 2009). Further investigation into the strength of the correlation is needed to indicate causation potentially, but this was beyond the scope of this study (Creswell, 2009).

Correlational designs are typically cross-sectional (Campbell & Stanley, 1963). A cross-sectional study is used to examine the relationships between one variable and other variables of interest as they exist in a defined population at a single point in time or over a short period of time (Campbell & Stanley, 1963). In a cross-sectional study, all factors are measured simultaneously. A cross-sectional study should represent the population if generalizations from the findings are to have any validity (Campbell & Stanley, 1963). The sample size should be sufficiently large enough to estimate the prevalence of interest conditions with adequate precision (Landreneau, n.d.).

Methodology

Population

The target population for the current study was those individuals that had been released while under the supervision of the NCDPS Community Corrections. The

primary goal of the North Carolina Department of Community Corrections (n.d.) is to reach an equal balance of control and treatment for offenders that will positively affect their behavior and lifestyle patterns. The Department of Community Corrections supervised 54,247 individuals in the 2014–2015 fiscal year (NCDPS, n.d.). Sixty-nine percent of the offenses were largely for non-trafficking drug offenses (NCDPS, n.d.).

Sampling and Sampling Procedures

I used purposeful convenience sampling in this study, which means that I used cases from the data that met the inclusion criteria for the sample (see Frankfort-Nachmias & Nachmias, 2008). Purposeful convenience sampling is frequently referred to as "judgmental sampling" because the sample is based on the researcher's subjective judgment and the purpose of the study (Frankfort-Nachmias & Nachmias, 2008). The advantage of using purposeful convenience sampling is that it is one of the most cost- and time-effective sampling methods available. While on the other hand, the disadvantages of using purposeful convenience sampling are that it has a vulnerability to errors in the judgment of the research, low level of reliability, and high levels of bias (Etikan et al., 2016).

For this study, I obtained secondary data through the North Carolina Public Safety Division of Adult Correction and Juvenile Justice through the ASQ system. This system and the data contained within it are accessible to the public. Some of the data are self-reported to the North Carolina Public Safety Division of Adult Correction and Juvenile Justice, including self-report of a SUD or who has been diagnosed with one. I kept all of

the cases retrieved from the secondary data set that met the inclusion criteria established in the data set used for analyses.

Inclusion Criteria

The inclusion criteria were individuals who were 18 years old or older who had been incarcerated and released at some point and time and whose information was in the ASQ database, as well as those who were released 3 years before date the data were pulled or before January 1, 2015.

Exclusion

The exclusion criteria were anyone who did not meet the inclusion criteria provided in the preceding subsection.

Sample Size Calculation

I used multiple logistic regression for this study because it is a statistical analysis that explains the relationship between two or more independent variables and one dependent variable that is binary (see Cronk, 2012; Field, 2013). Multiple logistic regression analyses also produce an odds ratio that is a predictive statistic (i.e., the chance that an increase in Variable A of 1 is related to a positive or negative change in the value of Variable B; Ogee et al., 2015). The *p* value statistic is the probability of obtaining an extreme effect when the null hypothesis of the study question is true (Ogee et al., 2015).

A statistical significance level denoted as alpha or α, of 0.05 is used to determine the probability of rejecting the null hypothesis when it is true (Ogee et al., 2015). This level indicates how far out from the null hypothesis value the line was drawn on the graph. The statistical power of 0.80 is the probability of rejecting the null hypothesis

when it is false, thus avoiding a Type II error (Ogee et al., 2015). A Type II error is accepting the alternate hypothesis. The effect size of 0.05 (medium) tells the researcher something about how relevant the relationship between two variables is in practice (Ogee et al., 2015). The two types of effect sizes are an effect size based on the proportion of explained variance (the proportion of explained variance is often indicated by one of the following terms: R^2 or eta squared, partial eta squared, or omega squared) and an effect size based on the difference in averages using Cohen's *d* (MEERA, n.d.; Statistics Teacher, 2017.). According to Frankfort-Nachmias et al. (2015), the size of the population is determined by the level of correctness expected in the approximations.

I conducted a power analysis for multiple logistic regression with six predictor variables to determine the appropriate total sample size, using G*Power 3.1 with an alpha of 0.05 to determine the probability of rejecting the null hypothesis, a medium effect size using a Cohen's *d* of 0.05, a power of 0.80, and two tails. The sample size for this study was 568.

Table 1.

*A Logistic Regression A Priori Statistical Power Calculation Using G*Power*

z tests - Logistic regression			
Options:	Large sample z-Test, Demidenko (2007)		
Analysis:	A priori: Compute required sample size		
Input:	Tail(s)	=	One
	Odds ratio	=	1.3
	Pr(Y=1‖X=1) HO	=	0.2
	α err prob	=	0.5
	Power (l-β err prob)	=	0.80
	R^2 other X	=	0
	X distribution	=	Normal
	X parm μ	=	0
	X parm σ	=	1
Output:	Critical z	=	1.6448536
	Total sample size	=	568
	Actual power	=	0.8005867

Procedures for Recruitment, Participation, and Data Collection

Original Data Collection by Department

The NCDPS (n.d.) was created in 2012 as a result of the consolidation of the Department of Corrections, the Department of Juvenile Justice and Delinquency Prevention, and the Department of Crime Control and Public Safety. The Division of Adult Correction and Juvenile Justice is one of six divisions within the Department of Public Safety. Adult Correction is responsible for the custody, supervision, and rehabilitation of adult offenders sentenced to community/intermediate punishment or prison (NCDPS, n.d.). Adult Correction is also responsible for the operation of the Prisons, Community Corrections, Alcohol, Chemical Dependency Programs, and Correctional Enterprises sections. The Section of Re-entry Programs and Services helps other sections within the Division of Adult Correction and Juvenile Justice and other Department of Public Safety divisions. The staff has expertise in research methods,

human subject protection, statistics, program evaluation, and policy analysis (NCDPS, n.d.). The data are gathered from the intake records received at the time of incarceration as well as when they enter into community supervision. The probation officer verifies the records for accuracy, then administers drug tests periodically while the offender is on probation. After the probation office verifies the records, the records are then entered into the ASQ system by a data entry clerk (NCDPS, n.d.).

Researcher Attainment of Secondary Data

I used secondary data for this study. Institutional Review Board (IRB) approval was obtained from Walden University before accessing any data and completing any statistical analyses. Secondary data from the ASQ system managed by the NCDPS Division of Adult Correction and Juvenile Justice is a matter of public record, and no permissions from the department are required to access the data.

Instrumentation and Operationalization of Constructs

There were no instruments used in this study as the researcher is using secondary data from a data source accessible by the public. The table below contains the variables used in this study and the values associated with each category in the variable. The ASQ system managed by the North Carolina Public Safety Division of Adult Correction and Juvenile Justice does not provide a codebook. However, the website does provide data element definitions and Department of Public Safety terminology (http://webapps6.doc.state.nc.us/apps/asqExt/ASQ).

Table 2.

Study Variables

Variable	Values/Coding
Age at initial offense (IV) offense	Actual age at time of initial
Gender (IV)	0 = Male 1 = Female
Ethnicity (IV)	0 = White 1 = Black/African American 2 = Hispanic/Latino 3 = Mixed race 4 = Unknown
Educational attainment level (IV)	0 = Less than high school 1 = High school or graduate equivalency degree (GED) 2 = College
Employment history (IV)	0 = Currently employment 1 = Currently not employment
History of substance use (IV)	0=No history 1=History (if history, the categories below will be used)
Type of substance (IV)	0 = Alcohol 1 = Substance use other than alcohol
Severity of substance use (IV)	0 = Mild 1 = Low 2 = Moderate 3 = High
Duration of substance use (IV)	0 = Less than 3 months 1 = 3 to 6 months 2 = 6 to 9 months 3 = 9 to 12 months 4 = 12 or more months
Reoffending status within 3 years of release (DV)	0 = No 1 = Yes

Note. IV = Independent Variable and DV = Dependent Variable

Data Analysis Plan

The secondary data was retrieved from the ASQ system managed by the North Carolina Public Safety Division of Adult Correction and Juvenile Justice (http://webapps6.doc.state.nc.us/apps/asqExt/ASQ). The ASQ system is located in a public domain, and no permissions from the organization are necessary to use the data for secondary data analysis. I used IBM Statistical Package for the Social Science (SPSS) version 23.0 to analyze the data.

Research Question: What is the predictive relationship between demographic factors (age, gender, ethnicity, age at initial offense, education level), history of substance abuse (type, severity, duration), employment history, and reoffending status in North Carolina?

Null Hypothesis *(Ho)*

There is no statistically significant predictive relationship between demographic factors (age, gender, ethnicity, age at initial offense, education level), history of substance abuse (type, severity, duration), employment history, and reoffending status in North Carolina.

Alternative Hypothesis *(Ha)*

There is a statistically predictive relationship between demographic factors (age, gender, ethnicity, age at initial offense, education level), history of substance abuse (type, severity, duration), employment history, and reoffending status in North Carolina.

Frequencies & Chi-square

Additional statistical analyses used outside of that which answered the research question included frequencies of the demographic information (descriptive statistics) and

chi-square test analyses to fully describe the data associated with the sample. A chi-square test is similar to a *t* test where one is looking for if there are statistically significant differences in the dependent variable between two groups of a single independent variable (MEERA Glossary, n.d.). However, *t* tests are used with dependent variables that are linear (such as scores on an instrument that measures an attitude on a scale of 1-10), and chi-square tests are used with binary dependent variables (Zint, n.d.). For example, these would be used if you wanted to see if there is a statistically significant difference between males and females (within IV of gender), Whites and non-Whites (in IV of ethnicity/race), or between those who have no history of drug use and those who do (in IV of drug use history) and a dependent variable of incarceration status (0 = not incarcerated and 1 = incarcerated).

Multiple logistic regression

The research question was answered by; a multiple logistic regression used to determine if there were any statistically significant predictive relationships between the independent variables and the dependent variable. Before completing the multiple logistic regression analysis, a Pearson correlation coefficient test, r, was completed to determine the association between variables. The correlation coefficient range can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables (Field, 2013). The analysis was completed to determine if any of the variables are highly correlated. Multicollinearity occurs when the independent variables in a regression model are correlated. When multicollinearity exists, one or more of these highly correlated independent variables should be removed from the model (Field, 2013).

Logistical regression is most appropriate for this study because I am attempting to determine if there is a statistically significant predictive relationship between two or more independent variables and one binary (0/1) dependent variable. OR are used to compare the relative odds of the occurrence of the outcome of interest, given the exposure to the variable of interest. It measures the association between exposure and an outcome. In logistic regression, odds ratios have a coefficient (b1); the estimated increase in the log odds of the outcome per unit increases in the value of the exposure. The 95% CI is used to estimate the precision of the odds ratios. A large CI indicates a low level of precision of the OR, and a small CI indicates a high level of precision of the OR. (Szumilas, 2010)

Threats to Validity

Validity is concerned with measuring what was intended to be measured. The researcher provides supporting evidence that a measuring instrument does measure the variable that it appears to be measuring. The validity of measurement can influence the validity of the conclusion drawn after testing the hypotheses (Frankfort-Nachmias & Nachmias, 2008). There are some internal and external threats to validity that can occur in the completion of a quantitative research study (Onwuegbuzie, 2000). Threats to internal and external validity can occur at one or more of the three major stages of the inquiry process: research design/data collection, data analysis, and/or data interpretation (Onwuegbuzie, 2000).

External Validity

External validity refers to the ability to generalize results to other participants, settings, and measures (Campbell & Stanley, 1963). External validity deals with the

ability to generalize study outcomes beyond the study population and setting (Polit & Beck, 2010). The dependent variable (offending status) for this study is defined as an additional arrest. The threats to validity represented in this current study are essentially associated with the collection of archival data from one specific state system. This threat can be mitigated by not using the archival data when inappropriateness, confusion, or carelessness is suspected (Tasic & Feruh, 2012). All the archival data was retrieved from the ASQ system managed by the North Carolina Public Safety Division of Adult Correction and Juvenile Justice (http://webapps6.doc.state.nc.us/apps/asqExt/ASQ). The results of this study can only be generalized to former offenders in North Carolina.

Purposeful convenience sampling consists of the researcher selecting whatever sampling units are conveniently available and choose the inclusion criteria for the sample (Frankfort-Nachmias & Nachmias, 2008). Purposeful convenience sampling has a potential threat to validity and generalizability of results that must be considered, such as being principally disposed to the researcher bias and having a limited generalization to the inclusion criteria for the sample (Frankfort-Nachmias & Nachmias, 2008; Sharma, 2017). To address the threat to external validity, I ensured the generalization of interpreted results and inferences reported were restricted to individuals with similar statuses as those tested in my study. Having limited generalizability was a threat to the external validity of the study (Campbell & Stanley, 1963).

A disadvantage to purposeful convenience sampling is that it is difficult to determine the probability of the inclusion of any specific sampling unit in the sample. There is no way of estimating the population's parameters from the values of the

characteristics obtained from the sample (Frankfort-Nachmias, 2008). One advantage of using purposeful convenience sampling is selecting whatever sampling units that are conveniently available and selecting the inclusion criteria (Frankfort-Nachmias & Nachmias, 2008).

Internal Validity

Many of the threats to internal validity traditionally related to experimental or quasi-experimental designs do not apply to the current study because they did not involve variable manipulation, determination of causal relationships, or manipulation of variables over time (Campbell & Stanley, 1963). The potential internal validity issues that affected the results of this study and their generalizability included sampling and non-sampling errors and errors that could invalidate the data (Rabianski, 2006). Sampling error occurs when the sample chosen by the researcher does not accurately reflect the total population that is studied (Rabianski, 2006).

Errors that can also invalidate secondary data occurred because of the person's attitudes and/or actions (s) and/or the organization's orientation for collecting the data. The data was gathered from the intake records received at the time of incarceration. The probation officer verifies the records for accuracy, and the probation officer administers drug tests periodically while the offender is on probation. After the probation office verifies the records, the records are then entered into the ASQ system by a data entry clerk (NCDPS, n.d.). When inappropriateness, confusion, or carelessness is suspected, the researcher should not use the data (Tasic & Feruh, 2012).

Construct Validity

Construct validity refers to the extent to which the instrument used to collect data is designed or constructed to capture the appropriate data (Patzer, 1995). However, self-reports can be affected by participant motivation to be in a treatment condition, the motivation that can change after the assignment is made. When all operationalized constructs use the same method (e.g., self-report), that method is part of the construct studied (Imperial, n.d.). Researchers consistently have to be mindful and explore the potential role and influences of each threat, given the particulars of the study, and take steps to minimize these threats (Imperial, n.d.). For this study, I made sure that I had evidence that the threat is plausible rather than just possible.

Ethical Procedures

The research protocol was submitted to the Walden University IRB for approval of the planned research design before accessing any data or undertaking any data analyses. As the ASQ is a public record (ASQ, n.d.) (http://webapps6.doc.state.nc.us/apps/asqExt/ASQ), no permissions were required from the NCDPS. No identified secondary data was used for the study, so no individual participant consent was required. Using secondary data allowed me to adequately answer the research questions while adhering to the confidentiality guidelines outlined by the IRB. I stored the data on one password protected computer. Only I and the committee members have access to the data, and the committee members would only have access if I needed assistance with the data analysis process. All of the data will be destroyed after 5 years.

Summary

The chapter explained the research design of the study, including details about population, sample, design, data collection methodology, ethical considerations, and the plan for data analyses. The secondary data for this study was obtained through the ASQ system managed by the NCDPS Division of Adult Correction and Juvenile Justice (http://webapps6.doc.state.nc.us/apps/asqExt/ASQ). The data was gathered from the intake records received at the time of incarceration as well as when they enter into community supervision. The participants' personal identifiers (names, dates of birth) are not included in the database to protect concerns of confidentially. Chapter 4 provided a detailed explanation of the data analyses and results.

Chapter 4: Results

The purpose of this quantitative study was to examine the relationships between the independent variables of gender, ethnicity, age at initial offense, educational attainment, history of substance use/abuse (i.e., type, severity, and duration), employment history, and the dependent variable of reoffending status. I developed the research question to ask if there is a statistically significant predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (i.e., type, severity, and duration), and reoffending status within 3 years of release from prison in North Carolina. Demographic frequencies and chi-square test analyses were performed to provide a complete description of the sample. I also performed multiple logistic regression to answer the research question and determine if there were any statistically significant predictive relationships between the independent variables and the dependent variable. This chapter includes a discussion of the data collection procedures and the results of the regression analysis.

Data Collection

The Walden University IRB approved my research proposal on July 23, 2019 (Approval No. 07-23-19-0518107) and the NCDPS (NCDPS; see Appendix B). The ASQ system is managed by the NCDPS Division of Adult Correction and Juvenile Justice, and I received the relevant data files from them on April 21, 2020. The data in the ASQ system are accessible to the public; however, I could not obtain all of the variables needed for the study through the ASQ system. Therefore, I had to get approval from the

NCDPS to send me the data required for the study directly. I requested the data on December 19, 2019, and due to the COVID-19 pandemic, I did not receive the data files until April 21, 2020.

I received the data set in 5 different Statistical Analysis Software (SAS) files. As part of the cleaning process, I combined the 5 SAS files by matching the case identification number (which was included in each data file) into one database using the SPSS Version 23. The independent variable of the duration of substance use was not available from NCDPS, so it was excluded from all the analyses included in this chapter. There were no cases where the individual did not have a history of substance use (no history = 0%; the history of substance abuse = 100%; see Table 4), so this variable was also excluded from analyses. There were no other discrepancies in collecting, cleaning, or labeling data from the plan presented in Chapter 3.

The original data set contained data from 18,236 individuals collected from 2010 through 2016. As part of the cleaning process, the inclusion criteria outlined in Chapter 3 were applied. Data from individuals who did not meet those criteria were deleted from the data file. They resulted in 5,903 participants who met the criteria included in the final data set. The necessary size for this study was 568 participants. I conducted a post hoc power analysis for multiple logistic regression to determine the achieved power. The power analysis used for hypothesis testing power was calculated using G* Power 3.1 (see Faul et al., 2009). The test was two-tailed. The odds ratio, an indicator of effect size, was set to medium with *OR* = 2.30. The *Pr(Y=1\X=1) HO* was set to .25. Results from the post hoc power analysis showed that the achieved power was .99 (see Table 3).

Table 3.

*Statistical Power Calculation Using G*Power*

z tests - Logistic regression			
Options:	Large sample z-Test, Demidenko (2007) with var corr		
Analysis:	A Post Hoc: Compute Achieved Power		
Input:	Tail(s)	=	Two
	Odds ratio	=	2.3
	Pr(Y=1‖X=1) HO	=	0.3
	α err prob	=	0.05
	Power (l-β err prob)	=	0.80
	Total sample size	=	5903
	R^2 other X	=	.25
	X distribution	=	Normal
	X parm μ	=	0
	X parm σ	=	1
Output:	Critical z	=	1.9599640
	Total sample size	=	568
	Actual power	=	1.0000000

Results

Demographics

The demographics of the sample are summarized in Table 4. The largest age group at the initial offense was 20–29 years old (48.5%). The sample was primarily male (91.6%) and Black/African American (54.3%). The majority did not graduate high school/GED (71.2%), and over half of the sample were employed (65.5%). All the participants had a history of substance use (100%), with alcohol used by 38.1% and other substances used by 61.9% of the sample. Approximately half of the participants had a high level of severity of substance use (50.9%). Out of the 5,903 participants, 84.9% did not reoffend during the 3 years studied.

Table 4.

*Demographics (*N*=5,903)*

Variables	Category	Number	Percent
Age at initial offense (IV)	18-19	2,106	35.7
	20-29	2,865	48.5
	30-39	709	12.0
	40-49	185	3.1
	50-59	34	.6
	60+	4	.1
Gender (IV)	Male	5,406	91.6
	Female	497	8.4
Ethnicity (IV)	White	2,497	42.3
	Black/African American	3,206	54.3
	Hispanic/Latino	127	2.2
	Mixed race	1	.0
	Unknown	72	1.2
Educational attainment level (IV)	Less than high school	4,201	71.2
	High school or GED	1,702	28.8
Employment history	Currently employed	3,809	64.5
	Currently not employed	2,094	35.5
History of substance use (IV)	No history	0	.00
	History	5,903	100.0
Type of substance use (IV)	Alcohol	2,248	38.1
	Substance other than alcohol	3,655	61.9
Severity of substance use (IV)	Mild	1,195	20.2
	Low	461	7.8
	Moderate	1,242	21.0
	High	3,005	50.9
Reoffending status within 3 years of release (DV)	No	5,011	84.9
	Yes	892	15.1

Note. The IV Duration of Substance Abuse was not available and is being eliminated from analyses. The IV History of Substance Use is also being eliminated from analyses due to their only being individuals who have a history of substance use is being included.

Chi-Square

I conducted a chi-square test to determine if there was a statistically significant difference between reoffending status by demographic factor. This included looking at differences in reoffending status between gender (i.e., male versus female offenders), ethnicity (i.e., White versus non-White offenders), education (i.e., graduated from high school versus those who did not graduate from high school), and type of substance used (i.e., alcohol versus other than alcohol). There were statistically significant differences in reoffending status within 3 years between the variables in gender (p = .012) and ethnicity (p = .001). There were no statistically significant differences in reoffending status within 3 years for the groups in education attainment level (p = .105) and type of substance use (p = .222; see Table 5).

Table 5.

*Pearson Chi-Square Analysis (*N=*5,903)*

	Value	*df*	Asymptotic Significance (2-sided)
Gender and reoffending status	6.249[a]	1	.012
Ethnicity and reoffending status	11.114[b]	1	.001
Educational attainment level and reoffending status	2.623[c]	1	.105
Type of substance use and reoffending status	1.489[d]	1	.222

[a.] 0 cells (0.0%) have expected count less than 5. The minimum expected count is 75.10.
[b.] 0 cells (0.0%) have expected count less than 5. The minimum expected count is 377.32.
[c.] 0 cells (0.0%) have expected count less than 5. The minimum expected count is 257.19.
[d.] 0 cells (0.0%) have expected count less than 5. The minimum expected count is 339.69.

Logistic Regression Assumptions

Multicollinearity

I calculated the correlations between all the variables using Pearson's correlation coefficient test in SPSS to determine if multicollinearity existed. If variables are highly correlated with one another, one of the variables should be removed from the model to avoid multicollinearity (Field, 2013). If any of the variables had a Pearson's correlation coefficient (r < +/-) of .70 or higher, one or more of the variables were removed from the multiple logistic regression to ensure that multicollinearity was not an issue (see Field, 2013). None of the variables were highly correlated at .70 or higher (see Table 6); therefore, I used all the variables in the regression analysis.

Table 6.

Multicollinearity: Pearson's Correlation

	Age At Initial Offense	Gender	Ethnicity	Education Attainment Level	Employment	Type of Substance	Severity of Substance	Reoffending Status
Age At Initial Offense		.039**	-.019	.148**	-.127**	-.060**	.001	.082**
Gender	.039***		-.107**	.010	.156**	.135**	.080**	-.0.33*
Ethnicity	-.019**	-.107**		.065**	.042**	-.045**	-.038**	.029*
Education Attainment Level	.148	.010	.065**		-.070**	-.021	-.018	-.021
Employment History	-.127**	.156**	.042**	-.070**		.099**	.055**	-.044**
Type of Substance Use	-.060**	.135**	-.045**	-.021	.099**		.137**	-.016
Severity of Substance Use	.001	.080**	-.038**	-.018	.055**	.137**		.000
Reoffending Status Within 3 Years	.082**	-.033*	.029*	-.021	-.044**	-.016	.000	

Note. N = 5,903.
* = Statistically significant at $p < .05$ level; ** = Statistically significant at $p < .01$ level.

I also calculated the variance inflation factor (VIF) to determine if any multicollinearity among the variables existed. VIFs greater than 10.00 indicate the presence of multicollinearity and a violation of this assumption (Field, 2013). None of the VIFs in Table 7 were greater than 1.061, noting the absence of multicollinearity among the independent variables was met.

Table 7.

*Variance Inflation Factors (VIF) (*N = *5,903)*

	VIF
Age at initial offense	1.044
Gender	1.061
Ethnicity	1.023
Education attainment level	1.031
Employment history	1.058
Type of substance	1.046
Severity of substance use	1.025

Multiple Logistics Regression

I used logistical regression to answer the research question because I was attempting to determine if there is a statistically significant predictive relationship between two or more independent variables and one binary dependent variable (see Cronk, 2012; Field, 2013). The logistic analysis had seven possible predictor variables included: age at initial offense, gender, ethnicity, education attainment level, employment history, and history of substance abuse (i.e., type and severity). The dependent variable was whether participants were reoffending within 3 years (yes = 1 or no = 0).

The Hosmer-Lemeshow goodness-of-fit was $p = .608$, indicating that the model is a good fit because $p > .05$ (Field, 2013). The *R* squared of the model is 0.21, which

indicates that 21% of the data fit the model, although this does not indicate that the results are not valid and reliable (see Field, 2013).

The results of the multiple logistic regression indicated that the variables of age at initial offense (p = .000), ethnicity (p = .000), education attainment level (p = .003), and employment history (p = .007) were related to reoffending status within 3 years at statistically significant levels. The odds ratio for these variables indicated the following (see Table 8):

- Age at initial offense: For each additional year of age at the initial offense, an individual was 1.032 times more likely to reoffend in the 3 years after release.
- Ethnicity: Those who are non-White were 1.325 times more likely than whites to reoffend in the 3 years after release.
- Education attainment level: For each increased level of education attainment (e.g., high school completion or attended college), an individual was less likely (*ExpB* = .779) than those who did not complete high school reoffends in the 3 years after release.
- Employment history: Individuals who were employed after release were less likely (*ExpB* = .803) than those who were not employed to reoffend in the 3 years after release.

The independent variables of gender (p = .087), type of substance used (p = .774), and severity of substance use (p = .648) were not related to reoffending in 3 years at statistically significant levels. Therefore, I am not able to reject the null hypothesis.

Table 8.

Results of Logistic Regression

						95% CI For *EXP(B)*	
	B	SE	Wald	*df*	Sig.	*ExpB*	Lower	Upper
Age at initial offense	.032	.005	40.093	1	.000**	1.032	1.022	1.043
Gender	-.259	.151	2.927	1	.087	.772	.574	1.038
Ethnicity	.281	.077	13.439	1	.000**	1.325	1.140	1.539
Education attainment level	-.249	.084	8.841	1	.003**	.779	.661	.918
Employment history	-.220	.081	7.379	1	.007**	.803	.685	.941
Type of substance	-.022	.076	.083	1	.774	.978	.842	1.136
Severity of substance use	.014	.031	.208	1	.648	1.014	.954	1.079
Constant	-2.510	.160	245.331	1	.000**	.081		

Note. N = 5,903.
* = Statistically significant at p < .05 level; ** = Statistically significant at p < .01 level.

Summary

I examined the predictive relationship between age at initial offense, gender, ethnicity, educational attainment level, employment history, type of substance, severity of substance use, and reoffending status within 3 years of release. I provided a detailed explanation of the study, including data collection and data analysis. I found statistically

significant differences in reoffending status within 3 years between the groups in the variables of gender (male/female) and ethnicity (white/non-white). The status of reoffending within 3 years were females at 6.3% and males at 93.7%, which indicates that females were significantly lower in reoffending within 3 years. Non-Whites at 62.8% and Whites at 37.2% indicate that the status of reoffending was significantly higher than Whites reoffending within 3 years. I also completed a logistic regression analysis to answer the research question and found that age at initial offense (p = .000), ethnicity (p = .000), education attainment level (p = .003), and employment history (p = .007) were related to reoffending status within 3 years at statistically significant levels. For each additional year of age at the initial offense, an individual is 1.032 times more likely to reoffend in the 3 years after release; those who are non-white are 1.325 times more likely than whites to reoffend in the 3 years after release; for each increased level of education attainment (high school completion, attended college) an individual was less likely (*ExpB* = .779) than those who did not complete high school to reoffend in the 3 years after release. Individuals who were employed after release were less likely (*ExpB* = .803) than those who were not employed to reoffend in the 3 years after release. Because all of the independent variables in the logistic regression were not predictively related to the dependent variable at statistically significant levels, I was not able to reject the null hypothesis. Chapter 5 presented a thorough interpretation of the study results, discusses the study's limitations, provided recommendations for future research, and highlighted the implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to determine if there was a statistically significant predictive relationship between gender, ethnicity, age at initial offense, educational attainment level, history of substance use/abuse (i.e., type, severity, and duration), and reoffending status within 3 years of release in North Carolina. I performed demographic frequencies and chi-square test analyses to fully describe the sample and multiple logistic regression analyses to answer the research question and determine any statistically significant predictive relationships between the independent variables and the dependent variable.

The sample comprised secondary data from 5,903 individuals obtained from the NCDPS. The study included those who were 18 years old or older who had been incarcerated and released at some point. The NCDPS database included those released 3 years before the data were pulled on or before January 1, 2015.

The findings of this study may affect social change by contributing towards an understanding of the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, and employment history), substance use status (e.g., type, severity, and duration), and reoffending status within 3 years of release in North Carolina. I found that there was a statistically significant predictive relationship between age at initial offense, ethnicity, educational attainment level, employment history, and reoffending status within 3 years of release. However, there was no statistically significant predictive relationship between the type of substance use, the severity of substance use, and reoffending status within 3 years. This information

may offer some insights to correctional officers who serve as community supervisors to decrease recidivism in North Carolina. This information can also be used as a resource for leaders and practitioners in the NCDPS and afford them to recommend treatments, interventions, and strategies to decrease recidivism for this population. In this chapter, I discuss my interpretation of the findings, limitations of the study, recommendations, and implications.

Interpretation of the Findings

Interpretation of Findings in Relation to Theoretical Framework

I used the SLT as the theoretical framework for this study. Theorists have indicated that SLT is one of the most influential learnings and human development theories and is rooted in many of the basic concepts of traditional learning (Mischel, 1973; Rosenstock et al., 1988). The theory focuses on learning that occurs within a social context and that people learn from one another (Ormond, 1999), and has often been used by researchers studying recidivism (e.g., Coley & Barton, 2006; Durose et al., 2014; Farrington, 1998, 2006; Katsiyannis et al., 2015; Louden & Skeem, 2012; Ogloff et al., 2004; Pettit & Western, 2014; Singh et al., 2018).

Theorists have suggested that learned behaviors are learned not only by observation but also by demonstration (Astray-Caneda et al., 2011). Copying the behaviors of others leads to reinforcing consequences (such as engaging in criminal activity; Astray-Caneda et al., 2011). Many behaviors that are learned from others yield satisfying or reinforcing results, which are applicable when considering criminal behaviors and suggest that repetitive offending may also be learned (Astray-Caneda et al.,

2011). Effects from the behaviors a person engages in are learned and reinforced based on others' positive or negative feedback. Positive reinforcements will result in behaviors being retained and stored to be repeated (Bandura & Kupers, 1964).

The study results indicated that age at initial offense, ethnicity, education attainment level, and employment history was related to reoffending status within 3 years at statistically significant levels. For each additional year of age at the initial offense, an individual is 1.032 times more likely to reoffend in the 3 years after release. Those who are non-White are 1.325 times more likely than Whites to reoffend in the 3 years after release. Young, non-White males with low educational levels are in the highest risk group that reoffends within 3 years after release. Finally, individuals who were employed after release were less likely than those who were not employed to reoffend in the 3years after release. I used the SLT in the study to get a complete integrated criminological approach to recidivism.

Interpretation of Findings in Relation to Previous Research

Interpretation of Results in Relation to Age at Initial Offense

Researchers have suggested that those who first offend when they are younger are more likely to recidivate than those who first offend when they are older (Farrington, 1998, 2006; U.S. Sentencing Commission, 2016). They have also suggested that the average age of criminal behavior onset begins at age 18.6 and ends at age 25.7, and lasts 7.1 years. (Farrington, 1998, 2006; U.S. Sentencing Commission, 2016). I found a statistically significant predictive relationship between age at initial offense ($p = .000$) and reoffending status within 3 years after release. The odds ratio indicated that for each additional year of age at the initial offense, an individual was 1.032 times more likely to reoffend in the 3 years after release. I only considered the age of initial offense and the reoffending status within 3 years. I did not take into consideration getting an average onset age for criminal behavior as one of the variables in the study. Getting an average onset of age may be something that other researchers can consider using in future studies to determine the average onset age for criminal behavior. Statistical outputs would support the work of previous research to determine the current relationship between the average age of onset of criminal behavior and reoffending status.

Interpretation of Results Related to Gender

Researchers have suggested that there are gender differences in the level of violence in criminal incidents and that the rate of offending and reoffending differs for females and males (Reisig et al., 2006). I conducted a chi-square test to determine if there was a statistically significant difference between reoffending status by gender (i.e., male

versus female offenders). I found statistically significant differences in reoffending status within 3 years between male and female offenders (p = .012). Male offenders were more likely to reoffend than female offenders, supporting what other researchers have found regarding gender and recidivism. I did not consider the level of violence/type of offense as a variable in this study. But this may be something that other researchers should include in future studies to see if the level of violence/type of offense results in statistical outputs that continue to support the work of previous researchers or if the addition of this variable shifts the statistical outcomes.

Interpretation of Results Related to Race

Understanding the role of race in recidivism is necessary for determining tactics for reducing recidivism (Pettit & Western, 2014). Blacks have the highest rates of rearrests, reconviction, and reincarceration among all indicator categories (Coley & Barton, 2006). In 2013, White inmates made up 47% of the entire jail population, up from 41% the previous year (Coley & Barton, 2006). The findings in the current study indicated that Black/African American individuals had the highest reoffending status rate at 54.3% of those reoffending. In comparison, Whites represented 42.3%, Hispanic/Latino represented 2.2%, mixed race represented 0%, and unknown represented 1.22% of those reoffending. I performed a chi-square test to determine if there was a statistically significant difference in reoffending status within 3 years between ethnicity groups (i.e., White versus non-White) and found there was p = .001. The odds ratio tests showed that non-Whites are 1.325 times more likely than Whites to reoffend in the 3 years after release. Researchers have suggested that the War on Drugs in the 1990s was

the beginning of the increased number of African American offenders in the prison population with the highest reoffending rate (Coley & Barton, 2006; Katsiyannis et al., 2015; Pettit & Western, 2014). The current study results aligned with the findings of previous researchers that Black/African Americans have the highest rate of reoffending within 3 years of being released. Other researchers could add an additional variable in their research to determine why African Americans have the highest reoffending rate, such as poverty, social-economic status, or systemic race issues.

Interpretation of Results in Relation to Education Level

Researchers have found a direct and strong relationship between an offender's education level and recidivism (Hill, 2015; Steurer & Smith, 2003). The results of the chi-square analyses in the current study showed no statistically significant differences in reoffending status within 3 years for the groups in education attainment level (i.e., less than high school or high school/ GED; $p = .105$. I found a statistically significant relationship between educational attainment level ($p = .003$) in reoffending status within 3 years of release when I conducted the multiple logistic regression. The odds ratio showed that individuals who completed high school or received a GED or completed college were less likely (*ExpB* = .779) than those who had less than a high school education to reoffend in the 3 years after release. Researchers have found that most offenders are statistically undereducated, a contrast to the general populations, directly correlating to the increase in recidivism rates (BJS, 2002; Hill, 2015). The findings in the current study confirmed previous researchers' findings that a lack of educational attainment is directly related to offenders reoffending status within 3 years of release.

Interpretation of Results in Relation to Employment

Researchers have indicated that post release employment is considered the most influential factor for successful reentry and a strong deterrent to recidivism (Lockwood et al., 2015). They have suggested that once a person has been incarcerated, it can be impossible to overcome because successful reentry into the workforce is very difficult. Criminal records are oftentimes a barrier to employment since most employers are reluctant to hire ex-offenders (Gunnison & Helfgott, 2010; Lukies et al., 2011).

I performed a multiple logistic regression test and found a statistically significant relationship between employment status (p = .007) and reoffending status within 3 years of release. After release, individuals who were employed after release were less likely (*ExpB* = .803) than those who were not employed after release to reoffend in the 3 years after release. Researchers have noted that many ex-offenders must deal with financial responsibility because of their criminal convictions. Job placement programs were not proven through research to reduce recidivism (Hill, 2015; Moses, 2012). I concur with the previous researchers that employment is an essential factor in avoiding recidivism. I did not include a variable for the effectiveness of job placement programs in this study, so future research should be conducted to determine if job placement programs could reduce recidivism.

Interpretation of Results Related to Drug Use and Type of Drug Used

In the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition, the terms of substance abuse and substance dependence are no longer used. Instead, the manual refers to SUD, which is defined as mild, moderate, or severe to indicate the

severity level that is determined by the number of diagnostic criteria met by an individual (APA, 2013). Drug abuse and criminal activity are often co-occurring, and in recent history, increased attention has been paid to this situation (Dart et al., 2015). Another trend in current discourse focuses on the prevalence of SUD and recidivism within offending populations (Ogloff et al., 2004).

The current study's findings indicated that out of 5,903 participants, all had a history of substance use (100%), with alcohol used by 61.9% and other substances used by 38.1% of the sample. Approximately half of the participants had a high level of severity of substance use (50.9%). I conducted a chi-square analysis to determine if there were statistically significant differences in reoffending status based on the type of substance used (i.e., alcohol or substance other than alcohol; $p = .222$). The findings showed there is no statistically significant difference between drug use and type of drug used with reoffending status within 3 years of release. Researchers have noted that most adults who had an alcohol use disorder did not have an illicit drug use disorder (Dart et al., 2015; Ogloff et al., 2004). Based on the current study results, I concur with past researchers that alcohol is used more often than illicit drugs. However, I did not include the variable of the type of illicit drug use but a limited type of substance use to alcohol use or other than alcohol use. More research is warranted to determine the type of illicit drugs used related to the substance used.

Limitations of the Study

The main limitation of this study was that that I utilized secondary data. Using secondary helped eliminate any research bias as I could not influence the procedures used

in the original data collection. However, using secondary data limits the amount of control I had over the data collection and recording of the data. Some of the data used were self-reported to the NCDPS, including self-report of a substance use disorder or those who have been diagnosed with one (NCDPS, n.d.), while other data were generated through the records of arrest. The researcher needs to use secondary data to ensure that the original data collection and recording process was accurate, reliable, precise, unbiased, valid, appropriate, and timely. The secondary data used for this study were received from the NCDPS (www.ncdps.gov).

The NCDPS was created in 2012 because of the consolidation of the Department of Corrections, the Department of Juvenile Justice and Delinquency Prevention, and the Department of Crime Control and Public Safety (NCDPS, n.d.). The Division of Adult Correction and Juvenile Justice is one of six divisions within the Department of Public Safety. Adult Correction is responsible for the custody, supervision, and rehabilitation of adult offenders sentenced to community/intermediate punishment or prison (NCDPS, n.d.). Adult Correction is responsible for the operation of Prisons, Community Corrections, Alcohol and Chemical Dependency Programs, and Correctional Enterprises. The Section of Re-entry Programs and Services helps other sections within the Division of Adult Correction and Juvenile Justice and other Divisions of the Department of Public Safety. The staff has expertise in research methods, human subjects' protection, statistics, program evaluation, and policy analysis (NCDPS, n.d.).

Some records lacked information regarding my proposed independent variable of the duration of substance abuse. Substance abuse duration was a wide enough issue with

the dataset that the variable was removed from the multiple logistic regression model. In addition, the proposed independent variable of history of substance use was removed from the multiple logistic regression model as all cases within the dataset indicated some type of history of substance abuse, so there was no variance in the data for that variable (Rabianski, 2006)).

Recommendations

I would recommend that additional research be conducted to determine if similar or differing results can be established with other organizations within North Carolina to determine each participant's substance use duration. According to the data received from the NCDPS, the duration of substance abuse was not available and was eliminated from the study. Another recommendation is to gain the data from each participant from each county prison system in North Carolina rather than the NCDPS. Future studies can be made to address the duration of substance abuse for each participant that reoffended within 3-years of release from the NCDPS. I would also recommend not utilizing secondary data because it limits the amount of control you have over the data collection and recording of the data (Imperial, n.d.).

Additional future studies can also consist of conducting quantitative research to relay and describe more details about their personal experiences while on probation. Interviews will be an excellent tool to getting accurate information from each participant to gain a better understanding of their demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, employment history), substance use status

(i.e., type, severity, duration), and reoffending status within 3 years of release in North Carolina.

Implications

Recidivism is a significant problem in the judicial system in the United States, with approximately 9% of 466,800 parolees at risk of reoffending and an estimated 5% of 2,067,100 probationers at risk of violating their conditions of supervision (BJS, 2015). Ninety-nine-point-five percent (99.5%) of inmates (approximately 92,678 inmates) in the federal prison system are believed to have a history of a substance use disorder and reoffending at some point (BJS, 2015). In North Carolina, at the end of the year 2017, there were approximately 97,624 offenders in community corrections supervision (NCDPS, 2018). Upon release from prison, these individuals require effective aftercare treatment programs that may help these individuals not to use substances again (Louden & Skeem, 2012).

According to Smith (2014), our prison system has become the new asylum and a revolving door for individuals with SUDs. Once these individuals leave prison, they are likely to end up reoffending again at some point in the future due to the ramifications of substance use (committing crimes to support substance use, selling substances, etc.). Researchers continue to struggle with understanding why there are so many occurrences of reoffending associated with offenders released to community supervision (BJS, 2015; DOJ, 2012). Nally et al. (2014) noted a higher unemployment rate amongst released offenders during the first year of release from prison, which was correlated with reoffending and returning to prison. Parolees with substance use disorders have a

substantially increased risk of having their parole revoked for reoffending (Baillargeon et al., 2009). The impact of recidivism is very costly to the judicial system in the United States due to the high rate of homelessness, unemployment, and the cost of overcrowded prisons. Researchers continue to struggle with understanding why there are so many occurrences of reoffending associated with offenders released to community supervision (BJS 2012, 2015). I found that most studies focused on the criminal behavior of the offender in the criminal justice system. This study aims to fill this gap by examining the predictors of recidivism for offenders with substance use disorders.

This study may affect social change by contributing towards an understanding of the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, employment history), substance use status (i.e., type, severity, duration), and reoffending status with 3 years of release in North Carolina. This study may offer some insights to correctional officers who serve as community supervisors as to why there is an increase in recidivism in North Carolina. This information can be used as a resource for leaders and practitioners involved in the NCDPS Division of Adult Correction and Juvenile Justice. It may allow leaders and practitioners the option to recommend treatment, interventions, and strategies to decrease recidivism for this population.

The positive social change implications are motivated to contributing towards an understanding of the predictive relationship between demographic factors (i.e., age at initial offense, gender, ethnicity, educational attainment level, employment history), substance use status (i.e., type, severity, duration), and reoffending status with 3 years of

release in North Carolina. The study offered information on some insights into the criminal justice system as to why there is an increase in recidivism in North Carolina. The information also provided information that can be used as a resource for leaders and practitioners involved in the NCDPS. The study also will allow leaders and practitioners to recommend treatment, interventions, and strategies to decrease recidivism for this population.

Conclusion

In conclusion, recidivism continues to be a major problem in the judicial system in the United States. However, understanding the predictive relationship between age at initial offense, gender, ethnicity, educational attainment level, employment history, type of substance, the severity of substance use, and reoffending status within 3 years of release can be invaluable information to leaders and practitioners in North Carolina. This information can also bring some insight as a resource in assisting with reducing recidivism in North Carolina. I examined the predictive relationships between age at initial offense, gender, ethnicity, educational attainment level, employment history, type of substance, severity of substance use, and reoffending status within 3 years of release. There were statistically significant differences in reoffending status within 3 years between the groups in the variables of gender (male/female) and ethnicity (White/non-White). I found that females were significantly lower in reoffending within 3 years. Non-Whites were higher than Whites reoffending within 3 years (at statistically significant levels). Age at initial offense, ethnicity, education attainment level, and employment history were related to reoffending status within 3 years at statistically significant levels.

For each additional year of age at the initial offense, an individual was 1.032 times more likely to reoffend in the 3 years after release; those who are non-white are 1.325 times more likely than whites to reoffend in the 3 years after release; for each increased level of education attainment (high school completion, attended college) an individual was less likely than those who did not complete high school to reoffend in the 3 years after release. After release, individuals who were employed after release were less likely than those who were not employed to reoffend in the 3 years after release. My research did not include substance abuse duration because it was not available. Therefore, it was eliminated from this study and needed to be included in a future study. More research is required not using secondary data because it limits the amount of control over the data collection. Future studies should be conducted utilizing interviews or surveys on recidivism in North Carolina.

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