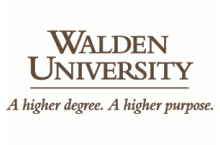

2020

Evaluating Integrated Treatment on Recidivism for Female Offenders in Criminal Justice System

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This is to certify that the doctoral dissertation by

Oyinkansola Popoola

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Abstract

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MPH, Walden University 2014

MSc, University of Ibadan, Nigeria 2006

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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August 2020

Abstract

The burden of co-occurring disorders (CODs) among offenders in the criminal justice system (CJS) in the United States, particularly among the female population, is threatening the communities. About 80% of women in the CJS were diagnosed and treated for CODs, and 63% tend to be rearrested. The study examined the possible influence of CODs, integrated treatment of CODs, and gender, on recidivism while controlling for other demographic factors. The study was based on the conceptual framework of integrated dual disorder treatment (IDDT) and feminist criminology theory. Cross-sectional quantitative study design was applied on a secondary dataset from the 2017 Treatment Episode Data Set - Discharge (TEDS-D). All the eligible records, based on the study inclusion and exclusion criteria, were analyzed. Frequency distribution tables, chi-square test, and multivariable logistic regression model were used to describe the participants and determine the associations between the independent variables and the dependent variable (recidivism). A total of 442,905 participants were analyzed. Most (38%) of them were between 25 to 34 years old and majority (71.4%) were men. The associations between prevalence of COD (Odds Ratio [OR] = 0.81; Confidence Interval [CI] 0.79, 0.84), previous treatment episode (OR = 1.3; CI 1.30, 1.28) and recidivism were statistically significant. Women appear to be at higher risks (8.7%) of recidivism than men (7.8%). In conclusion, COD and previous treatment episode are associated with recidivism. The social implications of these findings are the potential to promote individualized and gender-sensitive treatment, which may reduce recidivism, reduce incidence of crimes, and promote safer and healthier communities.

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Dedication

I dedicate this dissertation to God, my maker, who has brought me this far. I have been able to accomplish this journey with God by my side always. I am grateful to God for His eternal love, unwavering protection and favor received all through this journey. God showed up to equip me with strength, wisdom, and understanding especially on the days when everything seems stalls, felt discouraged and tired. I am returning all glory and thanksgiving to God for seeing me through this journey.

I dedicate this work to the memory of my late mother, Chief Mrs. H. K Odebiyi, who instilled hardwork, and perseverance lessons in me and set me on the mode that I can achieve whatever I set your mind to do. Mommy, may your beautiful and kindhearted soul continue to rest in peace, amen. For my father, Chief S. G. Odebiyi, I am glad you are alive to witness this day as your little girl achieves one of her dreams. For my darling husband, Adekunle, you have been an inspiration to me throughout this journey. Your encouragements and calming words gave me strength and strive to push through when I felt like giving up, tired, and discouraged. Thank you, sweetheart.

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I thank God for my husband, Adekunle, for his patience, love, supports, and belief in me. I am grateful to our beloved children, Olawale, and Olamide for your understanding, sacrifices, and I love you both dearly. To my dear nieces, Oyindamola and Oreoluwa, I love you girls and thank you for all you do. For my lovely siblings, Motunrayo, Mojoyinola, Morounropo, Morefunke, and Babatunde; your amazing love, prayers, and encouragements have been consistent all of our lives. I pray that my achievement will inspire my children, nieces, and nephews to become the women and men that they were born to be, trust in God, and work hard towards their goals in life.

My appreciation goes to my family and friends who have helped to make my dream come true. To my senior doctoral colleagues, I appreciate your time, recommendations, criticisms, expertise, and supports, it has been a privilege to learn from you all. My appreciation goes to the pastors and church members of Christ Apostolic Church Tampa family for your encouragements and prayers. Words cannot express my gratitude for your kindness and support. To everyone, I say thank you.

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Chapter 1: Introduction to the Study

Introduction

Coexisting mental health and substance use disorders, known as co-occurring disorders (COD), have been identified as one of the greatest problems for the population within the criminal justice system. People in the criminal justice system have more health care problems than the general population, making health care problems for this population a public health issue (Substance Abuse and Mental Health Services Administration [SAMHSA], 2016a). I used the terms *substance use disorder, substance abuse, mental health disorder,* and *mental illness* interchangeably as the case in this study; however, the terms are clearly defined in Diagnostic and Statistical Manual of Mental Disorders, DSM-V criteria. The National Alliance of Mental Health [NAMI] (2015) estimated that nearly 43.8 million adults in the United States are diagnosed with mental health disorders, and about 10 million adults are diagnosed with severe mental health disorders. Glueck (2015) noted poor treatment as one of the social issues facing communities, in which the comorbidity of mental health and substance use disorders is common. With the integration of mental health and substance use disorders to become co-occurring disorders, Cuellar and Cheema (2014) and Glueck (2015) reported that medical and behavioral health professionals collaborate to effectively assess, diagnose, treat, and manage individuals with mental health and substance use disorders.

There is on-going research to connect COD and crime to prevent its devastating effects on communities. Peters, Wexler, and Lurigio (2015) reported that mental health disorders are four to six times higher in jails and three to four times higher in prisons than

in the general population. It is crucial to have a better understanding of the connection between COD diagnosis, COD treatments, and crime to reduce criminal activities. Women have been reported to be the fastest-growing population of the criminal justice system (Gleason et al., 2013, National Abandoned Infants Assistance Resource Center, 2008); thus, it is crucial to see how COD affects both men and women with respect to the various symptoms they present, need for treatments, access to care, and if the COD treatments influence recidivism (rearrest withinin the period of 30 days before discharge from a treatement program) into the criminal justice population.

About two-thirds of incarcerated women are reported to be of ethnic or cultural minorities. They are primary caretakers of dependent children, which increases anxiety, guilt, and low self-esteem; they are unable to care for children during incarceration (SAMHSA, 2017b). SAMHSA (2015b) stated that medical issues such as sexually transmitted diseases, and screening, treatment, and interventions should be culturally valid and gender-sensitive. This study could increase the understanding of the associations between relevant sociodemographic and COD characteristics, including treatment status and recidivism. The study may become a source of reliable evidence for positive policy and social change in communities. The findings may promote individualized and gender-sensitive treatment, which may reduce recidivism, reduce incidence of crimes, and promote safer and healthier communities.

In this chapter, I will provide a background and overview of the study, including the scope of the problem to be addressed, gaps in the current literature, the need for this study, the study design, research questions, hypotheses, and variables. The theoretical

underpinning of the study of COD will be discussed briefly, highlighting its relevance to the current study. Related terms will be defined, and the study assumptions, delimitations, and limitations will be outlined. Lastly, the significance of the study will be elucidated.

Background of the Study

There is a growing awareness of the need to recognize the treatments of COD; thus, there is ongoing research on new approaches and treatment interventions to address COD, especially within the criminal justice system. Everett and Benjamin (2014) provided information on the integration of behavioral health and physical health care, and identified the barriers, costs, and burdens caused by untreated mental illness. With the advancement of community-based mental health and substance use services, it is crucial to have service providers that can provide psychiatric, medical, and counseling for individuals to best meet their needs appropriately in the same community-based setting (Everett & Benjamin, 2014). The adverse impact of COD is immeasurable, as it affects the individuals, families, and communities as a whole.

There are some infectious and chronic diseases such as HIV/AIDS, asthma, hepatitis C, sexually transmitted disease, cancer, and tuberculosis among others, as reported by Peters, Wexler and Lurigio (2015), that are found more often in the criminal justice system than in the general population and some of these diseases are either caused or aggravated by CODs. While some of the offenders with CODs might have been as a result of genetic predisposition, others could be environmental factors such as substance-addicted peers, traumatic events, environmental stressors, educational difficulties, and isolation (Peters, Wexler & Lurigio, 2015). There is a need for continued study of CODs

in the criminal justice system to address the significant challenges like community reentry that are accompanied by the difficulty of stable housing, noncompliant with medications, substance use relapse, recidivism, and threats to public safety. Peters, Wexler & Lurigio (2015) concluded their studies by highlighting the importance of integrated services for people with CODs in both institutional and community settings of the criminal justice system, while considering the gender and race of the population.

About 80% of women in the criminal justice system have CODs and most of them return to the community after serving their short sentences, which makes continued COD treatment complicated (Johnson et al. 2015). Woemn with CODs face more and different barriers than men when transitioning back to the community. This is due to lack of support, emotional needs, continuity of care and how COD treatment in the criminal justice system is under-resourced (Johnson et al., 2015). The providers identified the need for continuity of care, address relationship issues, and the availability of a navigator to assist women in managing community reentry, reducing relapse, and maintaining stability in the community (Johnson et al., 2015).

Cuellar and Cheema (2014) reported that the treatment of mental health and substance use is the most significant need of the population in the criminal justice system. The criminal justice population is prominent in today's substance abuse treatment system. About 37% of the referrals for substance abuse treatment are from the criminal justice population; referrals are documented by judges for either pretrial or posttrial detainees, probations officers, social workers and the police, making untreated COD associated with a higher risk of crimes (Cuellar & Cheema, 2014). It could also mean the presence of a

COD may increase the likelihood that an individual commits a crime or is involved in violent incidents. There is a growing awareness of the prevalence of COD and the criminal justice system; however, access to effective treatment continues to be a challenge. Gordon et al. (2007) expanded on the barriers and the need for an integrated healthcare system of behavioral health care, substance use, and physical care, especially for the vulnerable population. Hodge, Moser and Shafer (2012) identified that mental health disorders lead to an unfortunate economic situation like loss of employment, homelessness, and incarceration.

Predergast et al. (2017) and Toi and Mogro-Wilson (2015) addressed the barriers that incarcerated women with COD face during their transition back to the community. COD has been reported to be a significant cause of disabilities and influences crime rates in the community thus suggesting more integrated professionals to increase specialist care (Predergast et al., 2017; Toi & Mogro-Wilson, 2015). However, Everett and Benjamin (2014) reported that funding integrated care programs is a challenge. Gleason et al. (2014) reported the differences in the type and amount of substance use, psychological distress, and risk factors for other medical conditions in both men and women. These differences account for the different treatment needs for men and women receiving COD as integrated care (Gleason et al., 2014).

Generally, the extant literature addressed the barriers, facilitators, possible solutions, and economic and social impact of COD among the general population. However, the understanding of these elements of COD regarding its possible influence on recidivism among the population within the criminal justice system was limited in the

literature. In addition, the literature showed that women may be at higher risk of facing the consequences of COD than their male counterparts; however, the evidence was not sufficient in the literature. In this study, I focused on the impact of COD and its integrated treatment, and other related sociodemographic factors, with respect to its likelihood of reducing recidivism among offenders into the criminal justice system while considering gender differences.

Problem Statement

The incidence and the associated burden of COD among the offenders in the criminal justice system in the United States, particularly among the female population, is threating the economic and social systems of the society; thus, putting the female population at higher risks of suffering the burden. Multiple factors can cause CODs in women; therefore, women with CODs can receive integrated treatment services to address the symptomology that surrounds their mental health and substance use problem (Predergast, McCollister, & Warda, 2017). Predergast et al. (2017) reported that current studies on CODs had placed a stronger emphasis on developing integrated treatment services that simultaneously provide services that will treat both mental health and substance abuse disorders. Predergast et al. (2017) reported approximately 111,000 female offenders in both state and federal prisons and about 1.1 million female offenders on probation or parole in 2011. The increasing number of women with COD in jails, prisons, and community settings of the criminal justice system caused numerous challenges in providing effective CODs treatment services due to a shortage of integrated treatment programs (SAMHSA, 2015a).

A visible gap existed in the literature in addressing the relationship between the outcome of mental health and substance use disorders treatments, gender differences, and how they affect the offender's re-entry into the criminal justice system (recidivism). The previous studies did not sufficiently establish the relationship between the effectiveness of COD treatments and gender, especially in the case of female offenders upon their release in the community and the rates of recidivism, so to support improved and geneder-sensitive approach in resolving the social and economic problems of COD and recidivsim. I aimed to address this gap in my study.

I investigated how treating both mental health and substance abuse disorders in the same setting could lead to reduced recidivism into the criminal justice system for offenders. I also investigated the difference between men and women with CODs who have received integrated treatment and the effects of the treatment to reduce recidivism in the criminal justice system. It is imperative to understand how integrated treatment services can influence people with CODs who may be rearrested and to establish healthier lifestyles while considering if there should be a need for gender-specific treatments. Clinical staff and social and political support are necessary in establishing integrated treatment services to address the dynamics of treating CODs. Due to the lack of CODs in the crinimal justice system population and integrated treatment studies, Kissin, Tang, Campbell, Claus, and Orwin (2014) anticipated challenges that health care providers will have in incorporating integrated treatment services.

Purpose of the Study

The purpose of this quantitative study was to examine the possible relationship between the previous episodes of integrated treatment of CODs, gender differences, and their effects on recidivism in the criminal justice system. This study has a public health significance because it may provide a better understanding of COD diagnosis, gender differences, and COD treatment outcomes on the recidivism of offenders with COD into the criminal justice system. The offenders under the criminal justice system who are under probation or parole supervision seek treatment for mental health and substance use disorders as they transition back into the community (Ali, Teich, & Mutter, 2018). The importance of screening and assessment of CODs in the criminal justice system includes, among others, the inadequacy of criminal justice management to identify people with CODs at the different sections of the criminal justice system and to ensure continued culturally sensitive interventions (SAMHSA, 2015). It could be essential to provide integrated treatment for mental health and substance use disorders for these offenders as it can result in better outcomes like reduced substance use, reduce re-incarceration, and management of disorders (Kissin et al., 2014).

Research Questions and Hypotheses

Research Question 1 (RQ1): Is there a statistically significant relationship between COD diagnosis and recidivism while considering gender differences?

Null Hypothesis 1 ($H_0$1): There is no statistically significant relationship between COD diagnosis and recidivism while considering the gender differences.

Alternative Hypothesis 1 (H_a1): There is a statistically significant relationship between COD diagnosis and recidivism while considering the gender differences.

Research Question 2 (RQ2): Is there a statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences?

Null Hypothesis 2 (H_02): There is no statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences.

Alternative Hypothesis 2 (H_a2): There is a statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences.

Research Question 3 (RQ3): Is there a statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism, while controlling for age, gender, race, marital status, and education level and employment status?

Null Hypothesis 3 (H_03): There is no statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism while controlling for age, gender, race, marital status, and education level and employment status.

Alternative Hypothesis 3 (H_a3): There is a statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and

recidivism, while controlling for age, gender, race, marital status, and education level, and employment status.

Theoretical Framework

I used two theories to develop a robust theoretical framework for this study. The substance use and mental health disorders treatments and the effects of these treatments outcome can be used to examine the legal history of offenders in the community setting of the criminal justice system (Kissin et al., 2014). The theoretical framework of this dissertation is rooted in the use of integrated treatment services to treat CODs properly. Key to an integrated treatment model is the tenet that it is imperative to simultaneously address mental health and substance abuse issues, rather than treat them separately at different times and places (Chambers et al., 2014; Scott, Dennis & Lurigio, 2017). The population living with CODs have a higher incidence of early morbidity and higher mortality rates than the rest of the population (Balyakina, Mann, Ellison, Sivernell, Fulda, Sarai, & Cardarelli, 2014). It is necessary to promote mental health and substance use disorders treatments using the integrated dual disorder treatment model (IDDT). I used IDDT model developed at Dartmouth Medical School to establish the framework for the mental health and substance use disorders treatments and their relevance to having good quality of life (Stein, Anderson, & Gelberg, 2016).

The IDDT involves concurrent treatment of both mental health and substance use disorders (COD) in the same setting by a different clinician (Kim, Higgins, Esposito, & Hambline, 2017). The IDDT is a cohesive and unitary system of care; it provides the framework for the implementation of dual treatments in a coordinated way (Bayyakina et

al., 2014). The IDDT model was developed at Dartmouth Medical School as a framework that will work with the basics of the disorder, the assessment process, individual approaches to treatment, group interventions, strengthen working with families, other treatment approaches, and continued research (Bayyakina et al., 2014). People diagnosed with mental health disorders usually do not follow through when referred for substance use treatment, making the situation more complicated; therefore, there may be need to integrate treatments for mental health and substance use disorders and multidisciplianry care providers (Bayyakina et al., 2014; Surface, 2018).

Another theoretical framework for this study is the feminist criminology theory developed by Chesney-Lind (1988), which addresses females and crime. Gender is an essential factor in discussing criminality since there are differences in the pattern of criminality in the lives of women and men. Feminist criminology theory seems to be appropriate to study gender differences in the criminal justice system because it provides an understanding of the differences between male and female offenders (Chesney-Lind, 1988). Society discriminates against women based on sex and does not have the same access as men politically, legally, and socially. Gender inequality continues to be a social problem as women strive to integrate into the men's world. Some of the offenders diagnosed with COD have access to healthcare while in prison; however, transitioning into the community would require continued treatments to reduce the chances of being rearrested or causing other social problems by committing new crimes. Chesney-Lind and Shelden (2013) reported that the feminist criminology theory provides a theoretical explanation for the crimes attributed to the mental health and substance abuse disorders

for women, needs for gender-specific treatments, the responses of the female offenders to treatments, the barriers to service utilization and navigating the COD as an integrated healthcare system. A more detailed reflections of the two components of the study theoretical framework is provided in the next chapter, chapter 2. The chapter shows the bigger picture of how the study approach and context are connected with the theories, with evidences of their relevance to understanding this work.

Nature of the Study

The nature of the study was a cross-sectional and quantitative method of research. The quantitative analysis supports surveys and experiments which enable researchers to make empirical claims about the population in question with an outcome influenced by an intervention (Frankfort Nachmias & Nachmias, 2008). I made use of archival data on the general population that were discharged from substance abuse treatment programs in the Treatment Episode Data Set -- Discharges (TEDS-D) database, which presents a more comprehensive and generalizable gauge of treatment in the United States. I obtained the archival data set from the TEDS-D of the SAMHSA (2017b). TEDS-D gathers the demographics of the offenders, number of arrests made in the 30 days before the discharge from the treatment program, source of referrals, the number of previous treatment episodes and co-occurring disorders (formally referred to as ‘psychiatric problem in addition to substance use’ in the SAMHSA, 2017 codebook), SAMHSA (2016b). The cross-sectional study design would be able to decide on a point (specific time) measurable impact on the mental health and substance use disorders treatments for

the female offenders in the criminal justice system transitioning to the community in 2017 (Mcdonnell, Brookes, & Lurigio, 2014).

Frankfort Nachmias and Nachmias (2008) established that a cross-sectional study allows researchers to compare many variables at the same time; however, the cause and effects might not be determined over a period to time. This study, for example, examined the demographic of the participants, the COD treatments in relation to recidivism. The approach provided answers to the research questions in determining the effects of COD treatments on the re-entry of the offender in the criminal justice system, and if gender differences influence recidivism. It further addressed how the participation of female offenders for treatments or the number of prior treatment episodes improves the female offender's life upon release from incarceration. Recidivism which was determined by the effectiveness of the COD treatments based on the number of arrests made in the 30 days before the discharge would be the dependent variable, while independent variables include demographics of the participants, COD treatment and prior treatments episodes. The multivariable logistic regression model tested for the significant associations between the variables. The chi-square test was used to determine the statistical significance and relationships of the individual variables with recidivism; with particular statistical emphasis on the gender differences in COD diagnoses, COD treatments, and recidivism. The multivariable logistic regression analysis was used to determine the interactions between independent variables to predict the dependent variable while adjusting for potential confounders (Frankfort Nachmias & Nachmias, 2008). The analysis is more appropriate for determining associations between a single dichotomous

outcome and more than one independent variable. For the statistical tests, a *p*-value of 0.05 was used as the cutoff for statistical significance with a 95% confidence interval.

Definitions

Co-occurring disorders: The simultaneous diagnosis of at least one mental health disorder and at least one substance use disorder as characterized by DSM-5 (Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, APA 2013, SAMHSA, 2016a).

Criminal justice system: The criminal justice system is the sector of the government that creates laws, control crimes and impose penalties for violators through networks that comprise of the city, county, state and federal justice systems bounds by the constitution. (Mcdonnell, Brookes & Lurigio, 2014). The criminal justice system also enforces and detects crime, adjudicate judgments pronounced by the court, and the corrections which involve reforms and rehabilitation for the convicts (Mcdonnell, Brookes & Lurigio, 2014).

Integrated treatment: This is also referred to as *integrated care* or *COD treatment* in this work. It is a combination of options of care for physical healthcare, behavioral healthcare, and substance use care in the same setting where diagnosis, treatment, and management of these disorders are provided as determined appropriate, in a timely and coordinated organization (Everett & Benjamin, 2014; SAMHSA, 2017a)

Mental health disorders: This is used interchangeably with mental illness. A mental health disorder is a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in

the psychological, biological, or developmental processes underlying mental functioning. It was defined as a disorder in the DSM-V that causes functional impairment or considerably interferes with one or more life activities among adults 18 years of age or older (APA, 2013, SAMHSA, 2017b).

Mental health and substance use disorders: These disorders include, but are not limited to, generalized anxiety disorder, major depressive disorder, schizophrenia spectrum disorders, psychotic disorders, attention deficit or hyperactivity disorder, bipolar disorder, other mood disorders, alcohol use disorder, cannabis use disorder, phencyclidine use disorder, opioid use disorder, stimulant use disorder, tobacco use disorder, and other co-occurring substance use disorders (SAMHSA, 2016a).

Recidivism: Rearrest of a previous offender back into the CJS for a new crime, within 30 days' period before discharge from the correctional or treatment program assigned to the offender. Offenders who were released from prisons were more likely to be rearrested either for new crimes and violate their release condition (Visher & Travis, 2003). Rhodes et al. (2019) in their study conducted on the event- and offender-based recidivism methodology using the National Corrections Reporting Program established that offenders released might return to prison and the return may be for a new commitment, technical violation, or any other reason as long as the offender stays for more than 30 days. The allocation of rehabilitation and supervision resources for released offenders might influence recidivism and also understand the risk posed by the release offenders (Rhodes et al., 2019).

Substance use disorder: A substance use disorder is a continuum of "mild," "moderate," and "severe," abuse and dependence on alcohol or other drugs as classified by the DSM-5 (APA, 2013).

Assumptions

The primary assumption made at the outset of this study was that the secondary data received on the TEDS-D of the SAMHSA (2017b) are authentic, not falsified, and reflected care patterns of consumers at the treatment centers. Since the data was not collected by me, I assumed that the data for the study are reliable and nationally representative of offenders as the target population under investigation. I assumed that the participants understood the instructions for the survey and answered the questions according to the instructions given after they had freely agreed to be part of the study. I assumed that the integrated COD treatment was sufficiently appropriate to meet the needs of the clients. I also assumed that the theoretical framework of IDDT and feminist criminology theory provided a more in-depth understanding of the research study. There was a reasonable assumption to make, given that the original purpose of the study was to investigate how gender differences affected the utilization of the integrated care system of COD, re-entry of female offenders into the criminal justice system, and the barriers they face while navigating the system.

Scope and Delimitations

The study was about individuals under the criminal justice system that are under probation or parole supervision that seeks treatment for COD as they transition into the community. The target population for this study was justified based on research that

providing integrated treatment for COD can result in better outcomes like reduced substance use, re-incarceration, and management of disorders (SAMHSA, 2016c). This study addressed the re-entry of offenders into the criminal justice system based on differences in gender,the impacts of treatments upon release from incarceration, and if there was need for gender-specific COD treatment. The participants in the study agreed to answer the questions, they were given the survey forms, and the participants have the right to decline to answer any of the questions. The SAMHSA websites reported that the data collected are kept confidential, so also are the privacy of the participants. The delimitations of the study was no direct observation of the participants nor manipulation to influence their responses. Thus all survey responses are presumed self-reported.

Limitations

This study is subject to limitations. The first limitation was related to the participants who might not be truthful in their responses during the survey. The second limitation was concerned about the different people involved in the input of data which might result in data entry errors that may lead to inaccuracies in the data or missing data. The third limitation had to do with the study methodology. Since I chose a quantitative study to investigate how gender differences affect utilizing the integrated care system to treat COD in the criminal justice system population and the barriers they face while navigating the system, the quantitative methodology may not provide the desired result. The quantitative methodology examines relationships between variables and the results must be numeric; however, some details might be missing since there were no provision

to probe or expore their responses further, using interpretivsim approach, which might be crucial information (Frankfort Nachmias & Nachmias, 2008).

Significance of the Study

This study provided a further understanding of offenders by investigating their treatment history and how COD treatments affected the offender's re-entry into the criminal justice system while considering gender differences. The study intended to assess the archival data on offenders that are under probation or parole supervision who seek treatment for COD as they transition into the community. These individuals with COD under the criminal justice system receives care at a community health center. A study reported that, within three years, about 7 out of 10 offenders would have been rearrested possibly for a new crime or violation (Visher & Travis, 2003). The criminal justice provides information on offenders like the criminal recidivism, their history of felony arrests, the number of prior and duration of incarceration and court orders requiring assessment and treatment can assist in shaping the COD treatment, supervision, and case management (SAMHSA, 2015b). Thus appropriate assistance is required transitioning from prison back into the community to avoid crime and to alienate the difficulty in seeking treatments in the community (Visher & Travis, 2003). Another benefit of the integrated care system of mental health and substance use disorders is that it may allow access to medication in the same settings because some substance abuse treatment programs do not allow their participants to take psychotropic medication (Guyer, Backrash, & Shine, 2015).

The significance of this study included increasing the public awareness on COD, expanded studies on women under the criminal justice system, consideration for women's reproductive needs, physical and sexual assaults, access to healthcare and effects of violence on women's mental health (Lee, Zaharlick & Akers, 2017; Tripodi & Pettus-Davis, 2013). This results of this study intended to strengthen the relationship between mental health and substance use disorders treatments, suggests solutions to barriers faced by women offenders in seeking treatments and provide insights on how women can receive an early diagnosis, treatment, and management of mental health and substance use disorders and reconciliation of their medications in the same setting.

Furthermore, the results addressed how to empower women while transitioning back to the community to avoid recidivism. Positive social change may reflect the health behaviors of the target population. Thus, public health interventions and healthcare evaluation of the affected intervention influences legislative actions and support policy reforms (Prättälä & Puska, 2012). Implications for positive social change include developing strategies and application of ideas that will empower female offenders in the community. The positive social change may include the promotion of mental health and substance use disorders treatment in the community, a better understanding of seeking and access to care, and promotion of care through the integrated care system in public health care programs.

Significance to Practice

This study investigated how integrated COD treatments affects the offender's rearrest in the criminal justice system . The findings could lead to reduced re-entry into

the criminal justice system for offenders and promote the need for gender-specific treatments. The conclusion of the study might enable policymakers to promote greater cost-effectiveness with reduced incarceration rates, expand COD treatment in the community, consider adjudicating more cases for offenders who have mental health and substance use disorders, and empower mental health professionals. Other practices would promote COD awareness in the community, expand residential treatments, outpatient clinics, and workforce with high-security treatment for offenders that are chronically dangerous to themselves. The safety of offenders while incarcerated and upon release would fulfill the best practices of COD treatment.

Significance to Social Change

Positive social change can be reflected in the health behaviors of the target population. Thus, public health interventions and healthcare evaluation of the affected intervention influences legislative actions and support policy reforms (Prättälä & Puska, 2012). Implications for positive social change include developing strategies and application of ideas that will empower female offenders in the community. The positive social change will include the promotion of COD treatment both during incarceration and in the community, a better understanding of seeking and access to care, the need for gender-based treatment, promotion of female providers, and promotion of care through the integrated care system in public health care programs. The conclusion of this study might have positive social change for the individuals involved with the criminal justice system, the family members, service providers in treatment programs, and the general public.

In Chapter 2, I will expand on the integration care of COD, its application to this study, an overview of COD as integrated care in the criminal justice system. The various implications for female offenders as they transition back to the community, challenges faced in navigating the COD treatment, and how it can to reduce rearrest. I will highlight the gaps in previous research, the significance of this current study, explore the literature for this study, and identify the need for gender-specific COD treatment.

Chapter 2: Literature Review

Introduction

The risks of COD among people in the criminal justice system in the United States are observed more frequently among the female population (Gleason et al., 2013). The increased in female population in the criminal justice system worsens gender inequity due to potential deficiency of gender-sensitive integrated care which erodes the economic and social systems of society (National Abandoned Infants Assistance Resource Center, 2008; SAMHSA, 2016c). The purpose of this quantitative study was to examine the possible relationship between the previous episodes of integrated treatment of CODs, gender differences, and their effect on recidivism in the criminal justice system. This study could provide a better understanding of COD diagnosis, gender differences, and COD treatment outcomes on the recidivism of offenders with COD into the criminal justice system.

In this literature review, I address the need for continued research to understand how poor implementation of mental health and substance abuse disorder treatment could lead to increased re-entry of female offenders into the criminal justice system. The criminal justice system population has more health care problems than the general population. Peters, Wexler and Lurigio (2015) reported that the occurrence of mental health disorders is about four to six times higher in jails and three to four times higher in prisons than in the general population. Similarly, the prevalence of substance use disorder is higher in prisons when compared to the general population. The Treatment Episode Data Set (TEDS) of 2010 also reported that 37% of all referrals for substance

abuse treatments were from the criminal justice system (SAMHSA, 2016c). Therefore, it is crucial to study the significance of the treatment of substance use and mental health disorders in the criminal justice population.

The treatment of COD has been named one of the greatest needs of the criminal justice population although the prevalence differs between individuals with or without histories of incarcerations (Cuellar & Cheema, 2014). Studies emphasize the necessity of treating CODs, especially within the CJS. COD affects both men and women although women have been reported to be the fastest-growing population of the criminal justice system with different presenting symptoms, need for treatments and access to care (Gleason et al., 2013, National Abandoned Infants Assistance Resource Center, 2008). The United Nations in 2010 identified gender equality as one of the significant socio-health outcomes; therefore, more research is needed regarding how women with COD seek treatment their needs upon release to the community, and the implication of treatment to reduce re-entry into the CJS (Gleason et al., 2013, Hall et al. 2013).

Chapter 2 covers the following: (a) a review of the literature search strategies that I employed to identify relevant sources that provided sufficient background of the research topic; (b) an overview of the two theoretical frameworks: IDDT and the feminist criminology with a review of past studies; and (c) the main literature review of the relevant variables and concepts of the research, such as integrated behavioral health care, integrated care system of co-occurring substance use and mental health disorders, co-occurring substance use and mental disorders in the criminal justice system, co-occurring substance use and mental disorders treatments for female offenders in the criminal justice

system, implications of COD treatments for female offenders in the criminal justice system, and gaps in prior research. The methodologies and scope of the sources were also reviewed in relation to this research methodological options.

Literature Search Strategy

My research focused on the possible relationship between the COD, previous episodes of treatment, gender differences and its effect on recidivism in the criminal justice system. Previous researchers studied integrated care system treatment, CODs, and the criminal justice system. My search of the literature was digitally conducted on health, criminal justice, and medical databases such as CINAHL, MEDLINE, PsycINFO, PsyARTICLES, PubMed, Public Health journals, Criminal justice database, socINDEX, EBSCO Host, ProQuest for Walden and dissertations from other colleges, Google scholar search, and Walden llibrary database. In the search for literature, I limited most of the articles to the last 5 years, articles that were relevant to my study, and articles from peer-reviewed journals. The following keywords were used to conduct the literature search: *integrated care system, integrated behavioral health care system, mental health disorders, recidivism, substance use disorders, co-occurring disorders in the criminal justice system, females and crimes,* and *the criminal justice system.*

Theoretical Framework

I used IDDT and the feminist criminology theory as the theoretical frameworks for this study. My study examined the use of COD as an integrated care treatment for mental health and substance abuse simultaneously at the same facility. CODs are a significant public health issue due to the exposure of risks, the complexity of the

diagnostic where an individual might be struggling with various mental illnesses and multiple substance use, difficulty in service utilization and treatment, and access to such care (Ogloff et al., 2015; Wilton & Stewart, 2017). The theoretical framework for my study established that it is a public health awareness to promote COD treatments as explained by IDDT in the same setting by different clinicians (Kim, Higgins, Esposito, & Hambline, 2017) and the feminist criminology theory developed by Chesney-Lind (1988), which addresses women and crime.

To better understand how the implementation of integrated treatment for COD could lead to reduced re-entry into the CJS of offenders was explained by these theoretical frameworks. The feminist criminology theory was developed to address women and crime in the 80s, and might not adequately meet the needs of my study, so I added the IDDT which is an evidence-based practice and an implementation toolkit by SAMHSA for integrated care treatment (Chesney-Lind, 1988; Harrison, Curtis, Cousins & Spybrook, 2017). My goal for the study was to investigate offenders living with CODs and their vulnerable to more psychiatric episodes while considering gender differences.

Feminist Criminology Theory

Feminist criminology postulates that gender is an essential factor in discussing criminality because there are differences in the pattern of criminality in the lives of women and men. My study seeks to understand how treating both mental health and substance abuse in the same setting could lead to reduced recidivism into the criminal justice system for offenders. I used feminist criminology theory to understand the effect of gender differences. Feminist criminology theory is appropriate to study gender

differences in the criminal justice system because it provides an understanding of the differences between male and female offenders (Chesney-Lind, 1988). Chesney-Lind (1988) argued that gender is an essential factor in discussing criminality because criminality differs in the lives of women and men. Chesney-Lind (1988) further explained CODs in women, gender-specific treatments, the response of the female offenders, and the barriers to service utilization/ treatments. According to Chesney-Lind and Daly (1998), is impossible to discuss or understand women's lives without considering men; the lives and viewpoints of men are crucial. Society discriminates against women based on sex and they do not have the same access as men politically, legally, or socially (Chesney-Lind & Daly, 1998). Some of the offenders diagnosed with COD have access to healthcare while in prison; however, transitioning into the community would require continued treatments to reduce the chances of being rearrested or causing other social problems by committing new crimes (Ogloff et al.,2015).

The Integrated Dual Disorder Treatment (IDDT)

The IDDT model is an evidence-based practice endorsed by the SAMHSA (2016a). IDDT consists of different treatment and organizations, which makes it challenging to implement (Wamel, Rooijen, & Kroon, 2015). IDDT is a multidisciplinary model that combines psychotropic medications, counseling, interventions, outreach, motivation-based treatment, group treatment, case management, and social interventions to meet the needs of people living with CODs (Surface, 2008; Wamel, Rooijen, & Kroon, 2015). The IDDT is an evidence based models associated with significant outcomes according to the study carried by Harrison et al.(2017). The IDDT model was used to

improve fidelity measurements of the participants from baseline (68) to third review (40), where family interventions were included with multi-disciplinary team of integrated treatment specialist for participants to stay in dual treatments in a coordinated way for an improved treatment outcome (Harrison et al., 2017). The IDDT) model has been identified as an evidence-based practice and continues to be studied by researchers to address mental health and substance use disorders as a COD treatment at the same settings serviced by different providers to improve quality of life (Pringle, Grasso & Lederer, 2017; Surface (2008).

The Characteristics of the Integrated Dual Disorder Treatment Models (IDDT)

Figure 1. IDDT Fidelity Scale Source: Kikkert et al. (2018) and Kubek (2011).

The IDDT model is an evidence-based practice with the IDDT fidelity scale designed to guide professionals, and it was developed by Robert Drake of the Dartmouth Psychiatric Institute (SAMHSA, 2017a). The Ohio Substance Abuse and Mental Illness Coordinating Center of Excellence is an initiative of the Center for Evidence-Based Practices also reported that the characteristics of the IDDT for the best treatment and recovery of individuals with COD produces positive outcomes using the IDDT fidelity scale (Kubek, 2011). The IDDT fidelity scale model has 14 components with some of the components associated with improved outcomes. The components include a multidisciplinary team that usually includes medical providers, clinicians, case managers, employment specialist, residential staff, a criminal justice specialist, and a housing specialist amongst others meets to discuss the participant's progress, goals, insights, and advice to better coordinate all aspects of recovery ensuring working toward the same goals (Kikkert et al., 2018; Kubek, 2011).

The Stage-Wise Interventions is one of the components of the IDDT fidelity scale model that encourages individuals with COD to build up confidence that will assist them in recovering and developing independent skills using the four stages of treatment of precontemplation, contemplation, preparation and the maintanance stages (Kikkert et al., 2018; Kubek, 2011). The stages are the precontemplation stage for initial engagement; the contemplation and preparation stage that persuades and motivates action treatment stage to assist individuals in acquiring skills and supports; and the maintenance relapse stage, which ensures stable remission and strategies to maintain abstinence and recovery (Kikkert et al., 2018; Kubek, 2011). The IDDT clients engaged in comprehensive dual

disorder services appropriate for the recovery process and time-unlimited services designed to be on-going because participants experience cycles of relapse and recovery; thus, they can have access to dual treatment all the time (Kubek, 2011). IDDT programs use assertive outreach to engage participants in providing services; providers meet them in community locations they are familiar with, like in their homes, schools, or their favorite shops to develop trust (Kubek, 2011).

The motivational interventions are a way the clinician interacts with participants to assist in identifying their goals and strategies to achieve their goals while expressing empathy, encourage confidence, and avoid arguments (Kikkert et al., 2018). The IDDT substance abuse counseling is provided to participants in the active-treatment stage or relapse prevention to identify the consequences of relapse, develop skills to refuse substance use, and how to avoid high-risk situations (Kikkert et al., 2018) . The group treatment in the IDDT program was designed to engage in a stage-wise group treatment that addresses COD as an ideal setting to develop peer supports that share their experiences and coping strategies (Kikkert et al., 2018). Family education and support are critical for participants to reduce relapse, strengthen supports from family and friends, allows providers to learn more about the participant, and develop education and coping skills in line with the treatment team/plan (Kikkert et al., 2018). The participation in alcohol and drug self-help groups is an excellent source of social support for the participant with opportunities to fellowship, share and learn from others that they are not alone like the Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) **(**Kikkert et al., 2018).

The pharmacological treatment on the IDDT components series includes medications like antipsychotics, mood stabilizers, and antidepressants and is useful in the treatment of COD (Kikkert et al., 2018). However, providers assist the participants to adhere to the medication regimen and reduce addictive medications. IDDT is also an intervention to promote health because poor health was found in association with individuals with COD, they are exposed to emergency room visits and hospitalization, infectious diseases and chronic illnesses, and exposure to violence, physical and sexual abuse (Kikkert et al., 2018). The secondary interventions for substance abuse treatment for non-responders include interventions like post-traumatic stress disorder (PTSD), legal system and family interventions are some of the successful IDDT programs developed to identify individuals who are not responding to IDDT recommendations and monitored medication management (Kubek, 2011). High-intensity services are a low ratio of participants to clinicians for better services, although this scale is not included in the SAMHSA toolkit**,** however, there is reported evidence that some components in the fidelity scale have shown improved outcomes like the staff continuity, multi-disciplinary staff; community locus; positive engagement; continuous responsibility, and dual disorders model (Kikkert et al., 2018).

Kikkert et al. (2018) examined the effectiveness of using the IDDT model for treatment, and they found out that integrated care of CODs was more favorable than either treating substance use disorders or mental health disorders alone. However, the evidence from the study is inconclusive. IDDT model, as employed by Kikkert et al. (2018) included a collaboration of a multidisciplinary team that used motivational

interviewing as a key element on both patients' participation and providers' skills and knowledge. The providers were trained for IDDT for three days and made to implement the IDDT model to determine treatments and follow up assessments 12 months after IDDT implementation, Kikkert et al. (2018) measured the outcome with measurement in the addiction for triage and evaluation and found out that there is a reduction of substance use for the participants. Pringle, Grasso, and Lederer (2017) suggested that stable housing is one of the factors that can strengthen IDDT is an evidence-based program for individuals living with CODs. Individuals should be open to supportive housing while engaging them in stages of vocational rehabilitation advancement and education to assist in maintaining supportive housing (Pringle, Grasso, & Lederer, 2017). Stabilization of the IDDT program for homeless individuals should be assessable to housing assistance, compliance with medications and delivery of multidisciplinary services like integrated care treatment, program staffing, and effective service delivery is as well crucial (Pringle, Grasso, & Lederer, 2017).

IDDT is an evidence-based practice improves the quality of life for individuals living with CODs, Kubek (2011) reported that individuals that received four years of IDDT services had shown a significant long-term reduction in crisis services, psychiatric hospitalizations, and incarcerations in the Southeast Human Service Center in Fargo, Ohio State. There was a study between 2007 and 2011 where three cohorts were established to receive IDDT, and the outcomes after four years of IDDT services showed a significant difference (Kubek, 2011). Cohort one included 12 consumers that received 48 months of IDDT services between January 2007 to May 2011 recorded 98 percent

decrease in days of incarcerated, incarcerated days in year 1 was 199 days, which was reduced to 3 days in the 4th year as reported by Kubek (2011). The IDDT model produced a clinical environment for the multidisciplinary workforce of social workers, psychiatrists, clinicians, and other human service providers to develop safe and trusting relationships with people living with CODs and the ability to manage their symptoms (Kubek, 2011).

In conclusion, Wamel, Rooijen, and Kroon (2015) reported that IDDT is the preferred treatment model for dual disorder patients. Therefore, organizations are encouraged to implement the IDDT integrated treatment model through training, funding, and policy support. The multidisciplinary workforce that uses the IDDT model can interact with themselves to share their patients' information, presenting symptoms, medication management, and therapy to manage their health and mental stability to provide the best care (Kubek, 2011). While Kikkert et al. (2018) reported a reduction in the use of substance after implementing IDDT, they found no improvements in the psychopathology, therapeutic and motivation for a change however motivational interviewing is crucial in disseminating IDDT. From a theoretical perspective, incorporating the IDDT model would enhance positive outcome measurements in reducing re-entry into the criminal justice system of female living with COD.

Literature Review Related to Key Variables and Study Concepts

The integrated care system provides a range of care options for physical healthcare, behavioral healthcare and substance use in a new capacity in the diagnosis, treatment, and management of mental health disorders in a timely and coordinated

organization (Everett & Benjamin, 2014; SAMHSA, 2017a and Wynn & Moore, 2012). Integration care is a public health activity that coordinates physical and behavioral health where the diagnosis, treatment, and management of mental health disorders, substance use disorders, and medical care takes place in the same setting (Everett & Benjamin, 2014). The integration care system consists of interdisciplinary teams that provide a range of care options, promotes the commitment of improved health, and the integration of care continues to be a useful direction for physical and behavioral healthcare organization (Wynn & Moore, 2012).

I did not see the integrated care system as only having physical healthcare, behavioral healthcare, and substance use care system in the same setting; it extends to the assessment, implementation, and treatment as a team-based. The combination of services has its strength, especially using evidenced-based practices to attend to the health needs of the people. Stokes, Checkland, and Kristensen (2016) argued that integrated care might be a solution to present-day health care challenges because of the multi-disciplinary assessment, clinical, treatments, and case management involved although the system might be complex. Langer et al. (2018) reported that the complexity of integrated care includes multiple engaging providers to meet the needs of patients and ensuring the effectiveness of the multi-disciplinary team, especially for the high-risk population. Another complexity is funding, the finances are based on the differences in the fees charged by clinicians, providers, and other health professionals and with the intricacy of insurance providers network (Langer et al. 2018). However, with the passage of the Patient Protection and Affordable Care Act (ACA) in 2010, Children's Health

Insurance Program (CHIP) across the country and expansion of patient-centered medical home (PCMH) organizes and accounts for the full range of health care needs (Langer et al. 2018). The expansion of PCMH bundles the payment of a single payment for multiple providers across multiple care settings, which is a realistic solution to the challenges of integration of the health care system (Langer et al. 2018).

Understanding the Integrated Behavioral Health Care System

The integrated behavioral health care system is providing behavioral health care, which includes mental health and substance use disorders in the primary care setting (Jones & Ku, 2015). The behavioral health care is continuously being integrated within the health care delivery systems forming a foundation of providing quality health care for patients (Steinfeld et al., 2016). Jones and Ku (2015) reported that to improve the health care system, there should be improvements in access to the screening and treatment services for both mental health and substance use disorders. The approach of parallel or concurrent treatment of both types of disorders typically provided by different agencies has led to poor outcomes, the intertwined nature of COD could not be tackled and might provide confusing or conflicting messages about treatments (Jones & Ku, 2015). Thus integrated COD treatment approaches that focus on the interactive nature of the mental health and substance use disorders within the same settings have recorded the most successful treatments (SAMHSA, 2015a; Peters et al., 2012). The prevalence of individuals with mental health and substance use disorders in the criminal justice system has increased the awareness of COD, giving room for further review and advancement for treatments (SAMHSA, 2016a).

Physicians that engage in the integrated care system have more contacts with behavioral clinicians, which enables them to be more comfortable discussing mental health disorders and symptoms with their patients (Torrence et al., 2014). Primary care physicians continue to monitor patients with mental health disorders, which urges them to determine patients that have risks for committing suicide and how mental health disorders symptoms can be monitored with medical diseases (Steinfeld et al., 2016). A monitoring system is suggested to provide measurable data on the incorporation of the integrated behavioral healthcare system by primary care physicians (Steinfeld et al., 2016). The monitoring system would also record their experiences and suggestions, and become a guidance for other primary care providers who intend to consider integrated behavioral healthcare (Steinfeld et al., 2016).

There is a need for increased knowledge and experience in developing integrated behavioral health care (IBH) programs. Kallenberg (2015) suggested the involvement of employers, insurance companies, purchasers of health care and providers in educating and promoting integrated care. With further understanding of the importance of the integrated care system, it will enhance effective health care delivery systems, better health, and lowered cost for Americans, which are the Triple Aims of American health care system (Kallenberg, 2015). In the integration of service care, there is access to shared information of patient records either electronically or through joint case management and planning of medical and behavioral health services (Jones & Ku, 2015). Shared access to information according to Jones & Ku (2015), includes behavioral health

and medical staff having access to laboratory results, medication lists for reconciliation, and electronic health records to routinely work together with patients.

In the integration of behavioral health, Torrence et al. (2014) assessed the clinician's attitudes and perceptions of behavioral health within the primary care to increase service utilization and overall care of the high-risk populations. Integrated behavioral health clinical outcomes should assess patient's participation, the management of the disorders, preventative approaches, improvements in medical and psychotic disorders treatment, and service utilization (Torrence et al., 2014). The study reported that primary care physicians argued that behavioral health clinician is essential members of the integrated teams. Thus the team should address the patients' physical and behavioral health with improved healthcare delivery (Torrence et al., 2014).

The Criminal Justice System in the US

The criminal justice system of any society has been defined as the most crucial sector created by the governments to create laws, control crime, and impose penalties for violators not in single system but networks that comprises the city, county, state and federal justice systems bounds by the constitution (Mcdonnell, Brookes & Lurigio, 2014). The components of the criminal justice system protects public safety and lowers recidivism, law enforcement enforces and detects crime, adjudication is the judgment pronounced by the court and the corrections which involve reforms and rehabilitation for the convicts (Mcdonnell et al., 2014). Mcdonnell et al. (2014) reported that about 12 million adults pass through jails yearly in the US. Barnes (2014) conducted a study to

report the efficacy of the criminal justice system by carrying a study on how to identify, arrest, convicts of offenders and their reentry into the community.

Barnes (2014) found out in his study that 63% of persistent offenders tend to be rearrested, about 39% of those rearrested are likely to be convicted, 38% are placed on probation, and 43% are most likely to be sent to jail. Therefore, it is crucial to study arrest records and reentry into the community to determine how to reduce arrest records. The criminal justice system was found to be useful in identifying and prosecuting offenders, Barnes (2014) reported criminal justice system has an efficient record system to report arrest records, convictions and jail terms between the persistent offenders and non-persistent offenders. This study focused on how to reduce criminal behavior and reduce rearrests records by addressing COD which have been identified as an essential healthcare sector for the criminal justice system. Johnson et al. (2014) recognize the need for more practical transition programs in the community upon jail time release. Previous research indicated that substance use disorders, mental health disorders, and crime either independently or in collaboration has a significant impact on society. COD and crime is a significant public health problem affecting lots of people making it a social burden in the communities.

Co-Occurring Disorders as an Integrated Care System under the Criminal Justice System

COD differs in individuals and their ability to complete daily tasks and to live productive lives; it also poses risks of suicides, violence, homelessness, stigmatization, medical problems and criminal involvements in the criminal justice system (Wilton &

Stewart, 2017). The case definitions for COD in my study was based on DSM-V criteria (SAMHSA, 2016b). Integrated care for the COD is the systematic coordination of physical and behavioral health care that evaluates and treats mental health and substance use disorders in general healthcare settings (Everett & Benjamin, 2014). There are increasing studies on COD in the criminal justice system (Wilton & Stewart, 2017). The prevalence of COD was 84% in the prison settings and 74% in forensic psychiatric facilities which shows stronger evidence of COD among offenders than in the general population (Ogloff et al., 2015). Studies suggested that rates of COD are higher in the criminal justice system population than in the general population, although these disorders may not affect the criminal justice system outcomes (Hunt, Peters & Kremling, 2015; Wilton & Stewart, 2017). Literature has revealed that individuals with CODs are more vulnerable to higher rates of violence, suicide, homicide, criminal recidivism, and criminal history. However, although there is a consistent pattern between CODs and crime but Ogloff et al. (2015) suggested that it does not necessarily mean that CODs leads to increased criminal behaviors.

An individual with COD is higher in the criminal justice system compared to individuals in the general community; however, the combined effect of CODs on violence was higher than the individual effects of mental health disorder or substance use disorder diagnosis (Ogloff et al., 2015). The study revealed a higher prevalence of 43.1% of antisocial personality disorder and 77.7% of substance use in the criminal justice populations against the general population, and these were consistent with earlier research (Ogloff et al., 2015). Wilton & Stewart (2017) conducted out a study on

offenders with COD, offenders with only substance use disorders, offenders with only mental disorders only, and offenders with neither substance use disorder nor a mental disorder to determine which offenders would have the worst criminal outcomes among the groups. The criminal histories, prison outcomes, and profiles were considered, and the authors found out that offenders with co-occurring disorders have a higher risk of criminal history than other groups in the study (Wilton & Stewart, 2017).

It is essential to promote awareness and treatment of COD from a coordinated point of care to reduce criminal recidivism, suicide homelessness, and social harms in general. There is a need for coordination of professionals to address the integration of care while taking into consideration the access, location, and delivery of interventions. Thus, Somers et al. (2016) conducted their study to estimate the rate and geographic location of people with COD. The study found out that the rate of violent offenses which had been attributed to COD, was six times higher in the population living with COD when compared with other offenders in the criminal justice system, with more concentration in the urban settings (Somers et al., 2016).

COD within the criminal justice system has aligned with previous studies that its population are at risks of homelessness, financial constraints, minimal or lack of social supports, additional risks of suicide, unemployment and lack vocational skills, violence and minimal engagement in the community treatment, lowered service utilization, mortality upon release from incarceration, stigmatization among others (Hunt et al., 2015; Somers et al., 2016). Peters, Wexler and Lurigio, (2015) reported the prevalence of health care problems within offender populations; rates of bipolar disorder, major

depression, and schizophrenia are about 4–6 times higher in jails and 3–4 times higher in prisons than in the general population. Diseases such as asthma, high blood pressure, cancer, HIV/AIDS, hepatitis C, sexually transmitted disease and tuberculosis are common within offender populations than in the general population (Peters, Wexler & Lurigio, (2015).

Hunt and colleagues (2015) reported that treatment for COD is low for this population in part because these services are relatively few and inaccessible while considering the socio-demographics of the population. Somers et al. (2016) compared the socioeconomic factors like age, gender, and educational level; they found out that in comparison to other offenders, people with COD are younger, less educated, likely females and of aboriginal ethnicity. People living with CODs within the criminal justice system had higher rates of arrest and substance use severity than the general population when age, gender, and race of the offenders were considered (Hunt et al., 2015). According to Hunt et al. (2015), age plays a significant role in COD treatments, offenders with COD between the ages of 20 and 40 years are likely to have received treatment, non-offenders of the middle age are likely to have mental health treatments while younger adults have had substance abuse treatments. These youthful populations should be exposed to appropriate therapeutic interventions, health, and justice system, and preventative programs with cultural and gender considerations, while extending the social services to the entire adult population (Hunt et al., 2015; Somers et al., 2016).

Co-Occurring Disorders Treatments for Female Offenders in the Criminal Justice System

The COD affects both men and women, and these disorders can also occur in any combination of substance use and mental health diagnosis, thus, it is crucial to develop simultaneous integrated treatment services that pays attention to distinct presenting symptoms, reasons for seeking treatment, patterns of engagement, and treatment needs (National Abandoned Infants Assistance Resource Center, NAIARC, 2008; Prendergast et al., 2017). The combination of substance use and mental health diagnosis varies, NAIARC (2008) reported females with COD usually have alcohol as a significant substance with a record of 46%; records of other substance use among the female population were 18% for opiates, 17% for cocaine, 10% for marijuana, and 4% for other stimulants and drugs. The rates of primary mental health diagnosis of bipolar disorder, major depression, and schizophrenia actually vary; so, there are no specific combinations of substance use and mental health diagnosis (NAIARC, 2008). About 80% of women in the criminal justice system were diagnosed and treated with COD while incarcerated, therefore continued treatment while transitioning into the community is of utmost public health concern (Johnson et al., 2015).

Women are recorded as the fastest growing population under the criminal justice system with an approximate increase of 1.5% from 2005 to 2009 of the arrestee and almost 3.5% increase of women in jails and prisons (Johnson et al., 2015). Gleason et al. (2014) and Johnson et al., (2015) reported that gender is a crucial predictor of health outcomes not only because women generally outlive men, but women are more at risk for

diseases linked with metabolic syndrome and more likely to die from cardiovascular disease and diabetes mellitus. Gender was also a crucial predictor of continued treatment, especially for dual diagnosis treatment (Choi, Adams, Morse & MacMaster, 2015). With an increased female population in the criminal justice system, Sacks (2004) suggested that more attention should be directed to the changing population of female offenders so that gender-sensitive policies and gender-specific treatment should be considered to meet women's needs. It is vital to design treatment programs for female offenders; there should be a better understanding of the needs of women with CODs returning to the community from incarceration; thus, this demonstrates its public health significance (Johnson et al., 2015).

During incarceration, prisoners are at increased risks of suicides, violence, self-harm, and aggression among others, and some were taking medication on admission to prison; however, more than 50% of those who were medicated at admission did not continue pharmacotherapy in prison while some county jails require mentally ill inmates to be transferred to a crisis center or state psychiatric hospitals for treatment (Choi et al., 2015; Johnson et al., 2015). Transitioning to the community would entail continuous COD treatments to ensure positive outcomes and avoid rearrests of such individuals (Cuellar & Cheema, 2014; SAMHSA, 2016c). There is a need for continued treatments for all offenders as they transition into the community to avoid exposure to physical and sexual assaults, relapse on substance use, stress of reentry into the community, homelessness, and rearrests (Hall, Golder, Conley, & Sawning, 2013; Hodge et al., 2015).

While general offenders report a history of violent crimes associated with early childhood abuse and risks of sexual assaults associated with PTSD (Sacks, 2004), female offenders' reports trauma from physical and sexual abuse, family histories of addiction linked to their substance use, sexual behaviors like sex trade, child custody issues, and homelessness among other psychological problems (Scott, Dennis & Lurigio, 2017). Gender has been identified as an essential factor in the criminal justice system. Fries, Fedock and Kubiak (2014) suggested that men and women have different pathways into the criminal justice system. Therefore, their services and treatment should be different. Fries, et al. (2014) further reported that while some men and women have similar pathways for their criminal behavior like homelessness linked with extreme poverty, violence account for about 35% of pathways for men into the criminal justice system, women recorded about 37% pathways based on physical and sexual abuse, substance abuse, mental health disorders, victimization histories leading to subsequent criminal behaviors.

From the study carried out by Palis et al. (2017), both women and men reported that treatments had reduced cravings for substance use, stability in mental health disorders, and improved financial situation, thus, making it effective. However, both genders have different perceptions about the treatment outcomes. While there was record of improvements in health and quality of life for both genders, they, however, showed gender differences in their areas of improvements. Women reported growth stability, physical well-being, rebuilding relationships, stronger self-connection, and better nutrition; while the men emphasized reductions in crime, reduced worry about arrest, no

hustle to get drugs, and engagements in other meaningful activities (Palis et al. (2017). Studies have established difficulty in treating CODs in the community and the need for active intervention; my study intends to investigate how COD treatments and treatment outcomes influences women being the fastest growing population under the CJS and their re-entry into the criminal justice system. A study reported that, within three years, about 7 out of 10 offenders would have been rearrested possibly for a new crime or violation (Visher & Travis, 2003). Thus, appropriate assistance is required during transitioning from prison back into the community to avoid crime incidences, and to alienate the difficulty in seeking treatments in the community (Visher & Travis, 2003).

Critical Evaluation of COD Treatments for Female Offenders in the Literature

Choi et al. (2015) reported that previous studies indicated that women and men differ in their COD treatments, their experiences, mode of treatments, and significance and difference between those with residential and outpatient treatment. Sacks (2004) further explained that gender-related differences between offenders had been detected, their rates and pattern of substance use differ, early pathways into criminal behaviors as a result of substance use differs, lifestyle problems and different health indicators signified the existence of gender-related differences, thus, there is need for gender-specific COD treatment program in our communities. While COD treatments address substance use and mental health disorders, Cuella and Cheema (2014) suggested not limiting it all to health services because as inmates transition into the community; they tend to seek employment, housing, healthcare, and sometimes reunion with their families. Therefore, it is crucial to integrate job training, education and technical skills, and housing among others as they

rely on formalized step-down programs. Halfway houses and the opportunity to be linked to community service providers that can assist in coordinating care and reentering into the community should be made less stressful (Cuella & Cheema, 2004).

Addressing abuse and victimization for female offenders is crucial, childhood and adult physical and sexual abuse have been noted as significant factors for women engaging in criminal activities (Fries, Fedock & Kubiak, 2014; Sacks, 2004). Previous studies suggested that women are more stigmatized after incarceration causing homelessness, preventing them from COD treatments, reduced access to treatment needs which impacts a successful reentry into the community, thus placing women at risk for further victimization (Fries et al., 2014). The previous violent experiences have been suggested by Fries et al. (2014) to be an essential factor underlying COD in women, thus called to design gender-oriented treatment services in the community. Scott, Dennis and Lurigio (2017) also reported that women who were sexually assaulted usually experience emotional distress and symptoms of post-traumatic stress disorder (PTSD); thus, making it difficult to undergo and sustain recovery treatments for CODs since more than 90% of these women are sexually active. Early childhood abuse has been linked to higher rates of violent crime, higher-risk of sexual abuse and symptoms associated with PTSD; therefore, Sacks (2004) suggested that gender differences in treatments and criminality should be considered. Sacks (2004) reported that because female inmates reported abuse in childhood and the abuse of women still increases, unlike abuse in men which might have started as a child but tends to drops sharply as they reach adulthood.

According to Johnson et al. (2015), service providers indicated differences in the treatment and reentry needs of women and men with COD in the community, describing women to be open and more comfortable requesting for their needs while men are often closed in their demands, they feel they can take care of things. With this difference, COD treatment for women should encompass building relationships with families, and children; for instance, a woman returning to the community with a partner undergoing substance use would relapse about 90% of the time (Johnson et al., 2015). Taking parenting into consideration is crucial as about 70% of women in the criminal justice system have children under the age of 18, therefore, making the female offenders still have some level of responsibility (Sacks, 2004). Their minors might be placed in foster care, consequently, making parental rights and reunification challenging. Therefore, parenting should be addressed in their COD treatments and interventions which would further assist in being accepted by their families (Sacks, 2004). Parenting education as suggested by Sacks (2004) would strengthen the mother-child relationship which can be incorporated into the COD treatments for women as they transition back to the community. This would increase the women's contact with their children. Johnson et al. (2015) also noted that providers reported that women mostly have sole responsibility for their children upon release, unlike men who often have a female partner caring for their children. Research has found out that men and women had different pathways to criminality and substance abuse; thus, strongly supporting that effective COD programs are designed to be gender-specific in addressing the social, physical, education, mental health, family history, and homelessness among others.

Gender may be identified as one of the significant health outcomes by the United Nations in 2010 because women mostly outlive men, but still have a higher morbidity rate (Gleason et al., 2013). In an integrated treatment program, gender differences could be examined by age, type of diagnosis, race, functionality, psychological distress, health, social involvements, and substance use (Gleason et al., 2013). There is the need for more research on how women with CODs seek treatments, identifies their needs upon release to the community and the implication of treatment to reduce re-entry into the CJS (Gleason et al., 2013, Hall et al., 2013). The 2011 National Survey of Substance Abuse Treatment Services (N-SSATS) finds that approximately 90% of mental health and substance abuse providers accept criminal justice patients for treatments, thus making this study for the CJS population crucial (Cuellar & Cheema, 2014). With the increasing number of the female population in the CJS, research are ongoing on the need for specialized treatments for female offenders. There is a comparison between men and women offenders. Sacks (2004) reported that women offenders seem to experience more depression, low self-esteem, and other psychological problems than men. Choi et al. (2015) explained that treatment retention would necessitate a therapeutic alliance that focuses on person-centered care, gender-specific interventions, and biopsychosocial interventions. Therefore, there is a need for gender specialized treatments for female offenders.

According to Peters, Wexler, and Lurigio (2015), gender specialized COD treatment, and interventions are necessary to address the unique needs of female offenders. Interventions and treatment are tailored to treating traumas, PTSD, others like

homelessness, parenting, healthcare, family reunification, continued education, and employment opportunities are addressed (Peters, Wexler & Lurigio, 2015). Previous studies have emphasized the importance of assisting offenders on their way back to the community because reentry has been identified as a significant challenge for persons with CODs especially with females (Peters et al., 2015). Some of the barriers are not limited to the risk of homelessness, discontinuity of medications, recidivism, and substance use relapse among others, however, Peters et al. (2015) reported Medicaid services, intensive case management, psycho-educational skills, and specialized staff training would assist in smooth community transitioning. It is crucial to have specialized programs for offenders' re-entry into the community because 30 % of the services providers treat COD patients from the criminal justice population, 26% of providers offers substance abuse treatment while 17% offers mental health treatments (Cuellar & Cheema, 2014).

From the study carried out by Hunt et al. (2015) to determine the relationship between participants who self-reported lifetime treatment history, their socio-demographic characteristics, self-reported substance use, and the severity of their substance use. The authors examined data from 10 US metropolitan jails. Logistic regression was employed to explore the relationship between the history of treatments received by the participants, the severity of substance use and mental health disorders. Hunt et al. (2015) found out the severity of the substance use determines rates of treatment for participants. Participants with COD reports marijuana and alcohol use are lowest, while those that reported heroin are highest. This study reported the importance of COD as an integrated treatment both in the community and institutional settings,

which reduces recidivism and meets the needs of criminal justice system population. The finding from Hunts et al. (2015) indicated the need for future research as determined by the disparity between treatment needs and available treatment services, differences in gender as an implication in the gap between the prevalence of COD between men and women. My study was consistent in the methodology of the study conducted by Hunt et al. (2015) in the assessment of COD, the extension of COD treatment in the community, and to examine the need for gender-specific treatments to meets the needs of the criminal justice system.

Gap in Literature

The literature extensively addressed the public health significance of CODs and the importance of an integrated treatment approach among the offenders in the criminal justice system. The literature also clearly demonstrated the higher risks and vulerablity of the female population in the criminal justice system to the burden of failed COD treatment, pointing to the underlying factors pre and post-CJS expericences specific to women. However, besides implied ideas, the literature did not clearly demonstrate the possible effectiveness and influences of integrated or COD treatment episodes on reducing recidivism (rearrest) among the general and female population. This study would address the challenges that obscure properly integrated treatment services provided to female offenders with CODs that could reduce re-entry into the criminal justice system. With the high concentration of women that abuses substance and the criminal recidivism among female offenders, more studies should be conducted to better

understand how to incorporate recovery services for COD during reentry into the community (Scott et al. 2017).

Cuellar and Cheema (2014) also supported developing medical and health plans that can address the female offenders' complex health, social and behavioral health which would be beneficial to both the health and safety of the community. With the literature demonstrating that COD is a coexisting issue and not a single issue, this study intends to address effective treatment services for COD for female offenders on how to manage their disorders, continued treatments, develop coping skills to reestablish themselves back to the community. In this study, the relationship between previous treatment and sociodemographic variables like age, race, education level, marital status, criminal justice history, substances use, and its severity were considered as these variables may increase or decrease the likelihood of service utilization (Hunt et al., 2015; Somers et al., 2016).

Summary and Conclusions

Continued studies on COD and the criminal justice system signified the importance of this study because the rates of community safety, rising rates of female offenders, incarceration for females and reentry into the county and the reduction of such reentries are addressed which affects the communities. Although continued community COD treatment is a useful alternative for incarceration for many offenders with CODs, integrated services for this population still lack in many communities, thus the need for studies in this area to promote awareness. Incarceration of female offenders with CODs results in poor outcomes, increased risks of public safety, family dysfunctioning, risks of homelessness, relapse, and overall lower level of functioning.

This study is focusing on female offenders under the criminal justice system that is under probation or parole supervision that seeks treatment for COD as they transition into the community. The significance of this study would address increasing studies on women as compared to men in the criminal justice system, consideration for women's health and reproductive needs, exposure to physical and sexual assaults, low access to healthcare and increased attention on violence to women's mental health (Gelberg et al., 2004; Hodge et al., 2012; Lee, Zaharlick & Akers, 2017 & Tripodi & Pettus-Davis, 2013). The public health significance is to provide better understanding of the treatments and treatment outcomes on the re-entry of female population with COD into the criminal justice system to better achieve positive outcomes and reduce incarcerations for females.

In the next Chapter (Chapter 3, the methodology), I provided an overview of the research's methodology, highlights of the research questions and hypotheses, research design, and described the rationale for choosing the research design. I also clearly defined the variables, statistical methods, threats to study validity, and ethical considerations in more details. All these elements were discussed in the next chapter in consistence with the gap identified in the literature and the aim of the study.

Chapter 3: Research Method

Introduction

The purpose of this quantitative study was to examine the possible relationship between COD treatment as an integrated treatment service and its effect on the re-entry of offenders into the criminal justice system. My study investigated how COD treatments affect the offender's re-entry into the criminal justice system through reincarceration and rearrests. My study investigated if there is a decrease in the number of interactions of offenders with criminal justice system as a result of being involved in the COD integrated treatment services.

In this chapter, I review the study design and the rationale for choosing the design. I reviewed how the design was built on prior research and how it may add to the literature. I described the sampled population, sample size calculations, and the secondary data, which was the center for this study. I describe the recruitment of participants, their participation procedures, data collection, and the instrumentation. The binary logistic regression was chosen as the appropriate statistical data analysis method; this was discussed in detail. Finally, threats to validity, and ethical procedures of this study at various points of study ranged from design analyses to choice of data were described.

Research Design and Rationale

The dependent variable is recidivism which was determined by the number of arrests made in the 30 days before the discharge from the COD treatments while the independent variables included COD diagnosis and number of prior treatment episodes. The covariates are age, race, marital status, employment and gender.

I employed a cross-sectional study design to analyze TEDS-D archival data from SAMHSA (2017b) which gathers the demographic, mental health, substance use disorders, source of referral to treatment, prior treatment episodes, and treatment settings information. Cross-sectional quantitative design analysis is used to provide more appropriate answers to research questions about the differences or relationships among variables in a study (Creswell, 2009). It produces numerical data, allows the analytical process, and describes a sample of the population studied (Creswell, 2009). Furthermore, cross-sectional design involved data collection that was time-efficient, suitable for conducting analysis, measurement of numerical data, reliability of collected data, and descriptive and inferential statistical procedures with focus on a specific period or point in time (Creswell, 2009). The archival data is reliable due to controlled observations, assessments of larger populations, and considering the ethical concerns associated with data collection (SAMHSA, 2016c). The cross-sectional design is a preferred method appropriate for the study as it was used to determine the relationship between selected independent variables and a dependent variable.

The design was justifiable for the study because it examined if a set of independent variables predicted a dichotomous dependent variable. The design also responded real-world research questions, expands more understanding of the relationships among dependent and independent variables. However, the design was not suitable to be used to determine temporal relationships between the independent and dependent variables, thus, it was not used to determine a causative effect; and this further weakened its application to make predictive determinations between exposures and

outcomes. In addition, due to the temporal limitation of cross-sectional design, such study cannot be used to investigate chronological interactions over a period of time besides its application in determining serial point events such as for trend reviews (Creswell, 2009; Frankfort Nachmias & Nachmias, 2008).

Methodology

Population

The target population for this study was individuals in the criminal justice system who were referred for COD treatments. The participants' source of referral to the treatment was from the criminal justice system, which could include police officials, judges, prosecutors, probation or parole officers, and other judicial systems. These individuals were examined upon admission and discharge from the treatment programs. I used the discharge records of these individuals to determine eligibility of the participants as described in the inclusion and exclusion criteria below. I retrieved the data on these offenders from the 2017 TEDS-D database (SAMHSA, 2017b). For this study, relevant data was extracted from a public database to consist of only offenders aged 18 and over who reported COD diagnoses at admission and were enrolled in treatment programs.

Inclusion and Exclusion Criteria

The characteristics of the target population for this study that determined eligibility for inclusion in the study was age of 18 years and above and reference to COD treatment from the criminal justice system. The exclusion criteria were those characteristics of the study population that disqualified them from being eligible for participating in the study. The disqualified population included no identification of the

exact source of referral within the CJS, and death or no record of outcome of the treatment program (that is, no record of rearrests or successful completion of treatment) by the participants.

Sampling and Sampling Procedures

I made use of the 2017 TEDS-D database for my study by using a select command feature in SPSS that downloaded the information from its website in SPSS format. The TEDS-D is a national data system from the state administrative systems of SAMHSA that contains the annual admissions and discharges to public and private substance abuse treatment facilities (SAMHSA, 2016b). The TEDS-D provides data on the characteristics of persons admitted to these treatment programs who receive public funding; information includes demographics of the individual; characteristics of the substance abuse such as age at first use, route; frequency; COD diagnosis; number of prior admissions; and referral source among others (SAMHSA, 2016b). The treatment data are routinely collected across the states on individuals to monitor their substance abuse treatment systems; the data files are converted to a standardized format known as TEDS (SAMHSA, 2016b). SAMHSA gathered information from the population.

The mother survey conducted by SAMHSA employed the simple stratified random sampling approach, this was conducted in stages for the target population to represent estimates for each of the 50 states and the District of Columbia (SAMHSA, 2016c). The simple stratified random sampling approach was the best, and the rationale to employ this approach was because it provides a better representation of the target population and reduces the chances of selection bias since all the participants have equal

chances of being selected. The participants were individuals aged 12 years and older; however, this study involves adults, so participants included in the study were 18 years and above. To maintain the robustness and integrity of the original sampling technique from the mother survey, I selected all eligible records from the database for 2017. TEDS is a national data system where the states report their annual admissions and discharges from substance abuse treatment facilities to SAMHSA, especially the part of treatments that would be a public burden for substance abuse treatment.

For sample size, by standard components and values recommended by Creswell (2009), I applied an effect size of 0.3, alpha level of 0.05, and power of 0.80, the a priori G*Power analysis showed that a sample size of 360 might be sufficient for this study (Cook & Hattala, 2015). Applying a 10% of attrition or nonresponse rate in the form of incomplete data on some key variables, which might reduce the size of the sample (Creswell, 2009), I determined that 396 records would be sufficient. The effect size identifies the strength of the relationships among variables and was chosen to calculate the sample size for this study; it measures the strength between the independent and the dependent variables.

Procedures for Recruitment and Participation in the Data Collection

I made use of secondary data from TEDS-D for this study. Secondary data has been reported to be a useful tool, more prevalent in research, and usually filters relevant variables even before the data are accessed (Greenhoot & Dowsett, 2012). The TEDS-D is an extensive database with the advantage of an increased sample size that could control for Type II error and control for attrition in the dataset (Frankfort Nachmias & Nachmias,

2008). SAMHSA collected the original dataset for this study; this organization allows free access to their data although strict user responsibility rules was advised to be followed which stipulates that direct users would use their data only for statistical analysis (SAMHSA, 2016b). The data I used for this study were publicly available on the SAMHSA website and required no additional permission to gain access to the dataset.

I downloaded the data in a format that is compatible with SPSS as public-use data files available free of charge. The data are presented in two separate datasets of admission and discharge using a unique client identifier that did not contain any personally identifying information, following HIPAA regulations (SAMHSA, 2017). According to SAMHSA (2017b), the data were collected using an audio computer-assisted self-interviewing (ACASI) an instrument with a computer screen or listening to the questions on headphones for participants to input their responses. This computer-based questionnaire was designed to be interactive and available in both English and Spanish languages (SAMHSA, 2016c). I analyzed all the available data (that met my inclusion and exclusion criteria) from the original dataset collected (SAMHSA, 2017b).

Operationalization of Variables

The referrals for the 2017 TEDS-D treatment program varied from an individual or an agency making a referral for an individual to be involved in the treatment program. The SAMHSA website provided information on the questions and the responses of participants on the variables considered in the data set. The operational definition of the variables, the measurements, and the calculations of the independent and dependent

variables were provided for this study on the SAMHSA (2017). The coding of the variables are shown in Table 1.

The dependent variable was recidivism which is the likelihood of the participants to be rearrested within 30 days before being discharged from the COD treatments. The assumption of binary logistic regression required the dependent variable to be binary meaning a yes or no, 1 or 0 answers (categorical). I dichotomized the categories so that I can re-categorize into '0' if no arrest was made and '1' if once or more arrests were made in the past 30 days before discharge from the treatment program (Table 1).

The independent variables included COD diagnosis, as defined as a confimation of a disorder suffered by an individual who has a mental health diagnosis in addition to substance use disorders. Others include age of the participants on admission, educational level is the number of school year completed, marital status, employment status on admission, Ethnicity of Hispanic or Latino origin, race and gender. The treatment setting and type of services received are described in the 2017 TEDS-D 2010 dataset manual upon admission to these facilities (SAMHSA, 2016b).

Table 1. *Operationalization of study variables*

Operationalization of study variables		
Variable Name		Variable Types and Codes
Dependent variable		0 None
Recidivism	Categorical	1 Once or more times
Independent variables		
Number of prior treatments episodes	Categorical	0 No prior episodes 1 One or more prior treatment episodes
Co-occurring disorders	Categorical	1 Yes, 2 No,
Covariates		
Age	Categorical	1 18-20 years old, 2 21-24 years old, 3 25-29 years old, 4 30-34 years old, 5 35-39 years old, 6 40-44 years old, 7 45-49 years old, 8 50-54 years old, 9 55-64 years old, 10 65 and older
Gender	Categorical	1 Male, 2 Female,
Race	Categorical	1 Alaska Native 2 American Indian 3 Asian or Pacific Islander 4 Black or African American 5 White 6 Asian 7 Other single races 8 Two or more races 9 Native Hawaiian or Other Pacific Islander
Marital Status	Categorical	1 Never married 2 Now married 3 Separated 4 Divorced, widowed
Education	Categorical	1 8 years or less 2 9 to11years

Operationalization of study variables		
Variable Name		Variable Types and Codes
		3 12 years or GED 4 13 to 15 years 5 16 years or more
Employment	Categorical	1 Full-time 2 Part-time 3 Unemployed 4 Not in labor force

Data Analysis Plan

I employed the Statistical Package for Social Sciences, SPSS version 21 software to analyze the archival data. The dataset, the 2017 TEDS-A by SAMHSA, was obtained in its SPSS dataset format, this was to ensure compliance with the statistical analysis package with minimal manipulation and conversions. As a standard, SAMHSA presents already corrected and cleaned datasets for public use. However, to further ensure accuracy and quality of the data, I applied additionally precautionary measures to identify possible errors and coding formats that might interfere with the accuracy of the results as suggested by Van den et al. (2005). These included recoding to suit my study context, running frequencies of the original datasets against the extracted eligible datasets to ensure logical flow and alignment with the anticipated data outcomes, converting numbers stored as texts to numbers, and revising the variables labels to provide better sense consistent to my study terminologies. It was gainful to the study to have actively searched for errors, change the data shown to be incorrect, and edit suspected data abnormalities.

Research Questions and Hypothesis

Research Question 1 (RQ1): Is there a statistically significant relationship between COD diagnosis and recidivism while considering gender differences?

Null Hypothesis 1 ($H_0$1): There is no statistically significant relationship between COD diagnosis and recidivism while considering the gender differences.

Alternative Hypothesis 1 (H_a1): There is a statistically significant relationship between COD diagnosis and recidivism while considering the gender differences.

Research Question 2 (RQ2): Is there a statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences?

Null Hypothesis 2 ($H_0$2): There is no statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences.

Alternative Hypothesis 2 (H_a2): There is a statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences.

Research Question 3 (RQ3): Is there a statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism, while controlling for age, gender, race, marital status, and education level and employment status?

Null Hypothesis 3 ($H_0$3): There is no statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism while

controlling for age, gender, race, marital status, and education level and employment status.

Alternative Hypothesis 3 (H_a3): There is a statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism, while controlling for age, gender, race, marital status, and education level, and employment status.

Statistical Tests

The descriptive statistics was in this study to describe the general information and demographics of the study participants/records referred from the criminal justice system . Since there was no continuous data among the study variables, frequency and proportion analysis were conducted and presented in tables. The descriptive cross-tabulation tables were also used to describe the relative measures of the independent variables and covariates with respect to the dependent variable (Recidivism).

Pearson's chi-square (PCS) test was used to identify the significant ($p < 0.05$) associations between the individual independent variables and the dependent variable. The results were organized in cross-tabulation tables for easy interpretations. The PCS was used to determine the associations between the individual independent variables and the dependent variables as preferred by most studies in the literature. It is also the most appropriate test of independence for determining associations between two variables of categorical nature (Creswell, 2009).

Multivariable logistic regression (MLR) analysis was used for the inferential analysis to further test the various hypotheses and predict the likelihood of the outcome

/dependent variable while adjusting for the covariates as recommended by Creswell (2009) and observed in the literature for most studies of similar nature with this. MLR is more preferable for predictive model involving binary outcomes such as recidivism. The variables for this analysis showed statistically significant effect on the paired analysis using the Pearson's chi-square. The MLR was used to determine the strength of the associations in response to the research questions above.

Threats to Validity

The threats to validity include both internal and external validity, which influences the study results as determined by the design analysis, sampling type, data collection, and data analyses (Mertens, 2015). Internal and external validity are inversely related; Mertens (2015) demonstrated that as the internal validity of a study increases, the external validity tends to decrease. To deal with the threat of internal validity, I considered the use of random sampling in the original study, as well, as selecting all the participants that were eligible for the study. However, I presume that few threats to validity could be present in this study, connecting from the original survey; for example, possible selection bias, issues with data quality, and the generalizability of results from the original survey process could be potential threats to this study. The use of survey research designs in previous research has shown threats to the internal validity of studies such as selection bias as a result of who gets to participate in the survey (Mertens, 2015). The secondary data obtained from the TEDS-D database may have some internal threats to validity because they were self-reported data however the measures of collection were

assessed to be reliable (SAMHSA, 2017b). These observations form part of the limitations of this study.

The covariates might compromise the internal validity within a study because they affect the relationship between the independent and dependent variables by challenging the significance of the covariate (Mertens, 2015). Reverse causation and covariates are other threats to internal validity because reverse causation is when the researcher does not know which of the variables would happen first, maybe the independent or dependent variable (Mertens, 2015). Construct validity could also be a threat in this study, Frankfort Nachmias & Nachmias (2008) explained that some questions might either be overreported or under-reported which might be confusing for the participants who might result in a specific construct resulting in a threat. The data collection and instruments utilized for this survey research study had been assessed and confirmed to be reliable and valid ((SAMHSA, 2017b).

Ethical Procedures

This study was conducted upon the permission of the Walden University Institutional Review Board (IRB) that makes sure this study meets ethical standards for research, although data were collected based on SAMHSA ethical principles. The SAMHSA dataset included participants aged 12 years and older, but the adolescent age (12 -17) was excluded in this study. The participants included in this study were 18 years and above. By the HIPAA law, participants' information was protected, informed consent was being presented to participants to ensure their understanding of the research study, and permission to participate to avoid coercion involved in the research (SAMHSA,

2017b). The confidentiality of the participants was respected; for example, their names were not collected in the data, and a unique client identifier was used in a computer-assisted interviewing (CAI) method for confidentiality during and after interview SAMHSA, 2017b). I used the SAMHSA 2017 dataset, which is open to the public for secondary data analysis required no permission to access the data. The IRB approval number for this study is 11-14-19-0270982.

Summary

Cross-sectional quantitative study design was used in this study due to its cost-effectiveness and applicability to the nature of secondary dataset used and in determining the measures of interest. The design was chosen because its appropriateness in studying the effects or measures of interest within the point time period. However, I am aware of its limitation in investigating temporal characteristics which I considered in my interpretations. The statistical analysis of multivariable logistic regression and pearson's chi-square tests were used to test the three hypotheses that aligned with the research questions and discussed the characteristics of the variables. The following chapter will present the results and findings of the study, which would include a detailed description and interpretation of the characteristics of the study participants and the inferential analysis of the associations of interest, in response to the research questions. Results were presented in relevant tables and figures where applicable.

Chapter 4: Results

The purpose of this quantitative study was to examine the demographic characteristic differences of CODs and integrated treatment in gender and its effect on recidivism in the CJS, and the possible relationship between the integrated treatment of CODs and recidivism. The target population were offenders that are under probation or parole supervision that seek treatment for mental health and substance use disorders as they transition back into the community. The cross-sectional quantitative study design was employed to determine the relationship between COD diagnosis, previous integrated treatment episodes, demographic factors (such as age, gender, race, marital status, education level, and employment status) and recidivism (arrests made in the 30 days before the discharge from the COD treatments program). Chapter Four contained a summary of the results and findings of the statistical analyses in response to the research questions and hypotheses posed in the previous chapters. Chapter Four started with a discussion of the demographic characteristics of the sample participants/records, and presentation of the inferential results to describe the extent of associations.

Data Collection

The data collection process involved the actual electronic dataset download, studying the dataset codebook from the source to familiarize with the data management process, data cleaning, and, finally, the data extraction process. Due to the electronic process involved, the process was straightforward and rapid and lasted for about 2 weeks to satisfactorily complete the process. The process followed the procedures that I

described in Chapter 3. The response/data completion or validity rates were satisfactory, within the range of 80% to 100% across the study variables.

Sample Characteristics

The participants were accessed using archival data from TEDS-D of the SAMHSA (2017b), the total sample size of records retrieved were for 442,905 participants. As a result of utilizing archival data, I assumed that informed consent forms were obtained from the participants before their participation, as reported by SAMHSA. To describe the sample population for this study, the frequencies and percentages for these variables are presented in Table 2 (see Appendix A for the full descriptive statistics presentation, treatment characteristics and arrest records of the study population).

Age

The statistics for age showed a total of 442,905 valid records, no missing data on age. Table 2 shows that the youngest age was 18, and the oldest age group was 65 years old and above. The frequency distribution by age group showed that out of 442,905 records, age group 18 to 20 are 5.5% (*n*= 24,524) of the participants, 21 to 24 age group are 13.1% (*n*= 58,008), 20.6% (*n*= 91,329) belong to the 25 to 29 age group, which is the biggest group, 17.7% (*n*=78,250) are 30 to 34 age group, and 35 to 39 age group comprised 13.8% (*n*=61,332) of the study participants. Furthermore, 40 to 44 age group are 8.9% (*n*=39,495) of the participants, 45 to 49 age group comprised 7.7 % (*n*=33,922), 6.3% (*n*= 27,908) belong to the 50 to 54 years age group, 5.6% (*n*=24,727) belong to the 55 to 64 age group, and 0.8% (*n*=3,410) belong to the oldest age group of 65 years and older. The frequency distribution table (4.1) by age group shows clearly that most

participants (20.6%) in the study belong to the 25 to 34 years age group, and the least proportion (0.8%) was the oldest age group of 65 years and older.

Gender

In all, 442,832 of the participants indicated their gender. The majority (71.4%) were male.

Education

The educational status of the participants was based on the number of school years completed. Four hundred thirty-three thousand, five hundred and forty-eight (433,548) of the participants reported their educational level. Roughly half (49.9%) of the participants completed 12 years of education or a General Equivalency Diploma (GED), followed by almost a quarter (23.0%) who reported completion of 9 to 11 years of education. The smallest amount of the participants (4.2%) completed 16 years and above of education.

Marital status

The statistics for the marital status showed a total of 349,029 participants responded on their marital status. The majority of the participants were single and never married, representing more than half (66.1%) of the participants, followed by the divorced/widowed representing 14.9%. Those who were separated represented the smallest group (5.5%) of the participants.

Employment Status at Admission

The total number of participants that reported on their employment status was 434,089. Most of the participants (36.1%) were unemployed, followed by over a quarter

of the participants (28.0%) who reported they were not in the labor force; that is, they were either retired, students or residing in homes care amongst others. Those who were partially employed on a part time basis represented the smallest of the groups at 9.8%.

Race

Overall, 436,605 participants reported on their racial status. The majority of the participants (64.1%) were White, with origins in Europe, North Africa, or the Middle East; followed by Black and African American and the American Indian origins who represented 19.0% and 2.7% of the participants, respectively. The least represented race was the Alaska Natives at 0.3%.

Recidivism

The statistics showed a total of valid 399,284 participants with records on recidivism. The majority (92.0%) were not arrested within the last 30 days before being discharged from the program. That means that only 8.0% (*n*= 32, 126) were arrested once or more times.

Previous Treatment Episodes

Table 2 shows that 423,120 participants reported previous treatment episodes. Majority (59.6%) reported to have undergone one or more treatment episodes against less than half (40.4%) who reported no previous treatment episodes.

Co-Occurring Mental and Substance Use Disorders (COD)

Available records with completed information were 44,578. A little over a quarter of the participants (30.7%) was diagnosed of COD, while majority (69.3%) of the participants reported single diagnosis (either of mental or substance abuse disorder).

Table 2.

Frequencies and Percentages of the offender's characteristics (N = 442,905)

Variables	*N*	%
Age (Years)	*442,905*	
18 to 20	24,524	5.5
21 to 24	58,008	13.1
25 to 29	91,329	20.6
30 to 34	78,250	17.7
35 to 39	61,332	13.8
40 to 44	39,495	8.9
45 to 49	33,922	7.7
50 to 54	27,908	6.3
55 to 64	24,727	5.6
65+	3,410	0.8
Gender (biologic sex)	*442,832*	
Male	31,5985	71.4
Female	126,847	28.6
Education (years completed)	*433,548*	
< = 8	22,416	5.2
9 to 11	99,825	23.0
12 (GED)	216,463	49.9
13 to 15	76,823	17.7
16 years +	18,021	4.2
Marital Status	*349,029*	
Single (Never Married)	230,749	66.1
Currently Married	47,045	13.5
Separated	19,328	5.5
Divorced/Widowed	51,907	14.9
Employment	*434,089*	
Full time	113,852	
Part Time	42,653	
Unemployed	156,601	36.1
Not in Labor force	120,983	27.9
Race	*436,605*	
Alaska Native	1,310	0.3

(*table continues*)

(*table continues*)

Frequencies and Percentages of the offender's characteristics (N = 442,905)

Variables	*N*	%
American Indian (Besides Alaska Natives)	11,873	2.7
Asian/Pacific Islander	177	0.0
Black/African American	83,046	19.0
White	279,860	64.1
Asian	4,474	0.7
Native Haiwaiian/Other Pacific Islander	2,988	0.7
Other Single Race	41,559	9.4
Multiple Races (two or more)	11,318	2.6
Recidivism	*399,284*	
No (None)	367,158	92.0
Yes (Once or More)	32,126	8.0
Previous Treatment Episodes	*423,120*	
No (None)	170,885	40.4
Yes (One or More)	252,235	59.6
Co-Occurring Disorders	*398,327*	
Yes	122,167	30.7
No	276,160	69.3

Bivariate Analysis and Multivariable Logistic Regression Model

I used chi-square statistics was used for testing the statistical significance across the cross-tabulation table to determine and show both statistical and practical significances in associations between the individual independent variables and dependent variable. The decision rule is that with variables found to be associated, then the results of the statistical test would be statistically significant; reject the null hypotheses because there was some level of associations observed between the variables. The study findings was used to investigate how COD treatments affect the likelihood of recidivism and the

chi-square shown the frequency of COD diagnoses, treatments and recidivism based on gender differences. The association between genders and other variables; COD diagnosis; previous treatment episode; age, race, marital status, education level and employment status, are analysed (The complete cross-tabulation tables for all variables are enclosed in the appendix A, however, the relevant chi-square results for this narrative are found in Tables 3 to 7 below).

The results showed that recidivism is age-related among the participants. It appears the younger the subjects, the higher the risk of recidivism, considering the decreasing proportions of recidivism from 18 -20 (8.9%) to 65 and above years (4.9%). A general pattern appears the higher chance of recidivism among women (8.7%) than men (7.8%); the pattern does not follow the exposure-response relationship in women, as found among men. It appears the younger the subjects, the higher the risk of recidivism, considering the decreasing proportions of recidivism from 18 -20 (8.7%) to 65 and above years (4.6%) but more obvious among male subjects. The pattern in the overall age association with recidivism is likely to be influenced by the male population because of the visible exposure-response pattern among the male population than the female population. The association between age and recidivism is statistically significant at $X^2 = 427$, $p<0.001$ as shown in table 3.

Table 3: Chi-Square Tests showing Association between Age at Admission and Recidivism

Gender (Biologic Sex)		*Value*	*df*	*Asymptotic Significance (2-sided)*
Male	Pearson Chi-Square	324.937[b]	9	0.000
	Likelihood Ratio	343.444	9	0.000
	Linear-by-Linear Association	294.456	1	0.000
	N of Valid Cases	285574		
Female	Pearson Chi-Square	112.446[c]	9	0.000
	Likelihood Ratio	126.252	9	0.000
	Linear-by-Linear Association	54.541	1	0.000
	N of Valid Cases	113672		
Total	Pearson Chi-Square	426.865[a]	9	0.000
	Likelihood Ratio	458.121	9	0.000
	Linear-by-Linear Association	358.612	1	0.000
	N of Valid Cases	399246		

A relationship was found between the participant's education level and recidivism across the gender. The pattern of relationship almost followed an exposure-outcome response relationship among males, except for those with 8 years of education or less (7.2%), which was less than 8.6% among those with 9-11 years of school completed. The results demonstrated an exposure-response relationship from 9-11 to 16+ school completed years among males, but with no visible pattern among women. The general pattern across gender appears that there were higher chances of recidivism among women

(8.7%) than men (7.8%). Table 4 shows that the association between educational level and recidivism was statistically significant at $X^2 = 100$, $p<0.001$.

Table 4: Chi-Square Tests showing Association between Education and Recidivism

Gender (Biologic Sex)		*Value*	*df*	*Asymptotic Significance (2-sided)*
Male	Pearson Chi-Square	139.899[b]	4	0.000
	Likelihood Ratio	143.921	4	0.000
	Linear-by-Linear Association	67.536	1	0.000
	N of Valid Cases	281176		
Female	Pearson Chi-Square	11.575[c]	4	0.021
	Likelihood Ratio	11.753	4	0.019
	Linear-by-Linear Association	0.712	1	0.399
	N of Valid Cases	111940		
Total	Pearson Chi-Square	99.745[a]	4	0.000
	Likelihood Ratio	102.337	4	0.000
	Linear-by-Linear Association	44.070	1	0.000
	N of Valid Cases	393116		

The marital status of participants also recorded an association with recidivism although there was no visible pattern between the genders. The male participants that were separated showed higher chance of recidivism of 8.4%, while the separated and divorced group among the female participants showed higher chance of recidivism of 9.8%. The general pattern indicated that the association between marital status and recidivism was statistically significant at $X^2 = 13$, $p<0.004$ (See Table 5 below).

Table 5: Chi-Square Tests showing Association between Marital Status and Recidivism

Gender (Biologic Sex)		*Value*	*df*	*Asymptotic Significance (2-sided)*
Male	Pearson Chi-Square	17.345[b]	3	0.001
	Likelihood Ratio	17.465	3	0.001
	Linear-by-Linear Association	5.563	1	0.018
	N of Valid Cases	238486		
Female	Pearson Chi-Square	10.096[c]	3	0.018
	Likelihood Ratio	10.000	3	0.019
	Linear-by-Linear Association	9.553	1	0.002
	N of Valid Cases	90780		
Total	Pearson Chi-Square	13.232[a]	3	0.004
	Likelihood Ratio	12.927	3	0.005
	Linear-by-Linear Association	1.536	1	0.215
	N of Valid Cases	329266		

The employment status of the participants also showed a significant relationship with recidivism. The unemployed participants of both men and women recorded highest chances of recidivism at 8.9% and 10.6% respectively, while the employed group of the participants indicated the lowest chances of being rearrested; the men showed 6.8% while employed women showed higher chance at 7.1%. The general pattern indicated that the

association between employment status and recidivism was statistically significant at X2 = 621, $p<0.000$ (See table 6). The pattern in the overall employment status association with recidivism was likely to be influenced by the female population because of the visible exposure-response pattern among the female population, 8.7% than the male population of 7.8%.

Table 6: Chi-Square Tests showing Association between Employment Status and Recidivism

Gender (Biologic Sex)		*Value*	*df*	*Asymptotic Significance (2-sided)*
Male	Pearson Chi-Square	313.367[b]	3	0.000
	Likelihood Ratio	311.043	3	0.000
	Linear-by-Linear Association	106.768	1	0.000
	N of Valid Cases	281486		
Female	Pearson Chi-Square	316.393[c]	3	0.000
	Likelihood Ratio	311.417	3	0.000
	Linear-by-Linear Association	13.283	1	0.000
	N of Valid Cases	112253		
Total	Pearson Chi-Square	621.181[a]	3	0.000
	Likelihood Ratio	614.539	3	0.000
	Linear-by-Linear Association	141.163	1	0.000
	N of Valid Cases	393739		

The race of the participant indicated that an association with the likelihood of being rearrested, the association was statistically significant at X2 = 598, $p<0.000$ (See Table 7 below).The American Indians demonstrated the highest chances of recidivism at 11.4%, followed by the Whites at 8.4%; while the Asian/Pacific Island and Native

Hawaiian were among the racial groups with least chances at 0% and 5.6%, respectively. The association between the genders did not follow a visible pattern. The association with recidivism is likely to be influenced by the female population because higher proportion (8.6%) of the overall female population showed recidivism compared to the male population at 7.7%. A higher proportion (11.2%) of the American Indians women were rearrested, followed by the Whites women at 9.2%; while the American Indians and Whites among the men followed similar pattern but at 11.4% and 8.1%, respectively.

Table 7: Chi-Square Tests showing Association between Race and Recidivism

Gender (Biologic Sex)		*Value*	*df*	*Asymptotic Significance (2-sided)*
Male	Pearson Chi-Square	331.485[b]	8	0.000
	Likelihood Ratio	332.513	8	0.000
	Linear-by-Linear Association	56.056	1	0.000
	N of Valid Cases	281142		
Female	Pearson Chi-Square	270.180[c]	8	0.000
	Likelihood Ratio	289.267	8	0.000
	Linear-by-Linear Association	47.832	1	0.000
	N of Valid Cases	112284		
Total	Pearson Chi-Square	589.216[a]	8	0.000
	Likelihood Ratio	601.805	8	0.000
	Linear-by-Linear Association	99.462	1	0.000
	N of Valid Cases	393426		

Results for the Research Questions and Hypothesis

Research Question 1 (RQ1): Is there a statistically significant relationship between COD diagnosis and recidivism while considering gender differences?

Null Hypothesis 1 ($H_0$1): There is no statistically significant relationship between COD diagnosis and recidivism while considering the gender differences.

Alternative Hypothesis 1 (H_a1): There is a statistically significant relationship between COD diagnosis and recidivism while considering the gender differences.

I analyzed the data for RQ1 using crosstabs and Pearson's chi-square to determine the relationship between COD diagnosis and recidivism. Table 8 shows the association between COD diagnosis and recidivism while considering gender differences. The result demonstrated evidence that the association between COD and recidivism among the men and women were statistically significant at $X^2 = 290.9$, $p < 0.001$ and $X^2 = 354.3$, $p < 0.001$, respectively. The results of the analysis were clear, with a significant association between the variables COD, gender and recidivism, and there was an association between the variables. Table 8 shows that recidivism was generally higher (9.5%) among those with COD than among those without COD (7.0%). The pattern was similar among the men population (9.0% among those with CODs; 7.0% among those without CODs) and for the women population (10.5% among those with CODs; 7.1% among those without CODs). In summary, the Chi-square tests between COD and recidivism results showed there was an association, and the result was statistically significant ($X^2 = 679$, $p < 0.001$), thus, rejecting the null hypothesis and the research hypothesis proposed would be accepted.

Table 8: Crosstabulation of COD, Gender and Recidivism

				Recidivism				
				No	Yes	Total	Chi-square	*p*-value
Male	COD	Yes	N	64579	6375	70954	290.9	0.0001
			%	91.0%	9.0%	100.0%		
		No	N	17,4407	13,126	187,533		
			%	93.0%	7.0%	100.0%		
	Total		N	238,986	19,501	258,487		
			%	92.5%	7.5%	100.0%		
Female	COD	Yes	N	38,230	4,467	42,697	354.3	0.0001
			%	89.5%	10.5%	100.0%		
		No	N	55,717	4,281	59,998		
			%	92.9%	7.1%	100.0%		
	Total		N	9,3947	87,48	102,695		
			%	91.5%	8.5%	100.0%		
Total	COD	Yes	N	102,809	10,842	113,651	679.3	0.0001
			%	90.5%	9.5%	100.0%		
		No	N	230,124	17,407	247,531		
			%	93.0%	7.0%	100.0%		
	Total		N	332,933	28,249	36,1182		
			%	92.2%	7.8%	100.0%		

Research Question 2 (RQ2): Is there a statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences?

Null Hypothesis 2 ($H_0$2): There is no statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences.

Alternative Hypothesis 2 (H_a2): There is a statistically significant relationship between previous integrated treatment episodes for COD and recidivism while considering the gender differences.

For RQ2, the data was analysed using crosstabs and Pearson's chi-square to determine the relationship between the previous treatment episodes and recidivism while considering for the gender of the participants. Table 9 suggested that the history of previous episodes of treatment appears not to be useful in preventing recidivism. Generally, the result indicated that higher proportion (approximately 9.0%) of those with a history of COD diagnosis were rearrested for certain crimes before their discharge date from the treatment program (recidivism) than those without a history of substance abuse treatment (6.7%). Also, the pattern remains similar when reviewed by the gender of the participants. Among the men population, 8.7% of those with previous substance use treatment-experienced recidivism compared to those without previous treatment (6.4%), and for the women, 9.5 % of those with previous treatment, showed recidivism in comparison to those without previous substance use treatment (7.5%). The prevalence of recidivism among those with previous substance abuse treatment seemed higher (8.7%) among women than the men (7.8%).

From the Chi-square test to determine the relationship between the variables, the result demonstrated evidence that the association between the history of treatment and recidivism is statistically significant at X2 = 606, $p < 0.001$. The table 9 also showed that the tests between the history of treatment and recidivism showed that the association between history of substance abuse treatment and recidivism was statistically significant

among mem (Chi-Square = 481.0, $p < 0.001$) and women (132.1, $p < 0.001$) thus rejecting the null hypothesis and proving there was an association between substance abuse treatment and recidivism.

Table 9: Crosstabulation of Previous Treatment Episodes, Gender, and Recidivism

	Gender			Recidivism				
				No	Yes	Total	Chi-square	*p*-value
Male	Previous Treatment Episodes	No	N	104,747	7,185	111,932	481.0	0.0001
			%	93.6%	6.4%	100.0%		
		Yes	N	150,760	14,353	165,113		
			%	91.3%	8.7%	100.0%		
	Total		N	255,507	21,538	277,045		
			%	92.2%	7.8%	100.0%		
Female	Previous Treatment Episodes	No	N	41,366	3,354	44,720	132.1	0.0001
			%	92.5%	7.5%	100.0%		
		Yes	N	59,529	6,237	65,766		
			%	90.5%	9.5%	100.0%		
	Total		N	100,895	9,591	110,486		
			%	91.3%	8.7%	100.0%		
Total	Previous Treatment Episodes	No	N	146,113	10,539	156,652	606.1	0.0001
			%	93.3%	6.7%	100.0%		
		Yes	N	210,289	20,590	230,879		
			%	91.1%	8.9%	100.0%		
	Total		N	356,402	31,129	387,531		
			%	92.0%	8.0%	100.0%		

Research Question 3 (RQ3): Is there a statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism, while controlling for age, gender, race, marital status, and education level and employment status?

Null Hypothesis 3 ($H_0$3): There is no statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism while controlling for age, gender, race, marital status, and education level and employment status.

Alternative Hypothesis 3 (H_a3): There is a statistically significant relationship between COD diagnosis, previous integrated treatment episodes for COD, and recidivism, while controlling for age, gender, race, marital status, and education level, and employment status.

To respond to RQ3, MLR analysis was performed to predict the likelihood of recidivism among offenders who had COD and previous treatment episodes while adjusting for other covariates that might be confounders, according to the literature. The independent variables were COD diagnosis, and previous treatment episodes, while other covariates were age, gender, ethnicity, race, marital status, education level, and employment status.

From the MLR, the Cox and Snell's R^2 was 0.007 and Nagelkerke's R^2 was 0.017 as a measure of effect size. These findings indicated that the independent variables could explain between 0.7% and 1.70% of the variance in the outcome variable of recidivism. The Nagelkerke's *R* Squared test suggested that the model could only account for 1.7% of the changes in recidivism which seems practically not significant. This means that other factors not accounted for in this study could be responsible for influencing the significant changes in recidivism. Table 10 presents the coefficients, the Wald statistics, and associated degrees of freedom and probability values for each of the variables. The Wald

statistic determines the probability distribution that is used to test if the regression coefficient in a regression model is significantly different from zero. A total of 286,321 cases were included in the model, and the model significantly predicts the likelihood of recidivism (Omnibus $X^2 = 2105.902$, df = 30, $p < 0.001$). Therefore, the independent variables were significant predictors of recidivism because of the significance level ($p = 0.001$) being less than 5%. After adjusting for all other covariates (possible confounding variables), the association between COD and recidivism was found to be still statistically significant (Wald Chi-Square = 204.12; $p<0.001$). The association between previous treatment and recidivism was found to be statistically significant as well (Wald Chi-Square = 383.50; $p<0.001$).

The result implies that participants without COD have 10% lesser odds/chances of being rearrested within the period of treatment determined as 30 days before discharge from treatment, compared to those with COD. The result indicated that the odds of being rearrested within the period of treatment among those with COD is 10% higher than among those without COD (Table 4.9). Those with previous episodes of treatment have 34% higher chances of being rearrested within the treatment period or 30 days before the completion of the treatment course (Table 10).

Table 10: Model of COD, Previous treatment episodes and Recidivism, controlling for other Covariates

Variables	B	S.E.	Wald (df)	OR	95% C.I. for EXP	
					Lower	Upper

Variables	B	S.E.	Wald (df)	OR	95% C.I. for EXP	
					Lower	Upper
COD	-0.21	0.01	204.1(1) ***	0.81	0.791	0.837
Previous Treatment	0.29	0.01	383.5(1) ***	1.34	1.297	1.375
Age			321.4(9) ***			
18 - 20	Reference					
21 -24	-0.09	0.03	7.9 **	0.92	0.860	0.973
25 - 29	-0.09	0.03	6.8 **	0.92	0.862	0.979
30 -34	-0.18	0.03	27.7 ***	0.84	0.781	0.893
35 -39	-0.27	0.04	50.4 ***	0.77	0.710	0.824
40 -49	-0.30	0.04	57.5 ***	0.74	0.687	0.801
50 -54	-0.35	0.04	69.3 ***	0.71	0.651	0.767
55 -64	-0.59	0.04	164.1 ***	0.55	0.505	0.605
65+	-0.75	0.10	51.6 ***	0.47	0.384	0.579
Gender			152.9(1) ***			
Female	Reference					
Male	0.07	0.02	20.0 ***	1.07	1.039	1.104
Education			59.9(4) ***			
less 11 years	Reference					
12 (GED)	0.01	0.03	0.00	1.01	0.944	1.070
13 to 15	-0.04	0.04	1.1	0.97	0.901	1.033
16 years +	-0.15	0.05	9.7 **	0.86	0.783	0.946
Marital Status			59.6(3) ***			
Never Married	Reference					
Married	0.15	0.03	24.0 ***	1.16	1.092	1.228
Separated	0.11	0.02	24.0 ***	1.11	1.067	1.162
Employment			367.8(3) ***			

Variables	B	S.E.	Wald (df)	OR	95% C.I. for EXP	
					Lower	Upper
Full-time	Reference					
Part-time	0.33	0.02	328.2 ***	1.38	1.336	1.433
Unemployed	0.14	0.02	49.3 ***	1.15	1.108	1.200
Race			270.3(8) ***			
Alaska Native	0.40	0.12	10.6 **	1.49	1.170	1.884
Asian or Pacific Islander	-0.13	0.12	1.2	0.88	0.700	1.108
Black or African American	0.11	0.12	0.8	1.11	0.885	1.397
White	Reference					
Asian	-0.36	0.15	5.7	0.70	0.522	0.939
Native Hawaiian	-0.04	0.12	0.1	0.96	0.758	1.211
Other single race	0.05	0.13	0.1	1.05	0.818	1.343
Constant	-2.68	0.13	449.3 ***	0.07		

*a. Variable(s) entered on step 1: Co-Occurring Mental and Substance Use Disorders (COD, Previous Treatment Episodes, Age at admission, Biologic sex, Education (Number of School Years Completed), Marital Status, Employment Status at Admission, Race. Significance level =***p<.0.0001, p<0.001*

Summary

Three research questions and hypotheses were proposed and tested using archival data on participants from TEDS-Discharge of SAMHSA (2017b). The research questions was examined with chi-square statistic and MLR.

In RQ1, I proposed to detect any relationship between COD diagnosis and recidivism while considering the difference in gender. The chi-squared tests between COD and recidivism results by gender showed there was statistically significant association. Recidivism is generally higher among those with COD than among those

without COD and the pattern was similar among the men and women population. Although the pattern might be similar among the men and women population, the results showed that the likelihood of recidivism among the women population was higher with 10.5% among those with CODs and 7.1% among those without CODs than the men population with 9.0% among those with CODs and 7.0% among those without CODs. COD diagnosis and recidivism are associated, and the difference in gender is a significant factor. This association implies rejecting the null hypothesis and the research hypothesis proposed was accepted.

The RQ 2 was to determine if there was a relationship between previous treatment episodes and recidivism while considering gender. The result indicated that higher proportion of those with history of treatment was rearrested for particular crime before their discharge date from the treatments program (recidivism) than those without history of treatment. The prevalence of recidivism among those with previous substance abuse treatment seemed higher among women than the men, the null hypothesis was also rejected in response to the evidence of an association between substance abuse treatment and recidivism.

In RQ3, I intended to find the extent of relationship between the study key independent variables (COD diagnosis, previous integrated treatment episodes for COD) and recidivism, while controlling for age, gender, race, marital status, and education level and employment status. The investigation found that the independent variables were significantly associated with recidivism, while controlling for age, gender, race, marital status, and education level and employment status.

In Chapter 5, I provided further explanations of the findings of the study and how future researchers might improve while studying similar concepts. I also discussed possible practical implications, limitations encountered during the study, recommendations for future research, and suggestions to promote positive social change.

Chapter 5: Discussion, Conclusion, and Recommendation

Introduction

The purpose of this research was to determine the association between the CODs, previous integrated treatments, and recidivism among the criminal justice system population, considering the gender differences in the context of the female population. I used a cross-sectional quantitative study design on the archival data on the criminal justice system population discharged as made available in the TEDS-D database from SAMHSA (2017b); hence, a secondary data analysis. I used Pearson's chi-square test and MLR analysis to determine the relationships and strengths of associations between the independent variables (COD diagnosis, previous treatment episode, age, gender, race, marital status, education level, employment status) and recidivism (the number of arrests made in the 30 days before the discharge from the COD treatments program).

The findings were that the associations between the independent variables and recidivism were statistically significant; and the female population was generally at higher risks of recidivism than their male counterparts. The null hypotheses were rejected based on the overall findings that the variables were significantly associated with one another and on the differences in gender. In this chapter, I discussed the interpretations of my findings, limitations, my recommendations, the implications, and the conclusion of the study.

Interpretations of the study Findings

My findings confirmed the results of previous research that mostly indicated a statistically significant relationship between COD treatments and recidivism, and also a

predictive relationship with gender. My study findings revealed the importance of COD treatments in both institutional and community settings of the criminal justice system population while gender and race of the population should be considered in alignment with the earlier report by Johnson et al. (2015). Throughout this study, gender appeared to be a significant predictor of COD, previous treatment episodes, and recidivism.

This study revealed that there was a statistically significant relationship between COD, previous treatments, recidivism, and differences in gender. After adjusting for the covariates, the association between COD and recidivism was found to be statistically significant. Wilton and Stewart (2017) carried out a study to determine the extent to which COD affects correctional outcomes and public safety considering four groups of offenders (N= 715). The four groups are those with mental health disorders only, substance use disorder only, those with COD, and those without any disorder based on criminal histories, charges, incarcerated and recidivism using chi-square tests and cox regression analyses was used for the controlled risk factors (Wilton & Stewart, 2017). The study reported that offenders with COD had the most criminal histories and recidivism, the cox regression analysis model was significant ($\chi 2$=59.52, df= 7, p<.001) even with controlled variables were controlled, the group with COD were significantly more likely to have higher recidivism compared with other offenders (Wilton & Stewart, 2017).

This study revealed there is a higher chance of recidivism among women of 8.7% than men with 7.8%, which is consistent with previous studies. Sacks (2004) reported that mental health disorders manifest differently among women because women present more

lifestyle problems related to mental health disorders due to family background, childhood, educational level, social environment, and physical health than men. There is an increasing rate of female incarceration, which can be due to the offender's substance use history and changes in sentencing guidelines in the criminal justice system; women, according to Sacks (2004), have higher rates of substance use and different patterns of substance usage than men. COD is more common among female offenders who are susceptible to higher risks of sexual assault, sexual victimization, and domestic violence, and these have been linked to depression, PTSD, and bipolar disorder as some of these women tried to cope with the abuse of substances (Woods, 2018). The findings of Hodge et al. (2012) and Sacks (2004) revealed that 59% of female offenders indicated at least one mental health disorder upon arrest, which has been linked to their history of substance abuse. These findings revealed an increase in recidivism among females that have COD; they are usually unemployed and have a lower educational level (Hodge et al., 2012; Sacks, 2004).

The association between mental health and substance abuse disorder has been well established and supported by previous studies. Age, as revealed in this study, influenced recidivism and indicated that the younger the participants, the higher the risk of recidivism. The population aged between 25 to 34 years old constituted more with about 38% of the participants. Choi et al. (2015) reported that NSDUH in 2015 revealed about 8.1 million adults that are 18 years or older have COD compared to about 2.3 million adults with only mental health disorders in the previous year. Adults with a

history of mental health disorders have had higher rates of substance use, with about 32.1 percent compared to 14.8 percent of tobacco use (Choi et al., 2015).

The association between previous treatment and recidivism was found to be statistically significant. The study also indicated that the participants without COD had lesser chances of being rearrested within the 30 days before discharge from treatment program, compared to those with COD diagnosis. The findings indicated that participants with previous episodes of substance use treatment have higher odds/chances of recidivism. Woods (2018) conducted a study using self-report data of COD from a nationwide sample of adult male jail inmates to test the hypothesis that inmates with COD are more likely to be charged with assault and rearrested compared to inmates without COD. The study used multivariate models of up to 20 variables found out that relationship with COD and assault was highly significant statistically speaking both in the community and incarcerated thus increases recidivism (Woods, 2018).

The employment status of the participants is associated with recidivism. Hall et al. (2013) reported that crime and unemployment and underemployment are linked which could cause recidivism especially for the female offenders. The findings of these authors aligned to my study, the results indicated that unemployed participants had a higher level of recidivism across both genders, 10.6% for women and 8.9% for men. The employed group has less likelihood of recidivism, 7.1% for women, and 6.8% in men.

On reviewing the marital status of the participants, the findings suggested that those who had separated with their spouses had higher recidivism rates for both genders compared to those who had divorced, with higher risks among the women than men. The

findings from this study align with the findings of Hunt et al. (2015), Johnson et al. (2015), and Somers et al. (2016), which indicated that the social-economic status of participants is associated with the rearrests records of offenders. The authors cited hardship like homelessness, financial constraints, minimal or lack of social supports which included breakdown of family or marital supports, unemployment, lack of vocational skills, violence and substance use relapse amongst other causes of recidivism. The education level of the participants as reported by SAMHSA (2017b) was based on the years of school completed. The results indicated that participants who completed more than 16 years in school showed the lowest likelihood of recidivism; there is a similar pattern for both genders with 7.8% of women and 5.9% of men. The higher the education level of the participants, the lower the likelihood of recidivism and the total pattern in the results of the study suggested that there was a higher chance of recidivism among women (8.7%) than men (7.8%). The results from the study also indicated the lowest likelihood of recidivism found within participants with higher education in terms of completing more than 16 years of school. The population that were unemployed, with lowest level of education, and separated in their marriage demonstrated higher chances of recidivism.

Gender is a significant indicator in analyzing diseases and treatments. My study supports this fact by suggesting that female offenders with COD could be more vulnerable to recidivism and other related adverse outcomes as suggested in the literature (Choi et al., 2015; Gleason et al., 2014; Johnson et al., 2015). Johnson et al. (2015) highlighted that women who had inferior vocational skills, lower education, poorer

health, and COD, were involved with partners that abuses substance amongst others. The prevalence of recidivism among those with previous substance abuse treatment seemed higher among females than the male population and the participants with COD appeared higher among females than the male population. These findings aligned with the conclusions in the study conducted by Johnson et al., (2015) that females are recorded as the fastest growing population under the criminal justice system with an approximate increase of 1.5% from 2005 to 2009 of the arrestee and almost 3.5% increase in jails and prisons. The variables analyzed also suggested that female participants had higher chances of recidivism, given the COD and previous treatments. The findings of this study also affirm the findings from the study conducted by Johnson et al., 2015 that there was increased female population in the criminal justice system and should be given significant treatments for COD on their release to the community.

Interpretation of the Findings with Theoretical Frameworks

I used two theories to develop a robust theoretical framework to examine the history of previous COD treatments; gender; and the effects of previous treatment outcomes on the recidivism of offenders. The first theoretical framework for my study is the IDDT model, which is an evidence-based practice endorsed by the SAMHSA, and is an integrated treatment model that simultaneously treats mental health and substance abuse disorders in the same settings to improve the quality of life (Chambers et al., 2014; Pringle, Grasso & Lederer, 2017; Surface, 2008; Scott, Dennis & Lurigio, 2017). Feminist criminology theory is the second theoretical framework used to illustrate gender

differences in the criminal justice system and provides an understanding of the differences between male and female offenders (Chesney-Lind, 1988).

My study showed a statistically significant relationship between COD diagnosis and recidivism while considering the difference in gender. The study results showed significant associations, and that recidivism was generally higher among those with COD than among those without COD. This pattern was noted to be similar among the male and female population. The study findings revealed the likelihood of recidivism within the female population with CODs was more than the male population with COD.

From a theoretical perspective, my findings show that incorporating the IDDT model would enhance positive outcome measurements in reducing recidivism from the treatment point of view, while the feminist criminology theory embraces gender-specific treatments that will attend to the needs of female offenders. Gender differences in treatments and criminality should be considered, the COD treatments for women should encompass strengthening relationships between families, parenting education, career opportunities and homelessness among others for a woman returning to the community (Johnson et al., 2015 & Sacks, 2004).

Limitations of the Study

There are limitations inherent in the mother survey processes, in the study design, the use of archival data, and the study processes. The first limitation could be found as a result of the use of archival data for the analysis received from TEDS-D of SAMHSA (2017b). Data were collected and stored by individuals other than the researcher; therefore, the data collected might not be to the researcher's standard or the responses of

the participants might not be a true reflection and accuracy of their mental health status; substance use rearrests records and treatment history amongst others. Some of the participants were not fully literate to respond truthfully, especially the clinical assessment questions regarding their COD status.

Another limitation for this study is that the participants were referred for treatments in the community settings by the criminal justice system, which focused on offenders who seek treatments in government-funded programs. There is limitation of external validity as the result of the study may not be generalizable to private healthcare practice context since data were retrieved from offenders with COD that receives treatments in government-funded programs. Lastly, the cross-sectional study design may be used to convey or translate the study findings to causality. The implication for study findings is that COD diagnosis or previous treatment programs or episodes might have caused recidivism or criminality among the offenders.

Recommendations

Future research should consider examining the effect of COD and the history of integrated treatment episodes in community settings or recidivism and crime rates, using more robust research designs such as longitudinal cohort study designs or more experimental observational designs. The longitudinal cohort study designs could confidently account for the actual occurrence of the events of interest and, perhaps, time-factor influences. Much focus has not been on policy development on recidivism and offenders living with COD thus; future researchers are needed to draw the attention of the

government at all levels towards developing cost-effective and evidence-based policies with programs that will treat offenders to reduce recidivism.

Another reason for future research on offenders and recidivism is to accurately determine reasons for habitual recidivism among the offenders because some of the offenders with or without continued treatment upon release to the community will still be rearrested either for repeat or new crimes. There were also gender differences on how men and women seek and comply with COD treatments. Gender plays a significant role in the engagement and outcomes of treatment programs and may require distinct treatment needs for men and women (Gleason et al., 2014). With the increased women offenders with COD diagnosis, more attention should be directed to the COD diagnosis and treatments, Sacks (2004) suggested gender-sensitive policies and gender-specific treatment should be considered to meets women's needs while returning to the community and reduce recidivism. Therefore, this prompts me to recommend the need for further research on gender differences in future studies.

Implications

The public health implication of the study is that, with an increased women population in the criminal justice system with higher risks of CODs and recidivism, gender-sensitive policies, and gender-specific treatment that meets the needs of women, should be informed. The result of this study indicated that the impact of COD treatments is significant for recidivism as it provided more understanding on how to reduce the rearrests and incarceration in the criminal justice system, especially the offenders with COD. The results of this research can serve as the groundwork for improving COD

treatment across gender. Sacks (2004) suggested that female offenders have gender-sensitive programs that lessen the likelihood of recidivism. The increasing rate of female offenders in our contemporary society is becoming a complex issue that requires the attention of policymakers, the offenders and their families, the criminal justice system, and the community as a whole.

This study can assist policymakers in identifying appropriate policies to address the increase of female offenders in the criminal justice system. Some of the plans includes the diagnose and treatments to avoid treatments based on self-reports, facilitate continued COD treatments upon release to the public, and provision of gender-specific treatments. Gender-specific programs target women that could lead to better outcomes of incidents that involve offenders with COD. The social implications of this study will be an increase in awareness of mental health disorders, substance use disorders, and COD as integrated treatments, which can lead to reduced rearrests of the populations of adults with COD.

Conclusions

The purpose of this study was to examine the possible relationship between the integrated treatment of CODs, differences in gender and its effect on recidivism on the target population who are offenders under probation or parole supervision that seeks treatment for COD as they transition back into the community; however, with the secondary attention on gender influence. The population with COD and who face recidivism are typically younger, less educated, likely females in terms of their socio-economic status, and have pasts of being enrolled in a COD treatment program.

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Appendix A: Data Analysis Output

Frequencies and Percentages of the offender's Age at admission

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 20	24524	5.5	5.5	5.5
	21 - 24	58008	13.1	13.1	18.6
	25 - 29	91329	20.6	20.6	39.3
	30 - 34	78250	17.7	17.7	56.9
	35 - 39	61332	13.8	13.8	70.8
	40 - 44	39495	8.9	8.9	79.7
	45 -49	33922	7.7	7.7	87.3
	50 - 54	27908	6.3	6.3	93.6
	55 - 64	24727	5.6	5.6	99.2
	65+	3410	0.8	0.8	100.0
	Total	442905	100.0	100.0	

Frequencies and Percentages of the offender's Gender (Biologic Sex)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	315985	71.3	71.4	71.4
	Female	126847	28.6	28.6	100.0
	Total	442832	100.0	100.0	
Missing	System	73	0.0		
Total		442905	100.0		

Frequencies and Percentages of the offender's Education (Number of School Years Completed)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<=8 Years	22416	5.1	5.2	5.2
	9 - 11 Years	99825	22.5	23.0	28.2
	12 Years	216463	48.9	49.9	78.1
	13 - 15 Years	76823	17.3	17.7	95.8
	16 Years +	18021	4.1	4.2	100.0
	Total	433548	97.9	100.0	
Missing	System	9357	2.1		
Total		442905	100.0		

Frequencies and Percentages of the offender's Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single (Never Married)	230749	52.1	66.1	66.1
	Currently Married	47045	10.6	13.5	79.6
	Separated	19328	4.4	5.5	85.1
	Divorced/Widowed	51907	11.7	14.9	100.0
	Total	349029	78.8	100.0	
Missing	System	93876	21.2		
Total		442905	100.0		

Frequencies and Percentages of the offender's Employment Status at Admission

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full - time	113852	25.7	26.2	26.2
	Part - time	42653	9.6	9.8	36.1
	Unemployed	156601	35.4	36.1	72.1
	Not in Labor Force (retired, students, home care, etc)	120983	27.3	27.9	100.0
	Total	434089	98.0	100.0	
Missing	System	8816	2.0		
Total		442905	100.0		

Frequencies and Percentages of the offender's Ethnicity - Hispanic or Latino origin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Puerto Rico	14079	3.2	3.2	3.2
	Mexican	31297	7.1	7.2	10.4
	Cuban or Other Specific Hispanic	15888	3.6	3.7	14.1
	Not of Hispanic/Latino Origin	362620	81.9	83.5	97.6
	Hispanic or Latin Origin (Unspecified)	10535	2.4	2.4	100.0
	Total	434419	98.1	100.0	
Missing	System	8486	1.9		
Total		442905	100.0		

Frequencies and Percentages of the offender's Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alaska Native	1310	0.3	0.3	0.3
	American Indian (Besides Alaska Natives)	11873	2.7	2.7	3.0
	Asian / Pacific Islander	177	0.0	0.0	3.1
	Black/African American	83046	18.8	19.0	22.1
	White	279860	63.2	64.1	86.2
	Asian	4474	1.0	1.0	87.2
	Native Haiwaiian/Other Pacific Islander	2988	0.7	0.7	87.9
	Other Sinlge Race	41559	9.4	9.5	97.4
	Multiple Races (two or more)	11318	2.6	2.6	100.0
	Total	436605	98.6	100.0	
Missing	System	6300	1.4		
Total		442905	100.0		

Frequencies and Percentages of the offender's Recidivism (Rearrests 30 Days before Discharge from Treatment)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No (None)	367158	82.9	92.0	92.0
	Yes (Once or More)	32126	7.3	8.0	100.0
	Total	399284	90.2	100.0	
Missing	System	43621	9.8		
Total		442905	100.0		

Frequencies and Percentages of the offender's Previous Substance Use Treatment Episodes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No (None)	170885	38.6	40.4	40.4
	Yes (One or More Episodes)	252235	57.0	59.6	100.0
	Total	423120	95.5	100.0	
Missing	System	19785	4.5		
Total		442905	100.0		

Frequencies and Percentages of the offender's Co-Occurring Mental and Substance Use Disorders (COD)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	122167	27.6	30.7	30.7
	No	276160	62.4	69.3	100.0
	Total	398327	89.9	100.0	
Missing	System	44578	10.1		
Total		442905	100.0		

Cross-tabulation of Age and Recidivism

Gender (Biologic Sex)				Recidivism		Total		
				No	Yes		Chi-Square	P-Value
Male	Age at admission	18 - 20	N	15262	1499	16761	324.9	0.000
			%	91.1%	8.9%	100.0%		
		21 - 24	N	34082	3152	37234		
			%	91.5%	8.5%	100.0%		
		25 - 29	N	51991	4722	56713		
			%	91.7%	8.3%	100.0%		
		30 - 34	N	44096	3952	48048		
			%	91.8%	8.2%	100.0%		
		35 - 39	N	35479	3050	38529		
			%	92.1%	7.9%	100.0%		
		40 - 44	N	23458	1807	25265		
			%	92.8%	7.2%	100.0%		
		45 - 49	N	21028	1650	22678		
			%	92.7%	7.3%	100.0%		
		50 - 54	N	18302	1258	19560		
			%	93.6%	6.4%	100.0%		
		55 - 64	N	17139	1001	18140		
			%	94.5%	5.5%	100.0%		
		65+	N	2516	130	2646		
			%	95.1%	4.9%	100.0%		
	Total		N	263353	22221	285574		
			%	92.2%	7.8%	100.0%		
Female	Age at admission	18 - 20	N	5014	441	5455	112.4	0.000
			%	91.9%	8.1%	100.0%		
		21 - 24	N	13861	1430	15291		
			%	90.6%	9.4%	100.0%		
		25 - 29	N	23125	2306	25431		
			%	90.9%	9.1%	100.0%		
		30 - 34	N	20119	2097	22216		
			%	90.6%	9.4%	100.0%		
		35 - 39	N	15087	1388	16475		
			%	91.6%	8.4%	100.0%		

Gender (Biologic Sex)				Recidivism		Total		
				No	Yes		Chi-Square	P-Value
		40 - 44	N	9348	878	10226		
			%	91.4%	8.6%	100.0%		
		45 - 49	N	7288	645	7933		
			%	91.9%	8.1%	100.0%		
		50 - 54	N	5326	453	5779		
			%	92.2%	7.8%	100.0%		
		55 - 64	N	4100	249	4349		
			%	94.3%	5.7%	100.0%		
		65+	N	503	14	517		
			%	97.3%	2.7%	100.0%		
	Total		N	103771	9901	113672		
			%	91.3%	8.7%	100.0%		
Total	Age at admission	18 - 20	N	20276	1940	22216	426.9	0.000
			%	91.3%	8.7%	100.0%		
		21 - 24	N	47943	4582	52525		
			%	91.3%	8.7%	100.0%		
		25 - 29	N	75116	7028	82144		
			%	91.4%	8.6%	100.0%		
		30 - 34	N	64215	6049	70264		
			%	91.4%	8.6%	100.0%		
		35 - 39	N	50566	4438	55004		
			%	91.9%	8.1%	100.0%		
		40 - 44	N	32806	2685	35491		
			%	92.4%	7.6%	100.0%		
		45 - 49	N	28316	2295	30611		
			%	92.5%	7.5%	100.0%		
		50 - 54	N	23628	1711	25339		
			%	93.2%	6.8%	100.0%		
		55 - 64	N	21239	1250	22489		
			%	94.4%	5.6%	100.0%		
		65+	N	3019	144	3163		
			%	95.4%	4.6%	100.0%		
	Total		N	367124	32122	399246		
			%	92.0%	8.0%	100.0%		

Cross-tabulation of Education and Recidivism

Gender (Biologic Sex)				Recidivism		Total	Chi-square	p-value
				No	Yes			
Male	Education	<=8 Years	N	13970	1090	15060	140.0	0.000
			%	92.8%	7.2%	100.0%		
			%	5.0%	0.4%	5.4%		
		9 - 11 Years	N	59085	5560	64645		
			%	91.4%	8.6%	100.0%		
			%	21.0%	2.0%	23.0%		
		12 Years (GED)	N	134649	11472	146121		
			%	92.1%	7.9%	100.0%		
			%	47.9%	4.1%	52.0%		
		13 - 15 Years	N	41321	3225	44546		
			%	92.8%	7.2%	100.0%		
			%	14.7%	1.1%	15.8%		
		16 Years +	N	10170	634	10804		
			%	94.1%	5.9%	100.0%		
			%	3.6%	0.2%	3.8%		
	Total		N	259195	21981	281176		
			%	92.2%	7.8%	100.0%		
			%	92.2%	7.8%	100.0%		
Female	Education	<=8 Years	N	4950	491	5441	11.5	0.021
			%	91.0%	9.0%	100.0%		
			%	4.4%	0.4%	4.9%		
		9 - 11 Years	N	22614	2182	24796		
			%	91.2%	8.8%	100.0%		
			%	20.2%	1.9%	22.2%		
		12 Years (GED)	N	46239	4358	50597		
			%	91.4%	8.6%	100.0%		
			%	41.3%	3.9%	45.2%		
		13 - 15 Years	N	22957	2289	25246		
			%	90.9%	9.1%	100.0%		
			%	20.5%	2.0%	22.6%		

		16 Years +	N	5403	457	5860		
			%	92.2%	7.8%	100.0%		
			%	4.8%	0.4%	5.2%		
	Total		N	102163	9777	111940		
			%	91.3%	8.7%	100.0%		
			%	91.3%	8.7%	100.0%		
Total	Education	<=8 Years	N	18920	1581	20501	100.0	0.000
			%	92.3%	7.7%	100.0%		
			%	4.8%	0.4%	5.2%		
		9 - 11 Years	N	81699	7742	89441		
			%	91.3%	8.7%	100.0%		
			%	20.8%	2.0%	22.8%		
		12 Years (GED)	N	180888	15830	196718		
			%	92.0%	8.0%	100.0%		
			%	46.0%	4.0%	50.0%		
		13 - 15 Years	N	64278	5514	69792		
			%	92.1%	7.9%	100.0%		
			%	16.4%	1.4%	17.8%		
		16 Years +	N	15573	1091	16664		
			%	93.5%	6.5%	100.0%		
			%	4.0%	0.3%	4.2%		
	Total		N	361358	31758	393116		
			%	91.9%	8.1%	100.0%		
			%	91.9%	8.1%	100.0%		

Cross-tabulation of Marital Status and Recidivism

Gender				Recidivism		Total	Chi-square	P=value
				No	Yes			
Male	Marital Status	Single		150434	12869	163303	17.3	0.001
			%	92.10%	7.90%	100.00		
			%	63.10%	5.40%	68.50%		
		Currently Married	N	30086	2591	32677		
			%	92.10%	7.90%	100.00		
			%	12.60%	1.10%	13.70%		
		Separated	N	9981	918	10899		
			%	91.60%	8.40%	100.00		
			%	4.20%	0.40%	4.60%		
		Divorced/Widowed	N	29291	2316	31607		
			%	92.70%	7.30%	100.00		
			%	12.30%	1.00%	13.30%		
	Total		N	219792	18694	238486		
			%	92.20%	7.80%	100.00		
			%	92.20%	7.80%	100.00		
Female	Marital Status	Single	N	49623	4963	54586	10.0	0.018
			%	90.90%	9.10%	100.00		
			%	54.70%	5.50%	60.10%		
		Currently Married	N	10752	1090	11842		

			%	90.80%	9.20%	100.00		
			%	11.80%	1.20%	13.00%		
		Separated	N	6428	696	7124		
			%	90.20%	9.80%	100.00		
			%	7.10%	0.80%	7.80%		
		Divorced/Widowed	N	15538	1690	17228		
			%	90.20%	9.80%	100.00		
			%	17.10%	1.90%	19.00%		
	Total		N	82341	8439	90780		
			%	90.70%	9.30%	100.00		
			%	90.70%	9.30%	100.00		
Total	Marital Status	Single	N	200057	17832	217889	13	0.004
			%	91.80%	8.20%	100.00		
			%	60.80%	5.40%	66.20%		
		Currently Married	N	40838	3681	44519		
			%	91.70%	8.30%	100.00		
			%	12.40%	1.10%	13.50%		
		Separated	N	16409	1614	18023		
			%	91.00%	9.00%	100.00		
			%	5.00%	0.50%	5.50%		
		Divorced/Widowed	N	44829	4006	48835		
			%	91.80%	8.20%	100.00		
			%	13.60%	1.20%	14.80%		
	Total		N	302133	27133	329266		
			%	91.80%	8.20%	100.00		
			%	91.80%	8.20%	100.00		

Cross-tabulation of Employment Status and Recidivism

Gender (Biologic Sex)				Recidivism		Total	Chi-square	p-value
				No	Yes			
Male	Employment Status at Admission	Full - time	N	79499	5799	85298	313.4	0.000
			%	93.2%	6.8%	100.0%		
			%	28.2%	2.1%	30.3%		
		Part - time	N	24555	1921	26476		
			%	92.7%	7.3%	100.0%		
			%	8.7%	0.7%	9.4%		
		Unemployed		89815	8823	98638		
			%	91.1%	8.9%	100.0%		
			%	31.9%	3.1%	35.0%		
		Not in Labor Force		65667	5407	71074		
			%	92.4%	7.6%	100.0%		
			%	23.3%	1.9%	25.2%		
	Total		N	259536	21950	281486		

			%	92.2%	7.8%	100.0%		
			%	92.2%	7.8%	100.0%		
Female	Employment Status at Admission	Full - time	N	17971	1378	19349	316.4	0.000
			%	92.9%	7.1%	100.0%		
			%	16.0%	1.2%	17.2%		
		Part - time	N	11131	933	12064		
			%	92.3%	7.7%	100.0%		
			%	9.9%	0.8%	10.7%		
		Unemployed	N	38637	4584	43221		
			%	89.4%	10.6%	100.0%		
			%	34.4%	4.1%	38.5%		
		Not in Labor Force	N	34713	2906	37619		
			%	92.3%	7.7%	100.0%		
			%	30.9%	2.6%	33.5%		
	Total		N	102452	9801	112253		
			%	91.3%	8.7%	100.0%		
			%	91.3%	8.7%	100.0%		

Total	Employment Status at Admission	Full - time	N	97470	7177	104647	621	0.000
			%	93.1%	6.9%	100.0%		
			%	24.8%	1.8%	26.6%		
		Part - time	N	35686	2854	38540		
			%	92.6%	7.4%	100.0%		
			%	9.1%	0.7%	9.8%		
		Unemployed	N	128452	13407	141859		
			%	90.5%	9.5%	100.0%		
			%	32.6%	3.4%	36.0%		
		Not in Labor Force	N	100380	8313	108693		
			%	92.4%	7.6%	100.0%		
			%	25.5%	2.1%	27.6%		
	Total		N	361988	31751	393739		
			%	91.9%	8.1%	100.0%		
			%	91.9%	8.1%	100.0%		

Cross-tabulation of Ethnicity and Recidivism

Gender (Biologic Sex)				Recidivism		Total	Chi-square	p-value
				No	Yes			
Male	Ethnicity - Hispanic or Latino origin	Puerto Rico	N	10136	787	10923	23.5	0.000
			%	92.8%	7.2%	100.0%		
			%	3.6%	0.3%	3.9%		
		Mexican	N	16289	1457	17746		
			%	91.8%	8.2%	100.0%		
			%	5.8%	0.5%	6.3%		
		Cuban or Other Specific Hispanic	N	9485	789	10274		
			%	92.3%	7.7%	100.0%		
			%	3.4%	0.3%	3.7%		
		Not of Hispanic/Latino Origin	N	214910	18193	233103		
			%	92.2%	7.8%	100.0%		
			%	76.7%	6.5%	83.2%		
		Hispanic or Latin Origin (Unspecified)	N	7478	535	8013		
			%	93.3%	6.7%	100.0%		
			%	2.7%	0.2%	2.9%		
	Total		N	258298	21761	280059		
			%	92.2%	7.8%	100.0%		
			%	92.2%	7.8%	100.0%		

Female	Ethnicity - Hispanic or Latino origin	Puerto Rico	N	1922	128	2050	19.2	0.001
			%	93.8%	6.2%	100.0%		
			%	1.7%	0.1%	1.8%		
		Mexican	N	6300	600	6900		
			%	91.3%	8.7%	100.0%		
			%	5.7%	0.5%	6.2%		
		Cuban or Other Specific Hispanic	N	3000	317	3317		
			%	90.4%	9.6%	100.0%		
			%	2.7%	0.3%	3.0%		
		Not of Hispanic/Latino Origin	N	88427	8432	96859		
			%	91.3%	8.7%	100.0%		
			%	79.5%	7.6%	87.0%		
		Hispanic or Latin Origin (Unspecified)	N	1950	196	2146		
			%	90.9%	9.1%	100.0%		
			%	1.8%	0.2%	1.9%		
	Total		N	101599	9673	111272		
			%	91.3%	8.7%	100.0%		
			%	91.3%	8.7%	100.0%		
Total	Ethnicity - Hispanic or Latino origin	Puerto Rico	N	12058	915	12973	30.6	0.000
			%	92.9%	7.1%	100.0%		
			%	3.1%	0.2%	3.3%		
		Mexican	N	22589	2057	24646		
			%	91.7%	8.3%	100.0%		
			%	5.8%	0.5%	6.3%		
		Cuban or Other Specific Hispanic	N	12485	1106	13591		
			%	91.9%	8.1%	100.0%		
			%	3.2%	0.3%	3.5%		

	Not of Hispanic/Latino Origin	N	303337	26625	329962
		%	91.9%	8.1%	100.0%
		%	77.5%	6.8%	84.3%
	Hispanic or Latin Origin (Unspecified)	N	9428	731	10159
		%	92.8%	7.2%	100.0%
		%	2.4%	0.2%	2.6%
Total		N	359897	31434	391331
		%	92.0%	8.0%	100.0%
		%	92.0%	8.0%	100.0%

Cross-tabulation of Race and Recidivism

Gender (Biologic Sex)				Recidivism		Total	Chi-square	p-value
				No	Yes			
Male	Race	Alaska Native	N	762	63	825	331.5	0.000
			%	92.4%	7.6%	100.0%		
			%	0.3%	0.0%	0.3%		
		American Indian (Besides Alaska Natives)	N	6444	832	7276		
			%	88.6%	11.4%	100.0%		
			%	2.3%	0.3%	2.6%		
		Asian / Pacific Islander	N	143	0	143		
			%	100.0%	0.0%	100.0%		
			%	0.1%	0.0%	0.1%		
		Black/African American	N	57506	4269	61775		
			%	93.1%	6.9%	100.0%		
			%	20.5%	1.5%	22.0%		
		White	N	158594	14044	172638		
			%	91.9%	8.1%	100.0%		
			%	56.4%	5.0%	61.4%		
		Asian	N	2808	185	2993		
			%	93.8%	6.2%	100.0%		
			%	1.0%	0.1%	1.1%		
		Native Hawaiian/Other Pacific Islander	N	2051	133	2184		
			%	93.9%	6.1%	100.0%		
			%	0.7%	0.0%	0.8%		
		Other Single Race	N	25142	1728	26870		
			%	93.6%	6.4%	100.0%		
			%	8.9%	0.6%	9.6%		
		Multiple Races	N	5931	507	6438		

		(two or more)	%	92.1%	7.9%	100.0 %		
			%	2.1%	0.2%	2.3%		
	Total		N	259381	21761	281142		
			%	92.3%	7.7%	100.0 %		
			%	92.3%	7.7%	100.0 %		
Female	Race	Alaska Native	N	365	28	393	270.2	0.000
			%	92.9%	7.1%	100.0 %		
			%	0.3%	0.0%	0.4%		
		American Indian (Besides Alaska Natives)	N	3434	433	3867		
			%	88.8%	11.2%	100.0 %		
			%	3.1%	0.4%	3.4%		
		Asian / Pacific Islander	N	12	0	12		
			%	100.0%	0.0%	100.0 %		
			%	0.0%	0.0%	0.0%		
		Black/African American	N	12906	873	13779		
			%	93.7%	6.3%	100.0 %		
			%	11.5%	0.8%	12.3%		
		White	N	73968	7491	81459		
			%	90.8%	9.2%	100.0 %		
			%	65.9%	6.7%	72.5%		
		Asian	N	802	49	851		
			%	94.2%	5.8%	100.0 %		
			%	0.7%	0.0%	0.8%		
		Native Hawaiian/Other Pacific Islander	N	646	28	674		
			%	95.8%	4.2%	100.0 %		
			%	0.6%	0.0%	0.6%		
		Other Single Race	N	7481	462	7943		
			%	94.2%	5.8%	100.0 %		
			%	6.7%	0.4%	7.1%		

		Multiple Races (two or more)	N	3051	255	3306	
			%	92.3%	7.7%	100.0 %	
			%	2.7%	0.2%	2.9%	
	Total		N	102665	9619	112284	
			%	91.4%	8.6%	100.0 %	
			%	91.4%	8.6%	100.0 %	
Total	Race	Alaska Native	N	1127	91	1218	598	0.000
			%	92.5%	7.5%	100.0 %	
			%	0.3%	0.0%	0.3%	
		American Indian (Besides Alaska Natives)	Count	9878	1265	11143	
			%	88.6%	11.4%	100.0 %	
			%	2.5%	0.3%	2.8%	
		Asian / Pacific Islander	Count	155	0	155	
			%	100.0%	0.0%	100.0 %	
			%	0.0%	0.0%	0.0%	
		Black/African American	Count	70412	5142	75554	
			%	93.2%	6.8%	100.0 %	
			%	17.9%	1.3%	19.2%	
		White	Count	232562	21535	254097	
			%	91.5%	8.5%	100.0 %	
			%	59.1%	5.5%	64.6%	
		Asian	Count	3610	234	3844	
			%	93.9%	6.1%	100.0 %	
			%	0.9%	0.1%	1.0%	
		Native Hawaiian/Othe	Count	2697	161	2858	

	r Pacific Islander	%	94.4%	5.6%	100.0 %
		%	0.7%	0.0%	0.7%
	Other Single Race	Coun t	32623	2190	34813
		%	93.7%	6.3%	100.0 %
		%	8.3%	0.6%	8.8%
	Multiple Races (two or more)	Coun t	8982	762	9744
		%	92.2%	7.8%	100.0 %
		%	2.3%	0.2%	2.5%
Total		Coun t	362046	31380	393426
		%	92.0%	8.0%	100.0 %
		%	92.0%	8.0%	100.0 %