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Review Committee
Dr. Tom Diebold, Committee Chairperson, Psychology Faculty
Dr. Scott Duncan, Committee Member, Psychology Faculty
Dr. Brian Cesario, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2017

Abstract

Suicidal Behavior in Inmates through the Pathway of Psychopathy and Depression

by

Zsofia Muller-Balazsfi

MA, Budapest University of Economic Sciences, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Forensic Psychology

Walden University

May 2017

Abstract

Prison inmates are more prone to commit suicide than are individuals in the general population. Current scientific research has identified risk factors of suicide in the general population, such as mood disorders, but only a few research studies have examined risk factors that are particularly relevant to the incarcerated population. This study used a quantitative archival research design to examine the effect of primary and secondary psychopathic personality traits on the development of suicidal behavior in the mentally ill male prison inmate population at a U.S. federal prison located in the Southeast. Data on psychopathic traits as measured by the Psychopathy Checklist-Revised, and on depression as measured by the Personality Assessment Inventory, together with information on the number of suicide attempts coming from prison medical files, were gained from an archival database. The sample size was 203 participants where data were previously collected during their pretrial evaluation. The study was guided by Mann's diathesis-stress model of suicide, according to which impulsive-aggressive personality traits, both of which are characteristics of psychopathy, elevate the risk for suicide. Furthermore, depression may serve as the stress component of the model, and thus its effect was also added to the standard multiple regression model in the analysis. During the analysis, a pattern emerged in which the effect of secondary psychopathic traits was moderated by the percent of time spent in solitary confinement. The results of this research contribute to positive social change by helping professionals working with this population to address the issue of suicide prevention in prison settings via more effective treatment programs.

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Dedication

I dedicate this work to my parents and husband who believed in me and encouraged me to achieve great results in my education. Without their constant support and endless love, I would not be the same person I am today. Thank you for being there for me in good times and bad times. Also, I thank my sister Reka, who helped me to keep going until I hit the finish line. And thanks to Dominic and Nicolas, my wonderful sons, for being so understanding when I had to finish my university assignments. I am truly blessed to have such a great family.

Acknowledgements

Special thanks to my dissertation committee: Dr. Diebold, Dr. Duncan, and Dr. Cesario. Thank you so much for being there for me very promptly when I needed guidance and professional advice in my dissertation journey. Also, thanks to my great friend Becky Rozman for helping me to use proper language in my dissertation. I also thank the authors of the books and articles that have helped me to learn so much about psychopaths and suicidal behavior. I very much enjoyed learning from you all.

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Chapter 1: Introduction

In my dissertation, I examined the relationship between psychopathy and suicidal behavior in the mentally ill offender population. Even though suicidality is a prevalent problem in prison settings (Price, Salekin, Klinger, & Barker, 2013) and individuals with psychopathic personality traits are disproportionately involved in criminal activities, thus are disproportionately represented in the criminal justice system (Kiehl & Hoffman, 2011), this phenomenon is under-researched and the results of the existing studies are not conclusive (Negredo, Melis, & Herrero 2013). This is the research gap that this study intended to fill.

The implications of this study for social change are multifaceted. The findings from this study can help professionals working with the mentally ill incarcerated population to assess and mitigate the risk of suicide more effectively for these individuals. The results of this study contribute to positive social change because they help professionals working with inmates who exhibit high psychopathic personality traits and some psychopathology to better understand the constructs that lead to suicide in this population. The findings of the study enable mental health professionals to develop and implement better suicide prevention programs for this population.

Family members of the incarcerated offenders who attempt suicide can also be positively affected by the research findings. Also, as suggested by Hales, Edmondson, Davison, Maughan, and Taylor (2015), it is likely that fellow inmates of offenders who attempt suicide can benefit from these research findings.

In this chapter, I discuss the foundations of this dissertation. I provide the rationale for why this research study is of significant importance and is able to contribute to scientific knowledge and what is the current knowledge about the topic in the scientific literature. I also concisely summarize the purpose of this study together with the research question and hypotheses that the study answered. A short description for the theoretical foundation of this dissertation study is also discussed. Assumptions, delimitations, and limitations of the study are also described in detail.

Background

Cleckley (1988) conceptualized psychopathy for the first time in scientific literature in an article that was originally published in 1941. He found that psychopathic traits serve as protective factors, protecting people from engaging in suicidal behavior. However, contemporary research found evidence contradicting this tenet. An extensive number of research studies are available in the current scientific literature investigating the relationship between the levels of psychopathy and the development of suicidal tendencies in people. Contrary to Cleckley's views, empirical evidence suggests a statistically significant, positive relationship between psychopathic personality factors and the development of suicidal behavior, suicidal ideation, and self-harming behavior (Dhingra, Boduszek, Palmer, & Shevlin, 2014; Gunter, Chinball, Antoniak, Philibert, & Black, 2013; Gunter, Chinball, Antoniak, Philibert, & Hollenbeck, 2011).

Suicide is among the most significant current public health problems in U.S. prisons (Smith, Selwyn, Wolford-Clevenger, & Mandracchia, 2013) because prison inmates are more likely to engage in suicidal behavior than individuals in the general

population (Pennington, Cramer, Miller, & Anastasi, 2015). Furthermore, the number of inmates diagnosed with mental illness is ever increasing (Gunter et al., 2011). The prevalence of serious mental illness among the prison inmate population is higher than in the general population (Senior et al., 2013). However, evidence suggests that proper mental health care is not available for the prison inmate population (Deslich, Thistlethwaite, & Coustasse, 2013). Mental illnesses therefore remain untreated in inmates. Current research has yielded a significant relationship between depression and the development of suicidal behavior (Price et al., 2013). According to Negredo et al. (2013), scientific research on the relationship between the levels of psychopathy and suicide in the mentally ill prison inmate population is limited to a small number of studies, and the findings are not conclusive. This is the gap in current research that this dissertation intended to fill. Kiehl and Hoffman (2011) found psychopaths to be 20 to 25 times more likely to serve time in prison than non-psychopaths. These individuals have a disproportionate impact on the criminal justice system; therefore, this study intended to facilitate an increasing awareness of the underlying constructs of psychopathy within the incarcerated mentally ill male offender population.

Problem Statement

Extensive current scientific literature is available on the relationship between psychopathy and the development of suicidal behavior or suicidal thoughts. Empirical research has yielded a positive association between antisocial lifestyle and suicidality in the offender population (Dhringa et al., 2014; Gunter et al., 2013; Gunter et al., 2011). Furthermore, suicide is among the most frequent public health concerns in U.S. prisons

(Price et al., 2013), and inmates are more likely to attempt suicide than people in the general population (Pennington et al., 2015; Smith et al., 2013).

At the same time, the prevalence of serious mental illnesses in the inmate prison population is significantly higher than in the general population (Senior et al., 2013). However, prison inmates often lack proper mental health services and, therefore, mental illnesses such as depression, anxiety, and bipolar disorders frequently remain untreated in this population (Deslich et al., 2013). Also, the number of inmates with mental illness in U.S. prisons is increasing (Gunter et al., 2011). Depression and anxiety disorder have been found to be significantly related to suicidality in individuals with psychopathic traits (Gunter et al., 2013; Javdani, Sadeh, & Verona, 2011; Price et al., 2013).

Furthermore, it appears that a significant relationship between psychopathic traits, suicidal behavior, and suicidal ideation (Negredo et al., 2013; Swogger, Walsh, Homaifar, Caine, & Conner, 2012) and also between mental illness and suicidality (Gunter et al., 2013) has been established. However, only a limited number of research studies exist on determining the relationships between psychopathy, suicidal behavior, and suicidal thoughts among the mentally ill incarcerated offender population (Negredo et al., 2013).

Negredo et al. (2013) pointed out the need for further research in the mentally ill offender population, with a larger sample size. According to the authors, current research on the relationship between suicide and psychopathy in mentally ill individuals has yielded contradictory results. Both positive and negative relationships have been found between the impulsivity aspect of psychopathic traits and suicidal behavior. Pennington

et al. (2015) conducted a study on the relationship between psychopathy and suicidal ideation, but the measurement instrument they used to measure psychopathic traits - the Levenson Self-Report Psychopathy Scale (Levenson, Kiehl, & Fitzpatrick, 1995) - is not validated on the offender population; furthermore, their sample came from only one correctional institution where the subjects committed mostly non-violent crimes. Also, Pennington et al. suggest that investigating the relationship between psychopathy and actual suicide attempts – instead of suicidal ideation would provide a deeper insight into the relationship between psychopathy and suicidality. These limitations pose a threat to both the internal and external validity of their study. Pennington et al. indicated that future research is needed in order to address these limitations.

Purpose

The main purpose of this research study was to describe the relationship between the levels of psychopathy and the presence of suicidal behavior among the mentally ill male prison inmate population. The relationship between the levels of psychopathy and the development of suicidal behavior, according to Negredo et al. (2013), is under-researched, and the available research results are not conclusive. In order to fill this gap in current scientific research, the study used the quantitative research approach in its design. Statistical analysis of data that were obtained from an archival database was used in order to determine whether a relationship between psychopathic personality traits and the development of suicidal behavior exists. In the analysis, the criterion variable was the number of suicide attempts (including completions) and the predictors were primary and secondary psychopathic traits and depression.

Research Question and Hypotheses

In this dissertation, I examined the extent to which psychopathic personality traits affect the development of suicidal behavior in offenders. The research question that guided this study was this:

RQ: To what extent does psychopathy predict suicidal behavior in the mentally ill male prison inmate population?

The hypotheses for this research study are described here:

H_0: Primary psychopathic traits measured by the Psychopathy Checklist-Revised (PCL-R) Factor 1 scores and secondary psychopathic traits measured by the PCL-R Factor 2 scores do not predict suicidal behavior measured by the number of suicide attempts (including completions) in the mentally ill male offender population.

H_A: Primary psychopathic traits measured by PCL-R Factor 1 scores and secondary psychopathic traits measured by PCL-R Factor 2 scores predict suicidal behavior measured by the number of suicide attempts (including completions) in the mentally ill male offender population.

This hypothesis was deduced based on Mann's diathesis-stress model of suicide, according to which impulsive and aggressive personality traits positively affect the development of suicidal behavior (Mann, Waternaux, Haas, & Malone, 1999). Secondary psychopathic traits as measured by PCL-R Factor 2 scores indicate the extent to which impulsive and aggressive personality traits are present in an individual (O'Donohue, Fowler, & Lilienfeld, 2007). Also, results of previous research show that mood disorders such as depression and anxiety are related to suicide (Dhingra et al.,

2014; Gunter et al., 2011; Gunter et al., 2013; Javdani et al. 2011; Pennington et al., 2015; Price et al. 2013; Smith et al 2014; van Heeringen & Mann, 2014; van Orden et al., 2010). In order to test the hypotheses, a standard multiple regression test was used where the criterion variable was the number of suicide attempts (including completions) while the predictors were primary and secondary psychopathic traits as measured by the PCL-R, and depression as measured by the Personality Assessment Inventory (PAI).

Theoretical Framework

The theory that supported my dissertation was Mann's diathesis-stress model (Mann et al., 1999) of suicide. Diathesis-stress models, according to O'Connor and Nock (2014), suggest that preexisting vulnerability factors for suicide can be activated by stressful life events. Van Orden et al. (2010) found that individuals attempting suicide are most often diagnosed with major psychopathology. According to van Heeringen and Mann (2014), Mann's diathesis-stress model suggests a significant relationship between mood disorders, pessimism, depression, and the development of suicidal behavior; therefore, risk assessment must consider several factors that represent susceptibility to the development of suicidal behavior. Conversely, van Heeringen and Mann argued that most individuals presenting major psychopathology do not engage in suicidal behavior. This tenet strengthens the role of diathesis in addition to the presence of a mental illness.

Mann's diathesis-stress model of suicidal behavior asserts that when impulsive-aggressive personality traits are present in the individual, the person is more at risk of engaging in suicidal behavior (Mann et al., 1999). These two personality traits are characteristics of psychopathy, and the PCL-R facet 3 and facet 4 subscales measure

impulsive and aggressive personality traits, respectively (Hare, 1991). According to this model of suicidal behavior, the risk of attempting suicide is not solely determined by psychopathology but is also affected by a diathesis. Such a diathesis, according to O'Connor and Nock (2014), may be present in the form of (a) experiencing more suicidal ideation; that is, having suicidal thoughts but not acting on them, and (b) exhibiting impulsive and/or aggressive personality traits that increase the risk for the person to act on such ideations. According to van Heeringen (2012), the stress-diathesis model also suggests that depression and the feeling of hopelessness may serve as the stress component of the model. Looking at diathesis to suicidal behavior as a continuous construct makes it possible for the model to explain the differences between individuals' suicidal behavior.

Suicidal behavior in Mann's theory is conceptualized as actual suicide that results in death and attempted suicide that does not end with the death of the individual. In this research study, I investigated the relationship between psychopathic personality traits and suicidal behavior in mentally ill offenders. Based on Mann's theory, I examined whether the psychopathic personality traits of impulsivity and aggression and psychopathology such as depression predicted suicidal behavior in my sample. As suggested by Mann's theory, all of these factors may serve as diathesis or stress components in the diathesis-stress model of suicide. Therefore, in this research, it was hypothesized that individuals who score higher on these personality traits are more at risk to engage in suicidal behavior than those who score lower on these factors. Also, as suggested by the theory, it was predictable in this research that the diagnosis of depression will elevate the risk of

suicide in this population. Swogger, Van Orden, and Conner (2014) found Mann's

diathesis-stress model of suicidal behavior capable of explaining the development of

suicidal behavior in the high-risk population of criminal offenders; therefore, Mann's

diathesis-stress model of suicidal behavior provided an appropriate theoretical framework

to support my study. In Chapter 2, I provide alignment with Mann's theory and how it

was implemented in this research, and how it was used in formulating predictions and

understanding the results of the study.

Nature of the Study

The present dissertation is quantitative in nature. Quantitative research is

consistent with the primary focus of this study, which is investigating the relationships

between levels of psychopathy and suicide behavior in the male prison inmate

population. The focus of this study required the researcher to include factors in the

analysis of relationships that were consistent with Mann's expectations (Mann et al.,

1999) with regards to suicide-related factors. In order to determine the nature of the

relationships between levels of psychopathy, mental disorder, and suicidality, scores on

well-established psychological measurement instruments such as the PCL-R and the PAI

were examined in a non-experimental archival design. The PCL-R is the most frequently

used measurement instrument for assessing psychopathic traits in people (Mokros et al.,

2013). Hare et al. (1990) found the instrument to be valid and reliable when used in the

male offender population. Previous research has used this instrument to measure

psychopathy in the forensic population (Gunter et al., 2013; Negredo et al., 2013).

The PAI is a widely used self-report inventory in both professional and research settings that assesses psychopathology in adults (Morey, 2014). In previous research, the instrument has been found to be appropriate for use in the forensic population (Douglas, Hart, & Kropp, 2001; Rogers, Sewell, Morey, & Ustad, 1996). The PAI measurement tool's depression clinical scale is a valid and reliable measure to assess depression; its Dep_C: Cognitive subscale, whose results were used in this research, focuses on feelings of worthlessness and hopelessness (Douglas et al., 2001; Morey, 2014). Depression is a factor that Mann's diathesis-stress model of suicidal behavior (Mann et al., 1999) relates to the development of such behavior.

This research study used an archival quantitative research design. In this quantitative study, I used an archival database of male offenders in U.S. federal prisons. The archived data were collected by Dr. Duncan, a licensed forensic psychologist between 1990 and 2001 (S. Duncan, personal communication, October 10, 2015). The database consisted of the results of court-ordered pre-trial evaluations and de-identified prison medical files.

In my dissertation, the outcome variable was the number of suicide attempts (including completions). The predictors were psychopathic personality traits (measured on the PCL-R). Facet 3 and facet 4 items on the PCL-R measure impulsive lifestyle and antisocial behavior in individuals, respectively. These behavioral traits, according to Mann's diathesis-stress model of suicide, are related to the development of suicidal behavior. Previous research has also found depression and anxiety to be related to suicide (Dhingra et al., 2014; Gunter et al., 2011; Gunter et al., 2013; Javdani et al. 2011;

Pennington et al., 2015; Price et al. 2013; Smith et al 2014; van Heeringen & Mann, 2014). Mann's suicide model also relates subjective depression to suicidal behavior. Subjective depression serves as the diathesis component in the model (Mann et al., 1999). Therefore, I included depression as a predictor in my regression model and tested whether it affected the relationship between psychopathy and suicide. Furthermore, because during the analysis, a pattern emerged in which the effect of secondary psychopathic traits was moderated by the percent of time spent in solitary confinement, the interaction term of percent of time spent in solitary confinement with secondary psychopathy traits was also included as a predictor. This quantitative analysis was able to determine the extent to which the researched constructs predicted suicide in the mentally ill male prison inmate population.

Definitions

Suicidality and suicidal behavior broadly to refer to suicidal ideation (the intent to die without acting upon these thoughts), committing actual suicide (lethal intent is present), and engaging in self-directed violence (when the intent to die is absent). The definitions of constructs used in this research study are described here:

- The criterion variable of *suicidal behavior,* in accordance with the terminology used by Nock et al. (2008), refers to the actions of both committing suicide when the attempt results in death of the individual and attempting suicide when the action does not end with the death of the person. For the purpose of the study, suicidal behavior will be measured by the number of recorded suicide attempts (including completions).

- For the purpose of the study, the terms *suicidal behavior, suicidality,* and *suicide* were used interchangeably throughout the dissertation.

- The construct of *suicide* was defined as outlined in Nock et al. (2008), that is, an individual's intentional act to end his or her own life.

- The predictor variable of *psychopathy* was used as defined by the PCL-R (Hare, 1991) criteria. According to these measures, psychopathic personality disorder is characterized by four facets: the interpersonal, affective, impulsive, and antisocial personality traits.

- The term *primary psychopathy* in the current research study refers to the emotional deficits and interpersonal manipulation traits within the construct of psychopathy (Ross et al., 2007).

- The term *secondary psychopathy* refers to characteristics that are not essential but associated characteristics of psychopathy, such as antisocial behavioral traits and impulsivity (Ross et al., 2007).

- The predictor variable of *depression* was measured by the scores obtained by the PAI (Morey, 1991) psychological measurement tool on its Depression_C: Cognitive subscale.

- The variable of *anxiety* was measured by the PAI (Morey, 1991) Anxiety Clinical Scale.

- The variable of *percent of time spent in solitary confinement* refers to the time the inmate spent in solitary confinement divided by the overall time spent in the system.

- The term *interaction effect* was used as defined by Field (2013); that is, as the statistical term of the combined effect of two predictor variables.

- The term *moderator*, was used as was also used by Field (2013) to refer to a third variable that influenced the strength of the relationship between another two variables.

Assumptions

As stated above, the current dissertation used an archival database. The database was created by Dr. Scott Duncan, a licensed psychologist, while he was carrying out court-ordered psychological testing of male incarcerated individuals in the U.S. federal prison system as part of their pretrial evaluation (S. Duncan, personal communication, August 23, 2014). After their conviction, the examinees were followed over their years of incarceration, and information from the electronic prison psychological files was also added to the database. Based on the information that Dr. Duncan has provided, it is assumed that the dataset consisted of valid and reliable information on the mental health condition of the subjects. The use of unreliable data in the current research would pose a significant threat to the validity of the study; thus, it would result in the findings being flawed.

Scope and Delimitations

The scope of the current research study was limited to the understanding of the relationship between psychopathy, mental illness, and suicide in the U.S. male offender population. Scientific research has yielded a significant relationship between impulsive personality traits and suicidal behavior (Negredo et al., 2013). Previous research has

found that depression and the feeling of hopelessness are among the most common risk

factors associated with self-harming behavior and suicide attempts (Mandracchia &

Smith, 2015; Tuisku et al., 2014; Wilcox et al., 2012). Van Orden et al. (2010) argue that

past research has yielded a significant relationship between suicidal behavior and mental

and physical illness, history of suicide attempts, and social isolation. Social isolation

increases the likelihood of developing the feeling of hopelessness which is a contributing

factor to the development of depression (Tarrier et al., 2013). When investigating the

relationship between suicide and psychopathic traits, these aspects must be considered in

the research. As mentioned above, the study followed an archival quantitative research

design, and therefore the available data determined the scope of research.

Mann's theory of suicidal behavior considered diatheses factors such as mood

disorders and impulsivity to be related to the development of suicidal behavior (Mann,

Waternaux, Haas, & Malone, 1999). Information on these factors was available in the

database; therefore, this theory was able to guide the current research. However, Joiner's

Interpersonal Theory of Suicidal Behavior (van Orden et al., 2010) has also been found in

previous research to be appropriate to describe suicidal behavior in the offender

population (Mandracchia & Smith, 2015). In his theory, Joiner asserted that when

attempting suicide, people need to have the acquired capability to commit suicide; that is,

they need high pain tolerance and fearlessness of pain (Wachtel et al., 2015). As

Mandracchia and Smith (2015) indicated, Joiner identified three factors that are related to

suicide. These factors are thwarted belongingness (difficulties in establishing personal

relationships), perceived burdensomeness (feeling of being a burden on others), and the

above-mentioned perceived capability to commit suicide (Van Orden et al., 2010). Due

to the physical isolation from previous social systems and the elevated costs incarceration

creates for the inmates' families, friends, and the society at large, inmates are at elevated

risk for thwarted belongingness and perceived burdensomeness, respectively

(Mandracchia & Smith, 2015). Therefore, the theory would have been able to provide a

solid framework for this study. However, the archival database that this study used did

not contain information on thwarted belongingness, perceived burdensomeness, or

perceived capability to commit suicide. Due to the lack of such data, despite the general

usefulness of the theory in guiding research on the topic of suicide among the

incarcerated population, I have not addressed this theory in the current study.

Fazel, Grann, Kling, and Hawton (2011) found male prisoners to be more

vulnerable to committing suicide than females. Also, because the database consisted of

data gathered from male individuals, the scope of this research was limited to this

population and females were not included in the investigations. The potential

generalizability of the findings is therefore limited.

Limitations

The current dissertation used an archival database as its data source. Non-

experimental archival studies are not able to detect a causal relationship among the

variables; thus, the results could only be interpreted as a correlational relationship.

Another limitation of the research design is that when using an archival database, this

methodology does not allow personal involvement in the process of data collection; thus,

some information may not be readily available. Due to the nature of using archival data

in the study, in some cases only proximate data were available or not enough data were available on a particular variable of interest for use in the analysis. However, such data were appropriate to be used in the research, and only the scope of the study had to be modified accordingly.

Another limitation of the current study is that the data were collected only from male individuals, and thus gender effect could not be examined. As a consequence, generalizing the research findings to other populations was not possible. Furthermore, both the PCL-R and the PAI, the psychological measurement tools whose results I included in this study, are self-report measures. The results of self-report measures are subject to responder bias; however, the test results were administered by a trained psychology professional that mitigated the problem.

Significance

According to Wachtel et al. (2015), the tenth leading cause of death in the U.S. population is suicide, regardless of age and gender. Furthermore, suicide is also among the most common causes of death in the prison inmate population in the United States (Mandracchia & Smith, 2015). At the same time, professionals responsible for suicide prevention in the prison system face several problems. For example, Swogger, Van Orden, and Conner (2014) argued that suicidal ideation is higher in the forensic population than in the general population. However, Mandracchia and Smith (2015) found that suicidal ideation and actual suicide attempts remain underreported in prison settings. This is one of the reasons why conducting research in order to identify common risk factors of suicide and suicide attempts is of critical importance in order to help

professionals working with the prison inmate population to better address the issue of suicide prevention.

This study intended to fill a gap in current scientific research about the relationship between the levels of psychopathy and suicidality in the mentally ill U.S. federal prison inmate population. This research is of significant importance because it addressed the currently under-researched problem of suicidality within the inmate population by focusing on offenders with mental illness. Although suicide is one of the most frequent public health concerns in U.S. prisons (Smith et al., 2013), the problem of suicidality within mentally ill inmates population who also scored high on psychopathic traits - is currently under-researched in the scholarly literature (Negredo et al., 2013).

The results of this study can inform professionals working with this population about how to assess and mitigate the risk of suicide for these individuals. The results of this study contribute to social change because they inform professionals working with inmates who score high on psychopathic traits and have been diagnosed with mental illnesses to better understand what leads to suicide in this population. The findings of the study enable mental health professionals to develop and implement efficient suicide prevention programs for this population.

Furthermore, family members of the incarcerated offenders who attempt suicide can also be positively affected by the research findings. Also, as suggested by Hales et al. (2015), it is likely that fellow inmates of offenders who attempt suicide can benefit from these research findings.

Implications for Positive Social Change

   This study was intended to contribute to positive social change in many ways. First, it could help the work of mental health professionals who work with the mentally ill prison inmate population. As stated above, the results inform them about how to assess and mitigate the risk of suicide for these individuals. Smith et al. (2013) asserted that currently suicide is among the most significant public health problems in prisons in the United States. The results of this study provided information that was necessary to better understand what contributes to an elevated risk of suicide in mentally ill offenders who exhibit psychopathic traits. The findings helped identify factors that contribute to suicide in this population; thus, when mental health providers assess inmates for risk of suicide, they can be better informed about what factors they need to pay special attention to in their assessment.

   Treatment programs for this population can become more effective because the underlying constructs of committing suicide are now better understood; thus, the treatment programs can more specifically target factors that strongly contribute to the development of suicidal behavior in individuals with elevated psychopathic traits. The results can also support the development of suicide prevention programs in correctional institutions. With the help of the findings of this research, such programs may become more effective, meaning that more lives can be saved. The results may contribute to the development of better mental health care for the prison inmate population who score high on psychopathic traits and also exhibit mental disorders.

Other parties who might also benefit from the findings of this research are the family members and friends of the incarcerated offenders who attempt suicide and, according to Hales et al. (2015), fellow inmates who have contact with inmates who attempt or commit suicide.

Summary

The current dissertation investigated the relationship between psychopathic traits and suicidality in the mentally ill male offender population. As described in this chapter, suicide is a significant issue in the incarcerated population. Furthermore, individuals who exhibit psychopathic traits are disproportionately represented in the correctional justice system. However, despite these facts, only a limited amount of research exists on this topic. This is the gap I wanted to fill with my current dissertation.

In order to answer the research question to what extent does psychopathy impact suicidality in incarcerated individuals, a standard multiple regression test was used. The theoretical framework that supported the current study was Mann's diathesis-stress model according to which a significant relationship exists between mood disorders and the development of suicidal behavior (Mann et al., 1999).

As with every research study, the current dissertation has strengths as well as weaknesses that needed to be considered while conducting the study and interpreting its results. How these weaknesses were addressed in this study is discussed above in the current chapter. Despite these limitations in the study, the findings of the dissertation can contribute to social change in a way that advances currently available scientific knowledge in the field of forensic psychology.

This study is intended to contribute to positive social change in many ways. First, it could help the work of mental health professionals who work with the mentally ill prison inmate population. Smith et al. (2013) assert that currently suicide is among the most significant public health problems in prisons in the United States. The results of this study yielded information that is necessary to better understand constructs that contribute to an elevated risk of suicide in mentally ill offenders who exhibit psychopathic traits. The findings can help identify factors that contribute to suicide in this population; thus, when mental health providers assess inmates for risk of suicide, they can be better informed about what factors they need to pay special attention to in their assessment.

Treatment programs for this population can also become more effective because the underlying constructs of committing suicide are now better understood; thus, the treatment programs can more specifically target factors that strongly contribute to the development of suicidal behavior in individuals with elevated psychopathic traits. The results can also support the development of suicide prevention programs in correctional institutions. With the help of the results of this research, such programs may become more effective, meaning that more lives can be saved. The results may contribute to the development of better mental health care for the prison inmate population who score high on psychopathic traits and also exhibit mental disorders.

Other parties who might also benefit from the findings of this research are the family members and friends of the incarcerated offenders who attempt suicide and, as suggested by Hales et al. (2015), fellow inmates who have contact with inmates who attempt or commit suicide.

In this chapter, I provided an overview on the topic of the current research study. The next chapter contains a description and a summary of current scientific knowledge on the topic of the development of suicidal behavior in the male psychopathic incarcerated population. Chapter 2 also contains information on the theoretical foundation of this research study and explains how the theory was used to help make predictions and in interpreting the results of the study.

Chapter 2: Literature Review

Introduction

It appears that a significant relationship exists between psychopathic traits, suicidal behavior, and suicidal ideation (Negredo, Melis, & Herrero, 2013; Swogger, Walsh, Homaifar, Caine, & Conner, 2012) and also between mental illness and suicidality (Gunter, Chibnall, Antoniak, Philibert, & Black, 2013). However, only a limited number of research studies have examined the relationships between psychopathy, suicidal behavior, and suicidal thoughts among the mentally ill incarcerated offender population (Negredo et al., 2013). The main purpose of this research was to describe the relationship between the levels of psychopathy and suicidal behavior among the mentally ill male prison inmate population. The relationship between the levels of psychopathy and suicidal behavior, according to Negredo et al. (2013), is under-researched, and the available research results are not conclusive. This is the deficiency in current research that this study has aimed to make up for.

The relevance of the research problem is reflected in current research. Suicide is among the most significant current public health problems in prisons in the United States (Smith, Selwyn, Wolford-Clevenger, & Mandracchia, 2013) because prison inmates are more likely to engage in suicidal behavior than individuals in the general population (Pennington, Cramer, Miller, & Anastasi, 2015). Furthermore, the number of inmates diagnosed with mental illness is ever increasing (Gunter, Chinball, Antoniak, Philibert, & Hollenbeck, 2011). The prevalence of serious mental illness among the prison inmate population is higher than in the general population (Senior et al., 2013).

However, evidence suggests that proper mental health care is not available for the prison inmate population (Deslich, Thistlethwaite, & Coustasse, 2013). Mental illnesses therefore remain untreated in inmates. Current research has yielded a significant relationship between depression and the development of suicidal behavior (Price, Salekin, Klinger, & Barker, 2013). According to Negredo et al. (2013), scientific research on the relationship between the levels of psychopathy and suicide in the mentally ill prison inmate population is limited to a small number of studies, and the findings are not conclusive.

Cleckley (1988) conceptualized psychopathy for the first time in scientific literature in 1941. According to his views, the main characteristics of psychopaths were the deficits in their emotion processing and interpersonal abilities. He found that psychopathic traits serve as protective factors, protecting people from engaging in suicidal behavior. However, contemporary research found evidence contradicting this tenet (Negredo et al., 2013). An extensive number of research studies are available in the current scientific literature investigating the relationship between the levels of psychopathy and the development of suicide in people (Dhingra, Boduszek, Palmer, & Shevlin, 2014; Gunter et al., 2013; Gunter et al., 2011). Contrary to Cleckley's views, these research findings suggest a statistically significant, positive relationship between psychopathic personality factors and the development of suicidal behavior, suicidal ideation, and self-harming behavior.

This chapter provides an overview of related scientific literature which constituted the background for this dissertation and formed the conceptual framework upon which

the current study was developed. The reviewed articles and studies were retrieved from several databases in the Walden University Library. The literature review focuses on (a) suicide within the incarcerated offender population, (b) mental illness and suicide in offenders, (c) the construct of psychopathy, (d) the development of the Psychopathy Checklist-Revised psychological measurement instrument, (e) Mann's diathesis-stress model of suicide and the theoretical approach used to provide a framework for this research study, and (f) the current state of scientific research on the relationship between psychopathic personality traits and suicide.

Literature Search Strategy

The literature review includes information obtained from various books and articles retrieved from the following online search databases: PsychINFO, PsychARTICLES, PsychTESTS, ERIC, SAGE Premier, ProQuest Central, and Mental Measurements Yearbook with Tests in Print. Further searches on the Internet using Google Scholar were also conducted in order to identify seminal and current peer-reviewed articles and other scholarly works that were not available within the Walden Library. Search criteria included peer-reviewed full text articles published between 2012 and 2016 for the majority of the sources used in the study. In addition, keyword searches were conducted on the Internet using the following terms: *psychopath, psychopathy, offender, prison, jail, mental illness in prison, mentally ill offender, theory of suicide, suicide theories, suicide in prison, PCL, PCL-R, PCL-R Factor1, PCL-R Factor 2, psychopathy checklist-revised, primary psychopathy, secondary psychopathy, hopelessness, social isolation, depression, anxiety, diathesis-stress model of suicide*

behavior, Mann's theory of suicide, and combinations of those. Based on the results of these searches, further searches were completed using the reference lists from these articles.

Suicide Within the Incarcerated Offender Population

Going to prison is a major transition in people's lives and such major transitions affect offenders in many different ways (Slade & Edelman, 2014). Imprisonment has been shown to have negative mental and physical health consequences for the offenders (Doty, Smith, & Rojek, 2012). The consequences are reflected, among others, in the high suicide rates among prisoners. According to the World Health Organization (WHO, 2007), suicide rates have also been increasing in prisons where the number of inmates has decreased. In the United States, the number of inmate self-inflicted deaths in prisons is increasing every year (Bureau of Justice Statistics [BJS], 2015).

Suicide is a significant problem in jails and prisons, accounting for 34% of inmate deaths in jails and 5.45% of inmate deaths in state prisons in 2013 (BJS, 2015). The BJS (2015) found suicide to be a serious risk among incarcerated offenders in the 21st century, and the number of deaths both in jails and state prisons has increased from 2010 to 2015. Suicide is the leading cause of death in local jails, and its rate has increased by 14% from 2012 to 2013 (Bureau of Justice Statistics, 2015). These statistics present a pressing need to better understand the underlying risk factors that influence suicidal behavior among the incarcerated offender population and to better inform professionals engaged in suicide prevention and the assessment of inmates for suicide.

The prison inmate population is more at risk of suicide when compared with the general population in the United States (Rivlin, Fazel, Marzano, & Hawton, 2013) and also internationally compared to male prison populations in other countries (Fazel, Cartwright, Norman-Nott, & Hawton, 2008). In the male incarcerated offender population, the suicide rate is about three times higher than in the general population (Fazel, Grann, Kling, & Hawton, 2011). The reasons for that are multifaceted. Many factors that elevate the risk of suicide in the prison environment are different from those in the general society in many ways (Barker, Köles, & De Leo, 2014). Criminal offenders inherently have more risk factors for suicidal behavior when compared with people in the general population (WHO, 2007). Another significant difference is that the loss of important social connections will likely increase offenders' vulnerability to committing suicide (Fazel et al., 2008; WHO, 2007).

The development of suicidal behavior depends on demographic factors such as ethnicity and gender, criminological factors, and also clinical factors (Fazel et al., 2011). Demographic factors such as male gender, white ethnicity, and being married were found to be significant factors associated with risk for suicide in the incarcerated offender population (Fazel et al., 2008). Furthermore, criminological factors and psychiatric characteristics are equally important in explaining the high ratio of the development of suicidal behavior in the prison inmate population (Fazel et al., 2011). Among the criminological factors that were found to be associated with suicide are the occupation of a single cell, being a detainee or in detention under remand, or serving a life sentence (Fazel et al., 2008).

In 2007, the WHO, together with the International Association for Suicide Prevention, released guidelines in their publication titled *Preventing Suicide in Jails and Prisons*. In this publication, the WHO pointed out that suicide in custodial settings does not only affect the inmate population, but also the officers and health care professionals who are responsible for the safety of inmates. Also, due to media coverage, such incidents can escalate into a political scandal. However, Barker et al. (2014) argued that despite the professional awareness of the need for evidence-based effective preventive programs, the American correctional system still lacks knowledge on this topic that would help to significantly reduce the number of suicidal activities within the prison inmate population. Furthermore, Fazel et al. (2008) suggested that risk factors for suicide within the prison inmate population differ from those in the general population. The authors found that these differences were due to the unique environmental and criminological issues that the inmate population experiences, and that suicide prevention strategies in this population had to be based on empirical evidence.

Mental Illness and Suicide in Offenders

Psychiatric factors are also significant contributors to the development of suicidal behavior. Peterson and Collings (2015) found that around 90% of people who commit suicide suffer from some kind of mental illness. The authors found that having a diagnosis of mental illness increased the risk of suicide 20 to 40 times when compared with individuals without such a diagnosis. It is estimated that over 25% of all offenders suffer from severe mental illness (Morgan et al., 2012). Clinical factors such as

psychiatric diagnosis of depression and drug abuse have been found to be significant contributing risk factors of suicide in the prison inmate population (Fazel et al., 2008).

Slade and Edelman (2014) found that over 65% of incarcerated offenders have a diagnosis of at least one personality disorder, and around 18% of inmates exhibit a major mental illness. Fuehrlein, Jha, Brenner, and North (2014) argued that there are three times more mentally ill people incarcerated in U.S. prisons than are treated in psychiatric hospitals and that 40% of people diagnosed with a serious mental illness have been incarcerated at some point in their lives. Psychiatric disorders such as depression and personality disorders are more prevalent among incarcerated offenders than in the general population (Fazel & Seewald, 2012). Furthermore, mental disorders are significantly related to suicidal behavior (Daigle & Naud, 2012; Fazel & Seewald, 2012). Also, inmates who commit suicide are not only more likely to be diagnosed with mental illness, but also exhibit more aggression and violence than those inmates who do not engage in suicidal behavior (Doty et al., 2012).

Major depression was found in around 10% of male imprisoned offenders and the prevalence of the disorder exhibits an increasing tendency over time (Fazel & Seewald, 2012). However, there is a deficiency in the availability of mental health professionals in prison settings, and thus, they are not able to provide proper health care services that would meet the basic needs of inmates (Fuehrlein et al., 2014). Depression and anxiety are more prevalent among prisoners than in the general population. Because inmates lack proper mental health care, these disorders remain untreated (Deslich et al., 2013).

Offenders with serious mental illness are often impaired in their ability to cope with stress stemming from the nature of life in prison (Metzner & Fellner, 2010). This and the fact that mentally ill prisoners are often placed in single cells elevate the risk for suicide in the incarcerated offender population (Fazel et al., 2008). Also, a significant number of offenders who are placed in solitary confinement exhibit serious mental illnesses such as anxiety, depression, paranoia, and psychosis; at the same time, mental health services are restricted for offenders in segregation (Metzner & Fellner, 2010).

Anxiety and depression are among the most prevalent mental health disorders and share common features such as cognitive biases, low level of positive affect, and interpersonal difficulties (Davidson, Wingate, Grant, Judah, & Mills, 2011). Furthermore, these disorders represent an increased risk for the development of suicidal ideation and actual suicide (Randall et al., 2014; Thibodeau, Welch, Sareen, & Asmundson, 2013). Previous research found that people diagnosed with comorbid major depression and anxiety are more likely to have high levels of suicidal ideation, to attempt suicide, and to have a prepared plan for suicide than individuals without such diagnoses (Davidson et al., 2011).

Psychopathy

Psychopathy is a highly prevalent mental disorder in every society; it is twice as common as, for example, the occurrence of schizophrenia (Kiehl & Hoffman, 2011). It can be found in industrialized as well as in preindustrial countries, suggesting that the disorder is not culture-specific; psychopaths can be found across all cultures (Kiehl & Hoffman, 2011; Umbach, Berryessa, & Raine, 2015). Being able to identify with other

people's feelings and thoughts has undoubtedly some cultural aspects; however, this the

moral reasoning that is missing in psychopaths (Kiehl & Hoffman, 2011).

Studying psychopathy has been helpful in research in several fields of behavioral

sciences such as avoidance learning, social interactions, emotion processing, and the

development of criminal behavior (Müller, 2010). Being able to conceptualize

psychopathy accurately is of critical importance for many reasons. Research found

prison inmates with high psychopathic traits to be disproportionally responsible for crime

and violence and, in the general population, for problematic interpersonal relationships

and also for distress in professional fields (Anderson, Sellbom, Wygant, Salekin, &

Krueger, 2014). Due to these individuals' diminished ability to manage the challenges of

modern society, the number of research studies on psychopathy has increased over the

past decades (Hare, 2016; Kiehl & Hoffman, 2011; Müller, 2010).

Psychopathic Personality Disorder

The construct of psychopathy was first described by Hervey Cleckley in his

monograph, *The Mask of Sanity,* in 1941 (Crego & Widiger, 2016). Crego and Widiger

argued that the current clinical conceptualization of psychopathy is based on the seminal

work of Cleckley. Guided by Cleckley's early conceptions of psychopathy, Hare

developed his instrument in order to conceptualize psychopathy (Vitacco, Neumann, &

Jackson, 2005).

Cleckley identified 16 characteristics that were typical for psychopaths, one of

which was intelligence (Watts et al., 2016). However, their high intellectual abilities are

debated by researchers because these individuals often engage in seemingly unwise

behaviors (Hare & Neumann, 2008). Such conflicting issues like the lack of consistent associations between psychopathy and high intelligence stem from the significant differences in the currently used conceptualizations of psychopathy.

Gawda (2013) found that, in scientific literature, individuals with psychopathy are typically characterized as individuals who are exhibiting deficits in their processing of emotional stimuli. They are not capable of evaluating past experiences, have no insight into emotions, and have only a weak ability to practice emotional control. Furthermore, they are also unable to process complex emotions such as respect and guilt. Psychopathy, similar to other personality disorders, has an early onset in the individual's life, and has a lasting effect on the person's long-term functioning, which results in social dysfunction (Fulero, 1995).

Psychopathy is a composite disorder (Dutton, 2012). It consists of a combination of personality traits from multiple dimensions (Watts et al., 2016). There are several measurement tools used by researchers to assess psychopathic traits in people. Such measures include the PCL-R, the Personality Assessment Inventory Antisocial Features scale (PAI ANT), the Psychopathic Personality Inventory – Revised (Lilienfeld & Widows, 2005), and the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995).

Factor analysis of tools measuring psychopathy yielded two to four broad factors of psychopathy (Watts et al., 2016). Factor 1 incorporates interpersonal and affective personality traits, such as superficial charm and callousness. Factor 2 includes antisocial personality traits and lifestyle traits, such as impulsivity and irresponsibility. Criminality

belongs to this factor, too. Scientific literature referred to personality traits included in Factor 1 charateristics as primary psychopathic traits and personality characteristics included in Factor 2 characteristics as secondary psychopathic traits (Thompson, Ramos, & Willett, 2014).

The American Psychiatric Association (APA) considers antisocial personality disorder (ASPD) and psychopathy to be strongly correlated (Storey, Hart, Cooke, & Michie, 2016); therefore, psychopathy personality disorder is not included in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013). However, most people who meet the DSM criteria for ASPD do not necessarily meet the criteria for psychopathy in terms of scoring at or above the cut-off point on the PCL-R (Loomans, Tulen, & van Marle, 2015). The difference between the two constructs is that psychopathy is also characterized by deficits in affective-interpersonal facets, while ASPD is not. Thompson et al. (2014) argued that personality traits such as superficial charm and glibness, grandiose sense of self-worth, proneness to boredom, and parasitic lifestyle are only characteristics of psychopathy conceptualized by the PCL-R, but are not considered in the diagnosis of ASPD when assessed by the DSM-5.

The construct of ASPD can be considered as psychopathy with added emotion (Dutton, 2012) and the two constructs cannot be considered to be the same. Acknowledging this deficiency, the current DSM-5 in Section III (Emerging Measures and Models) provided a new personality disorder model, making the diagnosis of people with psychopathic traits more flexible and the ASPD construct more useful for

characterizing people with psychopathic traits (Anderson et al., 2014). The Section III

model no longer classifies personality disorders as categorical but instead emphasizes the

dimensional traits of personality disorders in its classification system.

Anderson et al. (2014) found that the *DSM-5* Section III model associated ASPD

with psychopathy to a higher extent than the previous *DSM-IV* manual. This greater

association between the facet profile of ASPD and psychopathy is due to the *DSM-5*

emphasizing personality characteristics and no longer the behavioral aspects of the

disorder (Anderson et al., 2014). However, Crego and Widiger (2014) asserted that the

PCL-R is much more tightly linked to Cleckley's conceptualization of psychopathy than

either edition of the DSM, including the current *DSM-5*.

Even though individuals with psychopathic traits do not necessarily become

criminals, empirical research yielded a connection between psychopathy and the

development of serious criminal behavior, violence, high criminal relapse rates, and poor

treatment response (Dhingra & Boduszek, 2013; Müller, 2010, Storey et al., 2016). Thus,

assessing for psychopathy became a frequent practice in criminal risk assessment. A

thorough understanding of the construct of psychopathy in a forensic context helps

researchers in the behavioral sciences to better understand dysfunctional human behavior

and its influence on society at large. Müller (2010) also argued that the currently most

widely used conceptualization of psychopathy is the PCL-R constructed by Hare. Hare

aligned his measurement tool with Cleckley's criteria of psychopathy. In his work, he

intended to retain the essence of the construct that Cleckley had developed (Hare, 1986).

Psychopathic Offenders

Psychopathy is described as a personality disorder characterized by emotional deficiencies and antisocial behavior (Erickson & Vitacco, 2012). The law holds psychopaths responsible for their criminal activities because they are acting rationally and have well-functioning cognitive abilities as understood by law so that they can be held responsible for behavior which violates the law (Erickson & Vitacco, 2012). Erickson and Vitacco (2012) established a relationship between psychopathy and criminal behavior and episodes of incarceration.

Sifferd and Hirstein (2013) argued that current scientific literature differentiates between successful psychopaths and unsuccessful psychopaths. Successful psychopaths have little to no criminal record, whereas unsuccessful psychopaths have a criminal record. For the purpose of this research, the focus was on the population of the so-called unsuccessful psychopaths.

In the general American population, only around 1% of people meet the criteria for psychopathy (Erickson & Vitacco, 2012; Kiehl & Hoffmann, 2011; Neumann & Hare, 2008). However, among the prison inmate population they are disproportionately represented; they make up 15-20% of all incarcerated individuals (Anderson et al., 2014; Erickson & Vitacco, 2012; Woodworth & Porter, 2002). Furthermore, 93% of male unsuccessful psychopaths above 18 years of age in the United States are convicted criminals currently imprisoned, on parole, or on probation (Kiehl & Hoffman, 2011). Also, Declercq, Willemsen, Audenaert, and Verhaenghe (2012) argued that individuals diagnosed with psychopathy are responsible for a disproportionately excessive amount of

violent crimes when compared with offenders without psychopathy. Furthermore, psychopaths were not only found to be significantly more likely to engage in predatory violence such as homicides but also to show a higher level of instrumentality in such crimes when compared with non-psychopaths (Declercq et al., 2012; Woodworth & Porter, 2002). These data account for an increased level of interest within modern research in studying the construct of psychopathy.

Previous research has found offender scores attained on the PCL-R to be related to the development of violent behavior, sex crimes, revocation of parole, criminal recidivism, substance abuse, poor participation in psychotherapeutic programs, and to poor response to treatment (Dhingra & Boduszek, 2013; Kiehl & Hoffman, 2011; Pujara, Motzkin, Newman, Keihl, & Koenings, 2014). The psychopathic personality disorder has been found highly relevant to the criminal justice system; therefore, the construct of psychopathy has been identified as a risk factor for the development of criminal behavior (Declercq et al., 2012).

Academic research yielded a positive relationship between scores obtained on the Factor 2 social deviant behavior scale, and within this factor, the facet 4 antisocial behavior subscale of the PCL-R, and violent behavior (Camp, Skeem, Barchard, Lilienfeld, & Poythress, 2013). Kiehl and Hoffman (2011) argued that 90% of individuals who score high on psychopathic traits recidivate in committing violent crimes while this ratio is only about 40% among individuals who score low on psychopathic personality traits. Furthermore, Kiehl and Hoffman explained that $460 billion per year is the cost of the American criminal justice and correctional system associated with

psychopathic offenders, which does not even include the costs of treatment of psychopaths in psychiatric hospitals.

Another problem, as listed above, is the treatment of psychopathy. Psychopathy does not seem to be treatable, and also some kinds of treatment can even deepen some problems (Kiehl & Hoffman, 2011). Kiehl and Hoffman (2011) argued that adult psychopathic offenders who participated in group therapy showed a higher recidivism rate than those who did not receive any therapy at all. However, the authors argued that there are also promising results with regards to treatment of psychopathic individuals, mostly juveniles. One such promising type of treatment is the so-called decompression treatment which concentrates on the slow methodological rebuilding of the absent social connections in psychopaths (Kiehl & Hoffman, 2011). Due to the high criminal justice costs of dealing with psychopathic offenders, even such expensive and long-lasting treatments seem to be cost-effective; therefore, even the decompression treatment program can be economically beneficial (Kiehl & Hoffman, 2011).

The Development of the Psychopathy Checklist-Revised

For the purpose of this study, I used the concept of psychopathy as defined by the PCL-R (2nd edition). The measurement tool has been developed over several decades from its first version into the version that is used today. The PCL-R today provides clinicians with a model that can explain a wide range of correlations with regards to the construct of psychopathy (Hare, 2016). In the criminal justice system, the use of the PCL-R is currently increasing at a rapid rate (Hare, 2016). The development of the scale is described below.

Psychopathy Checklist

The Psychopathy Checklist (PCL) measurement instrument was first developed by focusing on the assessment of criminal offenders (Hare, 1980). When developing the PCL, Hare refined the criteria that Cleckley outlined in 1941 (Hare, 1980). Hare found a need for developing a conceptual framework for the ratings of psychopathic traits as reflected in Cleckley's seminal work (Crego & Widiger, 2016). Without a valid and reliable measure of psychopathy that is generally accepted within the scientific community, it was impossible to compare research results (Hare & Neumann, 2006).

By developing the PCL scale, Hare's intention was to provide an operational definition for the construct of criminal psychopathy (Hare, 1980). Hare did not find the antisocial personality disorder *DSM-III* classification satisfactory and useful for diagnosing people with psychopathic traits. The reason for this is that the *DSM* focused only on antisocial behavior assuming that professionals were not able to gain valid and reliable information on interpersonal and affective personality traits (Fulero, 1995). The PCL, in contrast to the DSM system, does not only focus on the social deviance aspects of psychopathy, but also considers the affective and interpersonal traits in the individual (Hare, Hart, & Harpur, 1991).

Other inventories available at that time, such as for example the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Telleger, & Kaemmer, 1989) and the California Psychological Inventory (Gough, 1957), were proven to be unreliable measures of psychopathy due to the possibly distorted nature of self-reported data, inadequate assessment of interpersonal and affective personality traits, and

its lack of correlation with the clinical diagnosis of psychopathic personality disorder (Fulero, 1995). In order to address this problem, Hare constructed the PCL research scale. The PCL consisted of 22 personality and behavioral items (Hare et al., 1990). The PCL provides quantitative scores with regards to the individual's degree of psychopathy. The assessment procedure consists of both interview and file information (Hare et al., 1990).

The PCL became highly popular among researchers following its first publication. Professionals related PCL scores to other constructs, such as to violence, recidivism rate of offenders, and also to offenders who were mentally ill (Fulero, 1995). The PCL became a key assessment tool both in clinical and research practices (Hare & Neumann, 2006).

Psychopathy Checklist - Revised

Based upon the extensive professional experience with the PCL, Hare revised his instrument and developed the PCL-R (Hare, 1991). The PCL-R was developed in order to refine the scoring system of the PCL and fine-tune the item descriptions. Hare provided more explicit instructions to professionals with regards to the scoring process and also extended many item descriptions and deleted two items from the initial PCL instrument (Fulero, 1995). Item 2, *Previous diagnosis as a psychopath or similar*, and Item 22, *Drug and alcohol not direct cause of antisocial behavior*, were deleted, reducing the 22-item PCL to a 20-item scale (Hare & Neumann, 2006). The reason for deleting these items was not only the difficulty in measuring them but also that these items showed only low correlations with the PCL total score (Hare et al., 1990).

Hare changed the specific term of Item 6 *Irresponsible behavior as a parent* to the more general term of *Irresponsibility* and modified its scoring procedure (Hare & Neumann, 2006). Also, with regards to changes in the scoring system in the PCL-R, more extreme instances were now required to score for presence of deviant behavior when compared to the previous PCL (Hare et al., 1990). The item descriptions were more detailed than previously.

An extensive and consistent body of research has been conducted by using Hare's measure of psychopathy (Fulero, 1995); therefore, in order to sustain continuity in research, it was of great importance that the new version of the instrument does not substantially differ from the PCL (Hare et al., 1990). Hare et al. (1990) argued that the changes in the PCL-R do not affect the psychometric properties of the measurement and that the results of research using the PCL can be generalized to the PCL-R. Researchers concluded that both the PCL and the PCL-R measure the same construct and yielded identical results (Hare et al., 1990; Hare & Neumann, 2006).

Psychopathy Checklist – Revised (2nd Edition)

The currently used version of the instrument is the PCL-R (2nd edition) which Hare developed in 2003 (Hare & Neumann, 2006). The current international scientific community considers the PCL-R (2nd edition) to be the most widely used criteria structure, both in research and in application to the criminal justice system, and is often described as the gold standard for assessing psychopathy traits (Hare, 2016; Müller, 2010; Negredo et al., 2013). Hare and Neumann (2006) argued that the PCL-R (2nd

edition) did not involve substantive changes to the previous scale. No new items were added and the scoring criteria also remained the same.

The major difference between the first and the second edition of the PCL-R is that, by now, due to the large number of published articles on psychopathy using the PCL-R, a large amount of data exists that can be organized into comparison tables (Hare & Neumann, 2006). Similarly, possible sources of information needed to score each item are also available, together with descriptive statistics and validation data, for selected groups in the PCL-R (2nd edition) manual (Hare, 2003). With the inclusion of the additions, the PCL-R (2nd edition) became three times as large as the previous first edition (Hare & Neumann, 2006). However, being familiar with contemporary research results is still the professional's responsibility.

Many researchers have found the PCL-R (2nd edition) to be a valid measurement tool to predict violence, recidivism, and institutional misbehavior in the offender population (Hare & Neumann, 2006; Wilson & Yardley, 2013). The PCL-R is now validated in many populations, including but not limited to male and female offenders (Warren et al., 2005), African American offenders (Neumann & Hare, 2008), drug abusers (Rutherford, Alterman, Cacciola, & McKay, 1997), and sex offenders (Hare & Neumann, 2006). It has also been validated on offenders in many countries (Hare, Clark, Grann, & Thornton, 2000), such as Sweden (Grann, Längström, Tengström, & Kullgren, 1999) and Germany (Dahle, 2006); thus, results obtained by using the PCL-R have cross-cultural generalizability.

Hare and Neumann (2006) stated that the PCL-R (2nd edition) is a four-factor model of the psychopathy construct. The scale can be divided into two broad dimensions: Factor 1 (primary psychopathic traits) and Factor 2 (secondary psychopathic traits), within which four more specific facets can be identified: the interpersonal, affective, lifestyle, and antisocial facets (Hare, 2016; Hare & Neumann, 2006). These four facets represent interrelated domains of psychopathy describing the structure of the construct (Flores-Mendoza, Alvarenga, Herrero, & Abad, 2008; Hoppenbrouwers, Neumann, Lewis, & Johansson, 2015). Interpersonal and affective traits constitute primary psychopathic traits, while lifestyle and antisocial traits make up secondary psychopathic characteristics (Hare & Neumann, 2006).

Neumann, Johansson, and Hare (2013) described the items and factors in the PCL-R. Within primary psychopathic traits, items that belong to Facet 1, *Interpersonal traits*, are Item 1, *Glibness/Superficial charm,* Item 2, *Grandiose sense of self-worth*, Item 4, *Pathological lying*, and Item 5, *Conning/Manipulative*. Facet 2, *Affective dimension*, include Item 6, *Lack of remorse or guilt*, Item 7, *Shallow affect*, Item 8, *Callous/Lack of empathy*, and Item 16 *Failure to accept responsibility for own actions*. Within the secondary psychopathic traits, Facet 3 *Lifestyle* consists of Item 3, *Need for stimulation/Proneness to boredom*, Item 9, *Parasitic lifestyle*, Item 13, *Lack of realistic, long-term goals*, Item 14, *Impulsivity*, and Item 15, *Irresponsibility*. Lastly, Facet 4, the antisocial dimension of psychopathy, consists of Item 10, *Poor behavioral controls*, Item 12 *Early behavioral problems*, Item 18, *Juvenile delinquency*, Item 19, *Revocation of conditional release*, and Item 20, *Criminal versatility*. These four facets together are

needed to describe the complex structure of the psychopathic personality disorder
(Flores-Mendoza et al., 2008). The PCL-R describes the psychopathy construct as the
constellation of these personality traits and behaviors (Hare, Black, & Walsh, 2013).

Even though the PCL-R has not been developed to assess risk for offending but
rather to measure psychopathy as a clinical construct, the instrument has become the most
widely used measurement tool in the forensic arena (Hare, 2016). Hare (2016) argued
that the current PCL-R is one of the most frequently internationally used instruments in
violent risk assessment, risk management, and monitoring. Hare also argued that the
current PCL-R can assist mental health professionals when they engage in the assessment
and evaluation of psychopathic traits and behavior.

Mann's Diathesis-Stress Model of Suicide

The theory that supported my dissertation is Mann's diathesis-stress model of
suicide (Mann, Waternaux, Haas, & Malone, 1999). Diathesis-stress models, according
to O'Connor and Nock (2014), suggest that preexisting vulnerability factors for suicide in
people can be activated by stressful life events. Van Orden et al. (2010) found that
individuals attempting suicide are most often diagnosed with major psychopathology.
However, the presence of psychopathology is not a sufficient condition for attempting or
committing suicide (Gvion & Apter, 2011; Mann et al. 1999). On the one hand, most
individuals who attempt suicide are diagnosed with a psychiatric disorder; however, on
the other hand, most people with such disorders do not engage in suicidal behavior. This
suggests that diathesis plays a significant role in the development of suicidal behavior. In
the scientific literature, the concept of diathesis is described as a set of predispositional

factors, an antecedent that makes individuals prone to develop a disorder (van Heeringen, 2012).

According to van Heeringen and Mann (2014), Mann's diathesis-stress model suggests a significant relationship between mood disorders, pessimism, depression, and the development of suicidal behavior; therefore, risk assessment must consider several factors that represent susceptibility to the development of suicidal behavior. On the other hand, because most individuals presenting major psychopathology do not engage in suicidal behavior, there is a significant role of diathesis in addition to the presence of a mental illness in people (van Heeringen & Mann, 2014) who engage in suicidal behavior. Mann's diathesis-stress model of suicidal behavior considers not only the different risk factors but also their interactions, together with a diathesis as a distal risk factor that makes individuals prone to commit suicide when they experience a stressful situation (van Heeringen, 2012).

Mann's diathesis-stress model of suicidal behavior suggests that, when impulsive-aggressive personality traits are present in the individual, the person is more at risk of engaging in suicidal behavior than when these traits are not present (Mann et al., 1999). An individual who scored high on impulsive and aggressive personality traits is more at risk of attempting or committing suicide than those people who scored low on these traits, regardless of the presence of psychopathology (Gvion & Apter, 2011; Mann et al., 1999). These two personality traits are characteristics of psychopathy, and the Psychopathy Checklist-Revised (PCL-R; Hare, 1991) facet 3 and facet 4 subscales measure impulsive and aggressive personality traits, respectively.

According to Mann's model of suicidal behavior, the risk of attempting suicide is not solely determined by psychopathology but is also affected by a diathesis. Such a diathesis, according to O'Connor and Nock (2014), may be present in the form of (a) experiencing more suicidal ideation; that is, having suicidal thoughts but not acting on them and (b) exhibiting impulsive and/or aggressive personality traits that increase the risk for the person to act on suicidal ideations. Scientific research has also identified both aggressive and impulsive personality traits to be strong predictors of suicidal behavior (Gvion & Apter, 2011). McGirr and Turecki (2007) argued that, even though not all suicide attempts are associated with aggressive and impulsive personality traits, these traits nevertheless embody significant risk factors in individuals to develop suicidal behavior. According to Van Heeringen (2012), the stress-diathesis model also suggests that subjective depression and the feeling of hopelessness may serve as the stress component of the model. Looking at the diathesis to suicidal behavior as a continuous construct makes it possible for the model to explain the differences between individuals' suicidal behavior.

In the current research, I investigated the relationship between psychopathic personality traits and suicidal behavior in mentally ill offenders. In order to align the current study with Mann's theory, aggressive personality traits and impulsive personality traits were used as predictor variables in this research. According to Mann's diathesis-stress theory of suicide, these personality traits serve as diathesis components in the model. In order to be able to form hypotheses and interpret the results in the current research, Mann's theory of suicide provided the ultimate guidance for the study. In the

current research, I examined whether the psychopathic personality traits of impulsivity

and aggression, and psychopathology such as depression predict suicidal behavior in my

sample. Therefore, in this research, it was hypothesized that individuals who score

higher on these personality traits are more at risk to engage in suicidal behavior than

those who score lower on those factors. Furthermore, in the current study, as suggested

by the theory, it was also predictable that the diagnosis of depression (which focuses

especially on the cognitive symptoms of depression, that is, the thoughts of

worthlessness, hopelessness, and personal failure) would elevate the risk of suicide in this

population.

Suicidal behavior in Mann's theory is conceptualized as actual suicide that results

in death and attempted suicide that does not end with the death of the individual. For the

purpose of this study, data on suicidal behavior were obtained from prison medical files.

Impulsive and aggressive personality trait factors that the model uses for explaining the

development of suicidal behavior were provided by the PCL-R. Data on subjective

depression were provided by the PAI measurement instrument. Swogger, Van Orden,

and Conner (2014) found Mann's diathesis-stress model of suicidal behavior to be

capable of explaining the development of suicidal behavior in the high-risk population of

criminal offenders. Consequently, Mann's diathesis-stress model of suicidal behavior

provided an appropriate theoretical framework to support my study.

The Relationship Between Psychopathy and Suicide

In his early conceptualization of psychopathy, Cleckley (1988) stated that there

was an inverse relationship between psychopathy and suicidality. Cleckley argued that

psychopaths exhibit immunity from committing suicide. According to Cleckley's

conceptualization, psychopaths exhibit personality traits, such as poverty of emotions,

lack of ability to feel shame, egocentricity, superficial charm, lack of anxiety and guilt,

the lack of remorse, and immunity against punishment. Therefore, from this

conceptualization it follows that psychopaths are not prone to committing suicide

(Dutton, 2012).

Contradicting Cleckley's views, contemporary research has identified a

significant positive relationship between specific domains of psychopathy and suicidal

behavior in the offender population (Dhingra et al., 2014; Gunter et al., 2013; Gunter et

al., 2011; Verona, Patrick, & Joiner, 2001). Nonetheless, research regarding suicidal

behavior and suicidal ideation in people who score high on psychopathic traits measured

by the PCL-R is not conclusive. The research results are often contradicting each other

as described below.

In their seminal research, Verona et al. (2001) investigated the relationship

between antisocial personality traits measured by PCL-R Factor 2 scores and suicide

attempts among male offenders. Verona et al. identified a positive relationship between

the PCL-R total scores and male offenders' history of suicidal behavior. By assessing the

unique factors of the PCL-R, the authors have reported a positive relationship between

antisocial behavior (measured by the PCL-R Factor 2 scores) and suicide risk in their

sample. However, the authors have found neither interpersonal nor affective components

of psychopathy measured by the PCL-R Factor 1 scales (the core characteristics of

psychopathy that Cleckley has identified) to be related to suicidal behavior.

Douglas et al. (2008) replicated the research of Verona et al. (2001) and they reported largely consistent findings. Even though total PCL-R scores have not indicated a relationship with suicidal behavior, scores on the scale measuring impulsive and irresponsible traits have. Gunter et al. (2011) found that obtaining high total scores on the PCL-R predicted self-harming behavior without the intent to die. Furthermore, PCL-R Factor 2 scores which are related to antisocial lifestyle and impulsive personality traits predicted suicidal ideation in the participants. These findings were also in accordance with the early findings of Verona et al..

In accordance with these findings, Douglas et al. (2008) reported a significant relationship between suicidal behavior and the impulsivity and lifestyle characteristics of the psychopathy construct. However, contradictory to the work of Verona et al. (2001), both Douglas et al. and Smith et al. (2014) reported a small but reliable predictive effect of both interpersonal and affective personality traits on suicide. Furthermore, Smith et al. reported a weak positive relationship between primary psychopathy, depression, and suicidal ideation. Also, similarly to these research findings, Dhingra et al. (2014) found that individuals with higher scores on the affective domain of psychopathy measured by the PCL-R Factor 1/ Facet 2 scores were more prone to engage in suicidal behavior and also more at risk to self-harm. Participants scoring high on the interpersonal component of the PCL-R (measured on Factor 1/Facet 1 scales) were more at risk to develop suicidal behavior when compared with those individuals who scored lower on this component of psychopathy.

On the other hand, contradictory to the research findings of previous research (Douglas et al., 2008; Gunter et al., 2011; Verona et al., 2001), Dhingra et al. (2014) did not find a significant relationship between antisocial lifestyle factors (measured on Factor 2/Facet 4 scales) and the risk of development of suicidal behavior in their sample. Also, Swogger et al. (2012) did not find a significant relationship between the levels of overall psychopathic traits and the development of suicidal behavior or other acts of self-directed violence.

Gunter et al. (2013) found a significant relationship between levels of antisocial lifestyle and impulsivity, and the risk for the development of suicidal behavior in offenders in community correctional facilities. Similarly, Javdani, Sadeh, and Verona (2011) concluded that impulsive features of psychopathy predicted an elevated risk of suicide attempts in people in the general population. In particular, the authors found impulsive traits to be significant contributors to suicidal behavior even after controlling for depression. Also, Javdani et al. found that callous/unemotional traits served as protective factors from attempting suicide, as assumed by Cleckley (1988) in his early conceptualization of psychopathy, only in girls but not in boys.

Verona, Sprague, and Javdani (2012) reported that exhibiting interpersonal/affective (Factor 1) personality traits together with impulsive/antisocial (Factor 2) behavioral traits increases the risk of suicide only in women but not in men. The authors found that, through their inverse relationship, Factor 1 psychopathic traits together with a diagnosis of borderline personality disorder (BPD) played a protective role in men but not in women against developing suicidal behavior.

Pennington et al. (2015) found that psychopathological depression and anxiety are both moderating the relationship between secondary psychopathy, meaning impulsive and aggressive personality traits, and the development of suicidal behavior. Furthermore, Price et al. (2013) found that the presence of depression significantly elevates the risk for developing hostile behavior, interpersonal problems, emotional instability, and suicide. In accordance with these findings, Swogger et al. (2014) concluded that the presence of hostile behavior is significantly related to the development of suicidal behavior.

These research findings suggest that the presence of high levels of psychopathic traits alone (measured by the PCL-R total scores) do not account for the development of suicidal behavior, suicidal ideation, or self-harming behavior. The four psychopathic domains, such as the interpersonal, affective, impulsive, and antisocial lifestyle factors are differentially associated with the risk of suicidality in people. Consequently, as also suggested by Gunter et al. (2013) and Swogger et al. (2012), scientific research should address the four psychopathic traits of interpersonal, affective, impulsive, and antisocial traits separately rather than the overall level of psychopathy.

Summary and Conclusions

Evidence suggests that the prison inmate population is more likely to be at risk for suicide (Pennington et al., 2015) and more likely to have a diagnosis of a mental disorder when compared with individuals in the general population (Senior et al., 2013). However, Negredo et al. (2013) argued that only a limited number of research studies exist investigating the relationship between the development of suicidality and the levels of psychopathy in the mentally disordered offender population who also exhibit high

levels of psychopathic traits. This is surprising because empirical evidence suggests that the prevalence of serious mental illnesses among the male prison inmate population is significantly higher when compared with the general population (Senior et al., 2013).

Also, unfortunately, prison inmates lack proper mental health services, and thus, serious mental illnesses such as depression, anxiety disorder, and schizophrenia often remain untreated in this population (Deslich et al., 2013). Furthermore, Gunter et al. (2011) argued that the number of mentally ill inmates in U.S. prisons is increasing. Empirical evidence supports that these mental illnesses are significant risk factors of the development of suicidality in people (Gunter et al., 2011; Gunter et al., 2013; Javdani et al., 2011; Pennington et al., 2015; Price et al., 2013; Smith et al., 2013). Smith et al. (2013) asserted that suicide is among the most prevalent public health problems in prisons in the United States. According to the authors, inmates are more likely to engage in suicidal behavior and self-harming behavior or to develop suicidal ideation than individuals in the general population.

There are several gaps and limitations in current research on the relationships between suicidality, psychopathy, and a diagnosis of a mental illness. For example, in many articles, the research samples were small, and thus their results could not be generalized to the larger population (Javdani et al., 2011; Negredo et al., 2013; Price et al., 2013). Also, researchers have often used only self-reported data on suicide attempts, depression, and other factors (Dhingra et al., 2014; Gunter et al., 2011; Gunter et al., 2013; Negredo et al., 2013; Price et al., 2013); thus, these studies are prone to respondent bias. Furthermore, researchers have also used a measurement instrument to measure

psychopathic personality traits that has not been validated on the population they used it

on (Pennington et al., 2015).

The current research therefore used data obtained from medical records and semi-

structured interviews (such as administration of the PCL-R) and also used a large sample

size of 203 participants in order to attempt to fill in such gaps in current research and thus

advance scientific knowledge in this area of research. Pennington et al. (2015)

investigated the relationship between psychopathy and suicidal ideation. However, the

researchers used the Levenson Self-Report Psychopathy Scale (Levenson, Kiehl, &

Fitzpatrick, 1995), a measurement tool which has not been validated on the incarcerated

offender population. Furthermore, the authors suggested that, instead of evaluating

suicidal ideation, examining actual suicidal behavior would provide a deeper

understanding of the relationship between psychopathy and suicidality. The present

study intended to fill in the above-mentioned gaps in current scientific research using a

quantitative methodology to explain the relationships between psychopathic personality

traits and suicidal behavior in the mentally ill male offender population.

In this chapter, I have discussed current scientific knowledge with regards to the

topic of this research study. As stated above, the relationship between the levels of

psychopathy and the development of suicidal behavior is under-researched; furthermore,

the results are contradictory. In the present chapter, I briefly referred to the planned

methodological approach and aligned with Mann's theory of suicide in order to fill in this

gap in research. In the next chapter, I will provide a detailed description on the research

design, the measurement instruments, and the methodological procedures I used for the

current research study in order to answer the research question. The ethical

considerations related to this study are also discussed in Chapter 3.

Chapter 3: Research Method

Introduction

The main purpose of the current research was to describe the relationship between the levels of psychopathy and the presence or absence of suicidal behavior among the mentally ill male prison inmate population. The relationship between the levels of psychopathy and the development of suicidal behavior, according to Negredo et al. (2013), is under-researched, and the available research results are not conclusive. In order to fill this gap in current scientific research, the study has used the quantitative research approach in its design. Statistical analysis of the data from Dr. Duncan's archival database was used to determine whether a relationship between psychopathic personality traits and the development of suicidal behavior exists.

In this chapter, I describe the research design of this study. I describe the target population and present a description of the database I used. I also describe the statistical procedures that I used in order to evaluate the archival data; furthermore, the sources of data are presented together with information on the reliability and the validity of the instruments that were used in the data collection procedure. I also provide a description of the treatment of the data, including ethical considerations.

Research Design and Rationale

In this research study, I investigated the relationship between psychopathic traits and the presence or absence of suicidal behavior in the male prison inmate population. In order to carry out the research, the following variables were used. For the purpose of this research, the criterion variable was the number of suicide attempts (including

completions). Predictors were primary and secondary psychopathic traits, depression

mood disorder, and the percent of time spent in solitary confinement, which correlation

tests found to be related to attempting suicide in the sample.

In order to answer my research question, I conducted a quantitative

nonexperimental secondary data study. Quantitative nonexperimental archival research is

the most appropriate approach to find out about a possible relationship between

psychopathy and the development of suicidal behavior when incarcerated. Archival data

sources, such as the one this research was based on, often include longitudinal data and

present a data source on a certain population to which a single researcher has restricted

access (Turiano, 2014); therefore, archival research can advance knowledge in a

particular scientific field.

Using a nonexperimental quantitative approach in this study was appropriate

because the independent variables of psychopathy levels and psychopathology in

individuals cannot be manipulated as would have been required if experimental or quasi-

experimental approaches had been used. Testing the hypotheses in the Introduction

section of this paper requires primarily descriptive conclusions and does not aim to find

casual relationships among data. This research aimed to determine the existence or lack

of relationships between the variables of psychopathy, psychopathology such as

depression, and suicidal behavior.

The current archival research included a database that consisted of 374 cases that

were pretrial evaluation cases (S. Duncan, personal communication, August 24, 2014).

Out of these 374 cases, 268 cases were given the PCL-R evaluation for psychopathy (S.

Duncan, personal communication, August 24, 2014). Each case was given the PAI test

(S. Duncan, personal communication, August 24, 2014) which provides data on anxiety

and depression in the person. The database also contained information on prison files

about suicidal behavior. I chose this database because the information and data it

contained were relevant to the research question. Furthermore, another important

advantage of using archival data in research is that the research process requires less time

than research using primary data, due to the fact that the data are readily available.

Methodology

The current research investigated the relationship between psychopathy and the

development of suicidal behavior in the male prison inmate population. In 2014, there

were approximately 1.45 million male individuals (BJS, 2015) incarcerated in the United

States, and the magnitude of this figure was relatively constant between 2004 and 2014.

In the current study, I used an archival database that Dr. Scott Duncan put together over

an 11-year period (S. Duncan, personal communication, August 24, 2014).

The database consisted of 374 forensic pretrial evaluation cases conducted by Dr.

Duncan in the federal bureau of prisons (S. Duncan, personal communication, August 24,

2014). In their pretrial evaluations, participants were given several psychological tests,

including the PCL-R and PAI instruments (S. Duncan, personal communication, August

24, 2014). All individuals were then ultimately convicted and served time in the U.S.

federal prison system. The examinees were then followed over their time of incarceration

(S. Duncan, personal communication, October 8, 2015). The database also included

information that was collected from the electronic psychology files about the inmates'

use of psychological services. This information included data on suicidal behavior, such as suicide attempts, the type of attempt, and other factors such as percent of time spent in solitary confinement (S. Duncan, personal communication, October 8, 2015). The age of the participants ranged from 18 to 80 years of age. The security levels of the prisons where the participants were sent varied from minimum to maximum (S. Duncan, personal communication, October 8, 2015). This characteristic strengthens the representativeness of the sample. For the purpose of this study, all cases where data on psychopathy were available less the cases with missing data on other constructs were included in the analysis.

The current study used an archival database as a source of data; therefore, the Walden University guidelines with regards to using archival information applied to this research. In order to gain access to the necessary data, Dr. Duncan, who is the owner of the dataset, signed a data use agreement. A copy of the agreement is appended to this paper. In accordance with Walden University's requirements, an Institutional Review Board (IRB) application was completed in order to request approval to conduct the current research.

Instrumentation

As already mentioned above, the current study used an archival database as its data source. The data were collected between 1991 and 2000 at a U.S. federal prison located in the Southeast (Walters & Duncan, 2005). The tests were conducted as court-ordered mental health evaluations and carried out by forensic mental health staff at the prison (Walters & Duncan, 2005). Data were obtained through psychological

measurement instruments and from de-identified electronic prison medical files. More specifically, the data of this study were collected by conducting psychological testing with the PCL-R and the PAI measurement tools. For the purpose of this study, the majority of the data used in the analysis were provided by the scores participants obtained on these two instruments.

The PCL-R measurement instrument is one of the most commonly used psychological tests to determine the levels of psychopathy in people (Anderson & Kiehl, 2012; Mokros et al., 2013). The PCL-R was developed in forensic settings, built on Cleckley's conceptualization of psychopathy. According to Snowden and Gray (2011), the PCL-R was first developed as a two-factor model, where Factor 1 items are associated with the interpersonal and the affective features of psychopathy, and Factor 2 items are associated with impulsive and antisocial domains of the disorder. However, Snowden and Gray argued that Hare developed his assessment tool further by dividing these two factors into four facets. The data were collected by the PCL-R measurement instrument. However, Dr. Duncan has recalculated the scores obtained on the PCL-R and converted them into scores on the PCL-R (2nd edition). Recalculating the scores was possible without endangering the reliability of the data because the two measurement instruments measure the same constructs (S. Duncan, personal communication, September 17, 2016).

The PCL-R (2nd edition) consists of four scales: (a) interpersonal scale; (b) affective scale; (c) lifestyle scale; and (d) antisocial scale (Hare, 2016). The interpersonal scale is associated with the individual's interactions with others. This facet reflects personality traits such as deceitful and superficial interactions with others. The second

scale is related to affective personality features of psychopathic traits and includes lack of emotions, empathy, and remorse. The lifestyle facet refers to the impulsive and irresponsible lifestyle of the individual. Lastly, the antisocial facet is associated with the presence of antisocial and criminal behavior in the person. The four-facet model, according to Snowden and Gray (2011), is receiving increasing support in scientific research.

The PCL-R (2nd edition) measurement tool consists of 20 items to assess the level of psychopathy in individuals. The total score on this instrument can be interpreted as an overall assessment of psychopathy in the assessed individual. Hare (1991) claimed that the instrument consists of two factors where Factor 1 items measure the callous, selfish, and remorseless use of other people. Factor 1 items are the items of the interpersonal (4 items) and affective (4 items) scales. Factor 1 items measure the so-called primary psychopathic traits. Factor 2 items measure chronically unstable and antisocial lifestyles. Items on the lifestyle (5 items) and antisocial (5 items) scales belong to the Factor 2 part of the instrument. Factor 2 items measure the so-called secondary psychopathic traits. Because this study was especially interested in the effect of impulsive and aggressive personality traits on suicidal behavior, Factor 2 scores were appropriate to be used in the analysis.

The PCL-R uses semi-structured interviews, case history information, and unique scoring criteria to evaluate the results using a 3-point scale on each of the 20 items (Hare & Neumann, 2008). The variables this instrument measures for the purpose of the study are the overall psychopathy levels of the research subjects, specifically focusing on

aggressive and impulsive personality traits that, according to Mann's model of suicidal behavior, are key risk factors in developing suicidal behavior. In my research study, these variables were the independent variables (predictors in the regression model). The 3-point scale scores from 0 to 2, where the score 0 indicates that the particular item is not present in the tested individual. Score 1 indicates that the item may be present to some extent in the individual, whereas score 2 indicates that the item is strongly present in the person (Snowden & Gray, 2011). Therefore, the maximum scores on the instrument range between 0 and 40. Higher scores mean that the assessed individual exhibits more psychopathic personality traits than individuals who score lower on the instrument (Gray et al., 2003). According to Barry et al. (2000), when psychopathic traits are assessed by the PCL-R, the cut-off score of 30 for psychopathy is established in the forensic population. Scores obtained through the PCL-R were predictors in the standard multiple regression model that I used in my analysis. Predictors, by definition, are independent variables.

Hare et al. (1991) investigated the reliability and the validity of the instrument. In their research, the authors found the PCL-R to be a valid and reliable instrument when used with male forensic populations. To assess interrater reliability, Hare et al. calculated interclass correlation coefficients. They ranged from .78 to .98 ($M = .86$) for a single rating and from .87 to .97 ($M = .93$) when looking at the average of two ratings. The values of Cronbach's coefficient alpha ranged from .85 to .89 ($M = .88$), which indicates a good internal consistency of the instrument. The PCL-R was found to be homogeneous and unidimensional. Both Factor 1 and Factor 2 items demonstrated a high internal

consistency with the mean coefficient alpha for Factor 1 items .84 and for Factor 2 items .79. In their recent study, Mokros, Osterheider, Hucker, and Nitschke (2011) found a high interrater reliability for the PCL-R. The authors found that the intraclass correlation for the total score was .98 and the value for Cohen's kappa measuring interrater agreement was .73. Coefficient alpha for the PCL-R assessments was .82.

The PAI is a self-report measure with which mental health professionals assess adult personality and psychopathology (Morey, 1991). Morey described the PAI as a 344-item self-administered instrument that contains 22 non-overlapping scales that assess mental disorders. The instrument assesses psychopathological syndromes, such as anxiety and depression in individuals. The measure has four validity, two interpersonal, 11 clinical, and five treatment scales. Validity scales are included in the test in order to find out about the test-taking attitude of the individual taking the test. The Inconsistency validity scale provides information on whether the examinees are consistent in their answering; the Infrequency scale is checking for random responses; the Negative Impression scale and the Positive Impression scale measure determine whether the examinees are malingering or attempting to portrait themselves in an unduly unfavorable way (faking bad), or an unduly favorable way (faking good), respectively (Boyle & Lennon, 1994). The clinical scales assess personality characteristics and psychopathology in people. The PAI is easy to administer, because it requires a reading level of a fourth-grader (Morey, 1991). The individuals rate each item on a four-point scale where the ratings range from False, not at all true, through Slightly true, Mainly true, to Very true (Rogers et al., 1996).

The full scales' reliability measured by the alpha coefficients range from .45 to .90 (median .81) in the normative sample; from .22 to .89 (median .82) for student sample; and from .23 to .94 (median .86) for the clinical sample (Morey, 1991). The subscales' alphas range from .51 to .81 in the normative sample; from .57 to .85 for the student sample; and from .55 to .89 for the clinical sample. The PAI's item homogeneity is low in both samples, with a median of .22 in normative, and .29 in the clinical sample (Morey, 1991). This means that scale items measure different aspects of the particular construct.

Douglas et al. (2001) said in order to evaluate results, mental health professionals must convert the raw scores on the scales to T scores (M=50, SD=10). A T score of 60 indicates a possibility of a problem in the tested area; furthermore, a T score of 70 or higher indicates a presence of a problem in the relevant area. Among the 11 clinical scales are the Anxiety Scale and the Depression Scale. The Depression clinical scale quantifies symptoms of depression in the individuals (Boyle & Lennon, 1994). For the purpose of this study, scores obtained on the Depression_C: Cognitive subscale of the PAI were used as indicators for cognitive symptoms of depression (such as thoughts of worthlessness, hopelessness, and personal failure) in the research subjects. Depression has been found to be a strong contributing factor for suicidal behavior (Dhingra et al., 2014; Pennington et al., 2015; Price et al. 2013; Smith et al 2013; van Heeringen & Mann, 2014). Furthermore, according to Mann's diathesis-stress model of suicide (Mann et al., 1999), the feeling of hopelessness may serve as the stress component of the model (Van Heeringen, 2012). Scores 70 or above on the Scale indicate that the person is

depressed, unhappy, and hopeless with regards to the future. Obtaining high scores on the Depression scale indicates the presence of significant depressive thoughts in the person, the feeling of hopelessness, and the lack of interest in their lives. The variable of depression was a predictor variable in the regression model used in my analysis in this study.

As discussed in the Literature Review, previous research has identified anxiety disorder as a significant contributor to the development of suicidal behavior (Davidson et al., 2011; Dhingra et al., 2014; Gunter et al., 2011; Gunter et al., 2013; Javdani et al., 2011; Pennington et al., 2015). Therefore, scores obtained on the PAI Anxiety Scale were added in the correlation test in order to determine whether anxiety was associated with suicidal behavior also in my research sample. Scores obtained on the Anxiety Clinical Scale indicate the extent to which feelings of tension, worry, and fears are present in an individual. It measures the observable signs of anxiety (Boyle & Lennon, 1994). For the purpose of this study, scores obtained on this scale were used as indicators of the presence of anxiety in the person. As stated above, if individuals score in the high range, that is, obtain a T score of 70 or greater, it can be interpreted as anxiety being present in the person. Scoring low on this subscale means that the person denies feelings of anxiety and the person is extroverted, active, and self-confident.

In previous research, the instrument has been found to be appropriate for use in the forensic population (Douglas et al., 2001; Rogers et al., 1996). Douglas et al. used a logistical regression test in order to find out whether the PAI scales predict the domains of interest, including psychopathology such as, for example, depression and anxiety;

effect sizes for the analyses ranged from .09 (small effect) to .29 (moderate effect). In

their study, Boyle and Lennon (1994) examined the reliability and the validity of the PAI.

The authors determined only a moderate test-retest reliability of the instrument based on

a sample of 151 individuals with no psychopathology, 30 alcoholics, and 30 individuals

with schizophrenia. They reported a median stability coefficient of .73. Furthermore,

using a maximum-likelihood confirmatory scale factor analysis, the authors found a poor

fit to the PAI's factor structure that Morey (1991) initially identified. They found the

adjusted goodness-of-fit index to be .69 and the corresponding root mean square residual

to be .08.

In forensic settings, Douglas et al. (2001) established some support for the PAI's

construct validity. In a sample of 127 male examinees who were court ordered for

assessments of competence to stand trial, using logistic regression procedures, the authors

found that PAI scales of violence, psychosis, and personality disorders predicted these

domains. Effect sizes ranged from .09 to .29, that is, small to moderate. The authors

concluded that, despite some limitations of the instrument, the PAI is an appropriate

measurement tool to be used in forensic psychiatric setting in the key domains of

violence, personality disorders, and psychosis.

The variable of *percent of time spent in solitary confinement* was also added to the

regression model in the analysis. Data on this construct were collected from electronic

de-identified prison medical files.

The criterion variable in the current research was the number of suicide attempts (including completion). The data on suicidal behavior were collected from de-identified electronic prison medical files.

Operationalization of Constructs

Operational definitions of terms used in the current study for ease of use for the reader are provided below:

- For the purpose of this study, the term *psychopathy* was used as defined by the PCL-R (Hare, 1991) criteria. According to these measures, psychopathic personality disorder is characterized by four facets: the interpersonal, affective, impulsive, and antisocial personality traits.

- The term *primary psychopathy* in the current study refers to the emotional deficits and interpersonal manipulation traits within the construct of psychopathy (Ross et al., 2007). Primary psychopathic traits were measured by the PCL-R (Hare, 1991) Factor 1 scores.

- The term *secondary psychopathy* refers to characteristics that are not essential but associated characteristics of psychopathy, such as antisocial behavioral traits and impulsivity (Ross et al., 2007). Secondary psychopathic traits were measured by the PCL-R (Hare, 1991) Factor 2 scores.

- The construct of *suicide* was defined as outlined in Nock et al. (2008), that is, an individual's intentional act to end his or her own life.

- The terms *suicidal behavior* and *suicidality* are used interchangeably in the study. The terms refer to the actions of both committing suicide when the attempt results

in death of the individual and attempting suicide when the action does not end

with the death of the person. For the purpose of the study, suicidal behavior was

measured by the number of recorded suicide attempts (including completions).

The information was obtained through electronic prison medical files.

- The term *suicide attempt* refers to actions in which individuals attempted suicide

  but did not end with the death of the individual. This information was obtained

  through electronic prison medical files.

- The variables of *depression* and *anxiety* were measured by the scores obtained by

  the PAI (Morey, 1991) psychological measurement tool on its Depression_C:

  Cognitive subscale and the Anxiety Clinical Scale, respectively. A T score higher

  than 60 but lower than 70 indicates a possibility of a problem in the tested area. A

  T score 70 or higher on these scales accounts for a diagnosis of depression and/or

  anxiety in the person.

- The variable of *percent of time spent in solitary* confinement refers to the time the

  inmate spent in solitary confinement divided by the overall time spent in the

  system.

- The term *interaction effect* was used as defined by Field (2013), that is, as the

  statistical term of the combined effect of two predictor variables.

- The term *moderator*, was used the way it was also used by Field (2013) to refer to

  a third variable that influenced the strength of the relationship between another

  two variables.

Data Analysis Plan

The guiding research question for the current study was: To what extent does psychopathy predict suicidal behavior in the mentally ill male prison inmate population?

H_A: Primary psychopathic traits measured by the PCL-R Factor 1 scores and secondary psychopathic traits measured by the PCL-R Factor 2 scores predict suicidal behavior measured by the number of suicide attempts (including completions) in the mentally ill male offender population.

This hypothesis was deduced based on Mann's diathesis-stress model of suicide (Mann et al., 1999) according to which impulsive and aggressive personality traits positively affect the development of suicidal behavior. Within secondary psychopathic traits as measured by the PCL-R Factor 2 scores, facet 3 impulsivity and facet 4 aggressive traits indicate the extent to which impulsive and aggressive personality traits are present in an individual (O'Donohue, Fowler, & Lilienfeld, 2007). Also, results of previous research findings show that mood disorders such as depression and anxiety are related to suicide (Dhingra et al., 2014; Gunter et al., 2011; Gunter et al., 2013; Javdani et al. 2011; Pennington et al., 2015; Price et al. 2013; Smith et al 2014; van Heeringen & Mann, 2014; van Orden et al., 2010).

In this research, I investigated whether there was a relationship between the levels of psychopathy and suicidal behavior in the mentally ill prison inmate population. After eliminating cases with incomplete data, descriptive analysis was run in order to provide an overview of the sample's characteristics with regards to age, race, mental illnesses, education, and other constructs that describe the data available in the database.

Correlation tests were run in order to identify constructs that at least moderately correlated with suicidal behavior. A similar procedure was used in the recent study of Pennington et al. (2015) when the authors wanted to identify constructs that correlate with suicidal ideation. Furthermore, Negredo et al. (2013) also used a similar approach to determine such relationships between the number of suicide attempts and self-wounding episodes, and PCL-R Factor 1 and Factor 2 and Total scores. Such possible constructs were, for example, age, education, percent of time spent in solitary confinement, number of years in prison, and psychopathology. These constructs were then included as control variables in the regression model with which I answered the research question.

A standard multiple regression test was run in order to test the hypotheses. Standard multiple regression is a powerful data-analytic strategy with nonexperimental data to predict a criterion variable with predictor variables; furthermore, because the multiple regression analysis is a general and a flexible system, it is often used in the behavioral sciences (Cohen, Cohen, West, & Aiken, 2003). It is used to predict a continuous criterion variable from multiple predictor variables. In this research, the criterion variable was the number of suicide attempts (including completions). Covariates were depression, and other constructs that a correlation test identified as at least moderately correlating factors with suicidal behavior. Depression and anxiety have been identified by current research as major risk factors of suicidality (Gunter et al., 2011; Gunter et al., 2013; Javdani et al., 2011; Pennington et al., 2015; Price et al., 2013; Smith et al., 2014; van Heeringen & Mann, 2014). However, in the analysis, only

depression and not anxiety was associated with the number of suicide attempts.

Therefore, depression was included in the final regression model, but anxiety was not.

Another control variable, the *percent of time spent in solitary confinement* was added to

the regression model based on the results of the correlation tests. Predictors were

primary psychopathic traits measured by the PCL-R Factor 1 scores and secondary

psychopathic traits, measured by the PCL-R Factor 2 scores.

The predictors of primary psychopathy, and secondary psychopathy together with

depression and other constructs that the correlation test identified as at least moderately

correlating with suicide, were added to the regression model, using the *enter* method.

The data were then evaluated by using the IBM SPSS Statistics software, Version 24.

Significant test results indicated that the particular predictor variable actually predicted

suicidal behavior.

During the analysis, a pattern emerged according to which the percent of time

spent in solitary confinement moderated the relationship between secondary

psychopathyic personality traits and the number of suicide attempts; therefore, a

moderation analysis was conducted by using Andrew F. Hayes's PROCESS tool.

Prior to the analysis, data were cleaned by testing for any outliers and influential

cases, and cases with incomplete data. The data were checked to make sure that they met

the eight assumptions of standard multiple regression tests.

In order to be able to interpret the results, the standard multiple regression model

was analyzed. The model was based on the variables entered in the multiple regression

test, using the *enter* method. Next, I examined whether the standard multiple regression

test was a good fit for the data. The statistical significance of the model was also examined. The reason to do that was to find out whether the change in the variance in the number of suicide attempts (criterion variable) could be explained by the particular predictor variable(s) that the model contained. The coefficients of the regression model were also reported. Assumption testing for the analysis was also included in the report.

Threats to Validity and Reliability

As discussed above, this study used an archival database as its data source in order to be able to answer the research question. Archival research in general is strong in external validity because the participants are unaware of the research and its aims at the time of data collection; therefore, participants' behavior, and thus the research results, do not change during data collection due to participants' intention to make a good impression on the researcher. Furthermore, in the current research, I studied suicide, and the most appropriate dependent measure for this, the criterion variable in this study, were data on actual suicidal behavior obtained from electronic prison medical files. Therefore, this research study has the potential for exhibiting strong external validity.

The internal validity of archival studies is often compromised; this study was not able to establish a causal relationship between psychopathic traits and suicidal behavior. This was due to the fact that it was not possible to control for all possible factors that might have influenced the relationship of the two variables. The research design this study used lacks randomization. This also weakens the internal validity of the study. In order to address this problem, I controlled for the effects of depression on the relationship between psychopathy and suicide because in previous research this disorder has been

found to be related to suicide (Gunter et al., 2013; Pennington et al., 2015; Price et al.

2013; Smith et al., 2013), thus it is likely that this factor has an influence on the

researched phenomenon. However, there are some strengths of internal validity of the

current study. For example, when using an archival database, experimental mortality

does not constitute a threat. Furthermore, the instruments used for data collection have a

solid established validity and reliability in the scientific literature, and the data were

collected by certified health care professionals. Furthermore, as mentioned above, scores

obtained on the PCL-R have been recalculated by Dr. Duncan in order for the data to fit

the structure of the PCL-R (2nd edition). This might influence the reliability of the data;

however, because the PCL-R and the PCL-R (2nd edition) measure the same constructs,

such an adjustment does not pose a threat to the reliability of the data (S. Duncan,

personal communication, September 17, 2016).

The dataset that informed the current study consisted of data gathered by using

measurement instruments such as the PCL-R and the PAI that are considered to be valid

and reliable instruments to measure psychopathy and psychopathology in the forensic

population, respectively. The evaluations were carried out by forensic mental health

professionals. Data on suicidality came from electronic prison medical files where

observed suicidal behavior was recorded by the prison staff. Due to the above-mentioned

characteristics, the construct validity and the statistical conclusion validity of the current

research seems to be rather high.

Ethical Considerations

This research study used data from an archival database; therefore, there was no need to recruit participants: therefore, fewer ethical issues were of concern than to those researchers who recruit participants to collect their data. The data were collected by Dr. Duncan between 1990 and 2001 in federal prisons of the United States (S. Duncan, personal communication, October 8, 2015). Individuals the data were collected from were male offenders who were court-ordered to go through a pretrial evaluation and, therefore, obtaining informed consent from them was not required. However, using data from the database, it was important to present any information in a way from which it was not possible to identify the participants in the research study.

According to Walden University's IRB guidelines (2014), when using a private database that has not been published and is not available to the public, it is of critical importance to make sure that the data in the database were collected in an ethical manner. Another important ethical issue with regards to gaining access to the database, according to the *Research Ethics Planning Worksheet* (Walden, 2015), is to obtain official permission in the form of a Data Use Agreement from the owner of the database.

The data is stored in a password-protected computer in order to make sure that no unauthorized persons would be able to access them. Any datum in the data-set will be kept confidential. No conflict of interest is known regarding the use of the data from the archival database in this study.

The Walden University Institutional Review Board approved the proposal to conduct this research study on October 25, 2016, under the approval number of 10-25-16-0441893.

Summary

In the current chapter, I provided an overview of the methodological issues related to this study. Research design and the related rational was provided, together with detailed information on the archival database that this study used. Also, the psychological measurement tools that were used upon data collection together with statistical procedures that were used in the current research were discussed. Validity and reliability issues with regards to the study's findings were described. Information on ethical considerations related to this study was provided.

In the next chapter, in the Results section, I discuss in detail the statistical procedures together with the results the statistical analyses have yielded.

Chapter 4: Results

Introduction

In my dissertation, I investigated the extent to which psychopathic personality traits predicted suicidal behavior in the male prison inmate population. The purpose of this study was to describe the relationship between the levels of psychopathy and the presence or absence of suicidal behavior among the mentally ill male offender population. The relationship between the levels of psychopathy and the development of suicidal behavior, according to Negredo et al. (2013), is under-researched, and the available research results are not conclusive. In order to fill this gap in current scientific research, the current study used an archival design within the quantitative research approach. Statistical analysis of the data that were obtained from an archival database was used to determine whether a relationship between psychopathic personality traits and the development of suicidal behavior exists. In the analysis, the criterion variable was the number of suicide attempts including completions and the predictors were psychopathic traits, depression, and anxiety. The choice of predictors was based upon Mann's diathesis-stress model of suicide. According to this theory, impulsive and aggressive personality traits (both are characteristics of psychopathic personalities) serve as diathesis factors that account for an elevated risk of suicide, while mood disorders, such as depression and anxiety may serve as the stress components that make an individual prone to attempt suicide (Mann et al, 1999). The research hypotheses and the statistical analysis in this study were based upon this theory.

Research Question and Hypotheses

The research question this study answered was this:

RQ: To what extent does psychopathy predict suicidal behavior in the mentally ill male prison inmate population?
The hypotheses for the study are described here:

H_0: Primary psychopathic traits measured by the PCL-R Factor 1 scores and secondary psychopathic traits measured by the PCL-R Factor 2 scores do not predict suicidal behavior measured by the number of suicide attempts (including completions) in the mentally ill male offender population.

H_A: Primary psychopathic traits measured by the PCL-R Factor 1 scores and secondary psychopathic traits measured by the PCL-R Factor 2 scores predict suicidal behavior measured by the number of suicide attempts (including completions) in the mentally ill male offender population.

In this chapter, I discuss the circumstances of data collection and the characteristics of the data in the database I used in order to support my study. After providing information on the characteristics of data collection, I discuss in detail the statistical procedures I used to answer my research question and test the hypotheses. The results of the statistical analyses are also described in detail below.

Data Collection

This study was based on data in an archival database that was collected by Dr. Scott Duncan, a licensed psychologist, between 1991 and 2000 (S. Duncan, personal communication, October 10, 2015). Dr. Duncan created the database while he was

carrying out court-ordered psychological testing of incarcerated individuals as part of

their pretrial evaluation (S. Duncan, personal communication, August 23, 2014). After

their conviction, the examinees were followed over their years of incarceration and

information from the electronic prison psychological files was also added to the database.

The security level of the prisons varied from minimum to maximum.

The data were collected in a federal penitentiary in Atlanta and all participants

had committed federal crimes. All data came from individuals who were sent for a

pretrial evaluation prior to conviction. The limited diversity in geographical locations

and in the types of offenders suggests a limitation with regards to the representativeness

of the sample of the whole incarcerated population in the United States.

The dataset consisted of 374 cases. After removing 161 cases where the PCL-R

was not administered or had other incomplete records, the final sample consisted of a

total of 203 male offenders incarcerated in a federal prison in Atlanta. Descriptive

statistics are included in order to present an overview of the sample's characteristics with

regards to age, ethnicity, years of education, the history of previous felony, and whether

the individual had served in the military.

The majority of the participants were of Caucasian (49%; $n = 129$) or African

American (45.6%; $n = 120$) descent. Only a few participants were of Hispanic (3.4%%; $n = 9$) or other ethnic backgrounds (1.1%; $n = 3$). All participants were above 18 years of

age, and thus, the adult version of the PCL-R measurement tool had been used for all

cases. Most participants had previous felony records at the time of their current

evaluation. Detailed information on demographic and descriptive characteristics of the participants is provided later in this chapter.

Procedures of Determining the Predictor Variables

In order to identify covariates for the analysis, correlations with the number of suicide attempts were run between demographic variables (such as age, ethnicity, history of previous felony, service in the military), percent of time spent in solitary confinement when compared with the total time incarcerated for current charges, and clinical variables (e.g., primary and secondary psychopathic factors, depression, and anxiety). Cognitive symptoms of depression (as measured by the PAI DEP-C subscale which focuses on thoughts of worthlessness, hopelessness, and personal failure), percent of time spent in solitary confinement, aggression, and secondary psychopathic traits displayed significant positive relationships with the number of suicide attempts in the sample; furthermore, PCL-R Factor 1 scores and antisocial personality traits also approached significance with the number of suicide attempts. Therefore, these variables were considered for inclusion in the regression model as covariates. Both aggression and antisocial behavior are included within the secondary psychopathic traits as measured by the PCL-R Factor 2 scores; therefore, these variables were not included in the final analysis. No other clinical variables, as measured by the PAI clinical scales and subscales, indicated a significant correlation with the number of suicide attempts in the sample. Interestingly, contrary to previous research findings, anxiety did not display or did not at least approach significance as measured by the Pearson correlation coefficient, $r(201) = .039$ with the number of suicide attempts in the sample; therefore, this variable was not included later

in the regression model. There was no significant correlation detected between the variables of age, ethnicity, history of previous felony, and service in the military and the number of suicide attempts. The summary of demographic variables together with the clinical variables that displayed significant results or approached significance in the analysis is displayed in Table 1.

Table 1

Correlations Between Demographic, Psychopathy, and the Number of Suicide Attempts

Variables	1	2	3	4	5	6	7
1. Age	-	.132	-.108	-.168	-.075	-.270	-.102
2. Education	.028	-	-.014	-.038	-.228	-.428	-.214
3. Number of suicide attempts	.139	.849	-	.235	.044	.123	.147
4. Percent of time in solitary confinement	.053	.697	.011	-	.211	.130	-.007
5. PCL-R Factor 1 Primary psychopathy	.476	.001	.106	.000	-	.693	.114
6. PCL-R Factor 2 Secondary psychopathy	.000	.000	.018	.178	.000	-	.258
7. PAI depression_c subscale	.164	.005	.036	.917	.114	.000	-

Note. PAI = Personality Assessment Inventory. PCL-R: Psychopathy Checklist - Revised. Actual p values are shown in the lower diagonal of the table.

Based on their significance and the purposes of my research, the variables of primary psychopathy, secondary psychopathy, cognitive symptoms of depression, and percent of time spent in solitary confinement were finally included in my analysis.

Results

In my dissertation, I used data that were previously collected from 374 individuals during their pretrial evaluation. After eliminating cases where the PCL-R was not administered, together with cases with missing data on variables of interest in this study,

the final sample size in my analysis was 203; all these participants had been given the

PCL-R test in order to measure psychopathic traits.

Descriptive Statistics

The age of the participants ranged between 19 and 63 years ($M = 36.59$ years, $SD = 9.78$). The racial composition of the sample was 48.8% Caucasian, 47.3% African American, 3.0% Hispanic, and 1.0% Other. Two cases were missing racial data in the dataset. The mean years of education in the sample was 10.01 years ($SD = 2.74$). Previous felony was registered in 91.6% of all cases. The majority (77.6%) of the participants had not served time in the U.S. military.

After running correlation tests between demographic variables and clinical variables with the number of suicide attempts, significantly correlating variables (i.e., cognitive symptoms of depression, primary psychopathy, secondary psychopathy, and the percent of time spent in solitary confinement) were included in the regression model. Hierarchical regression tests indicated that the effect of psychopathy Factor 2 scores was moderated by the percent of time spent in solitary confinement; thus, the interaction term between PCL-R Factor 2 scores and the percent of time spent in solitary confinement was also included in the final regression model. Including the interaction term of two variables tends to create a multicollinearity problem in the data. Marsh, Dowson, Pietsch, and Walker (2004) demonstrated how highly correlated predictors may contribute to a faulty interpretation of research findings. In order to avoid multicollinearity, and thus the misinterpretation of the results, the variables were centered.

Evaluation of Statistical Assumptions

The data were evaluated with regards to the statistical assumptions that underlie the standard multiple regression statistical procedure. There are eight assumptions in standard linear multiple regression tests that have to be met in order to provide valid results in an analysis. These assumptions are the following: (a) the dependent variable is measured on a continuous scale; (b) there are two or more independent variables which can be measured either on a continuous scale or can be categorical; (c) the observations must be independent from each other; (d) there is a linear relationship between the dependent variable and each of the independent variables, and the dependent variable and the independent variables collectively; (e) homoscedasticity of data; (f) there is no multicollinearity in the data; (g) there are no outliers, high leverage points, and highly influential points among the data; (h) the residuals are normally distributed (Laerd, 2013).

The first three assumptions with regards to the nature and the number of the dependent and independent variables were met. The outcome variable (the number of suicide attempts) was measured on a continuous scale. The predictor variables of total time in solitary confinement, depression, primary psychopathy, secondary psychopathy, and the interaction term were all measured on continuous scales.

The other assumptions were tested by SPSS in order to determine whether or not they were violated in the dataset. The independence of observation assumption was tested by the Durbin-Watson statistic. There was independence of residuals, as assessed by the Durbin-Watson statistic of 2.131.

The overall regression plot and also the partial regression plots showed linear relationships, and thus the assumption of linear relationships between the predictor variables (and their composites) and the outcome variable was met. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The residuals were equal for all values of the predicted outcome variable of number of suicide attempts.

Including the interaction term of two variables tends to create a multicollinearity problem in the data. As stated above, in order to avoid this problem, the variables were centered. Centering the variable puts the mean of the variable to zero. After centering the variables, the Tolerance values were all above .1 which indicated that there was no multicollinearity to be detected within the dataset.

There were five outliers in the dataset as identified by Casewise Diagnostics. However, because only 18 cases (8.9%) attempted suicide, some outliers are usually inevitable in such distribution patterns. The frequency distribution of the number of attempts variable is shown in Table 2. The violation has only a small practical effect on the results, and only one case seemed to be influential as measured by the Cook's Distance statistics of 2.18; therefore, the cases were included in the analysis.

The residuals were approximately normally distributed as checked by the visual observation of the histogram with superimposed normal curve and a P-P Plot. The Q-Q Plot also confirmed that the residuals were close enough to normal distribution, and thus, the analysis was possible without any data transformation. The assumption of normality was met.

Table 2

Number of Suicide Attempts Frequency Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	185	91.1	91.1	91.1
	1	12	5.9	5.9	97.0
	2	2	1.0	1.0	98.0
	3	2	1.0	1.0	99.0
	4	1	0.5	0.5	99.5
	6	1	0.5	0.5	100.0
	Total	203	100.0	100.0	

Statistical Analysis

A standard multiple regression analysis was run using SPSS version 24 to predict the number of suicide attempts from secondary psychopathic traits, percentage of time spent in solitary confinement, and their interaction, primary psychopathic traits, and depression.

The set of variables statistically predicted the number of suicide attempts in the sample of male incarcerated offenders, where $F(5, 197) = 7.95, p < .001, R^2 = .17$, indicating that 17% of the variance was due to the predictors of secondary psychopathy, percent of time spent in solitary confinement, the interaction of these two variables, primary psychopathy, and depression. The following report of the effects of individual variables holds the other predictors as constants.

Primary psychopathic traits did not predict the number of suicide attempts in the sample, $b = -0.0099$, CI [-0.0353, 0.0156], $t(197) = -0.76$, $p = .45$. Although not a significant effect, primary psychopathic traits actually inversely affect the number of suicide attempts for incarcerated males; that is, high levels of primary psychopathic traits seem to reduce the number of suicide attempts. As discussed in Chapter 2, contemporary research has yielded contradictory results with regards to the relationship between primary psychopathy and suicidal behavior. The current research findings are consistent with previous research of Verona et al. (2001).

Secondary psychopathic traits approached significance in predicting the number of suicide attempts, $b = 0.0257$, CI [-0.0028, 0.0542], $t(197) = 1.78$, $p = .077$. The percent of time spent in solitary confinement and depression both significantly predicted the number of suicide attempts with $b = 0.0109$, CI [0.0051, 0.0166], $t(197) = 3.74$, $p < .001$, and $b = 0.0050$, CI [0.0001, 0.0099], $t(197) = 2.02$, $p < .05$, respectively.

In order to detect to what extent the percent of time spent in solitary confinement moderated the effect of secondary psychopathy, a moderation analysis was run by using Andrew F. Hayes's PROCESS tool. Moderation was shown by a significant interaction effect, $b = 0.0036$, CI [0.0020, 0.0052], $t(197) = 4.35$, $p < .001$, indicating that the relationship between secondary psychopathy and the number of suicide attempts was moderated by the percent of time spent in solitary confinement. In order to interpret this result, a simple slopes analysis was done on three levels (low, average, and high levels) of secondary psychopathy. The results indicated no relationship between percent of time in solitary confinement and the number of suicide attempts for people with low levels of

secondary psychopathy, $b = -0.015$, CI [-0.0483, 0.0178], $t(197) = -0.91$, $p = .365$. For

average levels of secondary psychopathy, the model approached significance, $b = 0.026$,

CI [-0.0028, 0.0542], $t(197) = 1.78$, $p = .077$, meaning that every percent in time spent in

solitary confinement results in a .026 increase in the number of suicide attempts for

people with average secondary psychopathy. For people scoring high on secondary

psychopathic traits, the model was significant, $b = 0.79$, CI [0.0404, 0.1168], $t(197) =$

4.06, p < .001; for people with high secondary psychopathic traits, every percent in time

spent in solitary confinement results in a .79 increase in the number of suicide attempts.

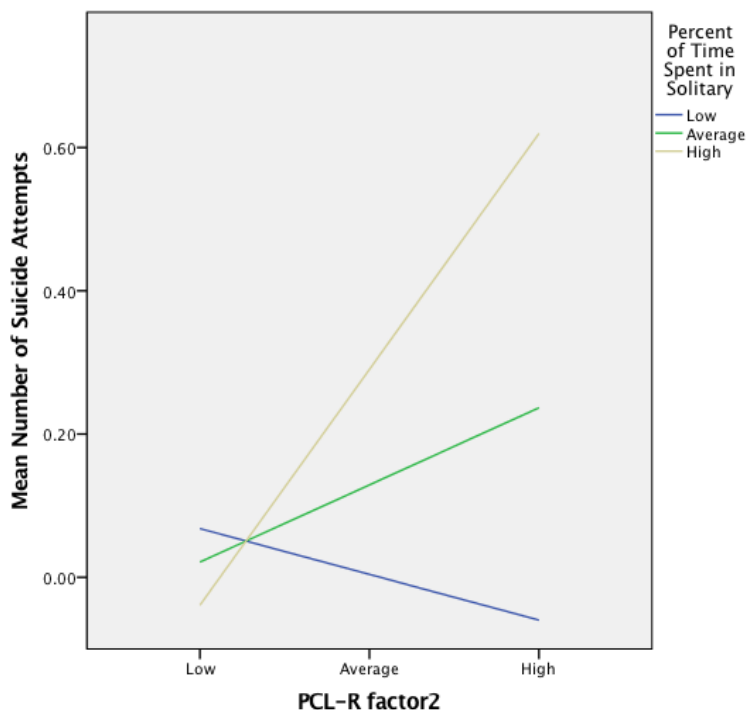Figure 1 visually demonstrates the findings of the simple slopes analysis.

Figure 1. Simple slopes equations of the regression of number of suicide attempts on

secondary psychopathy at three levels of percent of time spent in solitary confinement.

Based on these results, the null hypothesis was rejected with regards to Factor 2 scores, that is, secondary psychopathic traits predicted the number of suicide attempts in the sample. However, the null hypothesis was accepted with regards to Factor 1 scores, that is, primary psychopathic traits did not predict the number of suicide attempts in the sample.

Summary

A multiple linear regression test was conducted in order to answer the research question, that is, to what extent does psychopathy predict the number of suicide attempts in male incarcerated individuals. The statistical analysis yielded an answer, according to which primary psychopathic traits did not predict the number of suicide attempts in this population, but secondary psychopathic traits did. These results were in accordance with previous contemporary research findings of Verona et al. (2001). During the analysis, a pattern emerged in which the effect of secondary psychopathic traits on the development of suicidal behavior of inmates was moderated by the percent of time spent in solitary confinement. The pattern showed that the higher the level of secondary psychopathic traits, the bigger the increase in the number of suicide attempts by every percent of time spent in solitary confinement.

After providing in this chapter a detailed description of the data collection procedure and the statistical analysis I used in this study, I discuss in Chapter 5 the interpretation of the research findings, with regards to what extent this study contributes to contemporary research in the field of forensic psychology. Furthermore, it is also discussed how these research findings relate to the current scholarly literature. The

limitations of this study and recommendations for future research are also provided. I

also describe how this study contributes to positive social change and conclude with

recommendations for forensic psychology professionals that are based on the key

findings and elements of this study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The main purpose of this study was to describe the relationship between the levels of psychopathy and the presence of suicidal behavior among the mentally ill male prison inmate population. The relationship between the levels of psychopathy and the development of suicidal behavior, according to Negredo et al. (2013), is not only under-researched in the contemporary scientific literature but also, the available research results are not conclusive. In order to fill this gap in current scientific research, the present study used the quantitative research approach in its design. Statistical analysis of the data that were obtained from an archival database was used in order to determine whether a relationship between psychopathic personality traits and the development of suicidal behavior exists. In the analysis, the criterion variable was the number of suicide attempts (including completions) and the predictors were primary psychopathy and secondary psychopathic traits, cognitive symptoms of depression, and the percent of time spent in solitary confinement.

A standard multiple regression test was conducted in order to answer: to what extent do psychopathic personality traits predict the number of suicide attempts in male incarcerated individuals? The statistical analysis yielded an answer: primary psychopathic traits did not predict the number of suicide attempts in this population, but secondary psychopathic traits did. During the analysis, a pattern emerged in which the effect of secondary psychopathic traits was moderated by the percent of time spent in solitary confinement. The pattern showed that the higher the level of secondary

psychopathic traits, the bigger the increase in the number of suicide attempts by every

percent of time spent in solitary confinement.

Interpretation of the Findings

As discussed in the Literature Review in Chapter 2, only a limited number of

research studies exist on the relationship between psychopathic personality traits and the

presence of suicidal behavior. Furthermore, the results of these studies are not conclusive

(Negredo et al., 2013). In this dissertation, I found no relationship between primary

psychopathic traits and the number of suicide attempts in the male prison inmate

population. In the regression model, primary psychopathic personality traits did not

predict the number of suicide attempts. As discussed in Chapter 4, primary psychopathic

traits, although not significantly, seemed to be inversely affecting the number of suicide

attempts for people; that is, high levels of primary psychopathic traits seemed to reduce

the number of suicide attempts. This finding is in accordance with the previous research

findings of Verona et al. (2001).

Secondary psychopathic traits, conversely, predicted the number of suicide

attempts in the sample. Contemporary research has found a significant positive

relationship between secondary psychopathic traits and suicidal behaviour (Dhingra et al.,

2014; Douglas et al., 2008; Gunter et al., 2013; Gunter et al., 2011; Verona et al., 2001).

The results of these studies are discussed earlier in this paper, in Chapter 2.

The statistical analysis also indicated a positive significant relationship between

the cognitive symptoms of depression and the number of suicide attempts in the mentally

ill male prison inmate population at a U.S. federal prison located in the Southeast region

of the country. This finding is in accordance with Pennington et al. (2015), who found

that psychopathological depression and anxiety are both moderating the relationship

between secondary psychopathy (impulsive and aggressive personality traits) and the

development of suicidal behavior. Price et al. (2013) also found that the presence of

depression significantly elevates the risk for attempting suicide. Interestingly, in the

current research, anxiety did not display nor even approach significance with the number

of suicide attempts in the sample.

Another significant finding of this research that actually extends knowledge in

contemporary psychology research is the effect of the percent of time spent in solitary

confinement on predicting the number of suicide attempts in the research sample. During

the statistical analysis of the data, a pattern was observed in which the effect of secondary

psychopathic traits on suicidal behavior was moderated by the percent of time spent in

solitary confinement. The pattern demonstrated that the higher the level of secondary

psychopathic traits, the bigger the increase in the number of suicide attempts by every

percent in time spent in solitary confinement. When reviewing the current literature with

regards to research on psychopathic offenders' suicidal behavior, no previous research

studies have investigated the effect of solitary confinement on the number of suicide

attempts in the population of male offenders who also exhibit high psychopathic traits.

This finding also adds new information to contemporary scientific knowledge on the

suicidal behavior of psychopathic offenders.

The results of this research are in alignment with Mann's diathesis-stress model of

suicide. As stated earlier in this paper, Mann's diathesis-stress model suggests a

significant relationship between mood disorders, pessimism, depression, and the development of suicidal behavior (Mann et al., 1999). According to this model of suicidal behavior, the risk of attempting suicide is not solely determined by psychopathology but is also affected by a diathesis. Such a diathesis, according to O'Connor and Nock (2014), may be present in the form of (a) experiencing more suicidal ideation (having suicidal thoughts but not acting on them) and (b) exhibiting impulsive and/or aggressive personality traits that increase the risk for the person to act on such ideations. According to van Heeringen (2012), the stress-diathesis model also suggests that depression and the feeling of hopelessness may serve as the stress component of the model.

Based on Mann's theory, I examined whether the psychopathic personality traits of impulsivity and aggression, and psychopathology such as depression predict suicidal behavior in my sample. As suggested by Mann's theory, all of these factors may serve as diathesis or stress components in the diathesis-stress model of suicide. The findings of this research showed that individuals who exhibited higher levels of secondary psychopathic traits (i.e., impulsive and/or aggressive personality traits) were more at risk for attempting suicide than those individuals who scored low on these personality traits. Furthermore, the results of the current study also yielded that individuals with higher levels of cognitive symptoms of depression were more at risk to attempt suicide than those who exhibited lower levels of such symptoms. Such cognitive symptoms of depression include, for example, concentration difficulties, thoughts of personal failure, worthlessness, and hopelessness with regards to the future (Asmussen et al., 2009).

Therefore, it is appropriate to conclude that the findings of this study are in accordance with the essence of Mann's diathesis-stress theory of suicide.

Limitations of the Study

As stated in Chapter 1, this study used an archival database as its data source to answer the research question. By using a nonexperimental research study, I was not able to identify causal relationships among variables; thus, the results cannot be generalized to the whole population. Therefore, the findings of this research did not indicate that elevated psychopathic traits would cause an increase of risk of attempting suicide. The relationships between suicidal behavior and psychopathy, depression, and the percent of time spent in solitary confinement that this research study has detected can only be interpreted as a correlational relationship.

Another limitation of this study stems from the nature of using the archival research design. Due to the nature of using archival data in the study, in some cases only proximate data were available or not enough data were available on a particular variable of interest (for example, only 8.9% of the participants attempted suicide in the sample) for use in the analysis. While such data were still appropriate to use in the research, the scope of the study or the statistical procedure had to be modified accordingly.

The data were collected only from male offenders; thus, the gender effect could not be examined in this research. No conclusion could be deduced with regards to female offenders from the results of this research. The findings are only related to the male offender population.

The data were collected by self-administered measurement tools, such as the PCL-R and the PAI scales. The results gained from using self-administered tools are often subject to responder bias. However, both of these measurement tools demonstrated high levels of validity. Hare (2011) found the PCL-R to be a valid and reliable assessment tool to measure the traits of psychopathy in individuals in forensic settings. Douglas et al. (2001) found the PAI scales and subscales to be appropriate to measure psychopathology in individuals in forensic settings. Therefore, and because the data were collected by a trained psychology professional, this limitation was mitigated so that the results of the current research study can be considered valid and reliable.

Recommendations

The current research has yielded several findings with regards to the relationship between suicidal behavior and psychopathic personality traits in the male imprisoned population. Compared to previous research studies, this study identified a contributing factor to suicidal behavior in this population, namely, the percent of time spent in solitary confinement, that has not been examined before in scholarly research. However, the number of cases who attempted suicide was very low in the sample. Therefore, it is recommended that future research concentrates on the relationship between psychopathic personality traits and suicidal behavior, considering the effect of solitary confinement on this relationship and including more participants who attempted committing suicide.

Also, the results of this study indicate that further research on the overall effect of solitary confinement on the psychological well-being of incarcerated offenders is needed. Finding out about the implementation of possible measurements and control procedures

in the treatment of the incarcerated offender population would enable forensic psychologists to save more lives in prisons. Common procedures that might elevate the risk for committing suicide and/or might endanger the psychological wellbeing of inmates must be investigated and control procedures must be implemented in order to properly treat this population.

A larger sample size is required in order to examine the effect of anxiety on suicidal behavior. Previous research has found anxiety to be strongly related to suicidal behavior, but in this study, there were not enough cases to include in the analysis. However, examining the relationship between psychopathic personality traits and suicidal behavior, while at the same time also considering the effect of anxiety, depression, and time spent in solitary confinement could provide significant contributions to the scientific literature on psychopathic offenders' suicidal behavior.

Also, because the sample in this research consisted of only male incarcerated individuals, the gender effect could not be considered. It is recommended that future research also include female participants, so that the research findings could be generalized to a larger population. Female offenders with psychopathic personality traits remain uninvestigated in contemporary scientific research (Forouzan & Cooke, 2005).

Furthermore, the participants in this study were all convicted of federal crimes, not state crimes (S. Duncan, personal communication, October 8, 2015). Investigating a sample that is more diverse with regards to the types of crimes they committed would also help provide valuable information to future research in the discipline.

Implications

The implications of the current research could impact several different groups. Psychology professionals, family members, and friends of incarcerated individuals, as well as fellow inmates, could all benefit from the findings of this study. Present findings have potential value for psychology professionals working with incarcerated populations with regards to the complexity of the relationship between psychopathic personality traits and suicidal behavior. The results could help these professionals to identify what might elevate the risk of suicide in the male incarcerated population; thus, they would be better informed about what they need to focus on when assessing male inmates with elevated psychopathic personality traits.

Another way the results could contribute to positive social change is providing better treatment to the male incarcerated population who also exhibit elevated psychopathic personality traits. Treatment programs would now be able to provide better help for this population by targeting factors that can significantly contribute to the development of suicidal behavior among psychopathic male offenders. For the same reasons, suicide prevention programs can also be better developed, because the complexity of suicidal behavior is now better understood.

Overall, better mental health care could be provided for the mentally ill male prison inmate population who also score high on psychopathic traits. Taking the results of the current research into consideration, more lives could be saved among the male prison inmate population due to the fact that the underlying constructs of suicidality in this population are now better understood.

Other parties who might also benefit from the findings of this research are family members and friends of the incarcerated offenders who attempt suicide and, according to Hales et al. (2015), fellow inmates who have contact with inmates who attempt or actually commit suicide. Family members, friends, and fellow inmates can inform forensic psychology professionals when the inmate they are related to is exhibiting one or more of the contributing factors of suicidal behavior.

The results are indicating that solitary confinement is not a solution to the behavioral problems that are prevalent in prisons, but much rather is a significant problem that needs to be solved. Thus, the results have potential value for corrections officials and lawmakers. According to the Liman Report, the joint report of Yale Law School and the Association of State Correctional Administrators (Baumgartel et al., 2015), no nationwide general guidelines are available with regards to the practice of solitary confinement. The results of this study point out the importance of establishing such general rules that provide a framework to the practice of this sort of punishment.

With regards to methodological implications, it is important to note that the quantitative research design is an appropriate approach to investigate the nature of relationships between the development of suicidal behavior, psychopathy, and psychopathology. With the help of the quantitative approach, it is possible to identify further factors that significantly contribute to suicidal behavior in this vulnerable population of prisoners.

Regarding the recommendations for practice, as a result of this study, it is important to draw forensic psychology professionals' attention to the significant effect of

solitary confinement on attempting suicide in incarcerated male individuals who exhibit high secondary psychopathy traits together with a diagnosis of mental illness. When assessing incarcerated offenders for the risk for suicide, the percent of time spent in solitary confinement can provide useful information for treatment and suicide prevention programs.

Conclusion

This study intended to fill a gap in contemporary scientific research in the field of forensic psychology. Contradictory to Cleckley's initial conceptualization of psychopaths, individuals with psychopathic personality traits are not protected against attempting suicide. However, because psychopathy is a highly complex construct, it is important to be aware of the particular traits that are characteristics of psychopathy and are likely to elevate the risk of suicide in the mentally ill male prison inmate population. Also, because not all individuals who present major psychopathology attempt suicide, it is of critical importance to consider the role of diathesis in addition to the presence of mental illness. These research findings invite forensic psychology professionals not only to concentrate on and treat the specific psychopathology the inmate exhibits but also to always think in complex relations concerning their professional services. When treating this vulnerable population, it is of critical importance that, during the treatment process, scholar practitioners do not only assess and treat a certain psychopathology that is present in the individual but also consider the special circumstances that the inmates face in their everyday lives while incarcerated.

The fundamental takeaway of this study is that there are many aspects in prison inmates' lives where considering special circumstances during the assessment and treatment of this population would contribute to positive social change to a large degree. Even though prisons are correctional institutions and not mental health care centers, the high proportion of mentally ill individuals in this population calls for extensive research on the mental health assessment and treatment of incarcerated offenders.

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Appendix: Data Use Agreement

DATA USE AGREEMENT

This Data Use Agreement ("Agreement"), effective as of 08/10/2016 ("Effective Date"), is entered into by and between Zsofia Muller-Balazsfi ("Data Recipient") and Dr. Scott Duncan ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in scholarship/research **in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.** In the case of a discrepancy among laws, the agreement shall follow whichever law is more strict.

1. Definitions. Due to the project's affiliation with Laureate, a USA-based company, unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the USA "HIPAA Regulations" and/or "FERPA Regulations" codified in the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.

3. Data Fields in the LDS. **No direct identifiers such as names may be included in the Limited Data Set (LDS).** In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the project: demographic data (age, ethnicity, level of education, marital status, type of crime committed, number of previous arrests); T scores on the Personality Assessment Inventory's Depression Subscale, Anxiety Subscale, Drug Subscale, and Alcohol Use Subscale; scores obtained on the Psychopathy Checklist-Revised instrument.

4. Responsibilities of Data Recipient. Data Recipient agrees to:

   a. Use or disclose the LDS only as permitted by this Agreement or as required by law;

   b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;

   c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

   d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

   e. Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. <u>Permitted Uses and Disclosures of the LDS.</u> Data Recipient may use and/or disclose the LDS **for the present project's activities only.**

6. <u>Term and Termination.</u>

    a.   <u>Term.</u> The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

    b.   <u>Termination by Data Recipient.</u> Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.

    c.   <u>Termination by Data Provider.</u> Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

    d.   <u>For Breach.</u> Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

    e.   <u>Effect of Termination.</u> Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. <u>Miscellaneous.</u>

    a.   <u>Change in Law.</u> The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

    b.   <u>Construction of Terms.</u> The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

    c.   <u>No Third Party Beneficiaries.</u> Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

    d.   <u>Counterparts.</u> This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

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e.   Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

Signed: _Scott A. Duncan_

Print Name: _Scott A Duncan_

Print Title: _instructor_

DATA RECIPIENT

Signed: _____

Print Name: Zsofia Muller-Balazsfi

Print Title: _____