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DIAGNOSING THE PAST, CONSEQUENCES FOR THE FUTURE: A LIFE CYCLE OF TRAUMA AND MENTAL HEALTH ISSUES FOR INCARCERATED WOMEN. DOES RACE MATTER?

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JENNIFER HARTSFIELD
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DIAGNOSING THE PAST, CONSEQUENCES FOR THE FUTURE:
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DOES RACE MATTER?

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF SOCIOLOGY

BY

Susan F. Sharp, PhD Chair

Susan Marcus-Mendoza, PhD

Kelly Damphousse, PhD

Ann Beutel, PhD

B. Mitchel Peck, PhD

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ABSTRACT

The last two decades have seen an increase in the literature about incarcerated women. This research has established that incarcerated women share life histories wrought with abuse and trauma. Research has also found that incarcerated women suffer from mental health issues at higher rates than the general population. This is significant to the creation of policy and programming in the criminal justice system.

Previous research in the general population has established a link between adverse experiences in childhood and negative outcomes in adulthood. Childhood adverse experiences include measures of child abuse and household dysfunction such as parental divorce and living with substance abusing parents. This study establishes a new cumulative measure of adverse experiences that spans childhood and adulthood by adding the experience of adolescent sexual assault, rape as an adult, and domestic violence to childhood adverse experiences to create a Lifetime Adverse Experience (LAE) score.

Specifically, this study is focused on life histories of adverse experiences and mental health among female prisoners. Previous studies have not looked at differences among incarcerated women by race/ethnicity. This study finds that trauma histories vary significantly between white, black, and Native American women in prison. Furthermore, lifetime adverse experiences are significantly related to entering prison with a mental health diagnosis and experiencing symptoms of depression while incarcerated. Thus creating the need for policy and programming in the criminal justice system to address these needs.

CHAPTER ONE

INTRODUCTION

Just as the last two decades have seen an unprecedented increase in female incarceration, so has there been an unprecedented increase in the incarceration of mentally ill individuals (Cloyes, Wong, Latimer & Abarca, 2010). Although not simultaneous, there has been an increase in the criminological literature regarding women and crime as female incarceration rates increased. Where we once had male centered theories of crime, we now can speak of feminist pathways and the gender sensitivity of theories such as General Strain theory. This change has resulted in criminologists paying more attention to female deviance, crime, and incarceration. Similarly, more attention is being paid to mental health issues in prison. However, the work is not over. What we have learned about incarcerated women and mental health is important. We now know that as a group, incarcerated women are more likely to come from impoverished backgrounds and have life histories fraught with abuse and trauma - particularly childhood sexual abuse. We have also learned that incarcerated women have higher levels of depression, PTSD and other mental health-related issues than the general population. We also know that incarcerated women suffer from poor health. Finally, we have learned over the last decade or so that incarcerated women are provided with inadequate services to deal with the issues that plague them. In fact, even though the limited research that exists shows that gender matters with

regard to mental health, most correctional mental health studies fail to account for gender differences or the processes that create them (Cloyes et al., 2010).

While we have increased our knowledge regarding the incarceration of women, there is still much to be learned, especially in the area of mental health. We have bits and pieces in the criminological research about trauma, mental health, and incarcerated women, but we have yet to understand how these processes affect women and their mental health and what this means for the criminal justice system as a whole. Furthermore, our understanding about how race and ethnicity combine to affect the lives of incarcerated women is not well understood in the literature. This is particularly the case for smaller minority groups, such as Native American women. Perhaps this is due in part to numbers - large samples of incarcerated women are difficult to obtain in order to study minority women in detail. In fact, while there are some states that have several thousand incarcerated women, there are even more that only have several hundred incarcerated women. It is time now to look more closely at incarcerated women in an attempt to bring together pieces of information that we have learned over the years and to search for some answers regarding trauma, mental health, and race/ethnicity in the lives of incarcerated women.

Women and Prison

As of the middle of 2007, 115,308 of all prisoners were female (Sabol and Couture, 2008), this is an increase from the 68, 468 female prisoners in 1995 (Harrison and Beck, 2005). The state of Oklahoma is number one in the

incarceration of women, with 10.4% of all inmates being female. This amounts to 2, 274 women, at an annual expense of $16,000-$23,000 per offender (OK DOC, 2009). While there is a growing body of literature about incarcerated women, this population was virtually ignored by researchers until the last 15 years or so (Covington & Bloom, 2003). While the United States now has many female correctional facilities, women are still often treated by the system as if they are the same as men, from the design of prisons to the programs and treatments that are offered (Chesney-Lind, 2003; Shelden, 2001). Furthermore, non-white women are overrepresented in the prison system, and previous research has not thoroughly addressed racial and ethnic differences between incarcerated women. This is significant in light of the rapidly increasing numbers of women who are being incarcerated. The focus of this study is the traumatic histories of incarcerated women, as this bears directly on prison practice and is significant in creating prevention and treatment programs for female offenders both prior to, during, and after incarceration.

The pathways in which women become involved in the criminal justice system are unique to women and cannot be explained in the same way as male crime and criminality (Belknap & Holsinger, 2006; Holsinger & Holsinger, 2005). How women are treated while incarcerated should reflect their unique needs; if not, the risk is causing more harm. When women are treated like their male counterparts, we see them in chain gangs (Arizona) and subjected to boot camps designed to “rehabilitate” (Marcus-Mendoza & Klein-Saffran, 1998).

The results can be devastating to women who have a history of being abused and have mental illness such as depression or PTSD.

Previous studies regarding the traumatic histories of incarcerated women have been limited. These studies often used qualitative data, which offers detailed information about small, non-generalizable samples. Also, these studies often combined abuse types into one variable, which only gives general patterns of information (McDaniels-Wilson & Belknap, 2008). Of additional importance is the lack of research which looks specifically at minority women in prison and their experience of trauma. Furthermore, previous literature has focused on childhood sexual abuse and less research has been done on physical abuse as well as the relationship between sexual and physical abuse as a child and adult.

Just as past criminological research paid little attention to women, present research has essentialized women, treating them as a homogeneous group, when in fact they are a diverse group of women with unique needs and experiences. bell hooks uses the terms multiple jeopardy and interlocking systems of oppression to describe the experiences minority women have as a result of being female, non-white, and poor. This bears directly on the lives of incarcerated women, who we know to be very economically disadvantaged and undereducated as a whole. At this point in time, the literature on women and crime lacks important information regarding the lives of minority women. In the case of Native American women, this information is almost non-existent. It is a fair assessment that Native American women are often omitted or

overlooked in criminological research, which according to Collins (2000), is a form of oppression in itself.

This study seeks to expand the literature by offering evidence that a cumulative score of adverse events that span childhood and adulthood are a better predictor of mental health issues among female prisoners than looking at childhood adverse experiences alone. Secondly, this research seeks to establish whether or not lifetime adverse events differ by race. This research seeks to rectify a gap in the literature regarding race and incarcerated women, specifically in the case of Native American women.

The Study of Men Versus Women

The current study is focused on incarcerated women in order to expand the criminological literature regarding female prisoners. The existing literature has established that incarcerated women are significantly different than their male counterparts, which creates a need for separate policies and practices in the criminal justice system. Previous research has shown that 8 out of 10 cases of child molestation have a girl as the victim, making sexual abuse largely a female problem (Acoca, 1988). Furthermore, when delinquent juvenile girls and boys are compared to a community sample, the delinquent girls show the highest amount of psychological distress, indicating the prevalence and magnitude of distress experienced by this segment of the population (Caufman, Lexcen, Goldweber, Shulman, & Grisso, 2007). Additionally, Covington and Bloom (2003) point out the need to "do no harm" (p.10) in the criminal justice

system, suggesting the importance of insuring policies do not further traumatize prisoners.

Due to the different pathways by which women enter the criminal justice system, we must be aware of the damage that prison can do to women (Covington & Bloom, 2003). For example, the regular operating procedures and dynamics of prison can re-trigger Post-Traumatic Stress Disorder (PTSD) in traumatized women, and it can serve to feed the powerlessness that many women felt prior to incarceration (Covington & Bloom, 2003; Heney & Kristiansen, 1998). Furthermore, the power matrix of the correctional system, a mostly male-run and operated institution, can reinforce the gendered order of males dominating and victimizing females (Heney & Kristiansen, 1998). Lord (2008) points out that "prisons are antithetical to the issues of family relationships that sometimes underlie the mental illness of incarcerated women" (p. 939). Due to their histories of trauma and mental illness, women react to incarceration differently than men, necessitating a different approach to policy and programming (Lord, 2008). This is significant because most women who are in prison will be eventually released back into their communities, often times with the responsibility of raising their children. How women are treated by the criminal justice system will directly impact their chances for success upon release and in many cases their success as parents. Furthermore, due to the cumulative nature of abuse and household dysfunction, it follows that if women enter prison with histories of trauma and abuse, then prison would not be a magical cure. Upon release and re-entry into their

communities, many of these women may be at increased risk of continued abuse. In fact, Greene, Haney & Hurtado (2000) found that children of incarcerated women suffer many of the same abuses that their mothers experienced as children. As a result, prison programming may be able to play a unique role in better preparing and protecting women and their children from future abuse.

Underscoring the importance of identifying abuse histories, childhood experiences of household dysfunction and abuse have been linked to negative outcomes in adults. Beginning in 1995, the Centers for Disease Control (CDC), in partnership with Kaiser Permanente, conducted the Adverse Childhood Experiences (ACE) study. This study surveyed over 17,000 HMO members about a variety of health issues as well as their past histories of abuse and household dysfunction (Felitti et al., 1998, CDC 2010). This study was grounded in the idea that household dysfunction and different types of abuse are interrelated and may have a long-term effect on mental health and physical health (Felitti et al., 1998; Dube et al., 2003; Edwards et al., 2003). Childhood adverse events were split into three groups: abuse, neglect, and household dysfunction. Abuse included emotional abuse, physical abuse and sexual abuse. Neglect included emotional and physical neglect. Household dysfunction was made up of the following: mother treated violently, household substance abuse, household mental illness, parental separation or divorce, and incarcerated household member. Felitti et al. (1998) found that people who experienced one event had a 65% -95% chance of experiencing two adverse childhood events. Utilizing the same data, a later study

found that women were more likely than men to report most types of adverse childhood experiences (such as sexual abuse and household dysfunction) except for physical abuse (Dube et al., 2003). Additionally, they found a significant relationship between the number of adverse childhood events a person experienced and current depression. Similarly, Edwards et al. (2003) found a significant relationship between the number of adverse childhood experiences and mental health illness. Furthermore, a study of men and women on a college campus found that even when men and women experienced the same type of abuse, women are more likely to suffer from psychological distress as a result of the abuse (Romito & Grassi, 2007). Specifically, this study found that sexual violence was greater for females as well as experiencing depression, eating problems, suicidal ideation, and alcohol abuse as a result of the sexual abuse, further supporting literature that shows women are at higher risk of sexual violence and experience greater psychological distress as a result.

Summary

As noted in this chapter, men and women differ in many ways. The paths that bring men and women into prison are distinctly different as are the crimes that they are imprisoned for. Abuse and subsequent mental health issues differ by gender for the general population as well as for those who are incarcerated, which makes treating men and women the same in the criminal justice system nonsensical.

Historically, little attention was paid to the incarceration of women. However, the past decade has seen a marked increase in the study of women and crime. This is largely due to the fact that female incarceration has risen to unprecedented levels. Even though there has been an increase in the study of women in prison, the work is not finished. Due in part to sample sizes, quantitative research is scant and studies surrounding race and ethnicity are rare. As a case in point, research regarding Native American women is all but non-existent.

The current study seeks to rectify some of missing pieces surrounding the process that trauma and mental health play in the lives of incarcerated women. To do so, I build on the ACE study, drawing on sociological literature concerned with stress and cumulative disadvantage. Also, I attempt to expand the literature concerning the role of race and ethnicity in the lives of incarcerated women. In doing this, I will identify some areas where policy and practice in the criminal justice system can do a better job of meeting the needs of incarcerated women and society as a whole.

In the subsequent chapters, I will discuss empirical research on household dysfunction, trauma, stress and mental health. Additionally, I will discuss the methods used for collecting and analyzing the data in this study. The analysis and results are split into two separate chapters. Each chapter presents the findings for one of the two research questions. Finally, I will discuss the findings and the resulting policy implications.

Chapter Two is a review of the pertinent literature regarding childhood household dysfunction, childhood trauma, adult trauma, and mental health. The contributions of each type of strain to negative adult outcomes are discussed along with findings that show the inter-relatedness of each category of adverse experiences. I also discuss the prevalence and patterns of mental illness in female prison populations. I then discuss importance of intersectionality in research and the contribution of General Strain Theory to the current research project. Finally, I pose two research questions and the resulting hypotheses.

Chapter Three describes, in detail, the methodology of the study. Included with this, is a detailed description of the sample and the differences between the Oklahoma female prison population and women in the general population of Oklahoma. Also included, is a discussion of the survey and survey items used to test the hypotheses. A discussion of the ACE study is included, along with a comparison of findings for select variables.

Chapter Four presents the quantitative results for the analysis of research question one, hypotheses 1-3. This chapter established a lifetime measure of household dysfunction and trauma and shows the explanatory power of this measure in regards to mental health functioning.

Chapter Five gives the quantitative results for the analysis of research question two, hypotheses 4 and 5. This chapter is concerned with the racial differences in the experience of lifetime trauma and subsequent mental health.

Chapter Six contains a discussion of the study limitations, research findings, and contributions to the literature. The chapter ends with policy

recommendations stemming from the research findings and suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter is a review of the relevant literature used to establish a basis for the resulting research questions and hypotheses. The discussion begins by presenting the Adverse Childhood Experience (ACE) study, which consists of childhood abuse and household dysfunction. I then discuss adult traumas and how they are related to earlier abuse and household dysfunction. Next, is a discussion about mental health and incarcerated women, followed by a discussion about why race and ethnicity is important to this research. Finally, I discuss the theoretical perspective for this study. Chapter Two ends with a description of the research questions and five hypotheses.

Adverse Childhood Experience and Adult Trauma

Family characteristics. Several studies have documented long term negative effects from childhood experiences. The ACE study originally looked at 7 categories of childhood experiences, 4 of which were household characteristics that included substance abuse, mental illness, violence, and criminality by the adults in the home and the effects that has on the lifetime outcomes of the children in the study (Felitti et al., 1998), later, measures of neglect were added to make a total of 10 adverse childhood experiences (CDC, 2010). Previous research has shown that families that are violent tend to be violent in more than one way.

Children of women who are in a situation of domestic violence are often witness to a high level of violence that includes hitting, pushing, choking, kicking, severe beatings, and threatening death (McCloskey, Figueredo, and Koss, 1995). Furthermore, domestic violence does not end with the children's mother. In homes where fathers are abusive to mothers, the children are at increased risk for physical and sexual abuse (McClosky et al, 1995). It is interesting to note that for the women in this study, sexual abuse was not correlated with physical abuse, even though domestic violence was related to both.

Sexual abuse. Much of the literature surrounding incarcerated women and abuse focuses on the experience of childhood sexual abuse. It is undeniable that female inmates have a much higher rate of childhood sexual abuse victimization than the general population. Previous studies show rates of childhood sexual abuse ranging from 13% -59% among incarcerated women, and most agree that the most accurate estimation is close to 50% (Gilfus, 2002; Heney & Kristiansen, 1998; Marcus-Mendoza & Wright, 2003; McClellan, Farabee, & Crouch, 1997; Raj, Rose, Decker, Rosengard, Hebert, Stein & Clark, 2008; Zlotnick, 1997). This is compared to a rate in the general population of about 30 % (Heney & Kristiansen, 1998) or 25%, as found by the ACE study (CDC, 2010). Studies that compare incarcerated women to community samples find that there is a significant difference between the two, with childhood sexual abuse being more prevalent in the prison population (Raj et al., 2008). Research looking at multiple types of sexual victimization, such as childhood, adolescent or teen, and adult sexual assault, are not as common as studies that focus on childhood sexual abuse

alone (McDaniels-Wilson & Belknap, 2008). A recent study that does look at multiple forms of sexual violence experienced by incarcerated women found that 70% of incarcerated women reported experiencing lifetime sexual abuse (McDaniels-Wilson and Belknap, 2008). More specifically, the study found 54.5% reporting that they had been raped, 11.5% reported gang rape, and 50.1% reported childhood sexual abuse. Similarly, Raj et al. (2008) found that sexual violence across the life span was related, girls who were victimized as children were more likely to be victimized later in life.

There is a significant difference between incarcerated women and the general population in terms of abuse histories; however, this does not mean that childhood abuse causes criminality. While many incarcerated females share this type of past history, it is important to note that the majority of women in the general population who are abused as children never commit a crime (Browne & Finkelhor, 1986; Heney & Kristiansen, 1998). In addition, it is hard to tease out the effects of the abuse from other negative factors in the childhood environment because many of the women who were sexually abused as children also experienced environmental factors that are associated with a greater likelihood of committing a crime (Heney & Kristiansen, 1998). Additionally, some studies (Raj et al., 2008) purport that childhood sexual assault is a direct product of family relationships, and when adolescents leave that household environment they may be less likely to be the victim of further assault through the teenage years. Studies that use the ACE data show all types of abuse as well as household dysfunction can contribute to problems lasting well into adulthood (Dube et al., 2003;

Edwards et al., 2003; Felitti et al., 1998). In addition, other research has reported that more than one experience of sexual abuse across the life span was associated with increased mental health problems; even after accounting for other lifetime trauma, those who were sexually abused had more mental health problems (Banyard, Williams & Siegel, 2001). What is clear is the following: household dysfunction, victimization, and mental health problems are all intertwined; however, research has yet to sufficiently explain these relationships.

In an extensive review of past research on the impact of child sexual abuse, several correlations in the outcomes of survivors were reported (Browne & Finkelhor, 1986). The authors cite multiple studies that found high levels of depression, low self esteem, suicidal ideation, problems with school, running away, early marriage, and a study, that found 33%-68% of survivors (varied by severity of abuse) were raped as an adult (Browne & Finkelhor, 1986).

A recent study of males and females who had been abused or neglected as children found that earlier ages of abuse were associated with current mental health problems. The authors suggested that there may be added affects of abuse according to age and developmental stage of the child; for example, younger children may experience attachment problems that can affect them for the rest of their lives (Kaplow & Widow, 2007). This is significant for two reasons. It could be that childhood sexual abuse may have more of a significant affect on current mental health functioning than more recent sexual violence, or subsequent victimization may be related to the childhood sexual abuse. In either case, prison practices and programming could benefit from this knowledge.

Physical abuse. Childhood physical abuse has been studied far less than sexual abuse, especially with regard to women. When physical abuse has been studied, it has been a study concerned with linking physical abuse of males to violent crime, or it has been studied while also looking at sexual abuse (McDaniels-Wilson & Belknap, 2008; Springer, Sheridan, Kuo, & Carnes, 2007). In an attempt to rectify the gap in literature, Springer et al. (2007) found that childhood physical abuse was indeed linked to negative mental and physical health outcomes in adults. This relationship was independent of family characteristics and demographic factors for this sample in the general population. One study that looked at sexual abuse of incarcerated females found differential effects of childhood physical and sexual abuse, with physical abuse leading to running away as an adolescent (Conner, Hartsfield, & Sharp, forthcoming). Running away as an adolescent girl may lead to other negative outcomes such as contact with the criminal justice system for status offences and vulnerability of being alone on the streets. Of consequence to this study is the co-occurring nature of abuse. The ACE study, for one, found high levels of correlation between abuse categories (Felitti et al., 1998), as have other research studies (McCauley et al., 1997; Romero et al., 2009, Tusher & Cook, 2010). Additionally, the association between physical abuse and substance abuse is of subsequent consequence. Several studies have confirmed the relationship between childhood physical abuse and later drug use (Landsford, Dodge, Pettit, & Bates, 2009).

Cumulative Disadvantage and Stress

Previous literature has shown that childhood household dysfunction and childhood abuse are co-occurring (Felitti et al., 1998; McCauley et al., 1997; Romero et al., 2009). Similarly, previous studies have shown that childhood sexual and physical abuse are associated with adolescent sexual assault, adult rape (Follette, Pousny, Bechtle, & Naugle, 1996; Hartsfield, Conner, & Sharp, n.d.; Raj et al., 2008; Tusher & Cook, 2010), and domestic violence (Follette ete al., 1996: McNutt, Carlson, Peraud & Postmus, 2002; Tusher & Cook, 2010). While these factors are correlated, previous literature has debated whether or not the impact on associated negative outcomes are cumulative (Agnew, 1992; Appleyard, Egeland, van Dulmen, & Sroufe, 2004; Follette et al., 1996; Glasner et al., 2006; Rutter, 1981), or the product of more recent events (Agnew, 1992), or through a "threshold" effect (Appleyard et al., 2005; Rutter, 1979). Given the recency of adult trauma, it is possible that those events would have a greater negative impact on adult functioning (Agnew, 1992); however several studies have shown that individual recent traumatic events have greater effects but cumulative measures are a stronger predictor when abuses across the life span are considered (Hartsfield et al., n.d., Turner & Lloyd, 1995). The ACE study (Felitti et al., 1998) successfully shows that childhood factors of household dysfunction and childhood trauma predict adult negative mental and physical health outcomes. However, the authors of the ACE study admit that there is a gap in the literature as to *why* this is the case (CDC, 2010). In fact, they compare the process of negative outcomes to a pyramid, where the top point represents early death,

preceded by negative health outcomes. The bottom of the pyramid is household dysfunction and child trauma (see figure 1). The ACE researchers fully acknowledge that the process between childhood factors and negative outcomes has not been established and suggest that this process should be considered in future studies.

Figure 1.



(Source: http://www.cdc.gov/ace/index.htm)

Stress. It is possible that stress or strain increases according to the number of adverse experiences an individual has encountered, thus leading to negative adult outcomes. Childhood events may affect adult mental health by altering a person's ability to cope with later stress (Rutter, 1981; Thoits, 1983). Specifically, Glaser et al. (2006) describe childhood trauma as having a long lasting effect by increasing negative emotions, which heighten responses to future stress.

Stress, in the sociological literature, is described as "internal arousal" resulting from external situations or "stressors" that prevent or challenge a person's core values or needs (Aneshensel, 1992). In very basic terms, the accumulation of stressors may diminish an individual's capacity to cope with or

effectively manage emotions, which in term leads to negative mental health outcomes (Aneshensel, 1992; Turner, Wheaton, & Lloyd, 1995).

Mental Health

Mental illness in women prisoners is estimated to affect from 20 to 60 percent of the inmate population (Pollock, 2002). Many women prisoners have problems with depression, bipolar disorder, anxiety and Post Traumatic Stress Disorder (PTSD), often as a result of traumatic pasts. Incarcerated women are more likely to be involved with mental health services prior to incarceration and have more psychological problems than women in the community (Bloom, Owen & Covington, 2004). Additionally, a Texas study found higher CES-D, depression scores in incarcerated women than in the general population (McClellan, et al., 1997). The literature suggests that victims of sexual assault have a higher occurrence of PTSD and depression, whether they are incarcerated or not. Individuals with a history of sexual abuse reported more current symptoms of depression than a control group and those who experienced other types of abuse. Additionally, the onset of depression may have occurred in childhood (Widom, DuMont & Czaja, 2007). Incarceration could exacerbate PTSD or depression without effective treatment. In fact, a study that compared the mental health of male and female jail inmates found that the women's mental health fared worse the longer they stayed in prison, while the men's did not (Lindquist & Lindquist, 1997)

It is possible that incarcerated women re-experiencing a past trauma may account for the differences between incarcerated women in mental health status. In their article, Heney and Kristiansen (1998) outline several processes that trauma victims experience and illustrate how these processes can be relived through the incarceration process. For example, the very processes of prison, such as strip-searching, monitored bathing, pat-downs, body cavity searches, and restraining practices can serve to re-traumatize women by replicating the original abuse and adding to feelings of powerlessness. This is compounded by the fact that many of the women in prison were abused by men and the majority of prison guards are male, thus replicating the power structure of previous abuse (Covington & Bloom, 2003; Heney & Kristiansen, 1998; McClellan, et al., 1997).

Cumulative effects. Building on the Adverse Childhood Experiences study, Messina, Grella, Burdon, & Prendergast (2007) measured childhood adverse events and mental health in a sample of drug addicted male and female prisoners. They found that women were 10% more likely than men to report sexual abuse and 27% more likely to report that the sexual abuse was continual. In addition, being female was significantly related to several mental health categories (dissociation, depression, anxiety, sexual problems, and sleep disturbance). Furthermore, this study found a cumulative effect of abuse on mental health.

Childhood experiences of abuse, both sexual abuse and physical abuse are related to problems with mental health. Additionally, witnessing domestic violence is related to mental health issues. In a study of children who grew up in

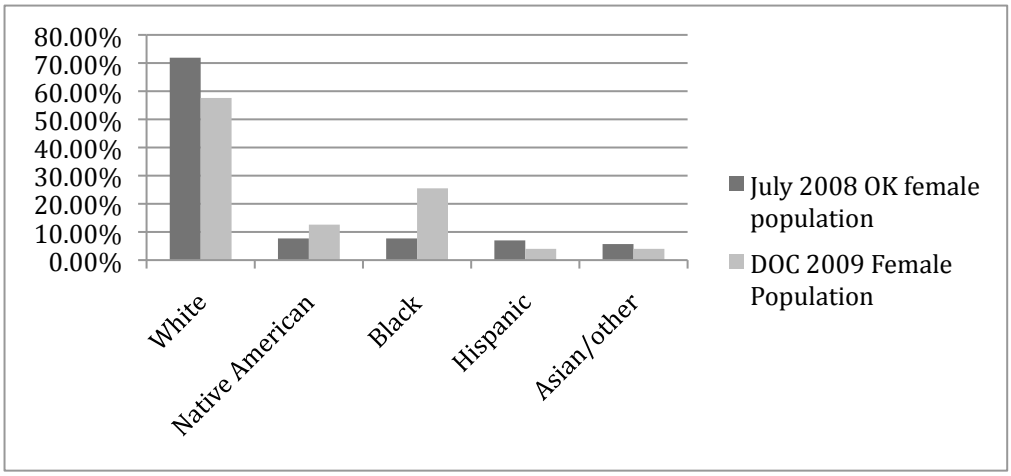
homes where domestic violence occurred, many suffered abuse themselves and suffered from mental health issues themselves (McCloskey et al., 1995). Of interest in this study is that no one particular mental health issue was correlated with a particular type of abuse, suggesting that the fear and experience of violence itself is enough to cause psychological distress, and alternate forms of coping manifest themselves in a broad range of mental health issues (McCloskey et al., 1995).

The existing literature is consistent in its findings regarding the prevalence of traumatic pasts incarcerated women share. Additionally, there is evidence that incarcerated females experience more mental health problems than their male counterparts. However, the existing literature rarely looks at multiple types of abuse in the same study (McDaniels-Wilson and Belknap, 2008). Additionally, the literature has considered childhood sexual abuse more often then adolescent rape by peers or adult rape. When considered together, the current study is unique in several ways and can add to the body of literature about incarcerated women.

Race and Ethnicity

According to data in 2009, the representation of race in Oklahoma correction facilities for women is not the same as it is in the general population of Oklahoma women. While females in Oklahoma are 71.9% white, 7.7% Native American, 7.7% black, 7% Hispanic, and 5.7% Asian or other, the percentages of incarcerated women are 57.6% white, 12.6% Native American, 25.5% black, 4% Hispanic, and .4% Asian or other.

Figure 2.



(Source: OK DOC, 2009)

As a group, whites are largely underrepresented in the prison population, while black and Native American women are overrepresented (OK DOC, 2009). This is not unlike the national statistics that show minorities are overrepresented in prison populations. Oklahoma is unique in the number of Native Americans both in the general and prison populations, thus making Oklahoma a good location for researching Native Americans in the prison system.

Perhaps no other phrase captures the essence of this research better than *soul wound,* which is the term used to describe the cumulative effects of a history of trauma and injustice (Walters and Simoni, 2002). Native Americans, as a group, have been subject to policies aimed at annihilation and then assimilation of their culture and people. These policies and practices, both historic and present, have served to disadvantage this group as a whole. Specifically, Native American women have been subject to high rates of interpersonal violence and forced sterilization that have resulted in an overall distrust of greater society (Smith,

2005; Walters and Simoni, 2002). Much of this trauma is not "historic". About 40% of Native American women of childbearing age were sterilized during the 1970's. Loss of culture and a feeling of powerlessness has led to increased interpersonal violence among Native American communities. Laws and policies regarding the policing of Native lands have left women unprotected from interpersonal violence (Smith, 2005). Additionally, Angela Y. Davis (2003) points out, "Because we are so accustomed to talking about race in terms of black and white, we often fail to recognize and contest expressions of racism that target people of color who are not black". As Collins (2000) points out, omission itself is a form of oppression.

Theoretical Perspective

Intersectionality. All too often women are treated as a homogeneous group, as if all women share the same position in society. The criminological literature is no exception to this practice. As stated by Spelman (1997), "If there is a woman part of me, it doesn't seem to be the kind of thing I could point to - not because etiquette demands that nice people don't point to their private or covered parts, but because even if I broke a social rule and did so, nothing I might point to would meet the requirements of being a 'part' of me that was a 'women part' that was not also a 'white part.'" Gender and race/ethnicity are inextricably linked and should be accounted for in research. Essentialist treatment of women is problematic at best because it masks the oppression experienced by many women. Consequently, some women are left to feel as though the feminist movement

either passed them by, or has no place for them in it. Nevertheless, an essentialist view of women is present in most academic theoretical traditions.

The use of intersectionality is rare if not unused in the study of many social issues. Speaking of bell hooks, Tong (1998: 217) writes that she is "…dismayed by the apparent inability of many white feminists to understand what black feminists actually mean by expressions such as 'multiple jeopardy' and 'Interlocking systems of oppression' (she) claimed in no uncertain terms that racism, sexism, and classism are not separable in fact, even if they are separable in theory." Quantitative sociological research has long used gender, race, and class as control variables, but little consideration has been given to the way in which each, race and class, contributes to the differences in oppression experienced by women. This argument closely mirrors the arguments raised by feminist criminologists in the 1970's and 1980's with regard to gender in the criminological literature. The result of leaving out a particular group of people is that policy and activism that stems from such research has not been as informed as it should or could be if an approach such as intersectionality had been standard practice. What is lost is the uniqueness of the oppression felt by women who are black, Hispanic, Native American, Asian, and so forth. Also, we lose information about white women, especially those who live in abject poverty. By accepting that women are not a single, solitary group and acknowledging differences in history and socialization we can gain a better picture of the world. This is not to say that there has not been or there is not utility in research on women as a single group. At this point in time, issues surrounding race and class have served as divisive

issues in the feminist movement, preventing a solid body of criminological research that is approached from a framework of intersectionality.

Beyond racism and sexism is classism. Classism has been an issue in feminism from the beginning of the feminist movement. Additionally, as white, middle class women began to achieve equal access to jobs and resources, revolutionary feminisms fell by the wayside (hooks, 2000). It was problematic that while Betty Freidan gained popularity with her book *The Feminist Mystique*, many lower class women were struggling in low paying jobs. For the masses of women who were unable to stay at home and share in the trials and tribulations of homemakers, *The Feminist Mystique* was further evidence to some that the feminist movement was a white, privileged class movement (hooks, 2000). Class status is of the utmost importance when discussing incarcerated women due to the overall class status of this group of women. The majority of the female prison population is made up of poor women, whose life experiences differ from those of middle and upper class women.

While the issues of intersectionality affect all aspects of research and policy, the issue of domestic violence is a topic that can exemplify my concerns with the present state of feminist criminology. Both research and policy have done a disservice to women who suffer multiple disadvantages due to race and class. If we are studying domestic violence and do not look for the differences among women, then policy and practice can not address the additional needs of women who are multiply marginalized. As a result, bias is introduced into the structure of services offered to battered women, whereby services do not

adequately cover the needs of some women, while others are left without services altogether (Crenshaw, 1991). In example, some battered women's shelters will not accept women who do not speak proficient English. Similarly, many programs do not address the housing and employment needs that force women to stay in abusive relationships. By understanding intersectionality, researchers can look for differences between and within groups of women and policy makers can better address the needs of all women (Crenshaw, 1991).

Within the field of criminology, more attention has been paid to women over the last 20 years due to an increase in female incarceration. This attention to women has lead to critical analysis of the field of criminology and its lack of literature concerning women. The last 25 years has seen the creation of feminist criminology and theories that are applicable to women's unique position in the criminal justice system. One is unable to discuss women in the criminal justice system without also discussing violence against women (Chesney-Lind, 1989). What is somewhat missing from feminist criminology is a discussion about economic marginalization and race with regard to women. It seems to me that many of the gains in the position of women have not been equally distributed across race and class. As a result, those women who are the most disadvantaged face the most oppression in society, with one consequence being contact with the criminal justice system.

The intersectionality framework is not without its criticisms. Using a framework of Intersectionality is not always feasible in quantitative research. It requires a sample large enough to have the representation needed to perform

statistical modeling. Also, some critics argue that you are reducing away your explanatory power when you break individuals into such small categories. Finally, where do we end? I have discussed race, class, and sexuality but what about ethnicity? Age? Geographic location? There could be a slippery slope with regard to how far are we willing to reduce down into individuality. Furthermore, this reduction into individuality is just that, individuality which could serve to place blame on the individual rather than institutions and structure for social problems. This is the divide both in scholarship and activism. Both methods of research are not without their strengths and weaknesses, as there is power in numbers and benefit to studying women as a solitary group; however, you may lose valuable information in doing so.

This research study is unique in that a framework of intersectionality is both feasible and beneficial to the literature on the topic of incarcerated women. When looking at the demographics of the women in prison, it is clear that this population is highly disadvantaged and that it is generally those with the least amount of power and resources who suffer the most discrimination in the criminal justice system, both as victims and offenders. This lack of power to change their situations feeds a vicious cycle of disadvantage, abuse, and offending.

General Strain Theory. Testing a theory is not the objective of this study; in fact, given that the population being studied is in prison and there is not a comparison group, theory testing is not appropriate. However, General Strain Theory heavily guides this study, and the results may have some significant implications to guide future tests of the theory. General Strain Theory, as put forth

by Agnew (1992), is rooted in the stress literature and expands upon previous strain theories. Prior to Agnew's General Strain Theory (GST), strain theory proposed that crime and delinquency was the product of blocked goals and opportunities (Merton, 1968). Agnew expanded this to say that crime and delinquency are the product of negative emotions that are a response to strain or stressors (Agnew, 1992). More specifically, GST identifies three major types of strain that can produce deviance: inability to achieve a desired goal, the loss or projected loss of positive stimuli, or the experience of negative stimuli (Agnew, 2006; Akers, 1997; Broidy & Agnew, 1997). In a later piece, Agnew (2001:351) sets out four specific categories of strain that are most likely to result in criminal coping: strains that are seen as unjust, high in magnitude, associated with low self control, and/or create pressure or incentive to cope through crime. Agnew does not argue that strain leads directly to deviance and crime; rather, the strain or stressor produces negative emotional states such as anger, depression, anxiety, and/or guilt. In the absence of adequate resources or coping strategies to deal with these emotions, negative outcomes such as crime may occur.

Agnew (2006, p. 4) defines strain as "events or conditions that are disliked by individuals." Strains are conceptualized in two ways, as objective or subjective (Agnew, 2001). Objective strains refer to those events or conditions that most individuals would consider negative. Child abuse and adult trauma such as rape and domestic violence are examples of objective strain. Subjective strains are those events and conditions that are negative in certain situations. For example, having parental divorce might be negative to some children who lose a stable

parent, but positive to those who are being taken away from an abusive parent. Furthermore, Agnew (1992, 2006) outlines several conditions in which strain will produce negative emotions: when the strain is perceived high in magnitude, long in duration or frequency (including clustering and accumulation), recency, or threatens core goals, needs, values, or identity. Few studies have investigated these dimensions of strain, particularly recency, duration, or clustering and accumulation (Slocum, Simpson & Smith, 2005). Instead, most tests of the theory have chosen to measure strain at one point in time.

The most persistent predictor of crime is gender, specifically being male. Historically, most criminological theory has focused on male criminality, but recent attention to women has brought more attention to answering the gender gap in crime question. GST has been applied and tested using samples of both males and females with good results. Previous studies have shown the theory to be applicable to both genders and flexible enough to account for the gender gap in crime by finding gender differences in both types of strains experienced and the resulting emotions. Even when males and females are exposed to similar strains, men tend to respond with anger, while women react with anger accompanied by feelings of guilt, depression, and anxiety (Broidy & Agnew, 1997). Thus, men are more prone to anger and externalizing behaviors such as criminal coping, and women to internalizing behaviors such as drug use, alcohol use, suicidal thoughts, and eating disorders (Broidy & Agnew, 1997; Piquero, Fox, Piquero, Capowich, & Mazerolle, 2010; Sharp, Terling, Atkins, & Gilliam, 2001; Sharp, Brewster, & Love, 2003). Thus, GST provides a partial explanation of the gender gap in

offending. However, contrary to this, research has found that incarcerated women have high rates of depression and other mental health issues (McClellan et al., 1997; Caufman et al., 2007; Sacks, 2004; Pollock, 2002; Zlotnick, 1997). In fact, a study of women and recidivism found a higher rate of recidivism rate for women with serious mental illness (Cloyes et al., 2010). Perhaps this can be partially explained by drug use as a way to cope with mental illness. Incarcerated women (Greene, Haney & Hurtado, 2000) and women in the general population (Dube et al., 2003) have been found to use drugs as a coping strategy to deal with past abuse . Additionally, women with mental health issues are at increased risk for drug use (Anda et al., 2006; Dalley & Michels, 2008), and drug use has been linked to non-violent crime in female inmates (Slocum et al., 2005). Furthermore, many women find themselves in jail for crimes directly related to drug use. It is clear that the relationship between mental health and offending is an area in need of further research, and although drug use is not examined in the current study, future research should look at drug use in relationship to abuse, mental health and offending.

Slocum et al., (2005) provide one of the few tests of General Strain Theory using a sample of incarcerated women. This study examines the recency, duration, accumulation and clustering dimensions of strain. The results of this study show that all dimensions of strain are highly correlated, although the type of criminal coping is different by dimension. Interestingly, this study found that drug use was associated with non-violent crime, despite GST's prediction for drug use to be a coping mechanism used to dissipate negative emotion thus lowering the

risk for criminal coping. This is particularly important to the current study as the majority of incarcerated women in Oklahoma are serving time for non-violent offences (OK DOC, 2009).

Research Questions and Hypotheses

Based on a review of the literature, this dissertation addresses two research questions and five hypotheses. Both research questions seek to expand the literature regarding adverse events over the life course and their relationship to adult mental health outcomes.

Research Question One

Previous literature has established that trauma such as childhood physical and sexual abuse contributes to mental health functioning as an adult. Previous literature has also shown that adult traumas such as domestic violence and rape have an adverse effect on mental health. Additionally, there is literature that shows that childhood trauma increases the likelihood of experiencing trauma as an adult. The resulting research question is as follows: Is there rationale for building on the ACE study by including experiences of adult trauma, and does this measure of lifetime adverse experiences better account for mental health issues among female prisoners than childhood measures such as the Adverse Childhood Experiences measure?

Hypothesis One

Adverse childhood experiences increase the likelihood of experiencing abuse as an adult.

Hypothesis Two

Adverse experiences are cumulative in the lives of incarcerated women, the more events experienced during both childhood and adulthood, the greater the likelihood of experiencing depressive symptoms while incarcerated.

Hypothesis Three

Adverse experiences are cumulative in the lives of incarcerated women, the more disadvantage experienced during both childhood and adulthood, the greater the likelihood of entering prison with a mental health diagnosis.

Research Question Two

Female prisoners as a whole are made of individuals from economically disadvantaged backgrounds. Previous literature suggests that low economic status coupled with minority status increase the strain or stress on an individual. Does minority status, specifically being black or Native American, increase the number of adverse experiences a female prisoner has in her lifetime, and does this increased number of adverse experiences contribute to an increase in mental health issues?

Hypothesis Four

Adverse experiences prior to incarceration differ by race. Specifically, black women and Native American women experience more adverse experiences than white women.

Hypothesis Five

As a result of differential experiences of adverse events, experiencing symptoms of depression differs by race.

Summary

At the core of these questions lies the following: how do childhood and adult trauma and disadvantage contribute to the high levels of mental health issues found among incarcerated women? Furthermore, if trauma and disadvantage are cumulative in the lives of women, what does this mean for programming and policies in the criminal justice system? Furthermore, what are the implications for women's re-entry?

CHAPTER THREE

METHODS

Introduction

In this dissertation, I examined the mental health status of female prisoners in the state of Oklahoma. In doing this, I created a cumulative scale that measures events of childhood, adolescent, and adult trauma and disadvantage. This scale is then related to the likelihood of entering prison with a mental health diagnosis and the likelihood of experiencing symptoms of depression while in prison. Additionally, differences in the experience of trauma and disadvantage by race/ ethnicity are assessed for the sample as well as the resulting mental health status of prisoners.

This chapter begins with a brief discussion of the issues surrounding prison research. I then discuss the data used for this research, followed by a description of the sample's characteristics. I then offer a comparison between this sample and the population of female inmates in Oklahoma. I end the chapter by outlining the dependent and independent variables. In Chapters Four and Five, I discuss the analysis as well as the results for my research questions and hypotheses.

Prison Research

Prisoners, as research subjects, are a special population because they are not an autonomous population. As such, researchers are subject to many rules and

regulations to ensure that the research subjects are protected. There are many legitimate reasons to do studies in the prison setting; however, past abuses have made it necessary for the Federal government to create guidelines for the protection of prison inmates.

Historically, there have been many abuses against inmates by researchers. During the early to middle 1900's, inmates were seen as an ideal population to experiment on, and the public had no qualms about doing so. In the name of "research," inmates were given tropical diseases, plutonium injections, and experimental medications and surgeries to name a few abuses (Kalmbach & Lyons, 2003). In response to these abuses, and others, the Federal government established the National Commission for the Protection of Human Subjects in 1974. The Commission recommended that most prison research be discontinued, and, as a result, prison research was vastly reduced.

The first attempts at regulating experimentation began with the Nuremberg Code (1949), which resulted in the first U.S. federal policy regarding human subjects, although this did not halt the abuses of prisoners. The Declaration of Helsinki (1949) specifically addressed "vulnerable" populations and stated that they require "special protection" as do those "giving consent under duress." In the 1970's, Americans were starting to learn of research abuses, thus leading to the Belmont Report in 1979. The Belmont Report lays out three ethical principles: *respect for persons, beneficence*, and *justice*. Each of the three ethical principles bears directly on prison research. *Respect for persons* specifically calls for informed consent and special protection of those who may be easily coerced

or unable to make autonomous decisions. *Beneficence* calls for minimizing risk and doing no harm - both of which require special consideration in the prison setting. The principle of *justice* restricts research on those who will not benefit from the research being conducted. Thus, this ended the practice of using prisoners as a population of convenience for research. There is an inherent contradiction between the free choice to participate in a research study and the nature of prison life.

In addition to the Federal regulations involved with prison research, correctional facilities have their own sets of rules and regulations regarding research. As noted by Byrne (2005), researchers must first research the appropriate criminal justice regulations in the area in which they wish to do research before a prison study can be proposed. Additionally, the IRB process is more rigorous when prisoners are the subjects of inquiry. Finally, it is important to note that female prisoners do have histories of abuse, which should be considered at all stages of the research process (Kalmback & Lyons, 2003). In sum, the research process when prisoners are the subjects of inquiry requires special attention and awareness on the part of the researcher.

Participants and procedure

The data for this study come from a survey of incarcerated women in the state of Oklahoma. The survey, entitled "Oklahoma Study of Incarcerated Mother and Their Children," was administered during the spring of 2007, 2008, and 2009 to inmates at several Oklahoma state facilities. These facilities range in security

level from community corrections to maximum security, although since the surveys were completed, Oklahoma no longer has a maximum level female prison. Participants were chosen by the Department of Corrections by drawing random, stratified samples. No inmate was surveyed more than once. The survey instrument consisted of closed and open-ended questions and took about 1 hour to complete. The survey included demographic questions as well as questions about the women's childhood, abuse histories, delinquency, offense type, history of incarceration, drug/alcohol abuse, and children.

Demographics

The demographic characteristics of the sample are displayed in Table 1. Of the three years the survey was administered, 232 (28%) were collected in 2007, 297 (35.8%) were collected in 2008, and 301 (36.3%) were collected in 2009. Over the three years, four facilities were surveyed. Three hundred and sixty-nine (44.5%) respondents were housed in a medium to maximum-security institution, 301 (36.3%) were in a minimum-security institution, and 160 (19.3%) were housed in community corrections facilities. The sample had a mean age of 36.68, with self-reported ages ranging from 18 to 69. In regards to race, 413 (50% of the sample) were white. One hundred and seventy-two (20.8%) were African American, the largest minority category, followed by Native America (n= 171, 20.8%). Hispanics and other races accounted for 70 (8.4%) individuals. From these categories, 3 dummy variables were created; *Black* (those who indicated black were coded 1, and all others were coded 0), *Native American* (all those who

indicated Native American or Native American and white were coded 1 and all others were coded 0, and *Other* (any responses other than white, black or Native American were coded 1 and all else were coded 0). White is the omitted category in the analyses.

Overall, educational attainment for the sample is low. The majority of respondents have less than a high school education with 90 (10.9%) having less than an 8th grade education and 267 (32.2%) having a 9-11th grade education. High school or GED education was achieved by 233 or 28.1% of the respondents and 78 (9.4%) completed vo-tech. One hundred and fourteen (13.8%) had completed 2 years of college and 13 or 1.6% of the respondents had completed 4 years of college. Two (.2%) had done some post-graduate work. When compared to the general population, this educational attainment is low, and suggests the relative economic disadvantage of this population as a whole.

The measure for education is the only survey question used in this study that changed in 2008 and 2009. In 2007, the question asked *what is the highest grade of school you have completed?* It was determined in subsequent years (2008 and 2009) that information about education would be gathered in more than one way to determine when (before or during prison) the education was obtained. The question from 2008 and 2009 used to create the measure for education in this study was *what is the highest grade of school you have completed before entering prison?* It is possible that this measure of education is slightly imperfect. Some respondents in 2007 might have reported education obtained while incarcerated.

The survey asked the women their marital status at the time of incarceration. One hundred and seventy five (21.3%) of the women reported they were married, and 259 (31.6%) reported they were not married or widowed but living with a male or female partner at the time of arrest. Of the remaining categories, 255 (31%) were divorced, separated, or widowed at the time of incarceration and not living with a partner, and 128 (15.6 %) had never been married. Finally, 13 respondents have an unknown marital status. From these categories a dummy variable, *Cohabitation*, was created. Those who reported they were married, not married but living with a male partner, not married living with a female partner, and widowed living with a male partner were coded 1, and all others were coded 0.

Table 1. Demographics

	N	Percent
Year of Survey		
2007	232	28%
2008	297	35.8%
2009	301	36.3%
Facility Type		
Medium to Maximum-security	369	44.5%
Minimum	301	36.3%
Community Corrections	160	19.3%
Race/Ethnicity		
White	413	50.0%
African American	172	20.8%
Native American	171	20.8%
Other	70	8.4%
Marital Status		
Married	175	21.3%
Not married, but living w/partner male or female	259	31.6%
Divorced, separated, or widowed; not living w/partner	255	31%
Never married, not living w/partner	128	15.6%
Unknown Status	13	
	Range	*Mean*
Age	18-69	36.68
Education	Frequency	Percent
Less than 8th grade	90	10.9%
9th-11th grade	267	32.2%
High School/GED	233	28.1%
Vo-Tech	78	9.4%
Up to 2 years college/associates	114	13.8%
4 years of college	13	3.7%
Post-graduate	2	.2%
Total	828	100%

Measurement

In this section, the specific measures of the analysis are described in detail. Both the dependent variables of depressive symptomatology and previous mental health diagnosis are discussed in detail, followed by the independent variables and control variables. Following a discussion of how each measure is coded, I list the frequency and percentage distributions.

Dependent Variables

CESD-R. The Center for Epidemiologic Studies Depression Scale (CESD-R) was included in the survey as a measure of the women's current depression status. The CESD-R measures depressive symptoms, not the presence of the psychological disorder of depression. In other words, this is not a diagnostic, clinical measure of depression. The CESD-R consists of 20-items that are scored on a 4-point Likert scale. See Appendix A for a list of the questions used in the complete scale. Respondents were asked how they felt or behaved over the last week by indicating one of the following: 1) rarely or none of the time, 2) some or little of the time, 3) occasionally, or 4) most or all of the time. The CESD-R is a theoretically-driven scale that has been proven to be valid and reliable (Radloff, 1977; Eaton et al., 2004).

The mean CESD-R score for all respondents was 41.36, with a minimum score of 10 and a maximum of 78.41 (see table 2). Alpha for this scale was .88, which was high. The standard deviation was 10.85. The mean for white respondents was 41.60, black respondents was 40.86, Native American

respondents was 42.22, and for races other than white, black or Native American, the score was 42.78. As a comparison, Radloff (1977) tested his scale in a general population sample and a sample of psychiatric patients. His study found means scores of less than 10 in the general population (all white) and 24-39 in the patient populations. Weissman, Sholomskas, Pottenger, Prusoff, and Locke (1977) found similar means among their samples in the community and psychiatric facilities. This suggests that the scores found in the present study were high, although this is not surprising given the nature of prison and the questions being asked.

Table 2. Dependent variables

	N	Percent
Mental Illness Diagnosis (prior to incarceration)	367	44.2%
	Range	*Mean*
Depression/CESD-R (last week)	10-78.41	41.36

Previous diagnosis of mental illness was created from the question, *if you have been diagnosed with a mental health problem, what was the diagnosis? (PMI)* Respondents wrote in answers. Qualitative responses of their diagnosis were coded 1. Those who did not indicate a previous diagnosis of a mental illness were coded 0. Three hundred and sixty seven (44.2%) women reported that they had been diagnosed with a mental health problem and 463 (55.8%) did not indicate that they had been diagnosed with a mental health issue (table 2).

Independent Variables

The following independent variables chosen for this study were derived from the Adverse Childhood Experience Study. Collected between 1995 and 1997, the CDC identified variables of abuse and household dysfunction that contribute to adult dysfunction. All but one variable from the ACE study was available for all three years of data; neglect was the omitted variable because these data were not collected in all survey years.

Mental health treatment in prison was created from the question, *Since coming to prison, I:* the response choices were, *Have received counseling for a mental health reason, Have received medication for a mental health reason, have received both counseling and medication for mental health reasons, or Have received no counseling or medication for mental health reasons.* Those who indicated that they had not received any counseling or treatment were coded 0 and those who indicated that they received some type of mental health treatment were coded 1. Three hundred and eighty (54.2%) respondents indicated that they received some type of mental health treatment while in prison and 450 (54.2%) did not receive any type of mental health treatment. Frequencies of mental health treatment are presented in table 3.

Table 3. Frequencies of Mental Health Treatment

	N	%
Mental health treatment in prison	380	45.8
Medication only	149	54.2%
Counseling only	51	6.1%
Medication and Counseling	180	21.7%

The following variables are household dysfunctions and traumas experienced during childhood. Previous literature suggests that these variables may contribute to the likelihood of going to prison with a mental health diagnosis and current level of depression. Frequencies of these variables are presented in table 4.

Lived with an alcoholic (LA) was created using the question, *During your first 18 years of life, did you live with anyone who was a problem drinker or alcoholic?* The response choices were *Yes* or *No*; responses of yes were coded 1 and no were coded 0. Five-hundred and four (60.7%) respondents indicated that they lived with an alcoholic and 326 (39.3%) did not. The frequencies for *LA* are presented in table 4.

Lived with a drug abuser (LDA) was created using the question, *During your first 18 years of life, did you live with anyone who was an illegal drug-user or addict?* The response choices were *Yes* or *No*; responses of yes were coded 1 and no were coded 0. Three hundred and ninety-seven (47.8%) indicated that they had lived with a drug user and 433 (52.2%) did not (see table 4).

Household member went to prison (HMP) was created using the question, *Did anyone in your household go to prison?* The response choices were *Yes* or *No*; responses of yes were coded 1 and no was coded 0. Two hundred and thirteen (25.7%) responded yes and 617 (74.3%) responded no(see table 4) .

Household member was mentally ill (HMI) was created using the question, *Was anyone in your household depressed or mentally ill?* The response choices were *Yes* or *No*; responses of yes were coded 1 and no was coded 0. Three

hundred and fifty-seven (43%) indicated that a family member was depressed or mentally ill and 473 (57%) responded no (see table 4) .

Mother treated violently (MTV) was created from a two-part question. The first part of the question asked, *When you were a child, was your father ever violent around your family?* The response categories were *Yes* or *No, if yes, towards whom (check all that apply.* The second set of responses was, *me, my mother or stepmother, my brother, my sister,* or *other.* The response choice of my mother or stepmother was coded 1 and all other responses were coded 0. Of the responses, 290 (34.9%) indicated yes and 540 (65.1%) indicated no (see table 4).

Childhood sexual abuse (CSA) was created from the question, *When you were a child (under age 18), were you ever sexually abused by anyone that was at least five years older than you?* The response choices were *Yes* or *No*; responses of yes were coded 1 and no was coded 0. Four hundred and fifty-seven (55.1%) respondents reported that they experienced CSA and 373 (44.9%) did not(see table 4) .

Childhood physical abuse (CPA) was created form the question, *When you were a child, were you ever physically abused by anyone? That is, were you ever hit with a fist, slapped, kicked or hit in anyway which left marks on you? We are not referring to regular spankings where no injury or no mark was left.* The response choices were *Yes* or *No*; responses of yes were coded 1 and no were coded 0. Three hundred and ninety-eight (48%) indicated yes and 432 (52%) no (see table 4) .

Parental Divorce (PD) was created using the question, *Did your parents ever separate or divorce?* The response choices were *Yes* or *No*; responses of yes were coded 1 and no was coded 0. Five hundred and thirty four (64.3%) respondents indicated yes, their parents had separated or divorced, and 296 (35.7%) indicated no (see table 4).

The following variables are adult traumas that previous literature suggests are related to childhood adverse experiences. Additionally, these variables may contribute to the likelihood of going to prison with a mental health diagnosis and current level of depression. Frequencies for these variables are presented in table 4.

Adolescent sexual assault (ASA) was created using the question, *Apart from other sexual experiences you had growing up, did a boy or group of boys force you or threaten you with harm in order to have sex with you?* The response choices were *Yes* or *No*, which were coded 1 and 0 respectively. One hundred and seventy one (20.6%) indicated that they had been sexually assaulted as an adolescent and 659 (79.4%) had not (see table 4).

Rape as an adult (RA) was created using the question*, As an adult (over age 18), have you been the victim of sexual abuse?* The responses choices were *yes, within the past year, yes, more than one year ago,* or *no.* Either response of yes was coded 1 and no was coded 0. Three hundred and thirty-one (39.9%) indicated yes they had experienced rape as an adult and 499 (60.1%) did not (see table 4) .

Domestic violence (DV) was created using the question *As an adult (over age 18), have you been involved in any episodes of domestic violence (Check all that apply)?* The response choices were, *no, yes- I have been the victim of domestic violence,* or *yes-I have been the perpetrator of domestic violence.* Responses of no were coded 0 and either response of yes was coded 1. Five hundred and ninety-one (71.2%) indicated yes, they had experienced domestic violence and 239 (28.8%) indicated no (see table 4).

Table 4. Frequency Distribution of Adverse Childhood Experiences and Adverse Lifetime Experiences as Compared to the ACE Study Findings.

	Yes (n)	%	% from ACE Study
Lived with an alcoholic	504	60.7%	29.5%*
Lived with a drug abuser	397	47.8%	29.5%*
Household member went to prison	213	25.7%	5.2%
Household member was mentally ill	357	43%	23.3%
Mother treated violently	290	34.9%	13.7%
Childhood sexual abuse	457	55.1%	24.7%
Childhood physical abuse	398	48%	27%
Parental divorce	534	64.3%	24.4%
Adolescent sexual assault	171	20.6%	N/A
Rape as an adult	331	39.9%	N/A
Domestic violence	597	71.2%	N/A

* These categories are combined in the ACE Study data.

In addition to the demographics of this study, Table 5 reports the percentages found in the ACE study [1] (CDC prevalence of individual adverse experiences, 2010). The incarcerated women show a much higher prevalence in each category. Most notably, having a household member go to prison was reported by about 5% of the ACE sample, but almost 26% of the prison sample. Also, about 23% of the ACE sample reported a mentally ill household member versus 43% of the prison sample. Other than the report of physical abuse, all other categories are reported approximately twice as often by the prison sample. There were significant SES differences between the two samples. Using education as a proxy for SES, the ACE sample reported about 39% had completed college or higher and another 36% had some college. This is compared to half of the prison sample reporting a high school/GED or less schooling[2]. Other demographic differences included age differences and race differences. The ACE study was largely an older sample, with the majority of respondents being 50 and over, as compared to the prison sample which reported a mean age of 36.7 years. The majority of the ACE sample was White (74%), while the prison sample was 50% white. A visual comparison of the ACE study and the current study demographics can be seen in Table 4.

[1] While ACE study surveyed men and women, all percentages reported are for only the women in the sample, unless otherwise noted.

[2] The ACE study data for education, age, and race include both men and women in the sample, which may account for some of the difference.

Table 5. Demographics of the ACE Study as Reported by the CDC as Compared to the Prison Sample

Gender	% From ACE Study	Prison Sample
Male	46%	N/A
Female	54%	100%
Race		
White	74.8%	50%
Hispanic/Latina	11.2%	N/A
Asian/Pacific Islander	7.2%	N/A
African-American	4.6%	20.8%
Other	1.9%	29.2%
Age		
19-29	5.3%	28.5%
30-39	9.8%	31.9%
40-49	18.6%	28.7%
50-59	19.9%	9.6%
60+	46.4%	1.1%
Education		
Not a high school grad	7.2%	43.1%
High school	17.6%	28.1%
Some College	35.9%	23.2%
College or higher	39.3%	3.9%

Adapted from www.cdc.gov/ace/demographics.htm

Two cumulative measures of trauma were created. The first measure is based on the ACE study and combined 8 of the 10 identified ACEs as defined by the ACE study. Two measures of neglect, emotional and physical neglect, were not available for use in this analysis as the data were not available for all three years. The second was a cumulative measure of both childhood and adult adverse experiences.

ACE scores were created by adding the following variables together: LA, LDA, HMP, HMMI, MTV, CSA, CPA, and PD. Scores range from 0 to 8, where each number represented experiencing that number of categories of adverse experiences. The items followed a normal curve, so if treated as a scale, the mean was 3.79 and Cronbach's alpha was .70 for the 8 items.

As shown in Table 6, the ACE scores reported by the sample in the ACE study were significantly lower than those of the prison population. It is important to note that the prison sample did not include the measures of neglect that were include in the ACE study, so I am confident that if that data were available, the difference between the two groups would be even greater. Two of the most striking differences lie in the score of 0 and 4+ events. Thirty-four percent of the women in the ACE sample reported never experiencing an ACE, while only 7.6% of the prison sample reported the same. Perhaps more striking, only 15.2% of the ACE sample reported experiencing 4 or more of the 10 categories, while over half, 54.6 percent, of the prison sample report experiencing four or more of the 8 categories. The ACE scale as proposed by the CDC was a cumulative measure, the premise being that children who were exposed to one adverse experience were

more likely to be exposed to multiple adverse experiences (CDC pyramid, 2010). Given that the prison sample reported experiencing each type of abuse at higher percentages than the ACE study, it would follow that their ACE scores would be higher as well.

Table 6. Frequency Distribution of ACE Scores from the Adverse Childhood Experiences Study Compared to Those in the Prison Sample.

	ACE Study	Prison Sample
0	34.5%	7.6%
1	24.5%	10.9%
2	15.5%	12%
3	10.3%	15%
4 or more	15.2%	54.6%

* does not include measures of neglect

Summary

The dataset used in this dissertation, "Oklahoma Study of Incarcerated Mothers and Their Children", is unique due to the size of the sample and scope of the questions. Most surveys of female prisoners are small, which does not allow for statistical evaluation of subgroups. This is especially true for Native American women. To my knowledge, there is not a research study of incarcerated women that has had the ability to look specifically at Native American women.

Furthermore, the sample size obtained from this project exceeds the number of female inmates in many U.S. states.

When compared with the ACE study, the prison sample reported a higher percentage of experiencing each type of ACE. In all but one category, physical abuse, the difference was more than twice the percentage of the ACE sample. Furthermore, the prison sample reported much higher ACE scores than the current sample.

Based on several bodies of literature regarding women, trauma, mental health, and incarcerated women, I created measures that were used in the subsequent analyses to determine the relationship between adverse experiences across the life course and mental health functioning in prison. While it is customary to present all variables in the methods section, I have not yet discussed the measure *Lifetime Adverse Events*. This is because the creation of this variable is the product of hypothesis one, and as such, I present this measure at the beginning of Chapter Four. Chapter Four presents the analysis that justifies the addition of adult trauma to the ACE scale. Additionally, Chapter Four presents the analysis of this new scale on mental health functioning. Chapter Five presents the analyses that assess the relationship of race/ethnicity on adverse lifetime events and subsequent effects on mental health outcomes.

CHAPTER FOUR

RESULTS: RESEARCH QUESTION ONE

Introduction

The Adverse Childhood Experience (ACE) study began in 1995 and found that adverse experiences in childhood were related to negative outcomes in adulthood (Felitti et al. ,1998). While previous research has shown that childhood trauma is related to negative mental health outcomes, the question remains as to the presence of other factors that may contribute to negative adult outcomes. Of interest to this study is female inmates and mental health. It is well documented that female inmates have histories that are fraught with abuse and disadvantage. Additionally, this population is known to have high rates of mental health issues such as depression.

This chapter begins by restating research question 1 and continues with presenting the results of analyses to test hypothesis one, two and three. It includes a justification and explanation of the measure *Lifetime Adverse Experiences (LAE)* and the relationship between the LAE and both going to prison with a mental health diagnosis and having symptoms of depression while incarcerated.

Research Question 1

Research question one is the result of an extensive literature review which establishes that childhood adverse events (particularly the ACE study) are related to negative mental health outcomes. Additionally, literature connects adult

traumas such as rape and domestic violence to problems with mental health. Furthermore, there is literature that connects childhood trauma to adult trauma. The resulting question becomes the following:

Is there rationale for building on the ACE study by including experiences of adult trauma and does this measure of lifetime adverse experiences better account for mental health issues among female prisoners? From this question are the following three hypotheses:

Hypothesis 1

Adverse childhood experiences increase the likelihood of experiencing abuse as an adult.

Statistically, there are two rationales for adding adult traumas to the items in the ACE measure. First, Table 7 presents a correlation matrix, indicating that all of the proposed items are highly correlated. This is consistent with research that shows the cumulative nature of trauma, which suggests that the addition of adult trauma is justified. As shown in Table 8, ACE scores were significantly related to experiencing adolescent sexual assault, rape as an adult and domestic violence as an adult. More specifically, each incremental increase in ACE score, increased the likelihood of experiencing sexual assault as an adolescent by 38% ($p < .001$). Similarly, each additional experience of an ACE increased the likelihood of experiencing rape as an adult by 25% ($p < .01$). Finally, each additional experience of an ACE increased the likelihood of experiencing domestic violence by 29% ($p < .001$). When the control variables of age, education, and

race/ethnicity are added (table 9), these relationships remain significant. As compared to the white women in the sample, Native American Women were more likely to report experiencing rape as an adult and domestic violence.

Table 7. Pearson Correlation Matrix of LAE Items

	DV	RA	CSA	ASA	CPA	MTV	HMP	HMI	PD	LD	LA
DV	1										
RA	.22***	1									
CSA	.20***	.25***	1								
ASA	.09*	.21***	.31***	1							
CPA	.21***	.20***	.40***	.19***	1						
MTV	.11***	.12***	.17***	.08*	.27***	1					
HMP	.04	.01	.13***	.05	.10**	.19***	1				
HMI	.17***	.21***	.23***	.23***	.28***	.26***	.18***	1			
PD	.09**	.01**	.20***	.11***	.19***	.21***	.12***	.22***	1		
LD	.11**	.03	.23***	.09*	.13***	.22***	.26***	.24***	.18***	1	
LA	.14***	.10**	.24***	.16***	.22***	.33***	.20***	.28***	.17***	.24***	1

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

Table 8. Bivariate Results for Odds Ratios for Logistic Regression of Adolescent Sexual Assault, Adult Rape Victim, and Domestic Violence on Adverse Childhood Experiences.

	ASA		RV		DV	
	β	*Odds Ratio*	β	*Odds Ratio*	β	*Odds Ratio*
ACE Score	.32	1.38***	.22	1.25***	.25	1.29***
-2 Log Likelihood	780.10		1068.96		946.10	
Nagelkerke R^2	.11		.07		.08	

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

Table 9. Odds Ratios for Logistic Regression of Adolescent Sexual Assault, Adult Rape Victim, and Domestic Violence on Adverse Childhood Experiences, Controlling for Age, Education, and Race/Ethnicity.

	ASA		RV		DV	
	β	*Odds Ratio*	β	*Odds Ratio*	β	*Odds Ratio*
Ace Score	.32	1.38***	.25	1.29***	.26	1.30***
Age	ns	ns	.04	1.04***	.02	1.02**
Education	ns	ns	ns	ns	ns	ns
White	ns	ns	ns	ns	ns	ns
Native American	ns	ns	.82	2.27***	.97	2.52***
Other	ns	ns	ns	ns	ns	ns
-2 Log Likelihood	769.75		1016.82		912.927	
Nagelkerke R^2	.11		.14		.12	

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

Lifetime Adverse Experience Score was created by adding *ASA, DV,* and *RV* to the ACE measures. The lifetime adverse experience scores range from 0-11, where each number represented the number of adverse events experienced. The items followed a normal curve. The mean was 5.11 with a standard deviation of 2.66 and Cronbach's alpha was .71 for the 11 items. Table 10 reports the frequencies of the *LAE* along side the frequencies of the *ACE* measure.

Table 10. Cumulative Adverse Experience Scores and Lifetime Adverse Experience Scores

	ACE Score		LAE Score	
	N	Percent	N	Percent
0	63	7.6%	28	3.4%
1	90	10.9%	50	6.0%
2	99	12%	91	11%
3	124	15%	81	9.8%
4	126	15.2%	99	11.9%
5	106	12.8%	99	11.9%
6	124	15%	104	12.5%
7	64	7.7%	109	13.7%
8	32	3.9%	76	9.2%
9			57	6.9%
10			27	3.3%
11			9	1.1%
Missing	2			

To further examine the relationship between childhood adverse experiences and the three later in life traumas of adolescent sexual assault, rape after the age of 18 and domestic violence, regression analyses were performed as outlined by Baron and Kenny (1986) to test for mediation. The three variables of trauma after childhood were tested for mediating effects on depressive symptoms and entering prison with a mental health diagnosis. According to Baron and Kenny (1986) a mediating variable is one that "… accounts for the relation

between the predictor and criterion" (p. 1176). In order to test for mediation, three regression models should be run, " first, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent variable and the mediator" (Baron & Kenny, p. 1177).

To run these models, a new variable, *post-childhood trauma*, was created by adding the variables *adolescent sexual assault, rape over the age of 18,* and *domestic violence*. The frequencies and descriptives of this variable are presented in Table 11. Scores range from 0-3 and the highest percentage of respondents (40.1%) reported experiencing at least one of the three traumas, followed by two (29.5%), zero (19.5%), and almost 11% reported experiencing all three.

Table 11. Frequencies and Descriptive Statistics of Post-childhood Trauma

Score	Frequency	Percent	Cumulative Percent
0	162	19.5%	19.5%
1	333	40.1%	59.6%
2	245	29.5%	89.2%
3	90	10.8%	100%
Total	830		
Mean-1.32			
Range=0-3 SD .91			

The first set of regression results are presented in Table 12. In this model, OLS regression was performed and the predictor variable was ACE scale, the dependent variable was score on the CESD-R, and proposed mediator was the three post-childhood experiences of trauma. Similar to the findings of Fellitti et al. (Edwards et al., 2003), model one shows the ACE scale was significantly ($p < .01$) related to current level of depression while controlling for age, education, mental health treatment, and race. When the three post-childhood experiences were added in model two, ACE was no longer significant at $p < .05$, however the three post-childhood traumas were significant ($p < .001$) and R^2 increased by .01 from model 1 to model 2. ACE scores are significantly related to post-childhood trauma ($p < .001$). The only control variable to be significant ($p < .001$) was mental health treatment in both model one and two.

Table 12. OLS Regression of CESD-R on Adverse Childhood Experiences and Post-Childhood Trauma, Controlling for Age, Education, and Race/Ethnicity.

IV	Model 1 β	Model 2 β
ACE	.58**	.35^{+}
ASA, RV, DV		1.63***
Demographics		
Age	-.01	-.03
Education	-.23	-.32
Black	.52	.94
Native American	1.02	.79
Other	2.02	2.04
Mental Health Treatment	4.15***	3.08***
R^2	.07	.08

**p< .01 ***p< .001 $^{+}$p < .10

Logistic regression of prior diagnosis of mental illness on ACE, post-childhood trauma, and control variables is presented in Table 13. The Independent variable was the ACE scale and the dependent variable was going to prison with a diagnosis of mental illness. The proposed moderator was post-childhood trauma.

Model one shows that the ACE scale was significantly ($p < .001$) related to entering prison with a diagnosis of mental illness. Also significant in this model were age ($p < .05$), education ($p < .05$), and black ($p < .01$), with older and more educated respondents being more likely to report going to prison with a mental health diagnosis and black respondents being less likely to report a mental health diagnosis. The addition of post-childhood trauma in model two increased the Nagelkerke R^2 from .13 to .17, indicating that post-childhood trauma increased the strength of the model. The addition of post-childhood trauma did not cause the ACE scale to lose significance. However, the odds ratio decreased from 1.31 to 1.23. Post-childhood trauma was significant ($p < .001$) with an odds ratio of 1.586. The control variables of age and education lost significance in this model, indicating that the post-childhood traumas moderated the relationship between age and education and reporting a diagnosis of a mental illness prior to incarceration. It may be that inmates who were older and more educated had more years prior to incarceration to experience post-childhood traumas. There was not a change in the likelihood for black respondents.

Table 13. Odds Ratios for Logistic Regression of Prior Mental Health Diagnosis on Adverse Childhood Experiences and Post-Childhood Trauma, Controlling for Age, Education, and Race/Ethnicity.

IV	Model 1 Odds ratio	Model 2 Odds ratio
ACE	1.31***	1.23***
	(.27)	(.21)
ASA, RV, DV		1.59***
		(.46)
Demographics		
Age	1.02*	1.01^{+}
	(.02)	(.01)
Education	1.12*	1.11^{+}
	(.11)	(.10)
Black	.54**	.59*
	(-.62)	(-.52)
Native American	.77	.70^{+}
	(-.26)	(-.33)
Other	.70	.70
	(-.36)	(-.36)
Nagelkerke R^2	.13	.17
-2 log likelihood	1047.07	1020.88

In sum, post-childhood trauma mediated the relationship between childhood trauma and mental health, particularly with symptoms of depression. This means that the ACE scale predicts negative mental health outcomes partially through post-childhood traumas. This begins to answer one of the questions posed by ACE researchers, who acknowledge that there is a gap in the literature as to how childhood trauma and household dysfunction affect negative adult outcomes (CDC, 2010). Furthermore, this is more evidence to justify the addition of *adolescent sexual assault, rape over age 18,* and *domestic violence* to the ACE items to create a more comprehensive measure of adverse experiences called, Lifetime Adverse Experiences.

Hypothesis 2

Adverse experiences are cumulative in the lives of incarcerated women, the more events experienced during both childhood and adulthood, the greater the likelihood of experiencing depressive symptoms while incarcerated.

Symptoms of depression were measured by the CESD-R scale, a well validated and often used measure. Ordinary Least Squares regression (OLS) was performed to determine the relationship between depressive symptoms and the LAE. Table 14, model one, presents the bivariate results for the Ordinary Least Squares regression of depressive symptoms and Lifetime Adverse Experiences. The result (model 1) show Lifetime Adverse Experiences were significantly ($p < .001$) related to current symptoms of depression, with 4% of the variance being explained. When the controls of receiving mental health treatment while in prison,

age, education, and race/ethnicity were added, this significant relationship remained. Table 14, model two, shows that when the controls were added, Lifetime Adverse Experiences was significantly ($p < .001$) related to current symptoms of depression, with 8% of the variance explained. More specifically, for each adverse event, the score on the CESD-R increased by .63. Receiving some type of mental health treatment while in prison was also related ($p < .001$) to depressive symptoms, and when added to the model, the amount of variance explained increased from 4% to 8%.

Table 14. OLS Regression of Symptoms of Depression (CESD-R) on Lifetime Adverse Experiences, Controlling for Demographics and Mental Health Treatment.

IV	Model 1 β	Model 2 β
Lifetime Adverse Events	.86***	.63***
Mental Health Treatment		3.86***
Demographics		
Age		-.01
Education		-.26
Black		.76
Native American		.91
Other		2.01
R^2	.04	.08
	N=829	N=823

***p <.001

Hypothesis 3

Adverse experiences are cumulative in the lives of incarcerated women; the more disadvantage experienced during both childhood and adulthood, the greater the likelihood of entering prison with a mental health diagnosis.

The variable, *going to prison with a mental health diagnosis* was a dichotomous measure, and as such, logistic regression was used in the analysis. Table 15, model 1, presents the odds ratios of being diagnosed with a mental illness prior to incarceration without control variables. The relationship was statistically significant; as the number of adverse events increased, the likelihood of reporting a prior mental health diagnosis increased by 29%. The bivariate model explained 13% of the variance. When the demographic control variables of age, education and race were added, the relationship remained significant, with each event increasing the likelihood of entering prison with a mental health diagnosis by 30%. The complete model explained 16% of the variance, which was an increase of 3% over the bivariate model. Of the controls, black was significant at the .01 level, and as compared to whites in the sample, black respondents were 41% less likely to report being diagnosed with a mental illness prior to incarceration. Additionally, Native American women were 28% less likely to report entering prison with diagnosis of mental illness at the significance level of .10.

Table 15. Odds Ratio for Logistic Regression of Mental Health Diagnosis on Lifetime Adverse Experiences, Controlling for Age, Education, and Race.

IV	Model 1 Odds ratio	Model 2 Odds ratio
Lifetime Adverse Events	1.29***	1.30***
Demographics		
Age		1.02
Education		1.12
Black		.59**
Native American		.72^{+}
Other		.70
Nagelkerke R^2	.13	.16
-2 log likelihood	1056.67	1028.94

***p <.001 **p<.01 *<.05 $^{+}$ < .10

Summary

This chapter has focused on research question 1 and hypotheses 1-3. While the ACE measure is very valuable, there is rationale for adding adult measures of trauma to it to create the Lifetime Adverse Experience scale. As hypothesized, this new scale does predict going to prison with a mental health

diagnosis. Also, as hypothesized, increased scores on the LAE predicted an increase in CESD-R score. So, the effects events of childhood household dysfunction, childhood trauma, and adult trauma were cumulative and contributed to the mental health functioning of adult women in prison. The following chapter, Chapter Five, presents the results for research question two, and hypotheses 4 and 5.

CHAPTER FIVE

RESULTS: RESEARCH QUESTION TWO

Introduction

Research question two is the result of literature that suggests that the life course of minority women is different than that of white women. Particularly for Native American women, previous studies have found very high rates of alcohol abuse, drug abuse, and domestic violence. Incarcerated women, as a group, are a largely disadvantaged population that suffers from low educational attainment and economic status. Previous research suggests that adding minority status to low SES creates a situation of double jeopardy that may result in increased stress or strain, which in turn could contribute to more symptoms of depression.

This chapter begins by restating research question 2, and continues with presenting the results of analyses to test hypotheses 4 and five. This includes the investigation of LAE and CESD-R means by race/ethnicity.

Research question 2

Does minority status, specifically being black or Native American increase the number of adverse experiences a female prisoner has in her lifetime and does this increased number of adverse experiences contribute to an increase in mental health issues?

Hypothesis 4

Adverse experiences prior to incarceration differ by race. Specifically, black women and Native American women experience more adverse experiences than white women.

The mean score of the LAE (n=830) is 5.11 with a range of 0-11 and a standard deviation of 2.66. Mean scores by race are as follows; Native American women had the highest mean score of 5.78 (SD 2.60), followed by other (5.45, SD 2.70), white (5.22, SD 2.59), and black (3.99, SD 2.51). Mean scores are reported in Table 16. In order to determine if there is a difference in LAE scores by race, analysis of variance (ANOVA) was performed. The results of the ANOVA are presented in Table 17. There is a significant difference in LAE scores by race, $F(3,816)=15.31$, $p < .001$. Turkey post hoc analysis (Table 18) show that white respondents scored significantly higher (at $p < .000$) than black respondents on the LAE, but lower than Native American respondents (at $p < .08$). In fact, black respondents scored significantly lower than white, Native American, and other categories at $p < .000$ while Native American respondents scored significantly higher than white at $p < .08$. This means that hypothesis four is only partially correct. There are significant differences in LAE scores, but black respondents scored significantly lower, rather than higher, than white respondents.

Table 16. Mean Scores of Lifetime Adverse Events and Race.

	Mean	Standard Deviation
LAE	5.11	2.66
Range 0-11		
N=830		
Native American	5.78	2.60
Other	5.45	2.70
White	5.22	2.59
Black	3.99	2.51

Table 17. Analysis of Variance Results for Lifetime Adverse Events and Race/Ethnicity

Sum of Squares	SS	df	Mean Square	F	Sig
Between	306.67	3	102.22	15.310	.000
Within	5448.34	816	6.677		
Total	5754.99	819			

Table 18. Tukey Post Hoc Analysis of Mean Lifetime Adverse Experience Scores by Race/Ethnicity.

Race		Mean Difference	Std. Error	Sig	Lower Bound	Upper Bound
1 White	2	1.23	.23	.000	.63	1.84
	3	-.56	.23	.080	-1.17	.04
	4	-.23	.35	.911	-1.12	.66
2 Black	1	-1.23	.23	.000	-1.84	-.63
	3	-1.80	.28	.000	-2.51	-1.08
	4	-1.46	.38	.001	-2.44	-.49
3 N. Amer.	1	.56	.23	.080	-.04	1.17
	2	1.80	.28	.000	1.08	2.51
	4	.33	.38	.819	-.64	1.31
4 Other	1	.23	.35	.911	-.66	1.12
	2	1.46	.38	.001	.49	2.44
	3	-.33	.38	.819	-1.31	.64

To determine if the difference found in the mean scores on the LAE by race/ethnicity are due to variation in reporting particular experiences in the scale by race/ethnicity, 11 separate models of logistic regression were run. Table 19 shows the odds ratios for each item in the LAE by race/ethnicity controlling for age and education. White was the omitted category for the analyses.

Black women. For black respondents, each category of the LAE was significant except for parental divorce. Living with an alcoholic, living with a drug addict, having a household member with a mental illness, witnessing violence against their mother, childhood physical abuse, childhood sexual abuse, adolescent sexual assault, rape over the age of 18 and domestic violence were all *negatively* and significantly related to scores on the LAE for black women. Having a household member go to prison was significantly related to LAE scores for black women. In fact, black women were 98% more likely to report that they had a family member go to prison while they were growing up ($p < .01$).

Native American Women. Having a family member who went to prison, experiencing a rape as an adult and experiencing domestic violence were significantly related to LAE scores for Native American women. Additionally, living with an alcoholic was significant at $p <.10$.

Other women. The category of other women was not significant in any of the 11 models.

Control Variables. Age was negatively and significantly related to living with a drug addict ($p < .001$), parental divorce ($p < .001$), household member in

prison ($p < .01$), and having a mentally ill household member ($p < .01$) while growing up. The older the respondent, the less likely she was to have reported the previous household dysfunctions. Age was also significantly related to rape as an adult ($p < .001$) and domestic violence ($p < .10$). This may be because the older the inmate, the more years of adulthood there have been for either to occur. Education was negatively and significantly related to living with a drug addict ($p < .001$), having a household member in prison ($p < .01$), violence against mother ($p< .01$), and childhood physical abuse ($p < .05$).

Table 19. Odds Ratios for Logistic Regression of Events in the Lifetime Adverse Event Scale by Race/Ethnicity Controlling for Age and Education. (Each event is a separate model)

	LA	LDA	PD	HMI	HMP	FVM	CPA	CSA	ASA	RA	DV
	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)	Odds ratio (b)
Black	.56** (-.52)	.59** (-.54)	.75 (-.29)	.38*** (-.96)	1.98** (.68)	.40*** -.93	.48*** (-.73)	.60** (-.53)	.57* (-.56)	.56** (-.57)	.46*** (-.77)
N. Amer	1.45^{+} (.37)	1.07 (.27)	1.26 (.23)	1.03 (.03)	1.72** (.54)	1.09 (.08)	1.09 .09	1.17 (.18)	.96 (-.05)	1.68** (.52)	1.54* (.43)
Other	.93 (-.07)	.96 (-.04)	.83 (-.18)	1.00 (.00)	1.32 (.28)	.81 (-.22)	1.23 .21	1.23 (.21)	1.09 (.09)	.96 (-.04)	.88 (-.13)
Age	1 (-.00)	.95*** (-.05)	.97*** (-.03)	.98** (-.02)	.97** (-.03)	.99 (-.01)	1.00 .00	.99 (-.01)	.99 (-.01)	1.03*** (.03)	1.01^{+} (.01)
Educ	.88 (-.13)	.80*** (-.22)	.93 (-.08)	.96 (-.04)	.82** (-.20)	.85** (-.16)	.89* -.12	.93 (-.07)	1.00 (.00)	1.01 (.01)	1.03 (.03)
Nagel-kerke R^2	.03	.13	.04	.06	.07	.05	.04	.03	.01	.07	.05
-2 Log	1079.96	1056.86	1049.39	1089.24	893.18	1032.24	1116.52	1117.23	826.88	1067.20	958.13

*p<.05, **p<.01, ***p<.001

Hypothesis Five: As a result of differential experiences of adverse events, experiencing symptoms of depression differs by race.

The mean score of the CESD-R scale (n= 830) is 41.36 (range 10-78.41, SD 10.85). The mean scores on the CESD-R by race are reported in Table 20. Higher scores on the CESD-R indicate more symptoms of depression. Native American women had the highest mean score (42.22, SD 11.07), followed by other (42.78, SD 11.82)), white (41.12, SD 10.81), and African Americans (40.86, SD 10.25). An analysis of variance was performed to determine if there was a significant difference between the means. These results are presented in Table 21 and were not significant. The survey respondents did not differ significantly on the CESD-R by race.

Table 20. Means and Standard Deviations for CESD-R Scores and Race.

	Mean Score on CESD-R	Standard Deviation
CESD-R	41.36	
Range 10-78.41		
N=830		
Other	42.78	11.82
Native American	42.22	11.07
White	41.12	10.81
Black	40.86	10.25

Table 21. Analysis of Variance Results for CESD-R Scores and Race/Ethnicity.

Sum of Squares	SS	df	Mean Square	F	Sig
Between	320.13	3	106.71	.91	.436
Within	95763.87	816	117.36		
Total	96083.99	819			

Summary

Chapter Five presents the results of research question 2 and hypotheses 4 and 5. The results for black and Native American women are different, with black women having a significantly lower mean score on the LAE than White, Native American and other women in the sample. The mean LAE score for Native American women was significantly higher (at $p < .08$) than all other groups of women. Further investigation showed that black women were indeed less likely to experience most categories of lifetime adverse experiences except for growing up in a home where a family member went to prison. Native American women were more likely to report that they had a family member go to prison and experienced rape and domestic violence as an adult.

While there is a significant relationship between race/ethnicity and the number of Lifetime Adverse Experiences, this does not translate into a difference in CESD-R scores by race/ethnicity. Interestingly, even though the LAE is related to CESD-R scores and LAE scores were significantly different by race/ethnicity, there was no significant difference by race in the level of depressive symptoms the women experienced.

CHAPTER SIX

DISCUSSION

This study addresses several gaps in the literature concerning incarcerated women, race/ethnicity, trauma, and mental health. Although previous criminological literature has established that incarcerated women have high rates of past trauma and high rates of mental health issues, much of this research has been done in pieces. Many studies only look at childhood sexual abuse or less frequently, childhood physical and sexual abuse. Rarely has trauma across the life span been considered. In fact, this is the first study in criminological literature that builds a case for cumulative adverse *lifetime* experiences. Furthermore, past research has been plagued by small sample sizes due to the smaller populations of incarcerated women. As a result, much of what we know about incarcerated women is from small, qualitative studies (McDaniels-Wilson & Belknap, 2008). The current study utilized a large (n=830) quantitative sample which allowed for more sophisticated analyses. Additionally, a major weakness of previous criminological literature has been the inability to effectively assess the situation of Native American women. In fact, to my knowledge, this is the only quantitative study of incarcerated women in criminological literature that has looked at Native American women in this way.

Limitations

Before discussing the results of this study, it is important to note several important limitations of the study. As with all research, there are limitations, and this study is not any different. Critics of cross-sectional survey research question the ability to accurately recall past abuse. Several studies have addressed this and found that if anything, past abuse is underreported. A study comparing official records to self-report found just this, respondents tended to underreport abuse (Ryder, Langley, Brownstein, 2009; Widom & Shepard, 1996). It is possible that my assessment of past abuse are conservative. It is important to note that these measures do not allow us to clearly determine the order of events. The best I can do is separate the events of childhood from those of adulthood. However, for the purpose of this study, we are concerned with how experiencing each type of abuse relates to mental health. There are no claims made about the order of events affecting outcomes. Perhaps of greater consequence is the measure of *previous mental health diagnosis* as it is possible that a respondent was diagnosed with a mental illness prior to experiencing a rape or event of domestic violence.

There are some inherent limitations to the study of incarcerated women that are a product of the prison environment. Perhaps the largest potential limitation is the use of measures to detect current level of depression. As with all validated measures of depression symptoms, the CESD-R was created for use in the general population, but certain aspects of prison life may cause artificially high scores on this measure. For example, questions such as *I felt hopeful about the future* or *my sleep was restless* or *I felt lonely* may be affected by the prison

environment. It is for this reason that depressive symptoms are discussed in terms of changes in the mean score rather than as a comparison to general population samples.

There is some evidence that measures of depression are not culturally sensitive. Specifically, Native American women are unique in their histories of intergenerational trauma, poverty, and substance abuse (Bryant-Davis, Chung, & Tillman, 2009; Mihesuah, 2003; Pace, Robbins, Choney, Hill, Lacey & Blair, 2006; Smith, 2005). As a result, Native American women have different experiences with regard to psychological illness. Studies assessing the use of the MMPI (a well-established psychological measure of mental health functioning) have found that American Indians score significantly different from other populations due to differences in world views and cultural practices (Pace et al., 2006).

Summary of Findings

The first part of the analyses assessed the relationship between childhood measures of Adverse Childhood Experiences (ACE)[3] and post-childhood measures of adolescent sexual assault, adult rape and domestic violence. Higher ACE scores significantly increased the odds of experiencing each of the post-childhood measures of trauma, confirming the relationship between childhood household dysfunction/trauma and later experiences of traumatic abuse.

[3] As described in the ACE study (CDC 2010; Felitti et al., 1998) minus the original measures of neglect.

Post-childhood measures of trauma were then added together to create a post-childhood trauma event scale and regression models were employed to assess their relationship to the CESD-R and going to prison with a mental health diagnosis. For current symptoms of depression (CESD-R), ACE scores were significantly related to depressive symptomatology, however, when post-childhood traumas are added ACE scores are reduced to significance at $p < .10$. This is partially consistent with Agnew (1992, 2006) ideas about recency of events causing negative emotions. It is important to note that the effect of ACE was not completely diminished and the R^2 only increased from .07 to .08, thus supporting the construction of a single measure to account for childhood and adult trauma.

The results of regression analyses on previous mental health diagnosis is somewhat different than the previous model. This is not too surprising, as the CESD-R is a measure of current depressive symptomatology whereas this measure is concerned with self reported diagnosis at a time point prior to incarceration. In this model, ACE scores were significantly related to previous mental health diagnosis and when post-childhood traumas are added, this significance remains with little change, even though post-childhood traumas are also significantly related. The Nagelkerke r^2 from model 1 to model 2 increased from .13 to .17, showing an increase in explanatory power with the addition of post-childhood measures of trauma.

Although both models showed different results, they both show the utility in considering both childhood and adult measures in one event scale of *Lifetime*

Adverse Events. Two processes seem to be at work, with more recent traumas exerting a stronger effect on current symptoms of depression with childhood factors and adult traumas exerting similar effects on mental health diagnosis. This suggests that models that *only* consider childhood factors are correct in their findings, but are missing a larger picture of the puzzle, which is the effect of adult trauma. This effect of adult trauma may be exerting independent effect on adult outcomes, but it is clear that that relationship may mediate the effect of childhood adverse experiences.

After establishing the measure *Lifetime Adverse Experiences (LAE)*, attention is turned to the relationship between LAE scores and current level of depression and going to prison with a mental health disorder. The LAE is normally distributed and has an alpha of .71, which is high. OLS regression was significant and related to current symptoms of depression. Symptoms of depression increased with each additional adverse event when controlling for age, education, race/ethnicity, and receiving mental health treatment while incarcerated. Of interest here is the significant relationship between mental health treatment and current symptoms of depression. This could mean that prison staff are successfully identifying and treating female prisoners, thus accounting for the significant finding. Conversely, this could mean that there is something about the treatment, mostly medication, which is causing an increase in depressive symptomatology. This is a finding that bears further investigation; unfortunately this study does not have the ability to discern the answer.

To support evidence that adverse experiences are cumulative across the life span, one-way analysis of variance was performed. The results showed that mean scores on the CESD-R differed significantly by score on the LAE. Post hoc analysis showed increasing LAE scores to be significantly related to increases in mean CESD-R scores, thus showing a cumulative effect of adverse events across childhood and adulthood on adult experience of depressive symptomology. This finding is consistent with stress literature that shows individuals to be more sensitized to strain that accumulates over time (Glasner et al., 2006; Ruch & Chandler, 1983; Thoits, 1983).

Logistic regression was used to determine the relationship between LAE scores and the likelihood of going to prison with a mental health diagnosis. As predicted, higher scores on the LAE were significantly related to going to prison with a mental health diagnosis when controlling for age, education, and race/ethnicity. Of interest is the variable of race/ethnicity. Black respondents were significantly less likely to go to prison with a mental health diagnosis and Native American women significantly[4] more likely than white respondents. There is literature that indicates that race can be a determinant in healthcare status and quality of treatment received (Simpson, Krishnan, Kunik, & Ruiz, 2006). For example, a survey of primary care physicians found that doctors are less likely to detect depression in black patients (Borowsky et al., 2000).

Overall, there is good evidence that adverse experiences are cumulative over the life-course and measuring these factors as one event scale is justified. In

[4] It is important to note that significance was low, $p<.10$, so some studies might not report this as a significant relationship.

fact, traumas across the life span are highly correlated. Placing them into regression models individually would violate statistical assumptions. Studies that only use childhood measures are most certainly missing important information and can be better informed if lifetime measures are employed.

"Double jeopardy" and "interlocking systems of oppression" (Collins, 2009; hooks, 1981;King, 1997;Tong, 1998) are terms that refer to the way race, class and gender interact to disadvantage women. Previous studies have found that low socioeconomic status is related to increased stress and poor mental health outcomes (Bernard, 1990; Lorant et al., 2003). Poverty has been found to be a strong correlate of childhood abuse, adult violence, and mental illness (Bryant-Davis, Ullman, Tsong, Tillman, & Smith 2010; Drake & Jonson-Reid, 2011; Lorant, 2003). Poverty is of particular importance to this study, as incarcerated women as a whole come from impoverished backgrounds regardless of race. Although, it has been argued that minority status compounds the effects of poverty. It was hypothesized that minority women in the sample would experience higher rates of trauma and subsequent problems with mental health.

The results were somewhat surprising in that black respondents reported significantly lower scores on the LAE than white, Native American, and other race/ethnicity categories. A closer look at each category of the LAE revealed that black respondents reported significantly less of each category except for parental divorce and having a household member go to prison. Parental divorce was not significantly different; however black respondents reported *higher* rates of having a household member go to prison. It is possible that this is an artifact of racism in

the system, with black women being more likely to be caught and sentenced to prison. Although, the data are not available to determine the reason for this. Using other variables in the study, I was able to determine that there is a mismatch with a higher percentage of black women reporting a family member going to prison than having a family member committing a crime. This is counter-intuitive and was the case only for the black respondents in the sample.

For Native American women, the hypothesis was supported. Mean scores on the LAE were significantly higher for Native American women than white, other, and black women. A more detailed look at the individual categories showed that Native American women were significantly more likely to report a household member going to prison as well as adult abuse. In fact, they were more than twice as likely to report domestic violence and rape as an adult. This is very similar to previous studies that have found high rates of abuse in Native American communities (Bryant-Davis et al., 2009; Malcoe et al., 2004; Smith, 1998; Mihesuah, 2003). When looking at the individual LAE categories, living with a drug user was not significant and living with an alcoholic was moderately significant (at $p < .10$), which is contrary to the previous literature that shows high rates of substance use in Native American communities. It is possible that poverty may account for this finding, although it is clear that there is something about the experience of being Native American that puts women at risk above and beyond socioeconomic status.

It is clear that there are racial and ethnic differences between women in the amount of lifetime adverse experiences they report. Furthermore, there are

significant differences by race in the type of adverse experiences they report. Socioeconomic status, poverty in particular, does not seem to account for the differential experiences in lifetime adverse events. Thus, this indicates the importance of intersectionality.

Hypothesis 5 predicted that there would be differences in the experience of depression for incarcerated women by race and ethnicity due to differential experiences of adverse events. Surprisingly, there was no significant difference in depressive symptomology between racial and ethnic categories. In other words, differences in the experience of adverse events did not amount to differences in symptoms of depression. It is possible that in measuring current symptoms of depression, we are actually measuring the prison experience. The findings of this study are made more significant given that incarcerated women are a homogenous group. Finding significant differences between them is a major contribution to the criminological literature.

Policy Implications

In considering the policy implications of this study, there seem to be four major points in time where different types of programs and policies would be beneficial. The four points in time that I will discuss are early intervention- prior to contact with the criminal justice system, first contact with the criminal justice system, during incarceration, and then re-entry or post-release from prison.

When considering the number of adverse events experienced by the women in the study, it is evident that there were missed opportunities to aid

women prior to incarceration. As a country, we are reactionary, with few preventive programs. This is an area where programming and policy to identify and assist girls and women before they come into the contact with the criminal justice system could save society money and significantly improve the lives of many girls.

For many women, first contact with the criminal justice system comes as a juvenile, oftentimes as a result of status offences perpetrated as a means of survival (Acoca 1988; Chesney-Lind, 1989). For these girls, the harsh atmosphere of jail and juvenile detention may further traumatize them (Acoca, 1988; Boyd, 2009; Heney & Kristiansen 1998). Additionally, identifying and providing support for girls who suffer from multiple events of disadvantage may prevent further contact with the criminal justice system.

Once in prison, the treatment and services offered to female prisoners can affect their success post-release. At the very least, daily prison practices should take into account the life experiences of this population to prevent further harm or traumatization at the hands of prison staff and practices.

As demonstrated by this study, adverse experiences are cumulative in the lives of women; prison is therefore not a magical cure. In fact, prison itself can be seen as one more negative life event. Once released back into their communities, these women are at significant risk of re-victimization. Prison may provide a unique opportunity to treat current mental illness and educate women on how to protect themselves from future harm.

Programming to address the multiple forms of dysfunction and trauma are not enough. Clearly, a need exists to address the cultural differences found in the prison system. There has been some resistance to the idea of "cultural competence" in psychological programming due to perceived "political correctness" (Bryant-Davis et al., 2009; Sue, Zane, Hall, & Berger, 2009). However, the meaning given to abuse and trauma are culturally determined (Bryant-Davis et al., 2009; Smith, 1998; Walters & Simoni, 2002). Native Americans pose a unique challenge for programming due to the cultural differences rooted in colonialism and years of abuse (Mihesuah, 2003; Smith, 1998). There is an inherent distrust of doctors and governmental healthcare due to past events such as forced sterilization that occurred during the 1970s. Conversely, Indian Health offers some opportunities to assist this community with mental health services (Johnson & Cameron, 2001). If Indian Health Services could regain the trust of the Native American community (Smith, 1998) and provide culturally competent services (Johnson & Cameron, 2001), this could represent a good support system for Native American communities. It could also be beneficial if this structure could assist tribe members while they are incarcerated and provide support services upon re-entry into the community. This structure could serve as a model for the rest of the state. Unfortunately, the resources do not exist to address trauma related counseling in the majority of communities.

Future research

There are many directions for future research to go. This study shows that household dysfunction and trauma across the lifespan are related to mental health functioning in adults. By no means are the adverse events tested here the only possible events. In fact, measures of household and family dysfunction during adulthood should be added to the LAE. This study was limited to trauma measures during adulthood, but it is possible that events such as loss of a job, loss of a spouse, loss of household income, loss of a child, major illness in the household, traumatic accident, or other events may contribute to mental illness . Additionally, this study used the CESD-R to determine the relationship between LAEs and depression. However, of equal importance is posttraumatic stress disorder (PTSD). It is possible that the effect of LAEs may be greater on symptoms of PTSD than depression. As noted in the literature regarding stress and strain, particularly General Strain Theory, self–efficacy and self-esteem may also play a major role in mental health outcomes. Future research should look at the role that self-esteem and self-efficacy play in depression and PTSD. Finally, the measure Lifetime Adverse Experiences is not limited to prison populations or women. Future research should test the LAE on samples of incarcerated men and women to test for differences by gender and outcome. Furthermore, the LAE should be tested in the general population, much like the ACE study to determine its utility in explaining other possible outcomes such as physical health, suicidal ideation, eating disorders, educational attainment, etc.

Concluding thoughts

There is a vast base of knowledge that exists on each topic that I have tried to integrate in this study. Sociology has a literature on stress as does the medical field. Psychological literature[5] has many studies concerned with mental health and trauma. Each field conceptualizes the problems differently (although not always), but each field can inform the other. What I have learned through this study is that we can all learn from each other, and the integration of ideas can make research and findings stronger. The creation of the measure *Lifetime Adverse Experiences* and its subsequent relationship to mental health functioning for incarcerated women contributes a new way to conceptualize adverse experiences that has many implications to policy in the criminal justice system, however the applications of this measure are almost unlimited.

While the LAE is an individual level measure of experiences, it is building an environmental argument. Childhood dysfunctions such as divorce, and parental substance abuse, violence and mental illness taken together are measures aspects of the child's environment that *increase* the risk of trauma. There is no reason to believe that being raped once is directly related to being raped again, yet this is what we see in trauma checklists. What we are really finding could be environmental risk that accumulates over time. It may also be that due to accumulated stress and processes such as reduced self-efficacy, it becomes difficult to recognize or escape high-risk environments.

What is clear is the following. There are multiple points where interventions could make significant difference in the lives of women.

[5] This should be obvious, but at the very least not surprising.

Furthermore, the mechanisms that cause trauma to accumulate require further investigation. With regard to incarcerated women, there is a clear need to address multiple forms of trauma and the risks and cycles that in their lives if for no other reason than to teach them how to avoid or protect themselves form future victimization.

REFERENCES

Acoca, L. (1988). Outside/inside: The violation of American girls at home, on the streets, and in the juvenile justice system. *Crime and Delinquency, 44*(4), 561-589.

Agnew, R. (1992). Foundation for a General Strain Theory of crime and delinquency. *Criminology*, 30, 47-87.

Agnew, R. (2001). Building in the foundation of General Strain Theory: Specifying the types of strain most likely to lead to crime and delinquesncy. *Journal of Research in Crime and Delinquency,* 38, 319-361.

Agnew, R. (2006). *Pressured into crime: An overview of General Strain Theory.* Los Angelos: Roxbury.

Akers, R. M. (1997). *Criminological theories: Introduction and evaluation* (2 ed.). Los Angeles: Roxbury.

Anda, R.F., Felitti, V.J., Bremner, J.D., Walker, J.D., Whitfield, C., Perry, B.D., Dube, S.R., & Giles, W.H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience,* 256, 174-186.

Aneshensel, C.S. (2009). Toward explaining mental health disparities. *Journal of Health and Social Behavior*, 50, 377-394.

Aneshensel, C.S. (1992). Social stress: Theory and research. *Annual Review of Sociology,* 18, 15-38.

Appleyard, K., Egeland, B., Manfred, H.M., & Sroufe, L.A. (2005). When more is not better: The role of cumulative risk in child behavior outcomes. *Journal of Child Psychology and Psychiatry,* 46(3), 234-245.

Banyard, V., Williams, L.M., & Siegel, J.A.(2001). The long-term mental health consequences of child sexual abuse: An exploratory study of the impact of multiple traumas in a sample of women. *Journal of Traumatic Stress,* 14 (4), 697-715.

Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173 -1182.

Belknap, J., & Holsinger, K. (2006). The Gendered Nature of Risk Factors for Delinquency. *Feminist Criminology, 1*(1), 48-71.

Bernard, T.J. (1990). Angry aggression among the "truly disadvantaged". *Criminology*, 28(1), 73-96.

Bloom, B., Owen, B., & Covington, S. (2004). Women offenders and the gendered effects of public policy. *Review of Policy Research*, 21(1), 31-48.

Borowsky, S.J., Rubenstein, L.V., Meredith, L.S., Camp, P., Jackson-Triche, M., & Wells, K.B. (2000). Who is at risk of non detection of mental health problems in primary care? *Journal of General Internal Medicine,* 15, 381-388.

Boyd, R.J. (2009). Meeting the mental health needs of female juvenile offenders where are we now, and where do we go from here? In R.L. Gido & L.Dalley (Eds), *Women's Mental Health Issues Across the Criminal Justice System* (pp.1-19). Upper Saddle river, NJ: Pearson.

Browne, A., & Finkelhor, D. (1986). Impact of Child Sexual Abuse: A Review of the Research. *Psychological Bulletin, 99*(1), 66-77.

Broidy, , L. & Agnew, R. (1997). Gender and crime: A General Strain Thoery perspective. *Journal of Research and Crime and Delinquency,* 34 (3), 275-306.

Bryant-Davis, T., Ullman, S.E., Tsong, Y., Tillman, S., & Smith, K. (2010). Struggling to survive: Sexual assault, poverty, and mental health outcomes of African American women. *American Journal of Orthopsychiatry,*30(1), 61-70.

Bryant-Davis, T., Chung, H., & Tillman, S. (2009). From margins to the center: Ethnic minority women and the mental health effets of sexual assault. *Trauma, Violence, & Abuse*, 10, 330-357.

Bryant-Davis, T., Chung, H., & Tillman, S. (2009). From margins to the center: Ethnic minority women and the mental health effets of sexual assault. *Trauma, Violence, & Abuse*, 10, 330-357.

Byrne, M.W. (2005). Conducting research as a visiting scientist in a women's prison. *Journal of Professional Nursing,* 21(4), 223-230.

Caufman, E., Lexcen, F. J., Goldweber, A., Shulman, E. P., & Grisso, T. (2007). Gender Differences in Mental Health Symptoms Among Delinquent and Community Youth. *Youth Violence and Juvenile Justice, 5*, 287-307.

Centers for Disease Control and Prevention (CDC). (2010). *Data and statistics.* retrieved from www.cdc.gov/ace/prevalence.htm.

Centers for Disease Control and Prevention (CDC). (2010). *Pyramid.* retrieved from www.cdc.gov/ace/pyramid.htm.

Chesney-Lind, M. (2003). Reinventing Women's Corrections. In S. F. Sharp (Ed.), *THe Incarcerated Women* (pp. 3-14). Upper Saddle River: Prentice Hall.

Chesbey-Lind, M. (1989). Girls crime and women's place: Toward a feminist model pf female delinquency. *Crime and Delinquency*, 35(1), 5-29.

Cloyes, K.G., Wong, B., Latimer, S., Abarca, J. (2010) Women, serious mental illness and recidivism: A gender based analysis of recidivism risk for women with SMI released from prison. *Journal of Forensic Nursing*, (6), 4-14.

Collins, P.H. (2000). *Black Feminist Thought.* New York, NY: Routlage.

Conner, S., Hartsfield, J., & Sharp, S.F. (Forthcoming). Differential Effects of Childhood Abuse on Pathways into Delinquency: A Retrospective Study of Incarcerated Women. International Journal of Crime, Criminal Justice, and Law.

Covington, S. S., & Bloom, B. E. (2003). Gendered Justice: Women in the Criminal Justice System. In B. E. Bloom (Ed.), *Gendered Justice: Addressing Female Offenders*: Carolina Academic Press.

Crenshaw, K. (1991). Mapping the margins:Intersectioalist, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241-1299.

Dalley, L.P. & Michels, V. (2008). Women destined to failure: Policy implications of the lack of proper mental health and addiction treatment for female offenders. In R.L. Gido & L.Dalley (Eds), *Women's Mental Health Issues Across the Criminal Justice System* (pp.177-195). Upper Saddle river, NJ:Pearson.

Davis, A.Y. (2003). Are Prisons Obsolete? Seven Stories Press.

Drake, B. & Johnson-Reid, M. (2011). NIS interpretations: Race and the national incidence studies of child abuse and neglect. *Children and Youth Services Review*, 33, 16-20.

Dube, S.R., Felitti, V.J., Dong, M., Chapman, D.P., & Giles, W.H. (2003). Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: The adverse childhood experiences study. *Pediatrics Official Journal of the America Acadamy of Pediatrics*, 111, 564-572.

Eaton, W.W., Smith, C., Ybarra, M., C., & Tien, A. (2004). Center for Epidemiologic Studies Scale: Review and revision (CESD and CESD-R). In ME Maruish (Ed). *The use of psychological testing for treatment*

planning and outcomes assessment (3rd Ed), Volume 3: Instruments for Adults, pp. 363-377. Mahwah, NJ: Lawrence Erlbaum.

Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., Koss, M.P., & Marks, J.S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults; The adverse childhood experiences (ACE) study. *American Journal of Preventative Medicine,* 14(4), 245-258.

Edwards, V.J., Holden, G.W., Felitti, V.J., & Anda, R.F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry,* 160(8), 1453-1460.

Follette, V.M., Polusny, M.A., Bechtle, A.E., & Naugle, A.E. (1996). Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *Journal of Traumatic Stress*, 9(1), 25-35.

Gilfus, M. E. (2002). Women's Experiences of Abuse as a risk factor for incarceration. *VAWnet*, 2006.

Glaser, P., van Os, J. Portegijs, J.M.P. & Myin-Germeys, I. (2006). Childhood trauma an emotional reactivity to daily life stress in adult frequent attenders of general practitioners. *Journal of Psychosomatic Research*, 61, 229-236.

Greene, S., Haney, C., & Hurtado, A. (2000). Cycles of pain, Risk factors in the lives of incarcerated mothers and their children. *The Prison Journal*, 80, 3-23.

Harrison, P.M., Beck, A.J. (2005). *Bureau of Justice Statistics bulletin prisoners in 2004* (NCJ 210677). Washington, DC: Bureau of Justice Statistics/National Institute of Justice.

Hartsfield, J., Conner, S., & Sharp, S.F. (n.d.). The Effects of Cumulative Sexual Abuse on Mental Health For Incarcerated Women. Manuscript submitted for publication.

Hartsfield, J. (2007). Sexual abuse and women prisoners. University of Oklahoma MA thesis.

Heney, J., & Kristiansen, C. (1998). An Analysis of the Impact of Prison on Women Survivors of Childhood Sexual Abuse. *Women and Therapy, 20*(4), 29-44.

Holsinger, K. & Holsinger, A.M. (2005). Differential pathways to violence and self injurious behavior: African American and white girls in the juvenile justice system. *Journal of Research in Crime and Delinquency*, 42, 211-242.

hooks, b. (1981). *Ain't I a Women: Black women and feminism.* Boston: South End Press.

_____. (2000). *Feminism is for everybody.* Cambridge: South End Press.

_____. (2000). *Where we stand: Class matters.* New York: Routlage.

Johnson, J.L. & Cameron, M.C. (2001). Barriers to providing effective mental health services to American Indians. *Mental Health Services Research*, 3(4), 215-223.

Kalmbach, K.C. & Lyons, P.L. (2003). Ethical and legal standards for research

in prisons. *Behavioral Sciences and the Law*, 23, 671-686.

Kaplow, J.B., & Widom, C.S. 2007. Age of onset of child maltreatment predicts long-term mental health outcomes. *Journal of Abnormal Psychology,* 116(1), 176-187.

King, D.K. (1997). Multiple jeopardy, multiple consciousness: The context if a black feminist ideology. In D.T. Meyers (Ed), *Feminist Social Thought: A reader* (pp219-242). New York: Routledge.

Lansford, J.E., Dodge, K.A., Pettit, G.S., & Bate, J.E. (2010). Does physical abuse in early childhood predict substance use in adolescence and early adulthood? *Child Maltreatment*, 15, 190-194.

Lindquist, C. H., & Lindquist, C. A. (1997). Gender Differences in Distress: Mental Health Consequences of Enviromental Stress Among Jail Inmates. *Behavioral Sciences and the Law, 15*, 503-532.

Lorant, V., Deliege, D., Eaton, W., Robert, A., Philippot, P., & Ansseau, M. (2003). Socioeconamic inequalities in depression: A meta-analysis. *American Journal of Epidemiology*, 157(2), 98-112.

Lord, E.A. (2008). The challenges of mentally ill female offenders in prison. *Criminal Justice and Behavior*, 35, 928-942.

Malcoe, L.H., Duran, B.M., & Montgomery, J.M. (2004). Socioeconomic disparities in intimate partner violence against Native American women: A corss sectional study. *BMC Medicine,*2(20).

Marcus-Mendoza, S., Klein-Saffran-J, & Lutze, F. (1998). A feminist examination of boot camp prison programs for women. *Women and Therapy*, 21(1), 173-158.

Marcus-Mendoza, S. T., & Wright, E. (2003). Treating the Woman Prisoner. In S. F. Sharp (Ed.), *The Incarcerated Female*. Upper Saddle river: Prentice Hall.

McCauley, J., Kern, D.E., Kolodner, K., Dill, L., Schroeder, A.F., & DeChant, H.K. (1997). Clinical characteristics of women with a history of childhood abuse, unhealed wounds. *Journal of the American Medical Association*, 277, 1362-1368.

McClellan, D., Farabee, D., & Crouch, B. M. (1997). Early Victimization, Drug Use, and Criminality: A comparison of Male and Female Prisoners. *Criminal Justice and Behavior, 24*, 455-476.

McCloskey, L.A., Figueredo, A.J., & Koss, M.P. (1995). The effects of systematic family violence on children's mental health. *Child Development,* 66(5), 1239-1261.

McDaniels-Wilson, C., & Belknap, J. (2008). The extensive sexual violation and sexual abuse histories of incarcerated women. *Violence Against Women, 14*, 1090-1127.

McNutt, L.A., Carlson, B.E., Persaud, M. & Postmus, J. (2002). Cumulative abuse experiences, physical health and health behaviors. *Abuse and Health,*12(2), 123-130.

Merton, R. (1968). Social theory and social structure. NY: Free Press.

Messina, N., & Grella, C., Burdon, W., & Prendergast, M. (2007). Childhood adverse events and current traumatic distress; A comparison of men and women drug-dependent prisoners. *Criminal Justice and Behavior,* 34 (11), 1385-1401.

Mihesuah, D.A. (2003). Indigenous American women. Lincoln: University of Nebraska Press.

Oklahoma Department of Corrections (OK DOC). (2009). Fiscal year 2009 annual report OK DOC female offender operations. Oklahoma.

Pace, T.M., Robbins, R.R., Choney, S.K., Hill, J.S., Lacey, K., & Blair, G. (2006). A Cultural-Contextual, perspective on the validity of the MMPI-2 with American Indians. *Cultural Diversity and Ethnic Minority Psychology,* 12(2), 320-333.

Piquero, N.L., Fox, K., Piquero, A.R., Capowich, G., & Mazerolle, P. (2010). Gender, General Strain Theory, Negative Emotions, and disordered eating. *Jpurnal of Youth Adolescents,* 39, 380-392.

Pollock, J. M. (2002). *Women, Prison, and Crime*. Canada: Wadsworth.

Radloff, L. (1977). The CES-D Scale: A Self-Report Deppression Scale fpr Research in the General Population. *Journal of Applied Psychological Measurement, 1*, 385-401.

Raj, A., Rose, J., Decker, M.R., Rosengard, C. & Herbert, M.R. (2008). Prevalence and patterns of sexual assault across the life span among incarcerated women. *Violence Against Women*, 14, 528-541.

Romero, S., Birmaher, B., Axelson, D., Goldstein, T., Goldstein, B.I., & Gill, M.K. (2009). Prevalence and correlates of physical and sexual abuse in children and adolescents with bipolar disorder. *Journal of Affective Disorders*, 112, 144-150.

Romito, J. M., & Grassi, M. (2007). Does violence affect one gender more than the other? The mental health impact of violence among male and female university students. *Social Sciences and Medicine, 65*, 1222-1234.

Ruch, B.O. & Chandler, A.M. (1983). Sexual assault trauma during the acute phase: An exploratory model and multivariate analysis. *Journal of Health and Social Behavior*, 24(2), 174-185.

Rutter, M. (1981). Stress, coping and development: Some issues and some questions. *Journal of Child Psychology and Psychiatry,* 22(4), 323-356.

Shelden, R. G. (2001). *Controlling the Dangerous Classes*. Needham Heights: Pearson Educartion.

Smith, A. (2005). *Conquest: Sexual violence and American Indian genocide.* Cambridge: South End Press.

Ryder, J.A., Langley, S., & Brownstein, H. (2009). I've been around and around and around: Measuring traumatic events in the lives of Incarcerated girls. In R.L. Gido & L.Dalley (Eds), *Women's Mental Health Issues Across the Criminal Justice System* (pp.45-65). Upper Saddle river, NJ:Pearson.

Sabol, W. J., West, H.C., & Cooper, M. (2009). *Bureau of Justice Statistics Bulletin: Prisoners in 2008* (NCJ 228417). Washington, DC: Bureau of Justice Statistics, National Institute of Justice.

Sacks, J. Y. (2004). Women with co-occurring substance use and mental disorders (COD) in the criminal justice system: A research review. *Behavioral Science and the Law, 22*, 449-466.

Sharp, S.F., Terling, Atkins, & Gilliam (2001). Purging behavior in a sample of college females: A research note on general strain theory and female deviance. *Deviant Behavior*, 22, 171-188.

Sharp, S.F., Brewster, & Love (2003). Disentangling strain, personal attributes, affective response and deviance: A gendered analysis. *Deviant Behavior*, 26(2), 133-157.

Simpson, S., Krishnan, L.L., Kunik, M.E., & Ruiz, P. (2006). Racial disparities in diagnosis and treatment of depression. *Psychiatry Quarterly,* 78 (3), 3-14.

Spelman, E. (1997). Women: The one the many. In *Feminist Social Thought: A Reader*, edited by Diana Tietjens Meyers. New York, NY: Routlage.

Springer, K.W., Sheridan, J., Kuo, D., & Carnes, M. (2007). Long-term physical and mental health consequences of childhood physical abuse: Results from a large population-based sample of men and women. *Child Abuse & Neglect*, 31, 517-530.

Sue, S., Zane, N., Hall, G.C.N., & Berger, L.K. (2009). The case for cultural competency in psychotheraputic interventions. *Annual Review of Psychology,* 60, 525-548.

Slocum, L.A., Simpson, S.S., & Smith, D.S. (2005). Strained lives and crime: Examining intra-individual variation in strain and offending in a sample of incarcerated women. *Criminology*, 43(4), 1067-1110.

Thoits, P.A. (1983). Dimensions of life events that influence psychological distress: An evaluation and synthesis of the literature. In H. Kaplan (Ed), *Psychosocial Stress: Trends in Theory and Research* (pp. 33-103). New York: Academic Press.

Tong. R. P. (1998). *Feminist Thought* (2nd ed.). Boulder: Westview Press.

Turner, R.J., Wheaton, B., & Lloyd, D.A. (1995). The epidemiology of social stress. *American Sociological Review*, 60(1), 104-125.

Turner, R.J. & Lloyd, D.A. (1995). Lifetime traumas and mental health:The significance of cumulative adversity. *Journal of Health and Social Behavior,* 36(4), 360-376.

Tusher, C.P. & Cook, S.L. (2010). Comparing revictimization in two groups of marginalized women. *Journal of Interpersonal Violence*, 25(10), 1893-1911

Walters, K.L. & Simoni, J.M. (2002). Reconceptualizing Native women's health: An "indigenist" stress-coping model. *American Journal of Public Health,* 92(4), 520-524.

Weissman, M.M., Sholomskas, D., Pottenger, M., Prusoff, B.A., Locke, B.Z. (1977). Assesing depressive symptoms in five psychiatric populations: A validation study. *American Journal of Epidemiology*, 106(3), 203-214.

Widom, C.S., DuMont, K., & Czaja, S.J. (2007). A prospective investigation of major depressive disorder and co morbidity in abused and neglected children grown up. *Arch of Gen Psychiatry,* 64, 49-56.

Widom, C.S. & Shepard, R.L. (1996). Accuracy of adult recollections of childhood victimization: Part 1. Childhood physical abuse. *Psycological Assesment,* 8(4), 412-424.

Zlotnick, C. (1997). Posttraumatic stress disorder (PTSD), PTSD comorbidity, and childhood abuse among incarcerated women. *The Journal of Nervous and Mental Disease, 185*(12), 761-763.

Appendix A

The Center for Epidemiologic Studies Depression Scale (CESD-R)

Instructions for the question: Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

Rarely or none of the time (less than 1 day)

Some or a little of the time (1-2 days)

Occasionally (3-4) days

Most or all of the time (5-7 days)

I was bothered by things that usually don't bother me.

I did not feel like eating; my appetite was poor.

I felt that I could not shake off the blues even with help from my family or friends.

I felt I was just as good as other people.

I had trouble keeping my mind on what I was doing

I felt depressed.

I felt that everything I did was an effort.

I felt hopeful about the future.

I thought my life had been a failure.

I felt fearful.

My sleep was restless.

I was happy.

I talked less than usual.

I felt lonely.

People were unfriendly.

I enjoyed life.

I had crying spells.

I felt sad.

I felt that people dislike me.

I could not get "going."

Appendix B

Survey Questions

Age

Your current age is: _____

Race/Ethnicity (Race)

What racial or ethnic group do you consider yourself? Check all that apply.

African-American

Hispanic

White

Native American

Asian

Other _____(specify)

Education (2007) (EDUC)

What is the highest grade of school you have completed?

8th grade or less

9th - 11th grade

High school graduate or GED

Vo-tech school

up 2 years of college (no degree) or associate's degree (2 years)

more than 2 years of college but no degree

4 years of college (degree)

Post-graduate school

Education (2008 & 2009) (EDUC)

What is the highest grade of school you have completed before entering prison?

8th grade or less

9th - 11th grade

High school graduate or GED

Vo-tech school

up 2 years of college (no degree) or associate's degree (2 years)

more than 2 years of college but no degree

4 years of college (degree)

Post-graduate school

Other:_____

Live with an Alcoholic (LWA)

During your first 18 years of life, did you live with anyone who was a problem drinker or alcoholic?

Yes No

Live with a Drug User (LWD)

During your first 18 years of life, did you live with anyone who was an illegal drug-user or addict?

Yes No

Parent Divorce (PD)

During your first 18 years of life : Did your parents ever separate or divorce?

Yes No

Household Member was Mentally Ill (HMI)

Was anyone in your household depressed or mentally ill?

Yes No

Household Member Went to Prison (HMP)

Did anyone in your household go to prison?

Yes No

Mother Treated Violently (MTV)

When you were a child, was your father (or father figure) ever violent around your family?

Yes No

If YES, towards whom? (CHECK ALL THAT APPLY)

me

my mother or step-mother

my brother(s)

my sister (s)

other (specify) _____

Childhood Physical Abuse (CPA)

When you were a child, were you ever physically abused by anyone? That is, were you ever hit with a fist, slapped, kicked or hit in any way which left marks on you? We are not referring to regular spankings where no injury occurred or no mark was left.

Yes No

Childhood Sexual Abuse (CSA)

When you were a child (under age 18), were you ever sexually abused by anyone that was at least five years older than you?

Yes No

Adolescent Sexual Assault (ASA)

Apart from other sexual experiences you had growing up, did a boy or group of boys force you or threaten you with harm in order to have sexual contact with you?

Yes No

Domestic Violence (DV)

As an adult (over age 18), have you been involved in any episodes of domestic violence? (Check all that apply.)

No

Yes, I have been the victim of domestic violence

Yes, I have been the perpetrator of domestic violence

Adult Rape (AR)

As an adult (over age 18), have you been the victim of rape or sexual abuse?

Yes, within the past year

Yes, more than one year ago

No