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The Impact of Parental Incarceration on Childhood Health

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Walden University
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Abstract

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MSW, University of South Carolina, 2009

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Many children in the United States have experienced the imprisonment of a parent, given the country's high rate of incarceration. Researchers have found that such children have a higher likelihood of having health problems than do other children. However, a gap in current literature exists regarding these children's ability to acquire needed health care services to accommodate health issues resulting from the experience of parental incarceration. Therefore, the purpose of this quantitative study was to examine the relationship between these children's health status and their experience of parental incarceration. Bowlby's attachment theory, along with life course theory, constituted the conceptual framework. A nonexperimental, quantitative, cross-sectional design was used to test several hypotheses that centered on the relationships between children's special health care needs and access, as well as the likelihood that they had experienced parental incarceration. Secondary data collected through the 2011-2012 National Survey of Children's Health (NSCH) was used in this study. The results of a logistic regression analysis revealed a strong relationship between the experience of parental incarceration among youth and a need for psychological counseling and treatment. In addition, the experience of parental incarceration was also a predictor of participation in state and/or federal health care programs, and somewhat increased the likelihood of receiving delayed medical care or none at all. The results reinforce the need for more effective counseling and services and better information sharing with families of incarcerated individuals to communicate the availability of such services. Such actions may promote positive social change by increasing the odds of these children's healthy adjustment into adulthood.

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Dedication

This dissertation is dedicated to those who relentlessly strive to aid children and families who have fallen victim to parental incarceration. With the help of researchers and others willing to share their knowledge and insight regarding the adversities of parental incarceration, we can help provide these children and families with a more positive outlook on the future.

Acknowledgments

To my family: I love and appreciate you all “infinity plus beyond.” I could not have gotten through this process without you. Your unconditional love and support, and your unyielding encouragement gave me the ambition to complete this journey.

To my committee: Drs. Bold and Harris, I would like to thank you both for your guidance throughout this process. Your astuteness and inspiration are greatly appreciated and will be valued forever.

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Chapter 1: Introduction to the Study

The United States has had the highest incarceration rates in the world since 2002 (Carson, 2015; Tsai & Scommegna, 2012). In 2013, approximately 1.6 million adults were incarcerated in U.S. state and federal prisons (Carson, 2014). The number of children with incarcerated parental figures in the country has similarly increased. According to the Pew Charitable Trusts (2010), in 2009, approximately 2.7 million children in the United States had an incarcerated parental figure. Nearly 10 million children had experienced the incarceration of a parental figure at least once during their lifetimes (Pew Charitable Trusts, 2010).

In a seminal study, Seymour (1996) explored the challenges faced by children who experienced parental incarceration and the social welfare professionals who work with this population. Seymour found that children of incarcerated parents experienced unique difficulties that negatively compromised their health and well-being, resulting in emotional withdrawal, delinquency, and developmental issues. Later researchers have also found that parental incarceration may be associated with negative outcomes in numerous domains of a child's health and well-being (Mears & Siennick, 2015). These domains encompass mental health, education, and criminal behaviors; which may persist throughout adulthood (Mears & Siennick, 2015).

In essence the aforementioned research, the ramifications of parental incarceration on the health of children are evident, which justifies the need for this study. Results of this study may provide professionals with knowledge regarding the impact of parental incarceration on child development, which they may be able to use in developing plans,

policies, and programs to mitigate the negative impact of parental incarceration on children's health.

This chapter begins with a section offering background information on the impact of parental incarceration of children. I then present my problem statement and conceptual framework. The chapter also includes my research questions and hypotheses and a discussion of the assumptions, scope and delimitations, limitations, and significance of the study.

Background

The increase in adult incarceration rates in the United States has caused a significant rise in the number of children affected by the incarceration of a parental figure. According to Uggen and McElrath (2014), more children in the United States are affected today by parental incarceration that ever before. Due to the damaging effects that parental incarceration can have on children, researchers have classified parental incarceration as an adverse childhood experience (Arditti, 2012; Shlafer et al., 2013). According to Arditti (2012), an adverse childhood experience refers to a traumatic experience that can lead to social, emotional, and cognitive neurodevelopmental development issues, which can persist throughout one's life.

Although a causal relationship has not been established between parental incarceration and health issues that their children experience, some studies have revealed that parental incarceration has a direct effect on children's behavior, mental health, and academic performance (see Murray & Farrington, 2006; Murray, Farrington, & Sekol, 2012). Other researchers have found that parental incarceration also directly affects

children's behavioral and emotional well-being, financial circumstances, and family stability (Geller, Garfinkel, Cooper, and Mincy, 2010; Glesner, 2012). For instance, Geller et al. (2010) conducted a study that revealed that children of incarcerated parents are more apt to experience economic and residential instability than children who have not experienced parental incarceration. Their findings suggest that children who have experienced parental incarceration have a higher prevalence of unmet material needs and behavioral issues than children who have not experienced parental incarceration (Geller, 2010).

Authors of a report by the Pew Charitable Trust (2010) documented that children of incarcerated parents were the most vulnerable children in their communities. Barriers that these children may face, such as being a minority, having parents with lower levels of education, and living in low-income households, increase their vulnerability to health issues. (Murphey & Cooper, 2015). Compared to children who had not experienced parental incarceration, these children were also at a greater risk for behavior problems and juvenile delinquency (Geller, Cooper, Garfinkel, Schwartz-Soicher & Mincy, 2012; Kjellstrand & Eddy, 2011; McNeely, 2002). Researchers with the Osborne Association (2012) reported that the experience of being separated from a parent due to parental incarceration can be as traumatic for a child as being separated from a parent due to death or divorce of the parent, because of the stigma, opacity, and economic strain that accompanies the separation.

Murray et al. (2012) conducted a systematic review and meta-analysis of 40 studies to examine the relationships between parental incarceration and children's

subsequent antisocial behavior, mental health, drug use, and educational performance. The researchers found a positive association between parental incarceration and antisocial behavior in children, but not for mental health issues, drug use, or academic performance (Murray et al., 2012). They also found that studies whose researchers had controlled for parental criminality or childhood antisocial behavior before incarceration showed a higher risk of childhood antisocial behavior than their counterparts (Murray et al., 2012). However, the Murray et al. concluded that many of the studies were of poor methodological quality, which affected the validity and reliability of findings.

Johnson and Easterling (2012) highlighted the methodological issues arising from the sampling methods used by researchers studying the effects of parental incarceration on children. Johnson and Easterling noted that when examining the effects of parental incarceration on children, it is inaccurate to conclude that the children are affected merely because their parent(s) have been incarcerated. Johnson and Easterling postulated that the methodological flaws in the research made it unclear whether adverse outcomes for these children were caused by parental incarceration or other factors. Some of these factors include financial strain because of a reduction of household income, lack of access to health care resources, and a shift in living conditions (Johnson & Easterling, 2012).

In conducting a review of literature related to the impact of parental incarceration on children, I found many deficits in the studies which limited the generalizability of findings from the research. Some of these deficits included methodological limitations and exclusion of background risk factors as variables or covariates (Hairston, 2007;

Johnson & Easterling, 2012; Turney, 2014). Turney (2014) also highlighted some of the shortfalls in research related to parental incarceration and children's health. She mentioned the lack of empirical evidence on the consequences of parental incarceration on children's health and the inconsistencies in findings across outcomes, which further highlights the need for more research in this area.

One important aspect to consider when examining the health status of children of incarcerated parents is the degree in which these children have access to and use needed health and/or therapeutic services. However, in the literature searches that I conducted, I did not find any literature that encompassed the utilization rates and the capability to access health services among children who have experienced the incarceration of a parental figure. Therefore, it appears to be a gap in the literature regarding the relationship between access to and utilization rates of health services and health outcomes among children who have experienced the incarceration of a parental figure.

Problem Statement

Statistics from the Department of Justice show that in 2007, approximately 1.5 million adults were incarcerated in U.S. prisons (Glaze & Maruschak, 2008). However, in 2013, there were approximately 1.6 million adults held in U.S. prisons, which also increased the number of children who had experienced incarceration (Glaze & Kaeble, 2014). According to Murphey and Cooper (2014), approximately 5 million children had a parent who lived with them to go to jail or prison. In offering this finding, Murphey and Cooper only included parents who resided with their children. Due to the exclusion of nonresidential parents, the number of such children is likely higher.

Researchers have consistently found evidence of an association between parental incarceration and negative outcomes for children. Swisher and Roetteger (2012) found that children of incarcerated parents are more likely to have internalizing issues (such as depression) and externalizing issues (such as aggressiveness and behavior problems) than their counterparts. Studies have also shown negative outcomes related to children's physical health and parental incarceration. Lee et al. (2013) found that children with incarcerated parents are more apt to experience long-term physical health issues, such as migraines, high cholesterol, and asthma. These studies are explained more in depth in the literature review.

The available studies indicating long-term ramifications of parental incarceration on children is an indication of the need for more studies that need to be conducted to explore the different factors contributing to the adverse effects of parental incarceration. The growing rates of parental incarceration can pose both social and economic challenges for the U.S. society. Furthermore, understanding the causal factors is an essential aspect in determining the best corrective measures and interventions that need to be provided to these children.

Purpose of the Study

The purpose of this nonexperimental, quantitative, cross sectional study was to investigate the degree in which children's special health care needs and ongoing special healthcare needs are related to the likelihood that the children experienced the incarceration of a parental figure. I also wanted to examine the degree to which

children's access and utilization of health care services is related to their likelihood that they have experienced the incarceration of a parental figure.

I used secondary data from the 2011-2012 National Survey of Children's Health (NSCH) to determine whether the independent variables (i.e., indicators of special healthcare needs, ongoing special healthcare needs, and access to and utilization of health care services) predict the likelihood of the dependent variable (i.e., parental incarceration). The results of this study provide empirical indications of the association between the noted variables. This information can be used by those who work with children who have experienced parental incarceration to advocate for more effective services to aid this population.

Research Questions and Hypotheses

RQ1. To what degree do children's indicators of special healthcare needs, and ongoing special healthcare needs predict the likelihood that the children experienced incarceration of a parental figure?

RQ2. To what degree does children's access and utilization of health care services predict the likelihood that the children experienced incarceration of a parental figure?

H_o1: Indicators of special health care needs and ongoing special healthcare needs are not statistically significant predictors of the likelihood that the children experienced the incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

H_a1: Indicators of special care needs and ongoing special healthcare needs are statistically significant predictors of the likelihood that the children experienced

incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

H_o2: Children's access to and utilization of healthcare services are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined the data collected from the 2011-2012 NSCH.

H_a2: Children's access to and utilization of health care services are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

A logistic regression analysis was used to test both hypotheses and predict the likelihood of the dependent variable (i.e., parental incarceration) in the presence of the independent variables (i.e., indicators of special healthcare needs and ongoing special healthcare need). Before the logistic regression analysis was performed, tests were conducted to assure that the main assumptions for this test are met.

Conceptual Framework

Bowlby's attachment theory was used as a theoretical framework for this study because it expounds on the role of parents in the health and development of children. The primary assumption of the attachment theory is that humans form attachments in the interest of survival (Bowlby, 1980). Bowlby's attachment theory helped highlight how attachment anomalies between parents and children can affect the health and development of children throughout their lifetime, which can ultimately impact the children's capability to utilize and access health services.

According to Bowlby (1980), an attachment is a "psychological connectedness between human beings" (p. 109). When a healthy attachment or bond is developed and maintained between a child and his or her parent, the child's chances of survival and ability to function increase, according to Bowlby. Bowlby also proposed that when children have strong attachments or bonds with their parent(s), they tend to have more emotional, social, and intellectual stability when they reach adulthood. But, if the attachment is not secure, a child tends to have more difficulties in emotional, social, and intellectual stability as an adult (Bowlby, 1980). Bowlby examined this assumption in his "44 Thieves'" study, where he examined the disturbance of maternal attachment among mother and child among 44 juvenile delinquents who had been referred to a child protective program in London for stealing. Bowlby used the maternal deprivation hypothesis to explicate the extent of maternal attachment among these children. Bowlby found that the children who had been separated from their mother for six months or more showed more signs of anti-social behaviors and emotional problems (Bowlby, 1980).

As it relates to Bowlby's attachment theory, when a parental figure is incarcerated, the parent-child attachment could be dismantled, which could contribute to numerous health disadvantages that can persist throughout adulthood, such as mental health issues, developmental delays, learning disabilities, etc. (Murray & Farrington, 2006; Murray et al., 2012; Turney, 2014).

The internal working model of attachment, which is a central tenet of Bowlby's attachment theory further explicates the significance of attachments among child and parent/caregiver. Studies have found significant associations between the attachment of a

child and caregiver and a child's functioning across multiple domains (Pearce & Pizzot-Pearch, 2007; Makariev & Shaver, 2010). Without looking at the historical aspects of the children's attachment to their parents, I utilized the attachment theory to examine how separation, such as in parental incarceration, may impact a child's health and wellbeing.

This study was also be guided by the theoretical fundamentals offered by the life course theory. This allowed me to formulate a basic understanding and argument on the effect of life transitions on childhood health. Mears and Siennick (2015) posit that parental incarceration constitutes a significant turning point in a child's life, which can have a negative effect on various outcomes of a child's life. These negative outcomes may persist throughout adolescent and adulthood. Consequently, through life course theory, I was able to explore the impact of parental incarceration on children's health issues.

Nature of the Study

This nonexperimental, quantitative study used a cross-sectional design to examine the degree in which the independent variables (i.e., children's indicators of special healthcare needs, ongoing special healthcare needs, and access and utilization of healthcare services) predict the likelihood of the dependent variable (i.e., parental incarceration). This design was ideal for this study because I used secondary data, and this design allowed me to gather numerical data to assess the relationships between the variables of interest. This design also allowed me to predict the likelihood of occurrence of the outcome of interest, and make generalizations across the population of interest

(i.e., children who have experienced the incarceration of a parental figure) (Babbie, 2010; Brians, Willnat, Manheim, Rich, 2011).

Definitions

Attachment: A close emotional bond between two people (Bowlby, 1969).

Attachment theory: The "psychological connectedness between human beings" (Bowlby, 1980, p. 109).

Caregiver: The person who has primary custody of a child and is responsible for the child's day-to-day care (Arditti & Savla, 2015).

Externalizing behavior: Negative, problematic behaviors that are directed outward (i.e., to the external environment). These behaviors can be aggressive, hyperactive, antisocial, and/or disruptive (Jianghong, 2004).

Internal working model of attachment: Attachment formed with the caregiver that influences a child's later responses to other people (Bowlby, Goldsmith, 2007; Koren-Karie, Oppenheim, & Goldsmith, 2007).

Internalizing behavior: Negative, problematic behaviors that are directed towards the self. Examples of internalizing behavior are perfectionism, anxiety, depression, and cognitive rigidity (Coplan, 2013).

Parental incarceration: A parent who is confined in a jail or a prison for any length of time (Johnson & Easterling, 2012).

Secure attachment: A child who has a secure attachment is confident that the caregiver will be available to meet their needs, and uses caregiver as a mean of safety to explore the environment. When a caregiver is separated from a child, a child may

experience distress and happiness when a caregiver is subsequently present (Ainsworth, 1978).

Assumptions

Data were obtained from the National Survey of Children's Health (Centers for Disease Control and Prevention, 2013). I assumed that the data were valid and reliable. Another assumption was that the respondents gave honest and accurate information about the children and their relation to the child. Additionally, I assumed that the respondents fully comprehended each questioned in the survey. The sample consisted of over 95,000 respondents who were randomly selected and screened. Therefore, it was assumed that the data contains minimal bias in selecting the participants, and produced valid and reliable results. According to Herlihy and Turner (2015), it is possible for a researcher to be influenced by previous experiences and other emotions and premonitions regarding a topic.

Scope and Delimitations

This study examined the degree to which children's indicators of special healthcare needs, ongoing special healthcare needs, and access and utilization of healthcare services predict the likelihood that the children experienced the incarceration of a parental figure. This examination was performed with data obtained from the 2011-2012 National Survey of Children's Health. The data from the survey reflects parent/caregiver reports, throughout the U.S., pertaining to the health of the specified child. The ages of the specified children ranged from 0-17 years of age, who were non-institutionalized. However, since institutionalized children were excluded from the

sampling frame, caution should be used when attempting to generalize results from this study to populations that include institutionalized children.

Limitations

The sample consisted of over 95,000 respondents who were randomly selected to complete the survey. The data from this survey was collected through phone interviews by unknown individuals, which creates a limitation of this study. According to Frankfort-Nachmias and Nachmias (2008), one major limitation of the use of secondary data is the inability to control how the data was generated and recorded, which limits insight into factors that may sway the results of the study. Since, I was not involved in the collection of the data, I have no knowledge of the instruments that were used to collect and analyze the data, which also posed a limitation to the study. This means that I had to rely on information collected by other authors. This placed my research at the mercy of this data, and their accuracy may, therefore, be an impediment to the validity of this study (Frankfort-Nachmias and Nachmias, 2008). Some of those deficits included methodological limitations of the studies and exclusion of background risk factors as variables or covariates in the studies (Hairston, 2007; Johnson & Easterling, 2012; Turney, 2014). Considering these limitations, more research should be conducted on this subject matter in the future.

Significance

Over the last decade, an array of disadvantages have been identified that children of parental incarceration face, such as poor mental health (Arditti, 2012) and increased risks of physical health issues (Lee et al., 2013; Turney, 2014). This study will contribute

to the existing literature by introducing new empirical literature that addresses the relationship between special health care needs of children who have experienced parental incarceration. I plan to share the results of this study with practitioners, policy makers, administrators, and others who are involved with children of incarcerated parents to help those professionals gain insight into the effects of parental incarceration on children. I also plan to accentuate the need for interventions that will adequately address the needs of this population. Upon the completion of my study, I will share the findings through presentations and dialogues at workshops, conferences, and seminars.

Summary

Incarceration separates parents from their households, which can create economic instabilities and strains on relationships. Additionally, parental incarceration also increases the risk of childhood health issues (Turney, 2014). More so, the special needs of children who have experienced parental incarceration have been overlooked in the area of research and human services (Wright & Seymour, 2002; Turney, 2014).

Children who have experienced the incarceration of a parental figure are at an increased risk of facing disadvantages in many areas of their lives, which can warrant special needs. For example, Wakefield and Wildeman (2014) indicated that children of parental incarceration experience more "externalizing" (e.g., aggressive behaviors) and "internalizing" (e.g., depression) problems than children without incarcerated parents. These children are also more at risk of having physical health issues (i.e., migraines, high cholesterol, and asthma) (Lee et al., 2013), academic issues (i.e., dropping out and

excessive absences) (Nichols & Loper, 2012), and economic instability (Uggen & McElrath, 2007).

This study contributes to literature within this area of interest by providing insight on the degree to which indicators of children's special healthcare needs and children's ongoing special healthcare needs predict the likelihood that the children experienced the incarceration of a parental figure. This study also addressed the degree to which access and utilization of health care services predict the likelihood that a child experienced the incarceration of the parental figure. An overview of the scope of the study was also provided in this chapter. Chapter 2 consists of a review of literature that has been conducted on aspects related to children's experiences related parental incarceration.

Chapter 2: Literature Review

Introduction

Parental incarceration can involve significant social, emotional, and economic losses that can have damaging effects on the health of children (Arditti, 2012). In conducting this study, I sought to generate knowledge on the effects of parental incarceration on children's special health care needs. Literature on parental incarceration and childhood health featured in this chapter includes studies that highlight the prevalence of parental incarceration. The chapter also contains the conceptual framework for this study that is grounded in Bowlby's attachment theory (Bowlby,1968; Bowlby, 1973; Bowlby, 1980) along with life course theory (Mears & Siennick, 2015). The literature provides insight into how a child's functioning, more specifically their health, is affected by the incarceration of a parental figure.

Literature Search Strategy

The primary approach for obtaining literature that was relevant to my topic was through Walden University's Library. Using Library resources, I searched numerous databases such as PsycInfo, SocIndex, EBSCOhost, SAGE, and Edisto. I also conducted searches in Google Scholar and obtained numerous electronic documents from the U.S. Census and the U.S. Bureau of Prisons.

Certain keywords and phrases were used to locate the literature described in this review. These included *the effects of parental incarceration on childhood health*; *parental incarceration*; *child well-being, parental incarceration*; *childhood physical health, parental incarceration*; *mental health, parental incarceration*; *children's*

behavior, *parental incarceration*; *economic issues*, *parental incarceration*; and *childhood attachment*. These terms were sometimes used in conjunction with one another.

During my review of the articles, some of the references in the articles were used to locate additional articles. However, many of the articles that located were too old, meaning they were over five years old and had to be excluded from the literature review. I also found that only a few studies have been conducted that focused solely on parental incarceration and childhood physical health issues.

Key Variables and Concepts

Because of the detrimental effects that parental incarceration can have on a child, parental incarceration is now classified as an Adverse Childhood Experience (ACE) (Hairston, 2007; Gjelsvik, Dumont, Nunn, & Rosen, 2014). Hairston goes on to state, somewhat ambiguously, that children with an incarcerated parent "may share" (2007, p. 18) some of the same symptoms as children who experience other traumatic events, and experience identical phases in coping with these events. It is worth noting that after summarizing many points of research on this topic, Hairston summarizes by stating that "a clear, causal relationship between parental incarceration and children's problems has not been established" (2007, p. 21). This can be set against studies suggesting otherwise, in future portions of the literature review.

Parental incarceration can cause separation, financial strains, unstable living arrangements, etc. among families (Christian, 2009; Geller & Franklin, 2014). The combination of stressors that children may endure as a result of parental incarceration can affect children's health in numerous areas such as mental health (Murray et al., 2012),

physical health (Lee et al., 2013), and behavioral health (Wildman, 2010). Each of these health categories is explored in depth later on.

According to Berg (2011) parental incarceration refers to the circumstance where a mother, father, or both parents are imprisoned for breaking a law. Berg (2011) characterized parental incarceration as an isolated phenomenon, where the rights, needs, and best interests of the children connected with the imprisoned parents are actively damaged. Lee, Fang, and Leo (2013) defined the concept of parental incarceration as a novel and distinct childhood risk. Lee et al. (2013) examined the association between parental incarceration with young adult physical and mental health outcomes. Lee et al. (2013) used data from the National Longitudinal Survey of Adolescent Health, to determine the association between the dependent variables (i.e., self-reported fair/poor health and health diagnosis) and independent variable (i.e., parental incarceration history). The data came from a probability sample of 14,800 adolescents who were in n grades 7^{th}-12^{th} during the 1994-1995 school year. The data was analyzed by using logic regression models and cross-tabulations. Results indicated a positive association between childhood exposure to parental incarceration and the increased risk of long-term health issues. This study is very important because it provides empirical evidence regarding the extent of the association between parental incarceration and childhood health issues.

Prevalence of Parental Incarceration

The United States has the highest incarceration rate in the world (Carson, 2014). At the end of 2013, the U.S. state and federal prison population and those in the custody of the local and city jails consisted of over 2 million prisoners. This number represented

an increase of an estimated 4,300 prisoners from 2012 (Carson, 2014). State prisons held the majority of the prisoners in the United States. Private prisons held 8%, and local jails, 5% (Carson, 2014). Statistics show that roughly 700 people are incarcerated out of every 100,000 people in the United States (Carson, 2015; Kaeble et al., 2015).

According to Glaze and Maruschak (2008), in 2007 52% of the adults incarcerated in state prisons were parents, and 63% of the adults incarcerated in federal prisons were parents. The majority of the adults incarcerated in the U.S. have children who are minors (i.e., are under the age of 18), and more than 45% of the prison population lived with their minor children before being incarcerated (Glaze & Maruschak, 2008). Data collected through the U.S. Bureau of Prisons in 1991 through midyear of 2007 showed a significant increase in the number of parents who were incarcerated in the nation's prison systems (Glaze & Maruschak, 2008). It should be noted that the rise in imprisoned parents and the prison population in general coincided with a sizable drop in the national murder rate (Cooper & Smith, 2011) and crime rate (Crime in the United States, 2010). In midyear of 2007, approximately 744,000 fathers incarcerated and approximately 166,000 mothers were incarcerated in the United States (Glaze & Maruschak, 2008). Statistics also showed a 131% increase in children with an incarcerated mother and a 77% increase in children with an incarcerated father (Glaze & Maruschak, 2008).

Impact of Parental Incarceration on Children Based on Gender of Parent

The dynamics of gender within the U.S. prison population should be considered when examining the prevalence of parental incarceration. In regards to the health status

of children of incarcerated parents, research has shown that the gender of the incarcerated parent has a significant influence on the nature of a child's response (e.g., internalizing and externalizing behaviors) to the incarceration and/or separation from the parent, which makes gender a significant aspect to examine. According to Chesney-Lind and Brown (2016), the gender of an incarcerated parent also influenced a child's health outcome. Additionally, the writers stated that the mother is often the last refuge for children in a family with an incarcerated parent. If the father is imprisoned, children normally go to the mother, but when a mother is incarcerated, they are sent to live with relatives, or put into the foster care system (Hairston, 2009). Given this context, it is worth noting that according to the U.S. Bureau of Prisons, males make up the majority of the prison population in both state and federal prisons (Glaze & Maruschak, 2008). In reference to both the state and federal prison population, males make up about 80 percent, females 18 percent, and 2 percent is comprised of other gender (Glaze & Maruschak, 2008).

I only found a small amount of research that had been conducted comparing the effects on children when a father is incarcerated compared to a mother (Lee et al., 2013). Most studies examined aspects of one or the other separately, but not both. However, a study in the upcoming Physical Health Issues section in this study does provide a detailed comparison by gender of the parent, measuring the impact of parental incarceration upon a child's well-being.

Impact of Parental Incarceration on Children Based on Race of Parent

In regards to statistics that reflect the make-up of the U.S. prison population, there is a notable disparity in the numbers describing the racial composition among prisoners.

According to Carson (2015), at the end of 2013, among male inmates, Blacks represented the largest group at (37%) of the state and federal prison population, followed by Whites (32%) and Hispanics (22%). The remainder (9%) of the male population reported their race as being "other." White females represented the majority of the state and federal female prison population (49%), followed by Black females (22%), and Hispanic females (17%; Carson, 2015). The remaining 12% reported "other" for their race. However, statistics also indicated that both the male and female population increased from the end of 2012-2013. The overall male prison population increased in 28 states, and the overall female population increased in 36 states (Carson, 2014).

Though African-Americans made up a larger proportion of the prisoner population than other races, the negative impact upon their children may be slightly ameliorated due to differences among different ethnicities when it comes to maintaining contact with their offspring after imprisonment. It appears that white and Hispanic prisoners are more reticent to contact their children while behind bars—61% of Hispanics and 60% of Caucasians had not had personal visits with their children in a recent survey, while just 55% of African-Americans could say the same (Hairston, 2007). The difference may not stand out as noteworthy at first glance, but is borne out throughout Hairston's study, and seems solid when examined in-depth: only 33% of African-American prisoners have never spoken with their children by phone, while the figure is 50% for Hispanics and 45% for Caucasians (2007).

Perhaps because imprisonment is more common in the African-American experience, people of this ethnicity are more accustomed to working through it and

making the best of a difficult situation. Of course, it is not that common—if the Census Bureau pegs the African-American population as 13.2% of the roughly 320 million citizens of the US ("Quick Facts," 2016), that puts their total numbers at nearly 42 million, while it has been stated that they account for less than half of the prison population or around 1 million. Still, incarceration is more common in the African-American community than others and perhaps this has made families more prepared to maintain bonds during incarceration rather than shunning the inmate or feeling shunned (on the part of the prisoner themselves). It would then remain to be proven if maintaining contact with one's imprisoned parent is better or worse for a child; it can be imagined that it would be generally positive, but this might be up for debate. Perhaps it lessens the attachment disruption, which Bowlby cited as harmful in the upcoming section.

Conceptual Framework

Bowlby's Attachment Theory

Attachment theory is a useful for explaining the relationship between parental incarceration and some of the negative outcomes that have been linked to children's mental and emotional health. Bowlby (1980) defined attachment as a "psychological connectedness between human beings" (p. 109). He showed that when a healthy attachment or bond is developed and maintained between a child and parent, the child's chance of survival and functioning ability are increased (Bowlby, 1980). Bowlby also suggested that attachment behaviors are the combination of the psychological and biological tunings within an individual mechanism (Bowlby, 1969). However, when a

child experiences the incarceration of a parental figure, their attachment connections are sometimes disturbed, which can be explicated through this theory.

According to Bowlby (1980), parents play a unique role in the developmental process of their children. Bowlby (1980) asserted that children come into the world with biologically pre-programmed instructions and emotions that they use later to form attachments with others. The family background and parental relationships in the early stages of life helps the child to gradually learn and develop new competencies and interests later in life.

The unstable environment created by the parental incarceration can increase the chances of the child experiencing similar occurrences throughout his or her life because of attachment disruptions (Geller, Garfinkel, Cooper, & Mincy, 2009). Bowlby argued that one particularly vulnerable stage of attachment (which might lead to future negative occurrences in the child's life) is present with children under the age of three, a not particularly surprising revelation. Only after this age are children more successful in building subordinate attachment relationships with others outside the family, such as teachers (Bowlby, 1982). One can surmise then, that the incarceration of a parent with a two-year-old child might be particularly difficult for the toddler. The mother in particular is closely attached to the child during these years, and children become upset in their absence (Bowlby, 1982).

The physical separation stemming from parental incarceration is a disruption that breaks the attachment bonds between a parent and the child. According to the attachment theory, real-life occurrences that upset or pose a risk of interruption of attachment bonds

can lead to grief and acute anxiety for children following the loss of the attachment figure (Bowlby, 1980). Therefore, separation from a parental figure due to parental incarceration can contribute to psychological trauma for the child.

Impact of Attachment Disruptions on Childhood Health

Bowlby maintained that attachment behaviors and attachment figures are critical components of a child's development (Bowlby, 1973). Consequently, certain aspects of a child's health are also dependent upon these components (Gold, 2011). According to Bowlby's (1973) premise of secure-based attachment behaviors, sensitive parenting reinforces secure-based behaviors because the child feels confident that the attachment figure will be there when needed. One the other hand, when a child is separated from a parent, or the attachment is disrupted, the child may experience separation anxiety, which could lead to internalizing behaviors and an insecure attachment style (Bowlby, 1973). The disruptions in attachment could also result in children assuming a negative view of the world and others. The manifestations of attachment issues in children may include doubts about being loved or feeling the need to protect one's vulnerabilities (Bowlby, 1980; Gold, 2011). Consequently, as stated by Pearce and Pezzot-Pearce (2013), the children with a maladaptive view of close relationships (or attachments to parents) tend to think that they are better off not trusting others because of the assumption that other people are not dependable, and that they might abandon them too. This is a typical reaction from a child who has experienced parental incarceration, and hence they feel betrayed by the absence of the parent and lose trust in any caregiver (Gold, 2011).

Bernard et al. (2012) posits that separations from parents due to parental incarceration could lead to disorganized/disoriented attachments between the parent and child, and also to the development of anxiety and health issues. Lee, Fang, and Luo (2014) supported Bowlby's point of view by suggesting that a child who finds their parent/caregiver a source of fear rather than support is more apt to develop behavior issues, which could arise from the incarceration of a parent. To further develop this latter point, Hairston (2007) states that children may struggle with the desire for connection with a parent, and the idea that they are a 'bad guy' because they went to prison. One can easily imagine a child being out of contact with their father for several years, hearing about his crimes, developing fear towards him as a result, and perhaps fear of his next visit/release from jail. This may be placed among the so-called maladaptive behavior of a child related to separation from a caregiver.

Bowlby's theory has been further developed over the years by other scholars. Some writers point out that the attachment to the parent under normal circumstances "teaches social interaction and other life skills, enables both physiological and psychological development and regulation, and provides the foundation for health development" (Pearlman & Courtois as cited in Smith, 2014, p. 12). Parental incarceration strips the child of this base of support.

Life Course Theory and Parental Incarceration

Life course theory is a theoretical explanation that offers perspective into how common life transitions, chronological age, and social change form people's behavior and lives from the time they are born up to the time of their death (Mears & Siennick, 2015).

The life course perspective draws some of its ideas and arguments from other theories of developmental psychology. Despite the similarities, there are clear differences between traditional developmental theories and life course theory. Whereas developmental psychology tries to find predictable, universal events and pathways in human life (Mears & Siennick, 2015). The life course approach draws attention to the historical aspect of a person's upbringing and timing of their introduction to various environments. Additionally, the culture of the individual and the way in which it and the preceding factors affect the life experience for each person through different stages of life is examined (Mears & Siennick, 2015).

Mears and Siennick (2015) conducted a quantitative study to determine the effect of parental incarceration on the child's transition into adulthood. The researchers discovered that parental imprisonment may severely affect several life outcomes for the affected children during transition from adolescence into adulthood. Using the propensity score matching analysis, the authors sampled 12,844 cases from the National Longitudinal Study of Adolescent Health data and found that a child's transition from childhood into young adulthood was adversely affected by the parental incarceration (Mears & Siennick, 2015). Results from the study revealed that the transition into adulthood was mired by negative outcomes in the areas of mental health, criminal behavior, drug use, alcoholism, education, financial management, and the ability to establish healthy intimate relationships. From the results, the authors conclude that parental incarceration represents a major turning point in the life course of a child (Mears & Siennick, 2015).

Another study by Swisher and Shaw-Smith (2014) sought to confirm the relationship between paternal incarceration and adolescent well-being. The study examined 14,800 cases derived from data from the National Longitudinal Study of Adolescent Health. Interestingly, the results indicated that the relationship between paternal incarceration and depression in adolescents is weak (Swisher & Shaw-Smith, 2014). Findings from the study further revealed that the relationship between adolescent depression and parental incarceration was contingent on the gender of the individuals and other mediating factors (Swisher & Shaw-Smith, 2014). One such mediating factor was the teen respondent's prior experiences of sexual abuse or physical assault from the incarcerated parent or other caregiver.

It is worth noting that parental incarceration affects children differently depending on where they are in their life course—toddler, elementary school age or teen. In the very earliest years, a child perceives a threat to their parent (like their arrest) as a threat to themselves (Smith, 2014). Several years later, the child views the parent as a role model, and misses that greatly in their lives when it is absent. Several years later again, the incarceration of a parent can lead to a retardation of progress toward adulthood, as seen in romantic relationships, independence and sense of self (Smith, 2014). On the other hand, the same author reports that in the absence of a parent, children may grow up faster and take on the role of a parent in their immediate family. Repeatedly in the literature, scholars stress the point that each case is different (Smith, 2014).

Impact of Parental Incarceration on the Health of Children

Bowlby (1969, 1980) confirmed a strong connection between the separation and loss of an attachment figure, especially the mother, on the health of children. According to Bowlby (1980), the lack of opportunity for regular and sustained contact between an infant and parent will prevent the development of the infant's attachment to the parent. After an attachment has developed, separation from the parent can generate a set of adverse emotional reactions from sadness to anger, which, in turn, may interfere with the optimal development of the child (Bowlby, 1980). The imprisonment of a parent can cause a variety of mental, behavioral, and physical health issues, which is discussed in the later sections.

Mental Health Issues

Lee et al. (2013) conducted a study to investigate the association between parental incarceration and the physical and mental health of children with incarcerated parents. Using data from the National Longitudinal Study of Adolescent Health, the researchers used cross-tabulations and logic regression models to analyze the information and draw conclusions. The sample consisted of 14,800 adolescents in grades 7^{th}-12^{th} who were interviewed in the 1994-1995 school year. The researchers looked for 16 health conditions (i.e., cancer, hypertension, high cholesterol, diabetes, heart disease, asthma, migraines, depression, PTSD, anxiety, epilepsy, ADHD, HIV/AIDS, hepatitis, obesity, and fair/poor health) and found a positive association with parental incarceration in eight of the 16 health conditions. Those conditions were depression, post-traumatic stress disorder, HIV/AIDS, migraines, cholesterol, asthma, anxiety, and fair/poor health (Lee et

al., 2013). The researchers ran a logic regression analysis on the data, which revealed that those who reported paternal incarceration had increased odds of all health issues except depression, while those who reported maternal incarceration were significantly more likely to report depression.

However, there were limitations that could have influenced the results of this study. Some of the health issues (i.e., cancer, heart disease, and hepatitis) examined in the study are less prevalent in young adults (the sample population used). This limitation might have limited the power of the test to detect associations between parental incarceration and these health issues in participants whose parents had been incarcerated. Nonetheless, this research is valuable because it provides a closer look into the collateral damage that parental incarceration can have on the health of children. The study also provides particular support to the concept of my study.

Murray et al. (2012) conducted a meta-analysis to examine the association between parental incarceration and negative outcomes for children, including antisocial behavior, mental health problems, drug use, and educational performance. The study synthesized 40 studies involving 50 samples totaling 7,374 children with incarcerated parents and 37,325 comparison children without incarcerated parents. The researchers used five inclusion criteria to select the studies that were used in the meta-analysis. The inclusion criteria were as follows (Murray et al., 2012): a) the study included children of incarcerated parents and at least one comparison group of children that have not experienced parental incarceration; b) the study included an examination of antisocial behavior, mental health, drug use, or educations performance; c) the study measured

outcomes after the child experienced parental incarceration; d) the study used the same outcome measures for both the children who had experienced parental incarceration and the comparison group; and e) at least one effect size was reported, or enough information was reported to calculate an effect size for the association of parental incarceration and the outcome variable.

Results from the meta-analysis showed a significant association between parental incarceration and children's antisocial behavior, but not for mental health problems, drug use, or poor educational performance. The studies that controlled for parental criminality and childhood antisocial behavior before parental incarceration demonstrated a 10% increase in the risk of childhood antisocial behavior. There was a pooled effect size of OR= 1.4 ($p<.01$), in comparison to children who had not experienced parental incarceration (Murray et al., 2012). However, only a small fraction of the 40 studies controlled for parental criminality, and few measured children's behavior before and after incarceration, which limited the analysis.

Turney (2014) conducted a comprehensive examination of the parental incarceration and the health of children. She proposed that parental incarceration is a type of stressor that can proliferate to the children of the incarcerated causing them to be at an increased risk for health impairments compared to their peers. Turney's (2014) study focused on determining the relationship between parental incarceration and children's overall health, physical and mental health conditions, activity limitations, and chronic school absence, compared to other adverse childhood experiences (i.e., parental divorce/separation, parental death, witness of parental abuse, household member mental

health problem, and household member drug or alcohol problem). The researcher used data from the National Survey of Children's Health 2011-2012, consisting of a sample (n=95,677) of noninstitutionalized children in the U.S. ranging from 0-17 years old (Turney, 2014). Using chi-square and logic regression analysis to analyze data, the authors developed findings indicating that children who have experienced parental incarceration had an increased risk of having adverse health outcomes. The study showed that children who had experienced parental incarceration had higher rates of mental health problems such as depression (6.20% vs. 1.83%, $p < .001$), ADD/ADHD (18.09% vs. 7.09%, $p < .001$), and anxiety (6.99% vs. 3.06%, $p < .001$). This study bolstered pre-existing evidence suggesting a link between the incarceration of a parental figure and the development of mental health problems in children.

Although negative mental health effects are associated with parental incarceration and the children involve, steps may be taken to lessen this impact. According to Uggen & McElrath (2014), who reviewed past research on the topic, the mental health of a child who's upbringing thus far would be considered an adverse childhood experience can show signs of improvement if appropriate interventions are taken so as to assure him/her of safety, stability and compassion. Additionally, a child whose prior relationship with the incarcerated parent was tumultuous often shows resilience and an ability to be resourceful if they are transferred into a new environment. The mental health of such a child illustrates such resilience, even when faced with adversity, because they had been conditioned to hardship.

After reviewing literature extracted from different databases, it can be concluded that the range of negative mental health issues are associated with the children of incarcerated parents in United States. The next section reviews literature that addresses the range of physical health issues often faced by children who have experienced the incarceration of a parental figure.

Physical Health Issues

In researching the association of parental incarceration and childhood physical health issues, I only found a couple of studies that actually focused on both aspects (i.e., parental incarceration and physical health issues). In a study by Lee et al. (2013), descriptive statistics as a qualitative interpretive measure was used to analyze data collected from about 16,000 participants. The researchers found that the most prevalent physical health conditions experienced by children who have experienced parental incarceration were obesity (39.5%), asthma (15.1%), migraines (14.8%), and hypertension (11.1%) (Lee et al., 2013). The researchers attribute these physical health challenges to the disadvantages, disruptions, and discomfort that these children endure without a concrete understanding of the happenings. However, the researchers were not able to account for the onset of these conditions, which was a limitation of these findings.

Turney (2014) found even more physical health conditions associated with parental incarceration. With a sample population of 95,677 participants aged 0-17 years old, the study was potentially large enough that it could be generalized and applied across the board. The data collected from the 2011-2012 National Survey of Children's Health (NSCH) was statistically analyzed using descriptive techniques to determine the

relationship between different variables. The physical health conditions included seizure disorders (1.30% vs. .61%, p <.01), hearing problems (1.93% vs. 1.19%, p <.01), vision problems (2.11% vs. 1.26%, p <.01), and bone, joint, or muscle problems (3.10% vs. 2.16%, p <.01). Many of the physical health issues among children with incarcerated parents are the product of the lack of proper support and care from the parents (Turney, 2014; Phillips et al., 2006).

Another study examined the extreme case of a rise in dangers to a child's physical health due to parental incarceration—an increase in mortality. On this point, children of incarcerated adults are worse off in some cases, but not others. A discrete-time survival analysis of children in Denmark discovered 293 deaths over a lengthy period of time, at a rate of 5 per 1000. When comparing children of incarcerated adults versus children of normal parents, the data indicated that having an incarcerated father only slightly increased the mortality rate for most of the child's life, but caused a major rise in mortality after age 16 (Wildeman, Andersen, Lee & Karlson, 2014). The absence was apparently felt most keenly in the late teen years, perhaps as the child began to act upon the bad behaviors he or she had witnessed or developed during the incarceration.

Fascinatingly in the study, boys with incarcerated mothers had a lower mortality rate than boys with non-incarcerated mothers. However, as with incarcerated fathers, a steep rise in the mortality rate occurred for boys after the age of 16. After that point, their mortality rate was above that of boys with non-incarcerated mothers (Wildeman, 2014).

Conversely, girls of incarcerated parents of either sex were better off in terms of mortality rate. This happier state of affairs was true all the way through the age of 18 (Wildeman et al, 2014). No increase occurred, even after the age of 16.

Upon examination, the researchers discovered that adjusting for socio-economic factors made a major difference. If one adjusted for socioeconomic demographics, daughters of incarcerated mothers were actually somewhat more likely to die (Wildeman et al, 2014). Thus, the study's authors argue for a strong link between parental incarceration and boys' mortality rates, but a less obvious and not as distinct linkage between the former and girls' mortality rates.

Behavioral Health Issues

Past research has shown that children who have experienced separation from parental figures through parental incarceration experience a number of behavioral health issues (Kjellstrand & Eddy, 2011; Murray, Farrington, Sekol, and Olsen, 2009; Turney, 2014). Such problems are very common among this group, particularly when the mother is the individual who is imprisoned—70% of children with incarcerated mothers have emotional or psychological problems (Smith, 2014). One type of behavior is "externalizing behaviors," which are negative, problematic behaviors that are directed outward (the external environment) (Kjellstrand & Eddy, 2011). According to some scholars, boys with incarcerated parents commonly exhibit negative externalizing behaviors, while girls portray internalizing behaviors (Smith, 2014). Externalizing behaviors can consist of aggressive behavior, hyperactive behavior, antisocial behaviors, disruptive behaviors, and others (Jianghong, 2004; Kjellstrand & Eddy, 2011). A meta-

analysis conducted by Murray et al. (2009) used 16 studies that examined the association between antisocial behavior and mental health. All of the studies indicated that children who have experienced parental incarceration are twice as likely to exhibit antisocial behaviors as children who have not experienced parental incarceration. Turney (2014) also focused on antisocial behavior in her study, identifying it as a severe consequence of parental incarceration. She posited that some children who have experienced parental incarceration are unable to develop prosocial non-cognitive skills including task completion, self-discipline and empathic behaviors.

In another study by Rodriguez and Margolinc (2015), the authors sought to investigate the adverse psychological and behavioral effects of parental separation on the wellbeing of children. The study compared the effect of parental separation on children whose parents were imprisoned, and those whose parents were away because of military deployment. This was aimed at determining the difference in the behavioral effects on the children and hence determine whether parental incarceration cause a unique danger to the children's psychological wellbeing, rather than simply a parental absence. The research indicated that parental incarceration, distinctive from other forms of parental separations, poses a particular threat to children's health (Rodriguez & Margolinc, 2015). The study also found that behavioral issues arise from the preexisting relationship between the child and parent, as well as disadvantages that the child endured prior to incarceration.

In a systematic review by Murray et al. (2009), the authors sought to locate evidence for behavioral health issues among children whose parents are under

incarceration. The authors reported that 16 different studies confirm the fact that children whose parents have been imprisoned or jailed have a higher probability of showing antisocial behavior and mental health problems in comparison to other children. The authors qualified their remarks by stating that it cannot be ascertained whether parental incarceration was the direct causation of these behavioral problems in children, however. Some of the behavioral effects of parental incarceration that were reported included low self-esteem, as observed by teachers and counselors. Murray et al. (2009) also suggested that a bivariate relationship exists between a child's aggressive behavior and the father's imprisonment.

An additional study by Murray et al. (2012) found a direct and unique link between parental imprisonment and sudden aggression, violence and anger bursts of the children involved. Approximately one third of the participants (children) being studied showed signs of posttraumatic stress disorders such as fear, depression, guilt and anger. McGinley and Varchevker (2012) refer to this trauma as enduring trauma because it is likely to hamper the child's development.

Morgan et al. (2014) found that children with imprisoned parents often receive less support than others, but will not complain or speak about what they are going through, or the challenges that they face on a daily basis. This may form the basis for their mental and behavioral challenges. The internalization of these challenges is likely to develop into what Arditti (2012) calls disenfranchised grief. Arditti (2012) describes disenfranchised grief as emotional mourning because of loss that is not openly recognized and not identified to be socially significant. Disenfranchised grief could develop into an

array of emotional complexities that can emerge from the physical absence of the parent due to incarceration. This puts these children at a higher risk of experiencing behavioral problems than their counterparts. The array of mental, physical and behavioral issues that children may face due to parental incarceration further confirms the collateral damage proliferated by parental incarceration.

The absence or loss of the attachment figure due to incarceration should not be taken lightly because of the detrimental effects that these children may face. Additionally, in order to help these children and alleviate/prevent long-term health issues, it is important to consider this population's capability to access and utilize needed services. The next section consists of a review of literature that examines the context of the access and utilization of health services among children who have experienced the incarceration of a parental figure.

Children's Access and Utilization of Health Care Services

The majority research that has been conducted on the impact of parental incarceration on the health of children indicates negative outcomes, as has been described above. Unfortunately, there is a lack of empirical research that provides a statistical analysis of the access and utilization of health services among children with incarcerated parents. This study examined this aspect by providing statistical support for the degree to which children's access and utilization of healthcare services predict the likelihood of the experience of incarceration of a parental figure. Considering the challenges that these children face, it is vital that they are able to access services that will adequately accommodate their needs.

When a parent is incarcerated, sometimes the child is uprooted and sent to live with another caregiver, which is most often a family member, also called a kinship caregiver (Glaze & Maruschak, 2008). According to Glaze and Maruschak (2008), a fifth of the children who have incarcerated parents live with kinship caregivers. Compared to caregivers who are non-family members, kinship caregivers are older, poorer, and less educated (Hairston, 2009). Nonetheless, these caregivers are charged with assuring that the child is able to access and utilize the appropriate services and support to address their needs, which can sometimes be difficult. One importance aspect to assure that these children are able to assess and utilize needed healthcare services is health insurance. According to LaVigne et.al (2008), one in four children living with caregivers, more specifically grandparents, live in poverty, and a fourth does not have adequate health insurance. Additionally, two-thirds of caregivers taking care of a child with an incarcerated mother reports not having enough money to meet their necessary needs.

Despite the difficulties that caregivers and their children encounter due to health service provisions, many states have made the effort to develop and/or improve child welfare and human services programs that will better serve this population. An example of this effort is the implementation of Kinship Navigator Programs in states such as Washington, New York, and Connecticut, which aids kinship caregivers in obtaining referrals for services and support (Hairston, 2009). However, in other states, barriers exist that may prevent or delay access to needed services. For example, some states require a caregiver to be the child's legal guardian to enroll the child in Medicaid or the State Health Insurance Program. Some states also require the caregiver to provide

documentation to prove they are a blood relative to the child and/or require them to complete extensive paperwork, which can be arduous to the caregiver and discourage them from applying all together (Nickel et al., 2009). Nickel et al. (2009) posits that these situations could be the result of improperly trained staff and/or misinterpretation of state health care provisions. For the most part, providing and assuring access to services to aid children who have experienced the incarceration of a parental figure is an intricate aspect in addressing the challenges that this population face, which could ultimately lead to a decrease in negative health outcomes and an increase in positive health outcomes.

Summary

Based on the empirical evidence that was presented, children who experience parental incarceration face numerous challenges that could cause damaging effects on their mental, physical and behavioral health throughout life. This chapter highlighted the prevalence of parental incarnation in the United States. The chapter also provided analysis of the various effects that parental incarceration has on childhood development, which includes the effects of parental incarceration on a child's mental, physical, and behavioral health. This chapter also highlighted various theories that was used in the analysis and discussion of parental incarceration and how this affects childhood. Some of the theories discussed included Bowlby's attachment theory and life course theory.
It would be helpful if the literature contained more gender comparisons. Many studies report that boys of incarcerated parents engage in such activities more often than their peers, or that when a child's mother is incarcerated, this leads to various outcomes for the children involved. However, few studies compared boy-girl, father-mother outcomes. A

study will often report the damage that the lack of a father in one's life due to incarceration causes, but will not follow it up with the comparison to the damage caused by the lack of a mother due to incarceration. Studies of boys' behavior are not often matched against girls' behavior, when both groups have an incarcerated parent. Some comparisons exist, and have been mentioned, but unfortunately, the pattern seems to be to select a group (father, mother, boy, girl) and then not to provide the comparative data for the opposite gender.

Additionally, more recent statistical information would be useful. The sources repeatedly reference the Glaze and Maruschak (2008) study, which gives the percent of state, and federal inmates who are parents, but no scholars have apparently taken up this specific point since then, although it has now been 8 years. Other statistics are offered, but not on this specific and meaningful point. Statistical research has been stagnant in this area for some time. Specifically, new statistics on the percent of prisoners who are parents, the total number of parent inmates (a near-estimate would be fine) and the percent of the total who are mothers or fathers, respectively, would all be very welcome additions to the accumulated data that is currently available.

Chapter 3: Research Method

Introduction

The purpose of this study was to investigate the degree in which children's indicators of special healthcare needs and ongoing special healthcare needs predict the likelihood that children experienced the incarceration of a parental figure. The degree in which children's access and utilization of health care services predict the likelihood that children experienced the incarceration of a parental figure was also examined. This chapter centers on the methodology of the study. It consists of a description and explanation of the research design and rationale, methodology, threats to validity, and ethical procedures.

Research Design and Rationale

This study was conducted using a quantitative, nonexperimental design. My primary goal was to assess the degree in which the independent variables predict the likelihood of the dependent variable. To accomplish this goal, I quantitatively analyzed numerical data obtained from the NSCH. According to Babbie (2010) a quantitative approach allows a researcher to work with data from large sample sizes to make generalizations to larger populations; whereas, a qualitative approach is restricted to smaller sample sizes and generalizability ranges (Babbie, 2010). Considering these factors, I determined that a quantitative approach was the best approach for accomplish the goal of this study.

According to Babbie (2010), a quantitative design may be classified as either experimental or nonexperimental. The goal in experimental designs is to determine a

cause-and-effect relationship among variables through manipulation (Creswell, 2009). In contrast to experimental designs, this study did not attempt to determine a cause-and-effect relationship among variables. Instead, it examined the ability of the independent variables to predict the likelihood of the occurrence of the dependent variables. The survey data that I used were collected previously by the 2011-2012 NSCH, and I was not able to control or manipulate variables in any way (Babbie, 2010; Creswell, 2009). Therefore, considering the aforementioned factors, I determined that a nonexperimental design was most appropriate for this study.

A cross-sectional design was also ideal for this study because it allowed me to gather numerical data and estimate the prevalence of the outcome of interest. More so, using a cross-sectional design allowed me to make generalizations across the population of interest. The population of interest consists of children who have experienced the incarceration of a parental figure (Babbie, 2010; Brians, Willnat, Manheim, Rich, 2011).

I used secondary data from the 2011-2012 NSCH to investigate the impact of the incarceration of a parental figure on childhood health. The NSCH survey was cross-sectional; that is, data were collected at one period of time (CDC, 2013). There was no causal relationship established, and no mediating factors related to the variables were considered. The survey data was obtained from households in the United States. Considering the universality of parental incarceration, data from this survey were ideal because the sample population was large and composed of individuals throughout the United States, which provides a snapshot of the population at large.

Methodology

Population/Sample

Data in the NSCH database were collected through telephone interviews of households throughout the United States that had at least one child aged 0-17 years (CDC, 2013). The overall sample represented noninstitutionalized children (i.e., children who were not committed to an institution) (CDC, 2013). The households included in the sample were selected through the use of list-assisted, random-digit-dials of landline and cell phone numbers (CDC, 2013). They were then stratified by state and telephone type. The two telephone types were landline and cell phones. After the households were screened and selected for participation, a parent or guardian with knowledge of the sampled child's health and health care was selected as the respondent. If the household had more than one age-eligible child, one child was randomly selected as the focal child of the interview (CDC, 2013).

Most respondents were mothers. Approximately 70% were biological, step, foster, or adoptive mothers. Out of approximately 848,000 households screened for children who met the survey criteria, only about 187,000 had children in the household who actually met the survey criteria. However, only 95,677 respondents completed the entire interview process. The majority of the surveys were completed through landline telephones. The NSCH survey was presented in English and translated into five other languages (i.e., Spanish, Cantonese, Mandarin, Korean, and Vietnamese). The majority of the translated interviews were conducted by Spanish-language interviewers.

Procedures for Data Collection

All data used in this study was collected through the 2011-2012 NSCH, which is described in detail in the following section. The data in this survey were devised to reveal the prevalence and correlates of the physical and mental health of children (Turney, 2014). Since the focus of this study encompasses childhood health issues, the data was ideal for this study. Therefore, data was collected and analyzed from the entire sample (n=95,677). In order to gain access to the coded datasets, I had to submit a data request form and a signed data use agreement (see appendix A) to the Data Resource Center for Child and Adolescent Health. However, I did not collect or analyze any data until this study was approved by Walden University's IRB.

Reliability and Validity of the 2011-2012 NSCH Data

According to Trochim (2006) reliability is the degree to which a measurement instrument can produce stable and consistent results, and validity refers to the degree in which the instrument measures what it is supposed to measure. Reliability, like validity, is essential in assessing the quality of a research tool (Frankfort-Nachmias and Nachmias, 2008). In research, reliability has to exist to consider validity, and vice versa (Frankfort-Nachmias and Nachmias, 2008). In other words, you cannot have one without the other. As previously mentioned, the data that was used in this study was extracted from the 2011-2012 NSCH, which used the Computer Assisted Telephone Interviewing (CATI) System. Numerous measures were used in NSCH survey to strengthen the reliability and validity of the data.

One measure was the use of online help screens and text that were incorporated to aid the interviewers (CDC et al., 2013). This measure promoted data accuracy. The CATI System was used to check whether a response was in a legitimate range, and that all information was recorded and reported accurately (CDC et al., 2013). Another measure that was used is pretesting. The CATI System underwent pretesting before the main survey was administered to ensure adequate functioning of the instrument. This measure increased the reliability of the instrument and the data that was collected.

Lastly, to ensure the quality of the interview, the interviewers were trained and monitored by supervisors throughout the interview process to assure that materials were read properly, the survey procedures (i.e., item wording and sequence) were accurately followed, the respondents questions/concerned were properly addressed, and that vague responses were properly probed (CDC et al., 2013). In reference to the extensive measures that were used to test, control, and assure the quality of the 2011-2012 NSCH, I assumed that the data was both valid and reliable.

Instrumentation

The 2011-2012 NSCH was developed and primarily funded by the United States Department of Health and Human Services (DHHS), Maternal and Child Health Bureau (MCHB) of the Health Resources and Services Administration. Additional/secondary funding for specific questions was provided by the DHHS, Office of the Assistant Secretary for Planning and Evaluation. As stated in the previous section, the NSCH was conducted by the Centers for Disease Control and Prevention Statistics, State and Local Area Integrated Telephone Survey Program, from February 28, 2011 to June 25, 2012.

Data from sections two (Child's Health and Functional Status), three (Health Insurance Coverage), four (Health Access and Utilization), and nine (Parental Health) will be used to address the research questions in this study.

Operationalization of Variables

The variables that were examined in this study are identified and defined in Table 1(Operationalization of Variables). The level of measurement for each variable is also indicated, along with the survey data that were analyzed to determine the relationship between the independent and dependent variables.

Table 1

Operationalization of Variables

Variables	Survey question s	Measurement/Scale	Level of measurement
Dependent variable: Parental incarceration			
Adverse childhood experiences	ACE5 Did [S.C.] ever lives with a parent or guardian who served time in jail or prison after [S.C.] was born?	(1) yes (2) no	Binary
Independent variable: Childhood health issues			
Presence of a special health care need	K2Q10 Does [S.C.] currently need or use medicine prescribed by a doctor, other than vitamins?	(1) Yes (2) No	Binary
	K2Q11 Is [his/her] need for prescription medicine because of ANY medical, behavioral, or other health condition?	(1) Yes (2) No	Binary
	K2Q12 Is this a condition that has lasted or is expected to last 12 months or longer?	(1) Yes (2) No	Binary
	K2Q13 Does [S.C.] need or use more medical care, mental health, or educational services than is usual for most children of the same age?	(1) Yes (2) No	Binary
	K2Q22 Does [S.C.] have any kind of emotional, developmental, or behavioral problem for which [he/she] needs treatment or counseling?	(1) Yes (2) No	Binary
Ongoing emotional, developmental, or behavioral needs and other special health care needs	K2Q23 Has [his/her] emotional, developmental or behavioral problem lasted or is it expected to last 12 months or longer?	(1)Yes (2) No	Binary
Independent variable: Access to health care services			
Health Insurance Status	K3Q01 Does [child name] have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid?	(1)Yes (2) No	Binary
Type of Health Insurance	K3Q02 What type of health insurance coverage, if any, did [child name] have at the time of the survey?	(1) Public Insurance such as Medicaid or SCHIP (2) Private Health Insurance (3) Currently uninsured	Nominal
*Adequacy of Current Insurance (only if "yes" to K3Q01)	K3Q20 Is [child name]'s current insurance coverage adequate to meet [his/her] needs?	(1)Never/Sometimes (2)Usually (3)Always	Ordinal
Adequacy of Current Insurance (only if "yes" to K3Q01)	(K3Q22) Does [CHILD'S NAME] health insurance allow (him/her) to see the health care providers (he/she) needs?	(1)Never/Sometimes (2)Usually (3)Always	Ordinal
Usual source of sick care	K4Q01 Is there a place that [S.C.] USUALLY goes when [he/she] is sick or you need advice about [his/her] health?	(1) Yes (2) No	Binary
Independent Variable: Utilization Rate			
Effective Care Coordination	K4Q22 Mental health professionals include psychiatrists, psychologists, psychiatric nurses, and clinical social workers. During the past 12 months, has [S.C.] received any treatment or counseling from a mental health professional?	(1) Yes (2) No	Binary
	K4Q23 During the past 12 months, has [S.C.] taken any	(1) Yes (2) No	Binary

medication because of difficulties with [his/her] emotions, concentration, or behavior?			
K4Q27 Sometimes people have difficulty getting health care when they need it. By health care, I mean medical care as well as other kinds of care like dental care, vision care, and mental health services. [During the past 12 months/Since [his/her] birth], was there any time when [S.C.] needed health care but it was delayed or not received?	(1) Yes	(2) No	Binary

Data Analysis Plan

To properly analyze the survey questions extracted from the 2011-2012 NSCH, I used the Statistical Package for the Social Sciences (SPSS, 21.0). The survey questions analyzed are explicated through descriptive statistics to allow readers to clearly understand and interpret the data. Inferential statistics techniques were also utilized to help make generalizations beyond the sample used in this study (Creswell, 2009). According to Frankfort-Nachmias and Nachmias (2008) the use of inferential statistics serves the purpose of estimating parameters and testing the hypotheses.

Logistic regression analysis was used to statistically predict the likelihood of the dependent variable (i.e., parental incarceration) in the occurrence of the independent variables (i.e., access to needed health care services, and utilization of needed healthcare services indicators of special health care needs, ongoing special health care needs, and access and utilization of health care services). According to Park (2013) logic regression analysis predicts the probability of influence of various variables on a dichotomous outcome. These variables must fall into one of two categories of the dichotomous dependent variable based on one or more independent variables. (Field, 2013; Park,

2013). In a logistic regression analysis, the dependent variable must be dichotomous and the independent variable(s) must be either continuous or categorical.

To assure that the logistic regression was appropriate for analyzing my data and produce valid results, I tested the assumptions for logistic regression analysis. The data was analyzed for (Field, 2013): a). missing data; b). independence of errors; and c). the absence of multicollinearity among independent variables. Participants who gave a response of "don't know" or "refuse to answer" was considered missing data (CDC et al., 2013). More so, missing data within the NSCH data set were given a numeric code to identify the missing data for specific variables (CDC et al., 2013). I referred to the data documentation and frequency lists to identify the correct code of each variable. Records that consisted of missing data related to the variables of interest in this study was excluded from the analysis. To test for independence of errors, I will meticulously examine the data to assure that there are no duplicate responses. To test for multicollinearity, I examined the data for redundant and/or highly correlated independent variables by using the variance inflation factor (VIF) (Fields, 2009). The VIF was calculated by SPSS. If this issue was present, I eliminated the redundant and/or highly correlated variables.

As identified in the previous chapters, the research questions and hypotheses that were examined in this quantitative study are:

RQ1. To what degree do children's indicators of special health care needs, and ongoing special health care needs predict the likelihood that the children experienced the incarceration of a parental figure?

H_o1: Indicators of special health care needs and ongoing special health care needs are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by the data collected from the 2011-2012 NSCH.

H_a1: Indicators of special care needs and ongoing special health care needs are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

The null hypothesis in RQ1 was tested by using a logistic regression analysis, which helped predict the likelihood of the dependent variable (i.e., parental incarceration) in the presence of the independent variables (i.e., indicators of special healthcare needs and ongoing special healthcare need). Before the logistic regression analysis was performed, the appropriate statistical and observational procedures were conducted to assure that the main assumptions for this test were met.

RQ2. To what degree does children's access and utilization of health care services predict the likelihood that the children experienced incarceration of a parental figure?

H_o2: Children's access to and utilization of health care services are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by the data collected from the 2011-2012 NSCH.

H_a2: Children's access to and utilization of health care services are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

The null hypothesis in RQ2 was tested by using a logistic regression analysis, which helped predict the likelihood of the dependent variable (i.e., parental incarceration) in the presence of the independent variables (i.e., indicators of special healthcare needs and ongoing special healthcare need). Before the logistic regression analysis was performed, the appropriate statistical and observational procedures were conducted to assure that the assumptions for this test were met.

Threats to Internal, External, and Statistical Conclusion Validity

The primary goal of conducting a research study was to determine if there were relationships between the independent and dependent variables. To assure the authenticity of the relationship among variables and the study in general, it is vital to weed out factors that could pose a threat to the validity of your results. The three types of validity that is discussed in this section are internal, external, and statistical conclusion validity.

Internal Validity

Creswell (2009) suggests that threats to internal validity are confounding factors that may affect the researcher's ability to establish a causal relationship among variables, which can also impede the researcher's ability to devise accurate inferences from data. In regards to internal validity, varieties of approaches were used in the NSCH data collection process to decrease the possibility of threats to internal validity. Some of the

approaches included: (a) the use of Computer Assisted Telephone Interviews, which provided assistance to the interviewers and promoted data accuracy; (b) interviewers were required to go through extensive training to conduct the interview/survey; and (c) pretests were conducted before the main interviews.

External Validity

External validity refers to the ability to generalize the results of research to other settings and populations (Creswell, 2009; Frankford-Nachmias & Nachmias, 2008). The NSCH sample consisted of 95,677 respondents from across the United States. The large sample size and expansive geographical location that the sample covered minimizes the threat to external validity. Due to the approaches that were used in collecting, testing, and maintaining the data of the NSCH, threats to both internal and external validity was presumed to be minimal and not pose a risk to the reliability of this study.

Conclusion Validity

Threats to statistical conclusion validity also have to be considered in this study. Statistical conclusion validity is the degree of reasonableness we conclude about relationships in data (Trochim, 2006). According to Trochim (2006), statistical conclusion validity is a major threat to quantitative studies, which can lead to incorrect conclusions about relationships in data. Creswell (2009) also puts forth that statistical conclusion validity can be compromised by a small sample size. However, the sample size used in this study is relatively large, which should help decrease the probability of a threat to statistical conclusion validity. As mentioned previously, a logistic regression analysis was used to analyze the data in this study. To reduce the risk of statistical

conclusion validity, statistical and observational tests/procedures were conducted on the data to assure that the assumptions of the logistic regression analysis were met before a statistical analysis was conducted.

Ethical Procedures

To ensure adherence to ethical standards and U.S. Federal Regulations, I submitted an application to Walden University's Institutional Review Board (IRB). No data were collected or analyzed until approval was given by Walden University's IRB. The IRB approval number for this study is 09-16-16-0171385. As mentioned earlier, in order to gain access to the coded datasets that were used in this study, I had to submit a data request form and a signed data use agreement (see Appendix A) to the Data Resource Center for Child and Adolescent Health. The data that was obtained had no information that could potentially identify or violate the confidentiality of participants. Therefore, I had no concerns regarding my obligation to protect the anonymity and confidentiality of the survey participants. The data that were collected and analyzed is secured on the hard drive of my personal computer. The computer is password enabled, and I am the only assessor of this data. After the completion of this study, the data will be retained for 5 years and thereafter deleted from the hard drive of my computer. The data will be permanently erased by using Erase, a secure data removal tool for Microsoft. Erase is free software, and is licensed under GNU General Public License version 3.0 (GPLv3).

Summary

This quantitative study utilized secondary data from a coded dataset that was generated through the NSCH, which followed a cross-sectional survey design. Relevant data were extracted from this survey to adequately address each of my research questions. Subsequently, I used SPSS version 21.0 to conduct a logistic regression analysis to examine the significance of the null and alternative hypotheses. To ensure the protection of data obtained from the survey, ethical procedures and U.S. Federal Regulations pertaining to social research was strictly adhered to in this research study. The results of the statistical analysis performed, is thoroughly explicated in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this nonexperimental, quantitative, cross sectional study was to investigate the degree in which children's special health care needs, ongoing special health care needs predict the likelihood that the children experienced the incarceration of a parental figure. This study also examined the degree in which children's access and utilization of health care services predict the likelihood that the children experienced incarceration of a parental figure. See Table 1 for information on how I operationalized study variables.

A logistic regression was used to analyze data. SPSS, 21.0 was used to carry out the logistic regression. The research questions and hypotheses were the following:

RQ1. To what degree do children's indicators of special health care needs, and ongoing special health care needs predict the likelihood that the children experienced incarceration of a parental figure?

H_o1: Indicators of special health care needs and ongoing special health care needs are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by the data collected from the 2011-2012 NSCH.

H_a1: Indicators of special health care needs and ongoing special health care needs are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

RQ2. To what degree does children's access and utilization of health care services predict the likelihood that the children experienced incarceration of a parental figure?

H_o2: Children's access to and utilization of health care services are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by the data collected from the 2011-2012 NSCH.

H_a2: Children's access to and utilization of health care services are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

This chapter presents the results of the data analysis. The first part of this chapter describes the data collection process and the procedures involved. The second part will consist of information regarding demographics. Lastly, the results of the data analysis will be thoroughly explained and evaluated.

Data Collection

A total of 95,677 records were extracted from the 2011-2012 NSCH database. Only 10,764 of these records contained values for all of the variables of interest. The other 84,903 records either had missing values or values that indicated the respondent gave an answer of "don't know" or "refused to answer". According to Stoltzfus (2011), to avoid violating the assumption of independence of errors, one's data must be free of repeated measures, such as duplicate responses or records. To check for independence of errors, the remaining records were checked for duplication on all the variables within a

case, using mySQL software. No duplicates were found, resulting in a total of 10,764 records for subsequent analysis.

Demographics

A total of 95,677 records extracted from the 2011-2012 NSCH database. Of these, only 10,764 records contained values for all the variables of interest. In regards to children who were selected to be the subject of interviews, there were slightly more male (52.5%) than female (47.4%) children. More than half of the selected children (66.1%) were White, non-Hispanic; the remainder were Black, non-Hispanic (12.2%); multiracial/Other, non-Hispanic (10.4%), and Hispanic (10.3%). The mean age of the selected child at the time of the interview was 10.56 (*SD* = 4.555). Almost half of the selected children (46.4%) were 12-17 years old. The other half (35.2%) consisted of children 6-11 years old while 18.3% were children aged 0-5 years old. The demographic characteristics of the selected children are presented in Table 2.

Table 2

Demographics for Selected Children from the 2011-2012 NSCH Dataset

Characteristic		Frequency	Percentage
Gender			
	Male	5656	52.5
	Female	5099	47.4
	N/A	9	0.1
Race			
	Hispanic	1101	10.3
	White, non-Hispanic	7119	66.1
	Black, non-Hispanic	1316	12.2
	Multiracial/Other, non-Hispanic	1124	10.4
	N/A	104	1.0

Characteristic		Frequency	Percentage
Age (years)			
	0-5	1974	18.3
	6-11	3794	35.2
	12-17	4996	46.4

When the respondents were asked if the selected child ever lived with a parent or guardian who served time in jail or prison after the child's birth, most respondents answered "no" (92.6%). All survey respondents indicated that the selected child currently needs or uses medicine other than vitamins and which are prescribed by a doctor. The need for prescription medicine was due to medical, behavioral, or other health conditions for all the children in the sample. In the majority of cases (89.4%), the health condition had lasted or was expected to last 12 months or longer. More than half of selected children (63.3%) also needed or used more medical care, mental health, or educational services than is usual compared to other children within the sample. Most children (82.3%) did not have any emotional, developmental, or behavioral problem for which treatment or counseling was needed. Results that reflect the presence of a special health care need for the selected children are presented in Table 3.

Table 3

Presence of a Special Health Care Need for Selected Child

Health Care Need		Frequency	Percentage
Medicine Prescription (K2Q10)			
	Yes	10764	100.0

Health Care Need		Frequency	Percentage
	No	0	0.0
Medical Condition (K2Q11)			
	Yes	10764	100.0
	No	0	0.0
Condition > 12 months (K2Q12)			
	Yes	9626	89.4
	No	1138	10.6
More services than usual (K2Q13)			
	Yes	3949	36.7
	No	6815	63.3
Emotional, developmental, behavioral problem (K2Q22)			
	Yes	1905	17.7
	No	8859	82.3

Questions K3Q01(health care coverage), K3Q02(Medicaid/CHIP), K3Q20(health insurance needs met), K3Q22(allow health care providers), and K4Q01(usual place) addressed healthcare needs of the dependent children. The access to health care answers are presented in Table 4. All selected children had some kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid. About a third of selected children had coverage insured by Medicaid or the Children's Health Insurance Program [CHIP] (32.5.4%). Most selected children's (i.e., the children who were selected to be the subject of the interview) (71.9%) health care needs were met by their health insurance, and less than one percent (0.6%) of the selected children needs were not met. Similarly, most selected children (81.3%) always had health

insurance allowing them to see the health care providers they needed. Less than one percent (0.4%) of the selected children were classified as never being allowed to see the health care providers they needed. Most children (99.8%) had a usual place where they went when they were sick or needed advice about their health. The access to health care answers are presented in Table 4.

Table 4.

Access to Health Care Services for Selected Child

Access		Frequency	Percentage
Health care coverage (K3Q01)			
	Yes	10764	100.0
	No	0	0.0
Medicaid/CHIP (K3Q02)			
	Yes	3503	32.5
	No	7261	67.5
Health Insurance Needs Met (K3Q20)			
	Never	63	0.6
	Sometimes	731	6.8
	Usually	2232	20.7
	Always	7738	71.9
Allow health care providers (K4Q22)			
	Never	38	0.4
	Sometimes	462	4.3
	Usually	1513	14.1
	Always	8751	81.3
Usual Place (K4Q01)			
	Yes	10549	99.8
	No	215	2.0

Questions K4Q22 (mental health), K4Q23 (medication, emotions, concentration, behavior), and K4Q27 (delayed/not received care) addressed the utilization of healthcare services through questions ascertaining effective care coordination. The effective care coordination answers are presented in Table 4. In the past 12 months at the time of the interview (82.2%) of the selected children had not received any type of treatment or counseling from a mental health professional; most children (87.3%) had not taken medication because of difficulties with emotions, concentration, or behavior. Also, in the past 12 months at the time of the interview, for the majority of selected children (90.4%) there was no time when needed health care was delayed or not received. The results of the effective care coordination questions are presented in Table 5.

Table 5.

Effective Care Coordination for Selected Child

Effective Care		Frequency	Percentage
Mental health (K4Q22)			
	Yes	1912	17.8
	No	8852	82.2
Medication, emotions, concentration, behavior (K4Q23)			
	Yes	1363	12.7
	No	9401	87.3
Delayed/Not received care (K4Q27)			
	Yes	1038	9.6
	No	9726	90.4

Results

To answer the first research question: To what degree do children's indicators of special healthcare needs, and ongoing special healthcare needs predict the likelihood that the children experienced incarceration of a parental figure? The following hypothesis was tested using logistic regression:

H_o1: Indicators of special healthcare needs and ongoing special healthcare needs are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by the data collected from the 2011-2012 NSCH.

H_a1: Indicators of special care needs and ongoing special healthcare needs are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

The overall equation to carry out the logistic regression analysis is as follows:

log (P (ACE5(parental incarceration) = 1)/1-P (ACE5(parental incarceration) =1)) = b0 + b1*K2Q12(condition>12 months) + b2*K2Q13(more services than usual) + b3*K2Q22(emotional, developmental, behavioral problem) + ε,

where P (ACE5(parental incarceration) = 1) is the probability that the selected child lived with a parent or guardian who served time in jail or prison after the selected child was born.

The dependent variable was parental incarceration (ACE5) and the independent variables were childcare health issues (K2Q12(condition>12 months), K2Q13(more

services than usual), K2Q22(emotional, developmental, behavioral problem)). As all selected children needed or were taking medicine other than vitamins for a medical, behavioral or other health care condition (K2Q10, K2Q11) were not included in the model. The independent variables were not included because most cases related to these variables consisted of missing values. Multicollinearity was tested by running a linear regression with ACE5 as the dependent variable and K2Q12(condition>12 months), K2Q13(more services than usual), and K2Q22(emotional, developmental, behavioral problem) as the independent variables. The VIF values varied between 1.029 and 1.209, indicating that multicollinearity present (O'brien, 2007). Since all three independent variables were dichotomous, they did not need to be coded into dummy variables.

The results of the logistic regression indicated that the overall model, with parental incarceration (ACE5) as a dependent variable and special health care needs and ongoing special health care needs as predictors, was statistically significant($\chi^2(3) = 185.794$, $p = 0.000$). The variables K2Q12(condition>12 months) and K2Q13(more services that usual) were not statistically significant predictors (Wald = 0.517, $p = 0.472$; Wald = 1.350, $p = 0.245$) of parental incarceration (ACE5). Thus, the length of the condition over 12 months and the use of medical care, mental health, or educational services more than is usual for most children of the same age did not change the log odds of having a parent incarcerated. However, variable K2Q22(emotional, developmental, behavioral problem) was statistically significant, Wald = 170.103, $p = 0.000$. Thus, if the child had any kind of emotional, developmental, or behavioral problem for which they need treatment or counseling, the odds ratio of having a parent incarcerated increased

3.205 times. The results of the logistic regression with parental incarceration (ACE5) as dependent variable with indicators of special healthcare needs and ongoing special healthcare needs as predictors are presented in Table 6.

Table 6

Logistic regression results with parental incarceration (ACE5) as dependent variable with indicators of special healthcare needs and ongoing special healthcare needs as predictors

Independent	B	S.E.	Wald	df	Sig.	Exp(B)
Condition>12 months	.094	.131	.517	1	.472	1.099
More services than usual	-.101	.087	1.350	1	.245	.904
Emotional, developmental, behavioral problem	1.165	.089	170.103	1	.000*	3.205
Constant	-2.877	.125	531.849	1	.000*	.056

Note. significant at 0.050 level. Model significant χ^2 (3) = 185.794, p = 0.000

To answer the second research question: To what degree does children's access and utilization of healthcare services predict the likelihood that the children experienced incarceration of a parental figure? The following hypothesis was tested using logistic regression:

H_o2: Children's access to and utilization of healthcare services are not statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by the data collected from the 2011-2012 NSCH.

H_a2: Children's access to and utilization of healthcare services are statistically significant predictors of the likelihood that the children experienced incarceration of a parental figure as determined by data collected from the 2011-2012 NSCH.

The overall equation is as follows:

log(P(ACE5(parental incarceration) = 1)/1-P(ACE5(parental incarceration) =1)) = b0 + b1*K3Q02(Medicaid/CHIP) + b2*K3Q20(health insurance needs met) + b3*K3Q20(health insurance needs met) + b4*K3Q20(health insurance needs met) + b5*K3Q22(allow health care providers) + b6*K3Q22(allow health care providers) + b7*K3Q22(allow health care providers) + b8*K4Q01(usual place) + b9*K4Q22(mental health) + b10*K4Q23(medication, emotions, concentration, behavior) + b11*K4Q27(delayed/not received care) + ε, where P (ACE5(parental incarceration) = 1) is the probability that the selected child lived with a parent or guardian who served time in jail or prison after the selected child was born.

The dependent variable was parental incarceration (ACE5) and the independent variables were access to health care services (K3Q02(Medicaid/CHIP), K3Q20(health insurance met), K3Q22(allow health care providers), K4Q01(usual place) and utilization rate (K4Q22(mental health), K4Q23(medication, emotions, concentration, behavior), K4Q27(delayed/not received care)). As all selected children had some kind of health care coverage, including health insurance, prepaid plans such as HMOs and government plans such as Medicaid (K3Q01), this independent variable was not included in the model. Multicollinearity was tested by running a linear regression with ACE5(parental incarceration) as the dependent variable and K3Q02(Medicaid/CHIP), K3Q20(health

insurance met), K3Q22(allow health care providers), K4Q01(usual place), K4Q22(mental health), K4Q23(medication, emotion, concentration, behavior), K4Q27(delayed/not received care) as the independent variables. The VIF values varied between 1.009 and 1.518, indicating that there was no multicollinearity present. For the dichotomous variables K3Q02(Medicaid/CHIP), K4Q22(mental health), K4Q23(medication, emotions, concentration, behavior), K4Q27(delayed/not received services) no further transformation was necessary before running the linear regression. However, variables K3Q20(Medicaid/CHIP) and K3Q22(allow health care providers) were categorical with four possible values (1 – Never, 2 – Sometimes, 3 – Usually, 4 – Always). Three dummy variables each for K3Q20(Medicaid/CHIP) and K3Q22(allow health care providers) were created, with 4 – Always as the reference category. For example, the dummy variable for "Never" would have ones for all the answers noted as "Never" and zeros for all the other values. For variable K4Q01(usual place) there were three possible answers: "Yes", "No" and "There is more than one place". These answers were merged, so that "There is more than one place" was recorded as "Yes".

The results of the logistic model indicate that the overall model was statistically significant, $\chi^2(11) = 818.426$, $p = 0.000$. The variables K3Q20(Medicaid/CHIP), K3Q22(allow health care providers), K4Q01(usual place), and K4Q23(medication emotions, concentration, behavior) were not statistically significant (Wald (3) = 1.212, $p = 0.750$; Wald (3) = 1.251, $p = 0.741$; Wald = 1.529, $p = 0.216$; Wald = 0.014, $p = 0.905$). Thus, having insurance that meets the selected child's needs, having a health insurance that allowed the selected child to see the health care providers they need,

having a usual source of sick care and taking medication for difficulties with their emotions, concentration or behavior did not change the log odds of having a parent incarcerated. However, variables K3Q02 (Medicaid/CHIP), K4Q22 (mental health), and K4Q27 (delayed/not received care) were statistically significant, (Wald = 523.467, p = 0.000; Wald = 60.768, p = 0.000; Wald = 7.859, p = 0.005). If the child was insured by Medicaid or the Children's Health Insurance Program, CHIP, the odds ratio of having a parent incarcerated increased 7.524 times. Similarly, if the selected child received any treatment or counseling from a mental health professional (psychiatrists, psychologists, psychiatric nurses, or clinical social workers), the odds ratio of a parent incarceration increased 2.222 times. Lastly, if the selected child needed health care but it was delayed or not received in the past 12 months at the time of the interview, the odds ratio of having a parent incarcerated increased 1.367 times. The results of the logistic regression with parental incarceration (ACE5) as dependent variable with children's access to and utilization of health care services as predictors are presented in Table 7.

Table 7

Logistic regression results with parental incarceration (ACE5) as dependent variable with children's access to and utilization of health care services as predictors

Independent	B	S.E.	Wald	df	Sig.	Exp(B)
Medicaid/CHIP K3Q02(1)	2.018	.088	523.467	1	.000*	7.524
Health insurance needs met (K3Q20)			1.212	3	.750	
K3Q20(1)	.363	.423	.735	1	.391	1.438
K3Q20(2)	-.054	.171	.100	1	.752	.947
K3Q20(3)	-.062	.110	.311	1	.577	.940
Allow health care providers (K3Q22)			1.251	3	.741	

Independent	B	S.E.	Wald	df	Sig.	Exp(B)
K3Q22(1)	.352	.505	.487	1	.485	1.422
K3Q22(2)	.060	.193	.095	1	.757	1.062
K3Q22(3)	.113	.121	.866	1	.352	1.119
Usual Place K4Q01_YES_NO	.336	.272	1.529	1	.216	1.399
Mental Health K4Q22(1)	.798	.102	60.768	1	.000*	2.222
Medication emotions, concentration, behavior K4Q23(1)	-.014	.119	.014	1	.905	.986
Delayed/Not received care K4Q27(1)	.313	.111	7.859	1	.005*	1.367

Note. * significant at 0.050 level. Model significant χ^2 (11) = 818.426, p = 0.000

Summary

Two logistic regression models were used to investigate the degree in which children's special health care needs, ongoing special healthcare needs are related to the likelihood that the children experienced the incarceration of a parental figure. Logistic regression was also used also examined the degree in which children's access and utilization of healthcare services are related to the likelihood that the children experienced incarceration of a parental figure. Both models were statistically significant, indicating that the two sets of predictors' reliability distinguish between children that experienced the incarceration of a parental figure and those that did not.

The Wald criterion demonstrated that within the indicators of special health care needs and ongoing special health care needs, only the indicator for the child's emotional, developmental, or behavioral problem for which they need treatment or counseling was a significant predictor (p = 0.000). When the child needed treatment or counseling, the

odds ratio of having a parent incarcerated is 3.205 times as large and therefore parental figures are 3.205 times more likely to have experienced incarceration.

Similarly, the Wald criterion demonstrated that within the children's access and utilization of health services, there were three significant predictors ($p < 0.050$). When the child was insured by Medicaid or CHIP, the odds ratio of having a parental figure that experienced incarceration increased 7.524 times, while the same odds ratio increased 2.222 times if the child needed treatment or counseling for mental health issues. Needed care that was not received or was delayed increased the same odds ratio 1.367 times.

Overall, the results indicated that the experience of parental figure is vital factor in examining the healthcare needs of children. Chapter 5 will discuss how these findings relate to the literature presented in this study. Chapter 5 will also consist of recommendations for future studies and implications for practice in regards to these findings.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this nonexperimental, quantitative, cross sectional study was to investigate the degree in which children's special healthcare needs and ongoing special healthcare needs predict the likelihood that the children experienced incarceration of a parental figure. The study also examined the degree to which children's access and utilization of healthcare services predict the likelihood that the children experienced incarceration of a parental figure. Logistic regression analyses were conducted to examine the likelihood of the dependent variable on the independent variables. Results of the logistic regression analyses indicated that both models were statistically significant in predicting the likelihood that the children experienced the incarceration of a parental figure. In this chapter, I will explain the interpretation of findings, limitations of the study, recommendations for future research, and implications of the study.

Interpretation of the Findings

There were numerous significant findings in this study. One significant finding was that a child's need for treatment or counseling for an emotional, developmental, or behavioral problem increased the odds of the child's experience of parental incarceration 3.205 times. Findings from this study are consistent with research findings showing a positive link between parental incarceration and emotional, developmental, and/or behavior problems (Kjellstrand & Eddy, 2011; McGinley & Varchevker, 2012; Murray et al., 2009; Smith, 2014; Turney, 2014). Findings from my study suggest that the

incarceration of a parental figure is a positive predictor of a child's need for treatment or counseling for emotional, developmental, and/or behavioral problems.

Another significant finding from this study was the positive correlation between a child's experience of parental incarceration and the need for treatment or counseling for mental health issues. The findings from this study suggest that a child is 2.222 times more likely to need treatment or counseling for mental health issues if he or she have experienced the incarceration of a parental figure. This finding concurs with existing literature that has examined this aspect and found a connection between parental incarceration and childhood mental health issues (see Lee et al., 2013; Murray et al., 2012; Turney, 2014).

In regards to children's access and utilization of health services, I found a positive correlation between a child being insured by Medicaid or CHIP and experiencing parental incarceration. Findings from this study indicated that a child insured by Medicaid or CHIP increased the likelihood that a child had experienced parental incarceration 7.524 times. Also, if a child needed care that was not received or was delayed, increased the likelihood that a child had experienced parental incarceration by 1.367 times. Based on my review of the literature, empirical research that provides statistical information regarding the access and utilization of services among children who have experienced the incarceration of a parental figure is scant. The findings of this study can serve as a foundation for future research in this area.

The conceptual framework for this study consisted of Bowlby's attachment theory along with life course theory. I used Bowlby's attachment theory because the theory

addresses the role of parents in the health and development of children. The primary assumption of attachment theory is that humans form attachments in the interest of survival (Bowlby, 1980). This theory helped convey how attachment anomalies between a parent and child can affect the health and development of children, which can ultimately influence the extent of utilization and access to health services (Bowlby, 1980). This notion supported findings from this study that identified an increased likelihood of a child's need for treatment or counseling for emotional, developmental, behavioral, and/or mental health if he or she had experienced the incarceration of a parental figure. This notion was also endorsed by the finding from this study that indicated increased odds of parental incarceration if a child needed services that were not received or was delayed, which corroborates the extent of a child's utilization and access to health services.

The life course theory was also used as a theoretical guide that offered a perspective into how life transitions, chronological age, and social change shapes behaviors and lives throughout lifespan, as it relates to the experience of the incarceration of a parental figure (Mears & Siennick, 2015). The demographics of the selected children showed that the majority (46.4%) of the children were in the age range of 12-17 years old, and the remainder consisted of children ages 6-11 years old (35.2%), and children 0-5 years old (18.3%). As mentioned previously, parental incarceration affects children differently depending on where they are in their life course (i.e., toddler, elementary school age or teenager), which gives heed to the consideration of these demographics. More so, literature has also found that a child's transition from childhood

into adulthood to be adversely affected by parental incarceration (Mears & Siennick, 2015). Gjelsvik, Dumont, Nunn, & Rosen (2014) posited that when a child experiences the incarceration of a parental figure, they are more likely to have poorer health-related quality of life, which lasts through adulthood. The notions and findings of the aforementioned body of literature provided support to the finding of my study, which justifies the use of this conceptual framework.

Overall, the findings of this study support the majority of prior research findings related to this matter. The findings of this study also substantiate a positive link between parental incarceration and childhood health issues. Specifically, the degree to which indicators of special care needs and ongoing special healthcare needs predict the likelihood that children have experienced the incarceration of a parental figure. More so, the findings also extend the knowledge regarding children's access to and utilization of healthcare services as predictors of the likelihood that the children have experienced incarceration of a parental figure.

Limitations of the Study

The main limitation of this study was the use of secondary data. Due the use of secondary data, I was not able to control how the data was collected, generated, or recorded. According to Frankfort-Nachmias and Nachmias (2008), this may limit insight into factors that may sway the results of the study.

Since I was not involved in the collection of the data, I have no knowledge of the instruments that were used to collect and analyze the data, which also posed a limitation to the study because I had to rely on information collected by others. Although the

interviewers were trained to administer the survey, their accuracy and competence is not guaranteed. This placed my research at the mercy of this data, and any inaccuracies could have affected the accuracy of the data that was used in this study (Frankfort-Nachmias & Nachmias, 2008).

Limitations to Generalizability

The sampled/selected children, in which the survey data reflects consisted of noninstitutionalized (i.e., children who were not committed to an institution) children aged 0-17 years in the United States. Since the selected children only consists of children in the United States, country-specific factors should be heeded when attempting to generalize the results of this study to children in other countries.

There were also significant differences in the demographic makeup of the selected children, more specifically among race and age. In reference to race, the sample was made up of children who were considered, white, non-Hispanic, black, non-Hispanic, multi-racial, non-Hispanic. White, non-Hispanics represented over half (66.1%) of the sample, which indicates that about 33.9% were non-White, non-Hispanics. So, a sizable portion of the sample represented White, non-Hispanics. Therefore, caution should be taken when attempting to generalize the results of this study to other races.

Recommendations

This study provided evidence of a positive correlation between parental incarceration and certain childhood health issues, and also children's access and utilization of health care services. Results from the data analysis revealed that children's special health care needs and ongoing special healthcare needs are significant predictors

of the likelihood that children have experienced the incarceration of a parental figure. The results also revealed that children's access and utilization of health care services are significant predictors of the likelihood that children have experienced the incarceration of a parental figure. Children who have experienced parental incarceration have increased mental health problems, as the literature provided in the review illustrated. This leads, as new research in this study shows, to a greater need for counseling and treatment for mental health issues. It is troubling that the lack of needed medical care or delayed care is 1.367 times more likely when children have experienced parental incarceration. Given that all children in the data set studied, had access to health care. More research needs to be conducted to explain why this is, to help provide better accommodations, and to improve the access and utilization of health care services for this population.

Thus not the focus of this study, further research could follow up on the linkage between government benefit, such as Medicaid and CHIP, usage by minors who have experienced the incarceration of a parental figure. Perhaps focusing upon government benefit usage as it specifically pertains to mental health and counseling programs could keep the investigation within the boundaries of this topic. This type of study could produce interesting financial figures that reflect the cost of parental incarceration; in terms of what is spent on the mental health treatment and counseling their children receive.

Implications of the Study

Findings from this study extends the literature on the impact of parental incarceration on childhood health by providing evidence that parental incarceration

significantly impacts the health status of children, and also the extent of their access and utilization of health care services. More so, the results suggest that children's experience of parental incarceration increases the likelihood of the need for treatment or counseling and also increases the likelihood that needed services were not received or was delayed.

Children who have experienced parental incarceration are in dire need of effective services to adequately address their needs, especially their health care needs. As the US prison population rises, more and more children will require such assistance. This in turn points toward a need for an increased number of practitioners, such as therapists, social workers, psychologists, etc., which colleges and universities should make considerable efforts to provide.

Practitioners currently in the field should double their efforts to develop effective treatment methods for such children, and work with local community groups who serve the families of incarcerated individuals, to spread the word that such counseling is available. Increased awareness of the availability of services for children who have experienced the incarceration of a parental figure would go a long way toward improved treatment levels, and reduced mental problems over the rest of their childhood and adult lives.

Conclusion

This study provided clear, distinct and significant results that are worth pondering and hopefully advance discussions on this topic. The long-standing linkage between parental incarceration and mental health problems in children (particularly that which requires treatment) is strongly reinforced here. Other results of note were produced as

well. This study should point towards a need for society to place greater emphasis on the provision of services to better address the needs of children who have fallen victim to the adversities of parental incarceration.

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Appendix A: Data Use Agreement

www.childhealthdata.org

Data Use Agreement: Data Resource Center Indicator Data Sets
2012 National Health Interview Survey, Child Complementary and Alternative Medicine Supplement
2011-2012 National Survey of Children's Health
2009-2010 National Survey of Children with Special Health Care Needs
2003 & 2007 National Survey of Children's Health Merged
2007 National Survey of Children's Health
2005-2006 National Survey of Children with Special Health Care Needs
2003 National Survey of Children's Health
2001 National Survey of Children with Special Health Care Needs

Definitions

1. **Licensee:** Nastassjiah Cunningham.
2. **Licensor:** Child and Adolescent Health Measurement Initiative (CAHMI), The Johns Hopkins Bloomberg School of Public Health, Department of Population, Family & Reproductive Health, 615 North Wolfe Street, Baltimore, MD 21205
3. **Data Set:** DRC Indicator Refined Data Set for: 2011-2012 National Survey of Children's Health, 2009-2010 National Survey of Children with Special Health Care Needs, 2003 & 2007 National Survey of Children's Health Merged, 2007 National Survey of Children's Health, 2005-2006 National Survey of Children with Special Health Care Needs, 2003 National Survey of Children's Health and/or 2001 National Survey of Children with Special Health Care Needs.
4. **Ownership:** CAHMI is the owner of Data Set which was developed in the course of research at CAHMI.
5. **Public Benefit:** CAHMI wants this Data Set to be utilized for the public benefit to the fullest extent possible.
6. **Publications:** Recipient agrees to acknowledge the Provider with appropriate citations in any publications or presentations using results from this Data Set. The suggested citation format is:

   Child and Adolescent Health Measurement Initiative (CAHMI). {*Year and name of survey*} Indicator Data Set. Data Resource Center for Child and Adolescent Health. www.childhealthdata.org

   Please initial here to acknowledge citation request NC
7. **Field of Use (how you intend to use these data):**
   I am conducting a study that will examine anomalies of children that are related to parental separation.

Terms

1. **Grant of License:** Subject to the terms and conditions of this licensee, Licensor grants to Licensee a non-exclusive, non-sub licensable, non-transferable license to use the Data Set provided herein and any associated documentation. Licensor is not obligated to provide upgrades to the Data Set or technical support beyond assistance in installing the Data Set.
2. **Ownership of Data Set:** This License gives the Licensee limited use of the Data Set. This License is not a sale of the Data Set and Licensor retains all title to all rights and interests in the Data Set. The Data Set is protected by U.S. Copyright laws, international treaty provisions and applicable laws of the country in which it is being used.
3. **Permitted Use:** Licensee may use the Data Set in the Field of Use for academic and research purposes only.
4. **Non-permitted Uses:** Licensee may not

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a. Use the data in the Data Set for any purpose other than statistical reporting and analysis;

b. Make any effort to determine the identity of any reported case in the Data Set;

c. Disclose or make use of the identity of any person or establishment discovered inadvertently, and will advise the Director, National Center for Health Statistics (NCHS), of any such discovery;

d. Link this Data Set with individually identifiable data from any other Data Sets;

e. Use the Data Set at any other location than that specified above;

f. Rent, lease, lend, sell, transmit or otherwise distribute or dispose of the Data Set temporarily or permanently without written consent of Licensor;

g. Create or permit third parties to create derivative works based on the Data Set;

h. Remove, modify, alter or obscure the copyright notices or any other proprietary notices contained in or on the Data Set;

i. Sell derivative works based on the Data Set.

5. **Term and Termination:** This License shall commence on the date of delivery of the Data Set to Licensee and shall terminate automatically upon breach of this License by Licensee.

6. **Confidentiality:** Recipient and Recipient Scientist agree to hold the Data in confidence and not disclose to anyone except to such of its employees, consultants and agents as may be necessary to make the determination required under this agreement, providing said employees, consultants and agents are bound by the terms of this Agreement.

7. **Publications:** Recipient agrees to acknowledge the Provider with appropriate citations in any publications or presentations using results from this Data Set.

8. **Warrants:** Licensor warrants that it has the lawful right to grant the license set forth in this Agreement.

9. **NO REPRESENTATIONS OR WARRANTIES:** Except as expressly provided in section 8, the parties acknowledge and agree that licensor, its trustees, directors, officers, employees, and affiliates make no representations and extend no warranties of any kind, either express or implied, including but not limited to warranties of merchantability, fitness for a particular purpose, non-infringement and the absence of latent or other defects, whether or not discoverable. Nothing in the license agreement shall be construed as a representation made or warranty given by licensor that the practice by licensee of the license granted hereunder shall not infringe the patent rights or copyright rights of any third party. In no event shall licensor, its trustees, directors, officers, employees and affiliates be liable for incidental or consequential damages of any kind, including economic damage or injury to property and lost profits, regardless of whether licensor shall be advised, shall have other reason to know, or in fact shall know of the possibility. Licensee assumes the entire risk associated with licensee's use of the Data Set.

10. **Complete Agreement:** This License is a complete and exclusive statement of the terms and conditions of the agreement between Licensee and Licensor.